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И ОБРАЗОВАНИЕ**

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AND EDUCATION**

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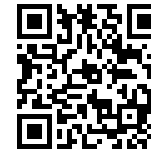
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Dear Readers!

We present the 6th issue of the journal *Psychological Science and Education* (No. 6—2024).

The rubric “Eduactional Psychology” opens with an analytical review on the development of initial pedagogical perceptions in students and specialists. The topic of pedagogical education is continued by the study of the correlation between the risks of aggression of student youth and indicators of self-efficacy, self-esteem and modesty. The results show that the higher the youth's level of aggression, the lower their self-esteem, self-efficacy, and modesty.

Readers will find the study of psychological well-being and educational outcomes of students with different strategies of entering higher education. The study analyzes the role of the demonstration exam as an assessment of the formation of professional competencies in future educational psychologists, and the factors influencing the reluctance of teachers to implement adapted digital gamification in the educational process. Regarding gamification in education, in order to promote successful implementation of this form of work, schools need comprehensive strategies, which include individual professional training for teachers, aligning game content with school curricula, and creating a favorable environment via public engagement and policy interventions.

In the rubric “Developmental Psychology” one can learn about the motivation for foster care of orphans of difficult-to-place categories in various forms of family placement; the study of ethnic, civil, and global identity of Russian high school students and their relationship to values. There are studies of the development and validation of a scale to study the adaptation of first-graders to schooling. The following studies consider the development and validation of a new instrument, the Adolescent Perseverance Scale, and the standardization of the Group Intelligence Test (GIT). We also recommend a review of the results of longitudinal studies of school theater as a tool to improve communication and socialization in adolescents, and to build individual-typological trajectories of school engagement. The related study analyzes an integrated approach to improving chess education through interactive learning strategies. The rubric concludes with a study of personality of a “stranger”, his characteristics as assessed by observers with different teaching experiences.

The rubric “Short Messages” presents a study of some aspects of additional education for children and opportunities for a fuller disclosure of the child's potential on the example of the Republic of Kazakhstan.

We hope that the readers of the journal will find interesting materials in the new issue of the journal *Psychological Science and Education*.

Editorial Board

Teacher Education as the Development of Student Teachers' Preconceptions and Beliefs

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The article examines the role of initial pedagogical preconceptions and beliefs held by students in teacher education programs as they begin to engage with pedagogical education curricula. It highlights the significance of school experiences in shaping these beliefs. The article analyzes the reasons for their sustainability during the subsequent acquisition of the educational program by future teachers at the university level. The author argues for the necessity of designing teacher education programs in the form of a sequential and specially organized transformation of initial pedagogical preconceptions and beliefs, aimed at fostering conceptual change and developing the practical thinking of future educators.

Keywords: teacher education; teacher training; initial beliefs; initial pedagogical preconceptions; conceptual change; practical thinking; teacher thinking.

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Педагогическое образование как развитие исходных педагогических представлений

Марголис А.А.

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В статье рассматривается роль исходных педагогических представлений студентов педагогических направлений подготовки, с которыми они начинают освоение программ педагогического образования. Показана роль школьного опыта в формировании таких представлений. Анализируются причины их устойчивости в ходе дальнейшего освоения будущими педагогами образовательной программы в университете. Автор считает необходимым проектирование программ педагогического образования

как процесса последовательной и специально организованной трансформации исходных педагогических представлений, их концептуального изменения, направленного на формирование практического мышления будущих педагогов.

Ключевые слова: педагогическое образование; подготовка педагога; исходные представления; исходные педагогические представления; концептуальные изменения (conceptual change); практическое мышление; мышление педагога.

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Introduction

One of the primary directions in the reform of the teacher education system is the enhancement of future teachers' practical readiness for independent professional activity. Over the past decade, a series of significant steps have been taken in the Russian Federation aimed at addressing this task. From 2014 to 2017, a project for the modernization of teacher education was successfully implemented, which led to the development of the new Federal State Educational Standard for Higher Education (FSES HE) in the field of "Education and Pedagogical Sciences" [15]. This standard outlined the general professional competencies necessary for future teachers to engage in teaching activity in accordance with the requirements of the professional teacher standard [12], which, in turn, is focused on achieving the educational outcomes of students as specified in the Federal State Educational Standards for General Education (FSES GE) [16]. In this way, it was for the first time that the standards for student education within the general education system, the professional activities of teachers, and teacher preparation were fully coordinated.

The new teacher education standard is based on activity-based approach, within which the primary unit of teacher education programs is not the traditional

academic discipline but a professionally-oriented module aimed at preparing student teachers for solving typical professional tasks. These modules integrate the necessary theory, practice, and research work. This created conditions to address one of the oldest problems in vocational education: the misunderstanding among students of how the theoretical material they study relates to their future professional activities. In this context, the theoretical section of the module becomes not merely a content of acquiring scientific knowledge but knowledge that is learned as tools for solving typical professional tasks. The newly developed FSES for teacher education has led not only to a substantial increase in practical training hours but also to a revision of the role and place of practice within the educational program.

Instead of the traditional understanding of practice as a way to illustrate theory, a "school-university partnership" model was adopted, recognising schools and teachers as sources of practical knowledge and methods of action no less important than the theoretical components of the pedagogical curriculum. The new model of practice involves a distributed scheme of organisation, whereby practice becomes an integral part of each professionally-oriented module, as well as a long-term

student teachers practice during the final year of study, enabling the integration of all previously acquired professional action methods from the modules (Margolis, 2021; Margolis, 2014) [6; 7].

The process of reforming teacher education received an important impetus in 2022—2023, when, under the initiative of the Ministry of Education of the Russian Federation, the existing standards of general education were revised. The list of subject-specific knowledge to be acquired by students was clarified, and based on this, the project to create the “core of pedagogical education” [17] was implemented. This project defines the content of subject preparation for future teachers, irrespective of the university where they undergo their training. This crucial stage of reform ensured the establishment of a level of subject-specific and methodological preparation for teachers that is necessary for mastering the educational content reflected in the updated general education standards.

Finally, the third phase of reforming the pedagogical education system, implemented in 2023—2024, was the creation of centres for conducting demonstration exams at pedagogical universities under the Ministry of Education of the Russian Federation. These centres are specially equipped venues for demonstrating the professional competencies acquired by graduates and for the independent assessment of their practical readiness to organise student teaching in accordance with the general and teacher education and professional standards.

Despite the many years of generally positive reforms in the pedagogical education system in the Russian Federation, several serious issues in the practical training of future teachers for the complex and multifaceted nature of pedagogical work remain unresolved.

One of the issues that requires in-depth study is the gap between theory and practice. This problem has a diverse nature and can be formulated in different ways. However, the common theme among these formulations is the question of how to ensure the translation of theoretical scientific knowledge into practice within the framework of pedagogical education programs. One of the key reasons preventing future teachers from developing professional practices based on the content of their theoretical training in pedagogical education is the initial pedagogical beliefs and preconceptions they bring with them to university.

Initial Pedagogical Beliefs

It is well known that prior knowledge, experience, and beliefs influence how learners acquire the content of an educational program (Vygotsky, 1935) [1]. Although this thesis is primarily applied to the learning of elementary and secondary school students (Posner et al., 1982; Chi, 2005; diSessa, 2017; Sinatra & Seyranian, 2015; Vosniadou, 2014) [18; 21; 26; 35; 38], it is equally applicable to the acquisition of professional education programs.

In the context of this article, we will examine it more specifically in relation to teacher education programs.

Initial pedagogical preconceptions and beliefs of future teachers (sometimes referred to as “everyday concepts or “intuitive beliefs”) have been extensively studied in the works of researchers since the late 1970s.

One of the earliest and most important studies in this field is D. Lortie's research, *Schoolteacher: A Sociological Study*(1975), which not only demonstrated the existence of such beliefs among future teachers but also described the mechanism by which they are formed (Lortie, 1975) [33]. This mechanism was

coined as the “apprenticeship of observation.” According to Lortie, the long-term experience of students observing the actions of various teachers leads to the formation of poorly formalised, incomplete, yet highly persistent beliefs about the content and characteristics of teaching as pedagogical activity. As noted in Lortie’s work [33] and in several later studies (Johnson, 1994; Richards & Pennington, 1998) [29; 34], the beliefs formed in students regarding teaching models are substantially incomplete and one-sided. Students typically observe only the external aspects of teaching and fail to perceive the internal dimensions related to the teacher’s plans, motives, and goals, which are aimed during a lesson at the class or the individual student. However, despite their incompleteness and lack of awareness, these preconceptions and beliefs are remarkably persistent in relation to efforts to change them during the process of teacher education or even while teaching practice on basis of school settings. As one of the young teachers interviewed metaphorically describes it, “I know I’m doing it wrong, and I would like to change, but I can’t and keep going back to my old ways” (Johnson, 1994) [29]. Even when dissatisfied with their initial beliefs about the goals and tasks of teaching, the absence of practical alternatives often leads novice teachers back to the methods they learned through observation during their own student experiences.

All of the above leads many researchers (Borg, 2004) [20] to the general conclusion that most teacher education programs have a very limited impact on transforming the initial pedagogical preconceptions and beliefs of future teachers. In D. Kagan’s work (Kagan, 1992) [31], it is shown that this is primarily due to the fact that initial pedagogical beliefs

act as a kind of “filter” through which teachers interpret the teaching methods they are studying. This “filter” is usually so effective that even pedagogical situations observed by students in practice rarely lead to a change in their initial beliefs and attitudes.

In the study by E. Joram and A. Gabriele (Joram & Gabriele, 1998) [30], an attempt was made to conduct a more in-depth study and structure the initial pedagogical beliefs of students undergoing teacher education. The study identified the most significant initial beliefs and attitudes of first-year students in teacher education programs and assessed the impact of the program on changing these attitudes. The researchers were able to identify several of the most typical initial pedagogical preconceptions and attitudes (beliefs) of students.

One of the most important of these initial beliefs is the students’ conviction regarding the relatively low value and significance of university theoretical courses compared to the role of practice in their training programs. In fact, this belief reflects the initial view held by many future teachers of teaching as a relatively simple set of skills and abilities. The analogy used by E. Joram and A. Gabriele (Joram & Gabriele, 1998) [30] compares this belief to learning how to ride a skateboard. It is clear that one can study the theory of skateboarding and the concept of maintaining body balance, but the value of learning such theory is evidently minimal compared to the practical attempts to learn how to ride the skateboard. As shown in the interviews conducted by the researchers, most future teachers, who evaluate the theoretical part of their teacher education program as much less significant compared to the role of practice, assume that teaching consists of a relatively simple set of skills

and abilities, comparable in complexity to skateboarding.

The second initial belief described by E. Joram and A. Gabriele (Joram & Gabriele, 1998) [30] is the conviction held by a significant group of students, which can be summarised as: "I was taught this way, and the result works for me." This primarily concerns teaching models in which the teacher conveys and transmits educational information to students, without distinguishing, in most cases, between the processes of teaching and learning.

Another important initial preconception of future teachers is the belief that the process of learning does not present a significant problem for students and does not require any particularly complicated efforts on the part of the teacher. This belief is rooted in the student teachers inability to differentiate between their own learning experiences and the learning and understanding processes of their future students. In fact, such students equate their own experiences and ability to understand the material with the corresponding processes in their likely future students. The absence of difficulty in understanding the learning material (which they have long since mastered during their school years) leads to the false conclusion that there are no potential problems in mastering the material for real or potential students.

Finally, another initial pedagogical belief is the conviction held by some students that issues related to student learning, in terms of their difficulty for the teacher, are secondary compared to the importance and complexity of classroom management issues. This management includes not only following the lesson plan but also maintaining discipline during lessons.

While this statement reflects the objective difficulty of such issues for novice teachers, the management challenges are often viewed not in terms of fostering

motivation and engagement in students but, first and foremost, as creating conditions for the effective transmission of lesson content in accordance with a pre-developed plan.

The results of the conducted diagnostics show that in the traditional design of the "Educational Psychology" course, only 17% of the 40 students surveyed changed their beliefs about the teaching process, and 26% about the features of the learning process. The majority of students retained their initial beliefs without modification (Joram & Gabriele, 1998) [30].

An equally interesting focus of the topic discussed is the students' perceptions not only of the nature of pedagogical work and methods of organizing teaching but also of who can be considered a good teacher.

Research on these perceptions reveals that the vast majority of students in teacher training programs define a good teacher as someone who is kind to children, has developed empathy, and is capable of offering them help and support. While this definition of a good teacher is unobjectionable, the issue arises from the dramatic mismatch between these qualities and the concept of a good teacher in terms of regulatory documents, standards, and list of professional competencies. In most cases, these documents define a good teacher as a highly qualified educator capable of ensuring the achievement of high educational outcomes among students — that is, a teacher who possesses the necessary knowledge and skills for this task. This discrepancy between the everyday perception of future teachers (shaped by their own experiences as former students) and the socially or state approved normative definition set by the goals of teacher education as a public institution has several important foundations.

The described contradiction objectively stems from the dual professional task of the teacher, who, on one hand, organises the effective acquisition of academic content and, on the other hand, does so through managing interactions with students and between them.

It is precisely this second task — organising interaction — that prevails in most students' understanding of what it means to be a good teacher, both among teacher education students and school pupils. Meanwhile, the first task (the mastery of academic content) is more commonly emphasised in normative public definitions. The failure to distinguish these different understandings of what makes a good teacher, or the overwhelming emphasis on the task of knowledge acquisition for teaching activity, leads to the preparation of teachers who find it difficult to become effective and capable of productive and multifaceted interaction with students. This is even more difficult to achieve considering that the teacher is involved not only in the teaching process but also in students' socialisation and development, which requires qualitatively different communicative competencies, level of psychological preparation, and the development of professional thinking in future educators.

This problem is further exacerbated by the fact that the admission process to teacher education programs does not usually include oral interviews or psychological testing. Moreover, the training programs themselves do not contain embedded components aimed at developing the professionally significant personal qualities of future teachers. The fundamental assumption behind this system of entry into teacher education programs is likely based on the belief that any applicant who scores a certain number of points on the Unified State Exam

(EGE) can be trained to become a good teacher, regardless of the level of development of their professionally significant personal psychological qualities necessary for effective communication with all participants in the educational process, particularly with students.

Reasons for the Persistence of Initial Pedagogical Beliefs

The reasons for the persistence of initial pedagogical beliefs can, in our opinion, be conditionally divided into three groups. The first two groups are not so much related to the specifics of these beliefs as to the problems and approaches to the design of teacher education programs, which, in general, appear indifferent to the existence of such beliefs, either ignoring them or attempting to influence them in an extremely ineffective manner, leading to their persistence and maintenance until the beginning of the graduate's independent teaching career.

The first group includes general deficiencies in traditional approaches to designing teacher education programs, which prove ineffective in terms of influencing the theoretical content on the subsequent professional activity of graduates in general and on changing their initial pedagogical beliefs in particular. Under this approach, the academic content in the form of a set of theoretical courses is mastered at university and then illustrated in practice, usually at the end of the semester. It might seem that the current FSES HE has established an alternative to the disciplinary approach to teacher education through the modular approach, where theory and practice are integrated into a single educational unit. However, as demonstrated by the results of several studies (e.g., the 2024 monitoring of programs in "Psychological and Pedagogical Education") [7], the transi-

tion to modular programs has largely remained on the paper. In reality, traditional disciplinary structures continue to dominate the curriculum in most teacher education programs. It appears that the shift to modular programs was too complex for most teacher education faculties, both due to the need to revise long-established curricula of theoretical disciplines and the need to reassess relationships with practical training bases. These bases need to be more deeply involved, not only in showing and illustrating theoretical knowledge but also in responsibly developing professional competencies with universities, recognising the unique competencies and knowledge of teacher-practitioners as equally necessary as the theoretical knowledge formed at university. The new methodology of the modular approach, in which theory is not used to illustrate practice but instead is integrated into practice — into the method of solving typical professional tasks — seems to have been too unfamiliar for most university faculty. As a result, theory continues to be studied within the framework of historically developed set of academic disciplines, subjectively treated by students as an end in itself (often reduced to the need to successfully pass exams or coursework), disconnected from the resolution of professional tasks or its instrumental, or “tool-like,” function, in the terms of L.S. Vygotsky [2]. This leads, on the one hand, to the loss of the opportunity to develop a meaningful relationship with the knowledge being studied and a significant reduction in students' academic motivation, on the other. An equally important consequence of preserving the disciplinary structure of educational programs is the fact that the opportunity for objectifying initial pedagogical beliefs, showing their limitations in solving professional tasks, and ultimately creating

conditions for their reflection and conceptual development arises extremely rarely. As a result, theoretical knowledge does not so much become part of the future teacher's new way of thinking, as it is memorised, with little influence on pedagogical practices. The effect of “academic knowledge washout” identified in the late 1980s (Tabachnik & Zeichner, 1984) [36] shows that theoretical knowledge acquired at university, if not used in the organisation of one's own pedagogical activities, completely disappears from the professional arsenal of a novice teacher within the first year, replaced by practical generalisations that spontaneously arise during their activities or are transmitted by more experienced colleagues.

The second group of reasons, well described in a number of works by both Russian and foreign authors (Korniilov, 2000; Kulyutkin, 1983; Kulyutkin & Sukhobskaya, 1990; Clark & Lampert, 1986; Eraut, 1995) [4; 5; 9; 23; 28], is related to the very nature of theoretical content in teacher education programs and the difference between the foundations of academic knowledge and the knowledge required when solving pedagogical tasks in teachers' practice.

The transition of teacher education programs (as well as programs for specialists in a number of other professions) to universities, which began in Europe, the USA, and Russia from the late 19th century and was fully formalised in the mid-20th century, raised the need to prove that, like other “classical university” professions, pedagogy also has a comparable body of scientific knowledge with a similar level of validity (as in the natural, technical, or social sciences), which can therefore serve as the scientific foundation for teacher training. The problem, however, is that teaching is so complex and multifaceted that any at-

tempt to strictly academicise the study of it inevitably leads to significant simplifications of the subject compared to its actual complexity. Thus, there emerges a paradox: the closer scientific pedagogical or psycho-pedagogical research comes to the standards of academic research in other sciences, the less connected it becomes with the real conditions of pedagogical practice, and the less valuable the knowledge acquired may be when applied to solving practical professional tasks by teachers.

The scientific knowledge underpinning many theoretical disciplines is obtained through the abstraction from the contradictory aspects and contexts of real pedagogical practice. Moreover, such knowledge remains predominantly mono-disciplinary, while solving most pedagogical problems requires teachers to possess interdisciplinary knowledge, integrated into a unified whole, which can be used to make effective pedagogical decisions.

According to Yu.N. Kulyutkin (Kulyutkin, 1983) [5], the weak influence of studied theory on the practical activities of future teachers is related to the fact that there is a significant gap between the theoretical concepts being learned and the specific methods used to solve practical pedagogical tasks. Kulyutkin suggests calling these intermediary elements “constructive schemes.” Such schemes represent different forms of operationalisation of theoretical concepts, essentially ways of transforming them into tools for solving practical tasks. The absence of such operationalisation methods results in theoretical concepts being memorised rather than applied in practice, leading to their “devaluation” as subjective knowledge for the teacher.

It is also important to note that academic knowledge in theoretical courses

in teacher education programs, being scientific knowledge, usually aims to understand an initial principle, uncover a pattern, abstracting from the contexts and “details.” However, most professional tasks require teachers to transform the pedagogical situation, adjusting it to the goals of their activity and to the specific conditions under which it occurs (Kornilov, 2000) [4]. In fact, one of the reasons for the insufficient demand for theoretical knowledge is that it is abstract and rarely relates to the context of solving professional pedagogical tasks. A whole layer or level of necessary operationalisation and contextualisation of this academic knowledge is missing (Kulyutkin, 1983) [5]. To solve most pedagogical tasks, teachers need knowledge not in the abstract-academic sense, but knowledge about transforming the system of elements of the pedagogical situation with which they are dealing (Kornilov, 2000) [4]. In fact, this requires a different type of thinking, namely, practical thinking. This type of thinking and its characteristics have been deeply studied within the scientific school of B.M. Teplov [14] and in the research conducted by Yu.K. Kornilov’s team at Yaroslavl State University [11; 13], as well as at the Institute of Psychology of the Russian Academy of Sciences [10]. Unfortunately, these studies have not had a significant impact on the methodology of building modern teacher education programs.

It would seem that solving the same problem of preparing future teachers for independent professional practice could be built within an alternative approach, based on analysing the practical generalisations of working teachers, reflecting on their experiences, and the implicit knowledge possessed by the best practitioners. Moreover, as some researchers, such as D. Schon (Eraut, 1995)

[28], argue, it is precisely the reflection on successful pedagogical experience, rather than relying on abstract academic knowledge, that underlies the success of expert teachers. However, for this purpose, such knowledge must be reflected upon by its bearers, objectified in a form accessible for transmission, and contextualised — that is, accompanied by some commentary on the conditions of its successful application. In other words, it must be transformed into the form of a case study as a distinct educational unit. This is what occurs in many training systems for other professions (doctors, managers, lawyers, etc.). In the case of teacher preparation, creating case studies — or, more precisely, case study libraries — still seems more like an exotic practice rather than a widespread educational norm. This is largely, it seems, because pedagogy has yet to develop a language for signifying professional practice, which would allow teaching activity to be translated into symbolic form and restored from that form.

The third group of reasons for the persistence of initial pedagogical beliefs is related to their own characteristics and the conditions under which they arise.

As noted earlier, such beliefs are the result of many years of students observing various models of teachers' pedagogical activity, primarily focusing on the external surface aspects of their behaviour and the sequence of professional actions in different typical situations. In most cases, this leads to the formation of initial beliefs in future teachers that are examples of procedural knowledge, the change of which, unlike declarative knowledge, is an extremely complex task (Anderson, 1983) [19].

Another important feature of initial pedagogical beliefs is their imagistic nature. The very process of observing

teachers at work and actively participating in the learning processes organised by these teachers inevitably leads to generalisation and some degree of typologisation. It is clear that, lacking scientific concepts and analytical tools for studying professional activity, such generalisations are primarily made using images of the teacher's activities and personality as a professional. The initial beliefs formed in this way lead to the creation of generalised, image-based representations that could be seen as future personal theories of pedagogical identity (Clandinin, 1986; Crow, 1986; Elbaz, 1983) [22; 25; 27].

According to most researchers, initial beliefs (which fully encompass the initial pedagogical beliefs of future teachers, formed during their school experience) are interrelated to varying degrees. The nature of these interconnections, according to different authors, can range from quasi-independence to strong connections, forming a kind of "naive" theory. For instance, A. diSessa (diSessa, 2017) [26] argues that these preconceptions are virtually independent of one another (the concept of *knowledge in pieces*), while C. Vosniadou (Vosniadou) suggests that different initial preconceptions form a kind of theory (similar to the relationship between concepts within a theory) (theory framework) [37]. Most researchers, however, lean towards the idea that there are some connections between different initial preconceptions, though these connections are much weaker than the relationships between concepts in a formal theory (framework).

In the case of pedagogical initial beliefs and preconceptions, one could assume that the imagistic generalisation of various aspects of a teacher's activity appears quite interconnected, particularly if the integrated image is somehow gener-

alised into a subjective representation of what constitutes a good teacher.

This embeddedness of initial pedagogical beliefs in something resembling a system adds further complexity to the process of changing them during teacher education. The reasons for this complexity lie in the fact that the learning process (from the perspective of constructivist ideas) involves integrating new information into an already existing system of knowledge and beliefs. In most cases, this implies a mild restructuring of the previously formed system and the integration of a new element. However, when new knowledge is fundamentally different in nature from the already established system of beliefs, such integration requires a profound restructuring of the system, which typically leads to significant difficulties and resistance from the learner. This is precisely what occurs in some cases during the process of acquiring teacher education programs, when mastering a new concept or method of action requires changing not just one previously existing initial pedagogical preconception, but the entire system of interconnected beliefs.

This situation is well explained by A. Corporaal (Corporaal, 1988) [24], who highlights the reasons for the limited impact of theory, studied within teacher education programs, on the actual practice of graduates. According to Corporaal [24], the reason for this is that the dominant method of teaching students in these programs does not focus on integrating new knowledge into the system of initial pedagogical beliefs with which the student begins their education. The lack of such integration, especially when the theoretical knowledge studied is fundamentally different from initial beliefs, does not lead to a restructuring of this belief system. On the contrary, in most

cases, the system remains largely unchanged, with the theoretical knowledge merely being memorised, without altering the thinking patterns of future teachers.

The mechanism described above is clearly illustrated by one of the most common initial pedagogical beliefs, according to which a significant number of students entering teacher education programs believe that the main professional task of a teacher is to effectively present the learning material. At the same time, most experts and curriculum developers in teacher education programs argue that the teacher's main task is to organise the learning and understanding processes of students regarding the educational content. This understanding of the teacher's professional task is rarely found in initial pedagogical beliefs (Weinstein, 1988) [38].

According to Posner et al. (1982) [18], new concepts developed within teacher education programs compete with initial pedagogical beliefs. Abandoning these beliefs in favour of the newly developed concepts implies that the new concepts should appear more justified, more plausible, and capable of helping to solve the professional tasks that future or beginning teachers will face more effectively. The difficulty in meeting these requirements is clearly seen in the previous example of future teachers' belief that explaining the educational material is the primary task of the teacher. Transforming this belief into a more complex understanding — that the teacher's main task is organising students' understanding of the content — requires, according to Posner et al. [18], that students recognise the limitations and inefficiency of their initial belief. However, organising such a development of students' beliefs faces three complex issues that arise during this transition (Wubbles, 1992) [39].

Why, if clear presentation of educational material is not the teacher's main

task, is it so widely practised in real pedagogical contexts? Why, within teacher education programs, is this topic also often presented in lecture form? And why, finally, is the common feeling that we are learning when someone explains something to us well ignored? If the new beliefs are not more effective in solving practical tasks than the initial beliefs, the transformation of the latter becomes unlikely. Since future teachers typically do not encounter educational situations in which the difference between what and how the teacher explains and what and how the students understand is obvious, initial beliefs remain largely impervious to change, as they appear to be subjectively well-founded and effective.

Thus, the formation of new concepts and understandings in future teachers not only requires the program developers to understand students' initial pedagogical beliefs but also necessitates the design of teaching situations and forms of learning that facilitate the process of reflecting on these beliefs (Wubbles, 1992) [39] and reveal their inefficiency compared to the new concepts in solving typical professional tasks.

Conclusions and Recommendations for Improving Teacher Education Programs

Summarising the above, the following conclusions can be drawn regarding the key characteristics of the initial pedagogical beliefs of future teachers:

1. The vast majority of students entering university teacher education programs already possess formed initial preconceptions and beliefs about the nature of pedagogical work, the content and methods of pedagogical activity, teaching styles, and models of teacher-student interaction.

2. In most cases, these beliefs are not subject to any specifically organised work by university faculty aimed at identifying, reflecting upon, or discussing their features and limitations. As a result, a significant proportion of students retain these beliefs in almost unchanged form (coexisting with memorised theoretical information) until they begin independent practical work, where these beliefs transform into a "personal practical pedagogy" in the face of the challenges and uncertainties encountered by young professionals.

3. The persistence of these beliefs, in our view, is not only related to the many years of students observing the pedagogical practices of different teachers (D. Lortie, 1975) [34], but also to the fact that throughout this period, students participate in their own learning activities, organised by teachers according to their beliefs about teaching. It is this active involvement, rather than mere observation, that allows students to form their own beliefs about the learning process. These beliefs do not always replicate teachers' methods, but in some cases may be based on rejecting them.

4. The experience gained through observing pedagogical activity and participating in it is not only formative for specific beliefs about pedagogy but is also closely linked to the emotions it evokes. This forms not just representations but cognitively-affective constructs that are better described as initial beliefs (Korthagen, 2017; Wubbles, 1992) [32; 40], which serve as the basis for developing personal pedagogical theories (which aligns with L.S. Vygotsky's position on the unity of affect and intellect) [3, p. 251].

5. Such emotionally charged experiences differ significantly from the experience offered to students in most teacher education programs, where the studied theory is primarily presented verbally, leading to memorisation rather than the

formation of new units of professional thinking. Furthermore, the content of these programs is mostly intellectually detached and rarely linked to strong emotions, which prevents the creation of sufficient potential for transforming previously formed beliefs.

Thus, while personal meanings and pedagogical beliefs are formed during school education, in university education, many students are primarily exposed to memorised definitions and representations rather than deeply engaged learning.

Key Recommendations for Teachers and Leaders of Teacher Education Programs:

Based on the conclusions formulated above, the following recommendations are, in our view, essential for the improvement of teacher education programs:

1. Students entering university teacher education programs (just like school pupils) are not a “tabula rasa” upon which a professor or teacher can “write” what the curriculum dictates. Rather, the preparation of future teachers should be designed as a gradual transformation of their initial pedagogical beliefs (which are often superficial and unconscious) into what can, with some approximation, be called pedagogical concepts or personal practical theories.

2. The transformation of initial pedagogical beliefs into pedagogical concepts during the acquisition of a teacher education program does not happen automatically. It requires special organisation from the program’s faculty. The focus of this work should be on creating conditions for the exteriorisation of initial beliefs, organising their collective and individual reflection, and constructing more advanced and conscious representations that will facilitate effective solutions to professional tasks.

3. Given that most initial pedagogical beliefs are not only cognitive but also cognitively-affective constructs, their transformation can, in our view, only occur if the program developers create educational-professional situations where students experience emotions and feelings. The solutions to professional problems they master should lead to the formation of personal meaning, rather than simply memorising specific scientific definitions or theories.

4. The opportunity for developing initial beliefs arises not so much from comparing them with theoretical and scientifically-based knowledge but from their application in practice and the analysis of the problems and limitations that arise, demonstrating the inadequacy or inefficiency of initial beliefs. This, in turn, necessitates a real, rather than a declarative, shift towards a modular approach in the design of educational programs.

5. Developing initial beliefs becomes a key task of teacher education programs only if the objective of these programs is not merely the acquisition of knowledge or the teaching of skills (or methods of action), as specified in the current standards, but the formation of a specific type of practical thinking in the graduate — pedagogical thinking.

6. Achieving this educational goal is possible only if teacher education programs distinguish between the processes of students’ teaching and their learning, and move towards designing activities that focus on the learning processes of future teachers.

7. The implementation of the above goals and recommendations implies the need for the development and launch of a research program on pedagogical thinking, including initial beliefs, practical generalisations, and the patterns of their conceptual development.

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The Relationship Between the Risks of Aggression among University Students and Indicators of Self-Efficacy, Self-Esteem, and Humility

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The study focuses on comparing rates of self-efficacy, self-esteem, and humility in relation to levels of physical aggression, anger, hostility, and general aggressiveness. 2315 students (83% — female) from Russian universities were recruited for this study. The following methods were utilized: the Buss-Perry Aggression Questionnaire, Rosenberg’s Self-Esteem Scale, R. Schwarzer’s & M. Jerusalem’s General Self-efficacy scale, S. Shwartz’s Values Questionnaire (PVQ-R2). Data from the “Humility” scale was used. The results showed significant negative correlations between the mentioned variables. An increase of aggression rates is associated with a decrease in self-efficacy, self-esteem, and humility. It was also found that there was no relationship between the indicators of hostility and humility. It was shown that the indicators of self-efficacy, self-esteem and humility differ in the context of different types of aggression. It was found that students with low and medium levels of physical aggression are characterized by higher indicators of self-efficacy, self-esteem, and humility. A similar trend is relevant for the group with low level of anger. Students with low levels of hostility show higher scores of self-efficacy and self-esteem (but not humility). Students’ self-esteem, humility, and self-efficacy also vary in the context of aggressiveness integral measure levels. The obtained results can be applied in the implementation of the Concept of development of the network of

psychological services in educational organizations of higher education in the Russian Federation.

Keywords: aggression; anger; hostility; university students; self-efficacy; self-esteem; humility.

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Взаимосвязь рисков агрессивности студенческой молодежи с показателями самооффективности, самооценки и скромности

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Представлены результаты исследования, посвященного сравнению выраженности самооффективности, самооценки и скромности студенческой молодежи в зависимости от уровня физической агрессии,

гнева, враждебности и общей агрессивности. Его участниками были 2315 студентов (83% — девушки) из вузов Российской Федерации. Были использованы следующие методики: опросник агрессивности Басса-Перри, шкала самоуважения (самооценки) Розенберга, шкала общей самооффективности Р. Шварцера, М. Ерусалема, Ценностный опросник Ш. Шварца (PVQ-R2; из общего массива результатов, полученных по этому опроснику, в настоящей статье рассмотрены данные только по шкале «Скромность»). Полученные данные показали значимые отрицательные взаимосвязи между рассматриваемыми показателями. В частности, чем выше уровень агрессивности у молодежи, тем ниже ее самооценка, самооффективность и скромность. Обнаружено отсутствие взаимосвязи между показателями враждебности и скромности. Показано, что показатели самооффективности, самооценки и скромности различаются в контексте выраженности уровня различных шкал агрессии. Установлено, что студенты с низким и средним уровнем физической агрессии характеризуются более высокими показателями самооффективности, самооценки и скромности. Аналогичная тенденция характерна для группы с низким уровнем гнева. Студенты с низким уровнем враждебности значимо чаще, чем остальные группы, демонстрируют более высокие показатели самооффективности и самооценки (но не скромности). Самооценка, скромность и самооффективность у студентов статистически значимо различаются в контексте различных уровней интегрального показателя агрессивности. Авторы считают, что полученные результаты могут быть применены при реализации Концепции развития сети психологических служб в образовательных организациях высшего образования в Российской Федерации.

Ключевые слова: агрессия; гнев; враждебность; студенты; самооффективность; самооценка; скромность.

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Introduction

Solving the problems of students as a specific social group is an urgent task of youth policy. These issues include providing opportunities for professional and personal growth, providing educational opportunities, and reducing the risks of anti-social behavior. These problems receive a lot of attention in psychological research, particularly in terms of the correlation between aggression, value systems, and psychological well-being indicators.

Within the context of the three most prominent theories of cultural values (G.

Hofstede, R. Inglehart, and Sh. Schwartz), there is a consistent argument that the predominant value orientations in a society are the most significant aspect of culture. These value orientations shape and support individual and collective beliefs, actions, norms, and goals [21]. The analysis of values within this article is conducted through the lens of the refined theory of fundamental values proposed by Sh. Schwartz [11; 21].

Values can both promote and discourage aggressive behavior. Several studies [14] have revealed a stable positive link between aggressive behavior and certain values,

particularly the value of power. In contrast, values such as self-determination and universalism are negatively associated with aggression. This relationship holds true across different cultures, including Germany, Italy, and the Jewish and Arab communities in Israel and the United States. It applies to various forms of aggression, including direct, indirect, verbal, physical, cyber-aggression, and bullying [21]. The relationship between aggression and openness to change, as well as values related to caring for nature, is generally weak and varies depending on the specific context [14].

The value of humility was justified within the refined concept of Schwartz's 19 values [11]. It should be noted that, within the "preliminary" framework, humility is borderline for the meta-values of conservation and self-transcendence [21]. However, empirical verification of the 19-value model allows us to consider it as a part of conformity within the initial 10-value model [11, p. 63], i.e., rather, to consider it in the context of conservation.

The meta-value of conservation and the values of conformity and humility, within the framework of Sh. Schwartz's basic and refined concepts, are significant variables in research on various aspects of aggression risks. For instance, the meta-value of conservation is associated with a desire to meet social expectations, and consequently, manifestations of restraint and self-control in adolescents, which leads to a negative association between this group of values and aggression [14].

There is also a body of research on value relationships by Schwartz and the Dark Triad (narcissism, Machiavellianism, and psychopathy). Studies [18], for example, have found a negative relationship between values such as tradition, security, and conformity, and all components of the Dark Triad. A study [22] compared the value profiles of individuals with primary and secondary forms of psychopathy to a nor-

malive (control) group. The results showed that individuals in the control group had significantly higher scores on humility and conformity, compared to those with various forms of psychopathy.

Among other studies of the relationship between humility and various aspects of socialization, we note, for example, that the variable humility is significantly associated with different aspects of young people's readiness for political engagement [10] and different attitudes, including towards religion, politics, and other issues [21].

The relationship between aggression, aggressiveness, and self-esteem in a person has been a topic of research for psychologists for a long time, according to modern scientific standards. In earlier studies [1], a connection between high aggression and low self-esteem has been presented. At the same time, several studies on the characteristics of criminal personalities prone to aggression revealed high self-esteem indicators [6]. At the turn of the millennium, researchers B.J. Bushman and R.F. Baumeister conducted a study that involved several experiments to establish a link between an individual's self-esteem and aggression. During these experiments, people's reactions to provocation aimed at them were considered [13]. Their results demonstrated that narcissistic personality traits were more strongly associated with aggression in experimental conditions than self-esteem. In addition, high self-esteem was observed in both the most aggressive and the most non-aggressive individuals. Therefore, the researchers concluded that aggression and aggressiveness of the personality were more likely to be linked to narcissism and unstable self-esteem [13]. Modern research also confirms a nonlinear relationship between aggression and self-esteem. For example, a study by S. Amad, N.S. Gray, and R.J. Snowden [12] found that people with low self-esteem were prone to reactive aggression. High levels

of self-esteem and narcissism, on the other hand, were also associated with aggressive behavior, but it was planned and aimed at achieving a specific goal.

Self-efficacy is a concept closely related to self-esteem, and they are interrelated. However, there is a subtle difference between the two. Self-efficacy refers to a person's perception of themselves in the future, while self-esteem refers to how they perceive themselves in the present. Self-efficacy involves the belief in one's ability to solve problems and overcome difficulties, while self-esteem involves the overall evaluation of oneself based on past experiences. Self-efficacy has a stronger connection to motivational aspects of personality, while self-esteem has a closer connection to perceptual aspects [15]. The relationship between self-efficacy and personality aggression is not as well-researched as the relationship between self-esteem and aggression. At the same time, the very essence of the concept of self-efficacy and its stable connection with the positive aspects of personality within the VIA-24 model allow us to discuss the multidirectional vectors of self-efficacy and aggression in personality structure. Both self-esteem and self-efficacy are considered key components of psychological well-being in modern psychology [7, 16, 19].

The main purpose of this article is to explore the relationship between self-esteem, humility, and self-efficacy in students with varying levels of physical aggression, anger, and hostility. The study aims to test the hypothesis that there will be significant differences in the levels of self-efficacy, self-esteem, and humility among students with varying degrees of aggression and its components, such as propensity to physical aggression, anger, and hostility.

Sampling and Research Methods

The study involved university students from nine different regions of Russia, representing three federal districts: Central,

Northwestern, and Volga. The sample consisted of 2,315 participants, with an average age of 20.19 years ($SD=2.9$). Most of the respondents were female (83%), and more than half had a pedagogical or psychological field of study (52%). About 23% had a socio-humanitarian background, 9% had a natural science background, and 7% had a technical background. It should be noted that a significant proportion of students in natural science (68%) and technical fields (47%) study at pedagogical universities, which makes the sample representative of students in psychological, pedagogical, and socio-humanitarian fields in Russia. The selection of study participants was done randomly and was based on their voluntary agreement to participate in the study. This was included in the survey form that they completed.

The study was conducted online on the platform forms.yandex.ru. Data collection and monitoring of the conditions of the survey were carried out by coordinators who were employees of psychological services and specialists from departments for working with students at participating universities. Statistical analysis was performed using IBM SPSS Statistics version 23.

To diagnose the level of aggression, the Buss-Perry Aggressiveness Questionnaire was used, adapted by S.N. Enikolopov and N.P. Tsybulsky [2]. To study self-esteem, the Rosenberg Self-Esteem Scale was used [3]. Students' self-efficacy was assessed using the General Self-Efficacy Scale of R. Schwarzer and M. Jerusalem, adapted by V.G. Romek [8], and the Schwartz Value Questionnaire (PVQ-R2) [11], specifically considering the data obtained on the humility scale of this questionnaire here.

In order to investigate the relationship between student aggression and indicators of self-efficacy, self-esteem, and humility, a correlation analysis was conducted using the Spearman's method. To compare groups with different levels of aggression,

a one-way analysis of variance was used, followed by multiple comparisons using the Tukey HSD test.

Results

Table 1 presents the average values, standard deviations (in parentheses) and reliability indicators for the scales of the Buss-Perry Aggressiveness Questionnaire, the General Self-Efficacy Scale by R. Schwarzer and M. Yerusalem, the Rosenberg Self-Esteem Scale, and the Humility Scale from the Schwartz Values Questionnaire.

Considering the results of descriptive statistics, it is worth noting that most of the studied variables show a predominance of lower values in terms of aggression (with the exception of anger), and higher values for self-efficacy, self-esteem, and humility. As the distribution of these variables differs from normal, we used Spearman's correla-

tion method for analysis. Table 2 shows the results of this correlation analysis for all the variables under study.

The results of the correlation analysis show significant negative correlations between variables such as aggressiveness and humility, as well as self-esteem and self-efficacy. In other words, the more aggressive a person is, the lower their self-esteem and self-efficacy are likely to be, and vice versa. A low indicator of aggression may indicate an increased level of self-confidence, self-worth, and humility. It should be noted, however, that there is no strong connection between humility and aggression.

To conduct a comparative analysis of self-esteem, humility, and self-efficacy among students with different levels of aggression indicators (physical aggression, anger, hostility, and an integral indicator), the respondents were divided into three groups

Table 1

Descriptive Statistics for The Studied Variables and Indicators of Reliability

Variable	Mean (SD)	Cronbach's alpha
Buss-Perry Aggressiveness Questionnaire		
Physical Aggression	17.66 (6.32)	0.78
Anger	18.87 (6.36)	0.83
Hostility	19.50 (6.37)	0.77
Integral scale	56.04 (15.34)	0.89
General Self-Efficacy Scale by R. Schwarzer and M. Yerusalem		
General Self-Efficacy	50.26 (9.42)	0.91
Rosenberg Self-Esteem Scale		
Self-Esteem	52.02 (8.82)	0.76
Schwartz Value Questionnaire (PVQ-R2)		
Humility	9.24 (2.57)	0.60

Table 2

The Results of The Correlation Analysis

	Physical Aggression	Anger	Hostility	Integral scale
Humility	-0.167**	-0.221**	-0.032	-0.175**
Self-Esteem	-0.192**	-0.268**	-0.486**	-0.396**
General Self-Efficacy	-0.119**	-0.194**	-0.309**	-0.264**

Note: ** — p<0,01.

for each indicator. The first group had a low level of the indicator, the second had a medium level, and the third had a high level.

Since the groups were initially different in terms of the number of respondents, an equalization procedure was carried out to ensure that each group had the same number of respondents. An equalization process was carried out in each case by randomly extracting data from respondents (corresponding to the lower frequency group) of each level. The final sample for assessing physical aggression included data from 651 respondents, anger — 998 respondents, hostility — 1072, and the integral indicator — 1160.

According to the ANOVA results of, there were significant differences in terms of overall self-efficacy, self-esteem, and humility when considering the tendency towards physical aggression. Specifically, the indicators for general self-efficacy ($F = 16.01, p < 0.01$) and self-esteem ($F = 26.74, p < 0.01$) showed a higher average value among students with a medium level of physical aggression. On the other hand, the scale for humility ($F = 13.49, p < 0.01$) exhibited a higher average in the group with a lower level of this trait. To determine the significance of these differ-

ences between groups, an analysis of multiple comparisons was conducted using the Tukey HSD test. The results of this analysis are presented in Table 3.

Considering the results obtained, it is worth noting that the differences between the low and medium groups were not statistically significant for all the variables studied. In addition, there were also significant differences between the low / medium, and high groups for all variables. Thus, students with low and medium levels of physical aggression were characterized by higher levels of self-efficacy, humility, and self-esteem compared to students with high levels of physical aggression.

According to the results of a one-way ANOVA, significant differences in anger levels were found in relation to variations in the levels of general self-efficacy ($F=25.16, p<0.01$), self-esteem ($F=49.99, p<0.01$) and humility ($F=48.03, p<0.01$). Additionally, there is a trend towards decreased levels of self-efficacy, humility, and self-esteem as anger levels increase. To determine whether these differences are significant between groups with varying levels of anger, a post-hoc analysis (using the Tukey HSD test) was conducted, and the results are presented in Table 4.

Table 3

The Results of A Study Comparing Self-Esteem, Humility, and Self-Efficacy among Students with Varying Levels of Physical Aggressiveness

Dependent variable	(I) Physical Aggression	(J) Physical Aggression	Mean Difference (I-J)	Standard error	p
General Self-Efficacy	Low	Medium	-0.12	0.88	0.989
		High	4.27*	0.88	0.000**
Humility	Low	Medium	0.52	0.24	0.081
		High	1.27*	0.24	0.000**
	Medium	High	0.74*	0.24	0.007**
Self-Esteem	Low	Medium	-0.16	0.82	0.978
		High	5.11*	0.82	0.000**
	Medium	High	5.28*	0.82	0.000**

Note: * — $p < 0,05$; ** — $p < 0,01$.

A comparative analysis of self-esteem, humility, and self-efficacy among students with different levels of anger showed statistically significant differences in all variables except for the indicator of general self-efficacy. According to this indicator, there were no significant differences between students with Medium and high levels of anger. Thus, students with low levels of anger were significantly more likely to have higher self-efficacy, humility, and self-esteem compared to students with Medium or high levels of anger.

According to the results of the ANOVA, significant differences in the hostility indicator were found only in the context of self-efficacy ($F=67.71$, $p<0.01$) and self-esteem ($F=229.91$, $p<0.01$). No significant difference was found in the humility group ($F=1.43$, $p=0.238$). To determine the significance of differences between groups with different levels of anger, a Tukey HSD test was used. The results of this analysis are presented in Table 5.

The results of a comparative analysis of self-esteem and self-efficacy indicate

Table 4

The Results of a Comparative Study on Self-Esteem, Humility, and Self-Efficacy among Students with Varying Levels of Anger

Dependent variable	(I) Anger	(J) Anger	Mean Difference (I-J)	Standard error	p
General Self-Efficacy	Low	Medium	4.19*	0.76	0.000**
		High	5.00*	0.74	0.000**
	Medium	High	0.81	0.74	0.517
Humility	Low	Medium	0.82*	0.20	0.000**
		High	1.96*	0.20	0.000**
	Medium	High	1.14*	0.20	0.000**
Self-Esteem	Low	Medium	3.98*	0.70	0.000**
		High	6.89*	0.69	0.000**
	Medium	High	2.91*	0.69	0.000**

Note: * — $p<0,05$; ** — $p<0,01$.

Table 5

The Results of a Study Comparing Self-Esteem, Humility, and Self-Efficacy among Students with Varying Levels of Hostility

Dependent variable	(I) Hostility	(J) Hostility	Mean Difference (I-J)	Standard error	p
General Self-Efficacy	Low	Medium	5.45*	0.75	0.000**
		High	8.24*	0.71	0.000**
	Medium	High	2.79*	0.72	0.000**
Humility	Low	Medium	0.17	0.20	0.667
		High	0.33	0.19	0.208
	Medium	High	0.15	0.19	0.718
Self-Esteem	Low	Medium	5.99*	0.64	0.000**
		High	12.88*	0.60	0.000**
	Medium	High	6.88*	0.60	0.000**

Note: * — $p<0,05$; ** — $p<0,01$.

statistically significant differences between all the studied groups. Students with a low level of hostility were significantly more likely to demonstrate higher levels of self-esteem and self-efficacy than other groups. Similarly, students with a medium level of hostility were also significantly more likely to have higher self-efficacy and self-esteem than students with a high level of hostility. However, there were no significant differences in humility between groups with different levels of hostility.

The results of the ANOVA show significant differences in the aggression index (Integral scale) in relation to self-efficacy ($F=43.32$, $p<0.01$), humility ($F=30.93$, $p<0.01$) and self-esteem ($F=132.38$, $p<0.01$). To determine the significance of the differences between groups with different levels of aggression (Integral aggression scale), an analysis of multiple comparisons was used (according to the Tukey HSD test), the results of which are presented in Table 6.

A comparative analysis of self-esteem, humility, and self-efficacy among students with different levels of aggression revealed statistically significant differences

between the groups on all variables. Specifically, students with a lower propensity for aggression exhibited significantly higher levels of self-efficacy, humility, and self-esteem compared to students with Medium or high levels of aggression. Conversely, students with medium levels of aggressiveness were more likely to exhibit higher levels of these traits compared to those with high levels.

The analysis of the relationship between youth aggression and indicators of self-efficacy, self-esteem, and humility revealed not only significant differences in the severity of these variables with respect to aggressiveness, but also differences in their severity depending on the type of aggression.

For example, for all types of aggression except hostility, there were differences in humility between groups. However, in the case of hostility, no statistically significant differences were found between the groups. Additionally, there were no significant differences between groups with low and medium levels of physical aggression. However, a different trend was observed for anger and the integral scale, where significant differences were present.

Table 6

The Results of a Comparative Study on Self-Esteem, Humility, and Self-Efficacy among Students with Varying Levels of Aggression

Dependent variable	(I) Integral scale	(J) Integral scale	Mean Difference (I-J)	Standard error	p
General Self-Efficacy	Low	Medium	3.78*	0.69	0.000**
		High	6.46*	0.69	0.000**
	Medium	High	2.68*	0.70	0.000**
Humility	Low	Medium	0.67*	0.18	0.001**
		High	1.45*	0.18	0.000**
	Medium	High	0.77*	0.18	0.000**
Self-Esteem	Low	Medium	4.57*	0.60	0.000**
		High	9.89*	0.60	0.000**
	Medium	High	5.31*	0.61	0.000**

Note: * — $p<0,05$; ** — $p<0,01$.

Discussion

The findings of the negative correlation between aggression scores and various measures of well-being in the study under discussion here add to the body of research on this topic, which has been conducted using samples from various countries [17].

The results we obtained did not show a relationship between the preference for the value of humility and the level of hostility. If we consider hostility as a cognitive component of aggression [2] associated with negative attitudes, the result is somewhat contradictory to studies on the link between values and justifying attitudes for aggression, which have identified negative connections between the values of conservation and justifying violence [14].

As for the relationship between various types of aggression and youth self-esteem, the results obtained from the relationship between self-esteem and self-efficacy indicators and aggression scales (physical aggression, anger, hostility, and an integrated scale) support the idea that low self-esteem plays a significant role in predicting aggression [1].

At the same time, the trends identified in this study remain relevant for the context of well-being research. For example, in the work by S.A. Rusina [9], it was found that students with a high level of role self-esteem had a higher degree of well-being components. The author concluded that “an increase in psychological well-being among students is accompanied by an increase in their level of role self-esteem” [9, p. 81].

In another study by A.W. Paradise and M.H. Kernis [20], the level of self-esteem and its stability were examined as predictors of personal well-being. Their findings indicated that a high level of self-esteem was often associated with higher levels of well-being. However, the authors emphasized the importance of studying not only the level but also the stability of self-esteem in future

research. They also noted the significance of considering the interaction between self-esteem and individual well-being [20]. L.B. Kozmina [4] notes a positive correlation between self-esteem and psychological well-being in a sample of psychology students. Risk factors include a tendency towards negative introspection, failure among peers, low self-esteem, and feelings of apathy and stagnation [4]. The data obtained from this study on the negative correlation between hostility and indicators of well-being support the above thesis.

The empirical results obtained clarify the specific risks of distress associated with aggression among student youth in the Russian Federation. One of the goals of the Concept for developing a network of psychological services in higher education institutions in Russia is to promote the creation of a psychologically safe environment for students [5]. This goal corresponds to the principle of timely identification of students at risk and organization of preventive measures [5].

On the one hand, the identified relationships between aggression and well-being indicators can be seen as a reflection of the current state of the student population in relation to these issues. On the other hand, it is the level of readiness for the expression of anger, physical aggression, and hostile attitudes (rather than the commission of illegal acts) that can be considered the target level for preventing the risks of student well-being. This, in turn, corresponds directly to the goal of the Concept: “risk assessment, prevention, and correction of aggressive and self-destructive behavior among students, as well as the development of resilience and positive interpersonal skills” [5].

The limitations of our study include the significant predominance of female respondents in the sample. This limits the ability to extrapolate the results to the general population of Russian students. However, given

the specific training profile of the respondents, the sample can still be considered representative of a large group of students studying in fields such as psychology, pedagogy, and social sciences, for which a similar gender distribution is typical. Another limitation is the satisfactory but low reliability of the Humility scale. This indicates the need for further clarification and refinement of the results obtained.

The possibilities for research in this area include considering various groups of values when examining the relationships between aggressiveness, self-esteem, and self-efficacy. Additionally, it is possible to include a number of contextual variables such as socio-economic status, academic mobility, learning profile, and others.

Conclusion

Comparing the severity of students' self-efficacy, self-esteem and humility, depending on their propensity to physical aggression, anger and hostility, we found a significant negative relationship between these indicators. In other words, the higher the level of aggression among students, the lower their self-esteem, self-efficacy and humility tend to be. Additionally, there was no correlation between hostility and humility among these students.

In addition, it has been shown that indicators of self-efficacy, self-esteem, and humility vary depending on the severity of different types of aggression. Students with low and medium levels of physical aggression

were found to have higher self-efficacy, self-esteem, and humility compared to those with high level, while the difference between low and medium physical aggression was not statistically significant. On the other hand, students with low anger levels showed higher self-efficacy, humility, and self-esteem than those with medium or high anger levels, although the level of self-efficacy did not differ between groups with medium and high anger. In addition, students with low levels of hostility were significantly more likely to demonstrate higher levels of self-efficacy and self-esteem than other groups. Students with average levels of hostility were also significantly more likely to have higher self-efficacy and self-esteem compared to those with high levels of hostility. In terms of general aggressiveness among young people, there were significant differences in self-esteem and self-efficacy between students with different levels of aggression, as measured by various indicators.

The results obtained by our research expand the understanding of aggression among students in psychological, pedagogical, and socio-humanitarian fields of study. They also align with the goals and principles of the Concept for developing a network of psychological services in higher education institutions in the Russian Federation. Specifically, they support the idea of improving a psychologically safe learning environment and reducing the risk of students engaging in illegal activities.

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Well-Being and Educational Outcomes Among Students with Different University Admission Strategies

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The study presents results of examining the psychological well-being and educational outcomes of first-year students based on their university admission strategies. The study included students who entered universities according to their results from the Unified State Examinations, being winners in school subject competitions, those who came via targeted recruitment or graduated from secondary vocational education institutions, and also those who entered the university hav-

ing the combination of Unified State Examination results with additional entrance examinations organized by universities. The research focused on indicators of well-being, subjective happiness, and anxiety among first-year students, as well as their performance in the first examination session. 4,920 first-year students from 19 universities across the Russian Federation were recruited for this study, comprising 57.5% girls, with an average age of 18.6 years (standard deviation: 1.6). The findings indicate that first-year students employing different admission strategies exhibit varying levels of well-being, subjective happiness, and anxiety, revealing distinct combinations of these traits. Notably, personal anxiety showed the greatest variability among first-year students based on their admission strategy. The choice of admission strategy is closely linked to students' educational outcomes during their first academic year. Furthermore, the unique combinations of psychological well-being indicators among groups of students with different admission strategies may either strengthen or weaken this correlation. The data highlighting the group-specific manifestations of psychological states based on admission strategies could serve as a scientific foundation for organizing psychological support in higher education.

Keywords: university admission strategies; psychological well-being; subjective happiness; anxiety; educational outcomes; first-year students.

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Представлены результаты исследования психологического благополучия и образовательных достижений студентов первых курсов в зависимости от стратегии поступления в вуз — по результатам государственных экзаменов, победителей школьных олимпиад, в рамках целевого набора, после окончания колледжей или по объединенным данным экзаменов и дополнительных вступительных испытаний, организованных вузами. В фокусе исследовательского внимания оказываются показатели психологического самочувствия, субъективного счастья, тревожности первокурсников и результаты их первой экзаменационной сессии. В исследовании принимали участие 4920 студентов первых курсов 19 образовательных организаций высшего образования Российской Федерации (57,5% девушек; средний возраст участников — 18,6 года, стандартное отклонение — 1,6). Показано, что первокурсники с разными стратегиями

поступления в вуз различаются по уровню психологического самочувствия, субъективного счастья и тревожности, демонстрируя уникальные сочетания выраженности этих признаков. При этом личностная тревожность выступает тем показателем психологического благополучия, который в наибольшей степени различается у первокурсников в зависимости от стратегии поступления в вуз. Выбор стратегии поступления оказывается взаимосвязанным с образовательными результатами студента на первом учебном году, а уникальное сочетание выраженности признаков психологического благополучия в группах студентов с различными стратегиями поступления может усиливать или ослаблять эту взаимосвязь. Полученные данные о групповой уникальности проявления признаков психологического состояния в зависимости от стратегии поступления могут стать научной основой организации психологического сопровождения высшего образования.

Ключевые слова: стратегия поступления в вуз; психологическое благополучие; самочувствие; счастье; тревожность; образовательные результаты; студенты первых курсов.

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Introduction

Entering university is a pivotal point in every young man's life, which on the one hand determines their future professional self-realization, and on the other requires the maximum actualization and stable functioning of individual psychological resources [1; 2]. In the Russian Federation there are numerous ways to enter university, each of them implies its own extent of "involvement", the period of active "utilization" and the number of spikes of maximum actualization of individual resources to achieve admission.

According to the Procedure for admission to higher education programs — bachelor's degree programs, specialist programs, master's degree programs, admission to universities is carried out on a

competitive basis based on the results of the Unified State Examinations [9]. Upon completion of school education, exams are taken in compulsory general education disciplines and subjects, which are determined by the university as entrance examinations. As a rule, the most active preparation for passing the state final certification in educational programs of secondary general education in the form of the Unified State Examination (hereinafter — USE) begins one year before the expected date of the exam and continues throughout the 11th grade, often with the help of additional classes with school and / or specially invited teachers, depending on the capabilities of the high school student's family.

Besides that, universities have a right to hold additional entry tests on specialties

or training programs, which require applicants to have a certain degree of artistic skills, fitness, psychological qualities, primarily in such areas as art, architecture, healthcare, physical education, pedagogy, media communication, etc. [11]. Only some highly-rated universities can hold additional entry tests in comprehensive disciplines, regardless of the specialty or the training program specificity. The programs of additional entry tests are posted by such universities in the public domain, and preparation for them can be carried out within the framework of preparatory courses of varying duration and intensity: from two-month intensive training to courses that can span several years, designed to prepare pupils starting in their 9th year. At the same time, preparation for additional entrance examinations at the university does not eliminate the need for consistent, hard work throughout the senior grades of school to achieve maximum success in the Unified State Exam, the results of which must be competitive when entering highly-ranked universities.

At the same time, applicants have an opportunity to be admitted into university without having to take entry tests, particularly by the results of pupils Olympiads (article 71 [14]). Thus, winners and prize winners of school Olympiads have the right to guaranteed admission to universities without entrance examinations or to be equal to persons who have scored the maximum number of points on the Unified State Examination in a specialized general education subject or who have successfully passed additional entrance examinations of a creative or professional nature. The guarantee of admission to a university makes the Olympiads attractive for schoolchildren of different age categories, but targeted work on participation in Olympiad competitions that give the right to admission without entrance examinations begins in grades 7—8,

when it is necessary to begin winning from stage to stage in the Olympiads of the chosen profile and level [10].

Within the framework of a separate competition, universities conduct admission to targeted training for places in a specially allocated target quota, when the customer organization interested in the future employee can support the student with additional social payments, for example, a scholarship, compensation for housing rent, etc., subject to the student's subsequent work for the customer for a period of at least three and no more than five years [8]. If it is possible to conclude an agreement on targeted training, the applicant is effectively guaranteed admission to the university without the need for high scores on the Unified State Exam, and the issue of further employment is also resolved.

In some universities a separate competition is held for the applicants who have completed secondary vocational training only on the basis of internal exams in general education and (or) creative disciplines without the need to pass the Unified State Exam. Moreover, in some universities college graduates' training can be accelerated, giving them a chance to get higher education faster than their peers who enter university upon graduating from comprehensive schools.

Each of these paths eventually leads to university admission on a state-funded place, but the choice of the strategy depends on the capabilities of the applicant's family and on his individual psychological resources, which allow or inhibit the realization of the chosen strategy. Target quota admission is characterized by the minimal amount of time and intensity of psychological resources without any spikes of extreme actualization. Striking a deal with an organization practically guarantees the applicant admission, extra social support

and further employment. By contrast, entering university by the results of the USE and extra entry tests requires applicants to demonstrate prolonged intellectual activity during the preparation phase, serious emotional stress during the examination at school and competitive tests at university, and also frequent actualization of regulatory capabilities and individual traits necessary for achieving the result.

According to the resource approach to the functioning of the psyche, prolonged psychological stress, typical for some enrollment strategies, at a certain stage can lead to substantial inhibition or loss of individual resources in the sphere of intellectual, personal or emotional development [1; 3; 20, etc.]. Inhibition of a certain resource, exacerbated by inability or impossibility to “redistribute”, causes the state of academic stress, which applicants fall into due to various deadlines, constant fear of losing a competitive test, failing to enroll into university, etc. The young man perceives this condition as psychological distress, which negatively affects the realization of relevant life goals in particular, and psychological well-being in general in the long run [1; 12].

The phenomenon of psychological distress, also known as psychological well-being in the terminology of positive psychology, is a multi-tiered structure, which is deeply intertwined with such concepts as happiness, subjective well-being, psychological well-being, anxiety, quality of life (for more details see [4; 5]). Cognation of these terms, from synonymity to generic relations, depends on the approach to the analysis of psychological well-being and theories, formulated within the framework of hedonistic and eudaemonist philosophy [17]. At the same time, when operationalizing concepts that reflect the general state of mental balance, psychological comfort and happiness, predominantly noticeable and high-intensity relationships are observed,

for example, between psychological well-being and happiness, happiness and personal well-being, etc. ($0.47 < r < 0.77$; $p < 0.001$) [7]. And usage of a particular term in empirical researches largely depends on the method of estimating the certain indicator of psychological well-being.

At the same time, among all the indicators or components of psychological well-being that are a more realistic reflection of its manifestation, the current psychological condition, feeling of happiness and frequency of anxieties can be highlighted.[7; 18; 19; 26 etc.]. The current psychological condition is defined through self-estimation of the individual psychological state, mood, serenity and positive energy [26]. It is proven that psychological condition ensures effective operation of the individual, and stressful events that last a long time or are intense can cause frequent mood swings, disruption of sleep patterns, decrease of everyday activity, apathy [22; 24; 27 etc.].

Traditionally, happiness is perceived as a complete synonym to psychological well-being and is defined as a state of maximum manifestation of positive emotions [5]. So, we see that the subjective feeling of happiness not only correlates with psychological well-being, but also directly affects the declared level of well-being and positive socialization [19]. Along with that, the studies only give information on moderate connection between these two indicators, which allows to feel happiness under certain circumstances while having a moderate level of general psychological well-being [e.g., 7].

Anxiety, personal first of all, which reflects the individual inclination to feeling anxious about certain events and perception of these events as potentially dangerous, is not only connected to the status of psychological well-being, but also affects academic results. [6; 13; 16; 25]. At the

same time there is a non-linear correlation between anxiety and academic achievements. The best academic results require the optimal level of anxiety [21]. Thus, students with low anxiety have lower attention, lack incentives for studying and lack personal responsibility for their academic results [13; 15]. On the contrary, high levels of anxiety will manifest in constant stress, feeling of uneasiness, emotional instability, what ultimately increases the risk of alienation and causes inability to follow your daily routine [16; 25].

First-year students are the most vulnerable category of young people, which on the one hand can retain the negative effects of university admission procedures, and on the other hand face the first year adaptation risks connected with their first examination session, self-studying, competing with their course mates [1; 2]. At the same time it appears to be necessary to focus our attention on various first year students' groups with different enrollment strategies, which, as already shown before, are characterized by different intensity and duration of "application" of individual psychological resources.

The objective of the research is to analyze the peculiarities of psychological well-being of first-year students and their academic achievements depending on their enrollment strategy. The priority of the study is the comparative analysis of the three indicators of psychological well-being among first-year students: general psychological condition, happiness, anxiety, as well as the percentage distribution of excellent and unsatisfactory academic achievements among first-year students depending on their enrollment strategy.

Materials and Methods

Four thousand nine hundred and twenty students from 19 universities from 7 federal regions of the Russian federation partici-

pated on the study. The average age of the participants is 18.6 years (standard deviation = 1.6), 57.5 % are women, 98% are on-campus students, 69.4% are state-funded. No significant statistical difference in all the analyzed indicators of psychological well-being was found in regard to the basis and form of education ($p > 0.05$).

Among the participants: 73.3% were admitted based on their USE results; 2.4% based on school Olympiads; 7% enrolled on a target quota; 7.4% — upon completing secondary vocational education; 9.2% — USE and extra university tests combined. It is worth mentioning that 0.7% are the students who entered university otherwise, e.g. special quotas, etc. The results of these categories were not included in the statistical analysis.

The research was carried out during the second half of the year (February — May) on computers in IT classrooms following the unified protocol, instructional texts and assigning id codes to the participants in strict accordance with Federal Law No. 152-FZ "On Personal Data". Under the supervision of the researcher the participants did test exercises in the same order reviewing the informed consent and obtaining the appropriate consent. Before completing the test tasks, each participant in the study provided information about their strategy for entering university and the results of the first examination session.

The indicators of psychological well-being

Current psychological condition

The level of psychological condition was estimated using the self-assessment questionnaire ("The WHO-5 Well-Being Index", [26]). The questionnaire includes five statements, for example, "I am in a good mood and feel cheerful", "I feel active and energetic", "I wake up and feel fresh and relaxed", etc.

The participants were asked to choose one variant which best fits the evaluation of their condition with the last two weeks: “All of the time”, “Most of the time”, “More than half of the time”, “Less than half of the time”, “Sometimes”, “Never”. The index of psychological condition is counted in points, calculated in accordance with the guidelines, in the range from 0 to 25, with the possibility of converting to percentage.

Happiness

The level of subjective happiness was estimated with the self-assessment questionnaire (“The Subjective Happiness Scale” [23]). The questionnaire consists of four statements with a question, for example: “Some people are usually very happy. They enjoy life no matter what, making the most out of it. How much is it like you?” The participants were to estimate on the scale from 1 to 7 to what extent each statement could reflect their condition. The level of subjective happiness is calculated according to the guidelines and is represented by the sum number from 7 to 28 [7].

Anxiety

The level of personal anxiety was diagnosed with the scale of personal anxiety self-assessment questionnaire “State-Trait Anxiety Inventory” [13]. The scale includes 20 statements, for example: “I feel anxious when I think about my affairs and obligations”, “I take my failures too hard and can’t let go of them for a long time”, “There is a little thought in my head bothering me”, etc. The participants were to choose one the answers: “Almost never”, “Sometimes”, “Often”, “Almost all the time” according to their feelings. The level of personal anxiety is estimated with the sum from 20 to 80 points, which, according to the guidelines can be low (below 30 points), moderate (31-44) or high (45 or more).

Academic achievements

The study records the results of the first examination session. Before completing the tasks each participant was to answer which marks they got at their first session choosing one of the options: only 5; 5 and 4; 5,4,3; all 4; 4 and 3; all 3; failed examinations.

Results

Psychological well-being of students with different enrollment strategies

The study analyzes the indicators of the current psychological condition, happiness and personal anxiety among first-year students depending on their enrollment strategy — based on the results of the USE, school Olympiads, target quotas, upon completing secondary vocational training or USE results plus extra university examinations combined. Table 1 demonstrates the average values and standard deviation of the indicators of psychological well-being of the first-year students with different enrollment strategies.

Table 1 shows the current level of psychological condition as a percentage with minimum and maximum values of 0 and 100 respectively, the level of subjective happiness on a scale from 4 to 28 points and the level of personal anxiety on a scale from 20 to 80 points.

According to the statistics, the highest level of psychological condition was recorded among target-quota first-year students. The average of 66.03 with the standard deviation of 20.6. At the same time, lowered figures were recorded among two groups: those who entered university after completing secondary vocational training and (the average of 59.73 with the standard deviation of 24.5) and based on the results of school Olympiads (the average of 59.46 with the standard deviation of 23.8). At the same time, the Olympiad winners are the happiest group (the average of 18.65 with

Table 1

Descriptive statistics of psychological well-being indicators of students with different university admission strategy

University admission strategy	Mean (Standard Deviation)		
	Psychological Well-being	Subjective Happiness	Anxiety
based on the results of the Unified State Examinations	62,64 (20,9)	18,03 (3,3)	41,27 (11,1)
winners and prize-winners of school Olympic competitions	59,46 (23,8)	18,65 (3,3)	43,97 (8,8)
within the framework of targeted recruitment	66,03 (20,6)	18,42 (3,4)	38,53 (10,0)
after graduating from secondary vocational education institutions	59,73 (24,5)	17,15 (4,0)	42,27 (10,4)
based on the results of the Unified State Examinations and Additional examinations	62,16 (20,6)	18,43 (3,6)	43,86 (10,5)

the standard deviation of 3.3). Significantly less happy are the secondary vocational students (the average of 17.15 with the standard deviation of 4.0).

The highest levels of anxiety are recorded among the Olympiad winners (the average of 43.97 with the standard deviation of 8.8) and USE and extra university exams combined (the average of 43.86 with the standard deviation of 10.5). The minimum value of anxiety was recorded among the target-quota students (the average of 38.53 with the standard deviation of 10.0) Therefore, the average values for all the indicators demonstrate difference between the groups depending on their enrollment strategy.

The authenticity of the group differences in the indicators of psychological well-being and their evaluation was carried out with the single-factor analysis of variance method. The enrollment strategy was used as the categorical factor, and the dependent variable was introduced consecutively by the indicators of psychological well-being, which are the current psychological condition, subjective happiness and anxiety. The evaluation of the distribution of all the dependent variables for the groups in comparison using Levene's

criterion demonstrated the equality of dispersions ($p > 0.05$). Table 2 illustrates the combined results of analysis of variance on the indicators of psychological well-being of the first-year students depending on their enrollment strategy.

According to table 2, statistically noticeable differences between the first-year students with different enrollment strategies were gathered in all the indicators of psychological well-being, with the biggest amount of the enrollment strategy effect for personal anxiety being ($\eta^2 = 0.05$; $p = 0.001$). The groups vary to a lesser extent in such indicators as the subjective happiness and the current psychological condition ($0.02 < \eta^2 < 0.03$; $p < 0.05$).

The analysis of multiple comparisons with Bonferroni adjustment shows that of all the indicators of psychological well-being personal anxiety varies the most between the groups of students with different enrollment strategies. In particular, the difference was registered between all the groups but the Olympiad winners and the students who passed the USE plus extra university tests combined. These groups are characterized by almost identical slightly increased levels of personal anxiety (43.97 and 43.86 respectively). According

Table 2

Differences in indicators of psychological well-being depending on the university admission strategy

	Sum of Squares (SS)	Fisher Criterion (F)	Level of Significance (p)	Effect Size (η^2)
Psychological Well-being	5610,10	3,09	0,029	0,03
Subjective Happiness	143,93	2,11	0,041	0,02
Anxiety	3167,13	5,34	0,001	0,05

to the data, the target quota group with the lowest level of personal anxiety statistically authentically differs from the rest of the groups, which indicate higher levels of personal anxiety ($p = 0.001$).

For the current psychological condition multiple comparisons have shown statistically authentic differences between the target quota group with the best result and the groups of the students, who enrolled based on the results of school Olympiads and after secondary vocational training ($p = 0,029$). For the subjective happiness the only difference can be seen between the Olympiad winners (happier) and the graduates of secondary vocational schools (less happy).

Therefore, the first-year students with different enrollment strategies vary in their level of psychological condition, subjective happiness and anxiety, showing unique combinations of these indicators' manifestation.

Academic performance of students with different enrollment strategies

The study analyzes the results of the first examination session of the first-year students depending on their enrollment strategy — based on USE results, school Olympiads, target quota, secondary vocational training and USE + extra university test results combined. The following grade variants are represented in the study: all 5; 5 and 4; 5, 4, 3; all 4; 4 and 3; all 3; failed examinations. Table 3 illustrates the

percentage distribution of the first session results among the students with different enrollment strategies.

As table 3 suggests, the largest number of first-year students who finished the first examination session with excellent grades are among those students who entered university based on the results of USE + extra university tests combined (24.2%), and the lowest is among the graduates of secondary vocational schools (17%).

The distribution of students who failed one or more exams and, accordingly, have failed examinations after the first session draws attention. Thus, the largest number of first-year students with failed examinations was found in the group of students who graduated from secondary vocational education institutions (9%), while the smallest number was in the group admitted based on combined USE results and additional entrance examinations of the university (2.3%). It has been shown that a relatively high percentage of students with unsatisfactory exam grades (3.4%) is also observed in the group of winners of school Olympiads, which exceeds the number of underperforming students admitted based on USE results (3.0%). A high percentage of students with academic debts was also recorded in the targeted quota group (5.4%).

Consequently, the choice of enrollment strategy for higher education institutions essentially determines the educational outcomes of the first examination session, primarily regarding the distribution

Table 3

Percentage distribution of the first session results among the students with different enrollment strategies

	«5» only	«5» & «4»	«5», «4» & «3»	«4» only	«4» & «3»	«3» only	Debts remain
based on the results of the Unified State Examinations	21,4	37,1	17,6	7,4	10,0	3,5	3,0
winners and prize-winners of school Olympic competitions	23,2	24,5	15,6	6,7	24,4	2,2	3,4
within the framework of targeted recruitment	19,4	30,0	18,0	7,3	16,5	3,4	5,4
after graduating from secondary vocational education institutions	17,0	34,0	14,5	8,5	14,5	2,5	9,0
based on the results of the Unified State Examinations and Additional examinations	24,2	35,3	20,5	7,0	9,8	0,9	2,3

of excellent and unsatisfactory grades. However, it should be noted that in all the analyzed groups of first-year students, regardless of their enrollment strategy, the most common category is those who passed the first session with “excellent” and “good” grades.

Discussion

According to descriptive statistics, first-year students in Russian universities, regardless of their enrollment strategy, report their psychological well-being and happiness as slightly above average, as well as experiencing anxiety, the manifestation of which corresponds to the upper limit of the moderate range.

Along with moderate average values of the analyzed indicators of psychological well-being, there is an extremely wide range of individual differences among first-year students in the manifestation of anxiety, current psychological condition, and self-assessment of happiness. According to the study, extremely low values (for psychological condition and happiness) or high values (for anxiety) are observed in 8.1%, 8.5%, and 5.6% of first-year students, respectively. These results

correspond to the data from the population study of first-year students in Russian universities, which reports that 9% of respondents experience regular emotional difficulties, including increased irritability, a tendency toward anxiety for various reasons, and frequent mood swings [2]. First-year students with extreme values of psychological distress should be closely monitored by specialists in university psychological services.

The results of the variance analysis revealed significant differences in all the analyzed indicators of psychological state among students depending on their enrollment strategy: based on the results of the Unified State Exam (USE), winners and prizewinners of school Olympiads, within targeted admissions, after completing secondary vocational education, or based on combined USE results and additional entrance examinations organized by universities. Notably, the most pronounced differences between student groups were found in personal anxiety, which reflects an individual’s propensity to frequently experience anxiety regarding a wide range of phenomena and events, particularly those related to the assessment of their knowl-

edge, skills, and abilities [13; 16; 25]. It was shown that the least anxious students are those admitted to the university through targeted admissions under a separate competition for specially allocated quotas, which effectively guarantees enrollment, social support during their studies, and subsequent employment. The highest levels of personal anxiety in the sample were recorded in two groups of first-year students who were admitted based on the results of school Olympiads or on the basis of combined USE results and additional entrance examinations. The slightly elevated levels of anxiety among students with these enrollment strategies may be associated with the duration and intensity of psychological tension during the admission process and possibly the already established necessity to maintain a high educational status without the possibility of making mistakes during the first year.

In terms of current psychological condition and subjective happiness, less pronounced differences were observed between the various groups of first-year students. Specifically, the differences pertain to three groups of first-year students: those admitted through targeted admissions (with better condition), those who entered after completing secondary vocational education (with low condition and low self-assessment of happiness), and those who were admitted based on school Olympiad results (with low condition but the highest self-assessment of happiness). It is important to note that regardless of the enrollment strategy, the average values of psychological well-being indicators are in the range of moderate expression of signs. However, even variations within this range are significantly different between groups with specific admission strategies. These results, obtained through analysis of multiple comparisons with Bonferroni correction,

highlighted the uniqueness of the psychological state of first-year students with different admission strategies and allowed for a correlation with the results of the first examination session.

It was shown, in particular, that the largest proportion of students who received excellent grades in all exams of the first university session (24.2%) and the smallest number of students with failed exams (2.3%) are found in the group of first-year students admitted to the university based on combined results from the Unified State Exam (USE) and additional entrance examinations. Students in this group are characterized by an average level of psychological well-being and happiness, while reporting a higher level of personal anxiety compared to their peers in other groups. This combination of characteristics allows for the prediction of their high academic performance, primarily based on data regarding the optimal level of anxiety, which can manifest as a responsible attitude towards studies, increased academic interest, and a constant need for high evaluation of their efforts[6; 13; 21 etc.].

Another group of students that closely follows in educational achievements during the first session are the winners and prizeholders of school Olympiads. 23.2% of first-year students with this admission strategy reported having passed all their exams with excellent marks. At the same time, it is notable that there is an unexpectedly high percentage of students in this group who have failed exams after the first session (3.4%). It is possible that the expression of psychological well-being indicators in this group of first-year students, particularly the lowest psychological condition in the sample and the highest level of personal anxiety, may negatively affect educational achievements in some cases. Specifically, research has shown that elevated levels of

anxiety, particularly concerning the evaluation of performance outcomes, can lead to unstable emotional expressions, excessive worry, unwarranted perfectionism, and in some cases, to avoidance of evaluative situations, which consequently results in an inability to meet academic obligations. Therefore, the increased level of personal anxiety, depending on the characteristics of psychological well-being and the sense of happiness, may either limit or, conversely, facilitate educational achievements in the first year.

The highest incidence of unsatisfactory exam results during the first session is reported by students admitted to the university after completing vocational education institutions (9% of respondents in this group). Additionally, this group of first-year students has the lowest proportion of students receiving excellent grades, at 17%. The psychological well-being of students who come to study at the university after attending colleges can be characterized by the lowest psychological well-being, the lowest self-assessment of happiness, and an average level of anxiety. This combination of characteristics may indicate heightened risks of maladjustment for this category of first-year students and may be associated with the fundamentally new demands of the higher education system compared to the level of vocational education.

Analysis of the percentage distribution of unsatisfactory exam grades has revealed another group with a relatively high number of first-year students having failed exams after the first session—students enrolled through targeted admission programs (5.4%). Among these students, the percentage of those receiving excellent grades is relatively low at 19.4%, which is less than that of students who were admitted based on their Unified State Exam results. However, their psychological well-being is characterized by the best indicators such as the

lowest levels of personal anxiety, optimal psychological well-being, and adequate subjective happiness. It is precisely this reduced level of personal anxiety, along with the possible specificity of targeted education that manifests in a diminished personal interest in studies, limited academic curiosity, and relative indifference to educational outcomes [6; 13; 21 etc.].

The largest group consists of students who were admitted to the university based on their Unified State Exam results, and they are characterized by average levels of psychological well-being. In this group, there is a moderate percentage of excellent students (21.4%) and a relatively low percentage of underperforming students (3.0%). This indicates that, despite certain issues, compared to other groups, students admitted based on USE results demonstrate more stable academic performance and higher indicators of psychological well-being.

The data on the psychological state and academic results of the first semester confirm the existing conclusions about the ambiguity of the relationship between well-being and academic success among students, including those with various admission strategies [16; 21; 22; 24; 27]. At the same time, the obtained data present a relevant research task — to determine the extent to which the relationship between the university admission strategy and academic results is mediated by the current psychological state of first-year students, other psychological traits necessary for university education, and, importantly, the knowledge already acquired during the preparation for university admission.

Conclusions

This is the first study to examine the specifics of psychological well-being and academic results during the first examination session among students of Russian

universities, depending on their admission strategy — whether through Unified State Exam (USE) results, as winners and prize holders of school Olympiads, through targeted admission, after completing secondary vocational education, or through combined data from USE and additional entrance examinations organized by universities. Statistical analysis has allowed us to draw the following conclusions:

1. It has been shown that first-year students with various admission strategies differ in their levels of psychological well-being, subjective happiness, and anxiety, demonstrating unique combinations of these traits. In this context, personal anxiety emerges as the indicator of psychological well-being that varies the most among first-year students depending on their university admission strategy.

2. The choice of admission strategy is found to be interconnected with a student's academic results already in the first year

of study. Furthermore, the unique combination of psychological well-being indicators within groups of students employing different admission strategies may either strengthen or weaken this correlation.

3. First-year students with various admission strategies require specific programs and technologies for psychological support in higher education, which are based on data regarding the group uniqueness of psychological well-being indicators as influenced by their admission strategies.

The results obtained in the research can serve as a scientific basis for organizing psychological support in higher education: by understanding the specifics of the manifestation of psychological well-being or distress indicators among groups of first-year students with different admission strategies, psychologists can more accurately and quickly identify the most effective technologies, programs, and methods of working with students.

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Demonstration Examination as a Form of Assessing the Formation of Professional Competences of Future Educational Psychologists

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The article contains an analysis of the normative and theoretical-methodological foundations of preparing and conducting a professional examination as a form of assessing the formation of professional competencies of future teacher-psychologists on the basis of the Center for Professional (Demonstration) Examinations of the Moscow State University of Psychology and Education. The study presents requirements for the development of the demonstrational exam and the criteria for its independent expert evaluation, the organizational process and stages of the professional (demonstrational) examination. The article concludes that interim and final certification, through professional (demonstrational) examinations, serves as an innovative method for assessing professional competencies. This approach not only evaluates the level of development of these competencies but also gauges the degree to which future educational psychologists have mastered the methods for solving professional problems. By addressing the current challenges associated with the preparation and administration of professional (demonstrational) examinations, we can enhance the quality of training for educational psychologists, ensuring it aligns with the demands of our time.

Keywords: demonstrational exam; professional competences of an educational psychologist; assessment of professional competences; professional training of an educational psychologist; readiness for professional activity.

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Демонстрационный экзамен как форма оценки сформированности профессиональных компетенций у будущих педагогов-психологов

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Представлены результаты анализа нормативных и теоретико-методологических основ подготовки и проведения профессионального (демонстрационного) экзамена как формы оценки сформированности профессиональных компетенций будущих педагогов-психологов на базе Центра проведения профессиональных (демонстрационных) экзаменов федерального государственного бюджетного образовательного учреждения высшего образования «Московский государственный психолого-педагогический университет». Описаны требования к разработке заданий демонстрационного экзамена, а также критерии проведения их независимой экспертной оценки. Рассмотрен порядок организации и этапы проведения профессионального (демонстрационного) экзамена. Авторами делается вывод о том, что промежуточная и итоговая аттестация в форме профессионального (демонстрационного) экзамена является новым средством оценки профессиональных компетенций, позволяющим определить не только уровень развития профессиональных компетенций, но и степень овладения способами решения профессиональных задач обучающимися будущими педагогами-психологами. Обращается внимание на то, что понимание актуальных вопросов подготовки и проведения профессиональных (демонстрационных) экзаменов позволяет повысить качество профессиональной подготовки педагогов-психологов, отвечающей актуальным вызовам современности.

Ключевые слова: демонстрационный экзамен; профессиональные компетенции педагога-психолога; оценка профессиональных компетенций; профессиональная подготовка педагога-психолога; готовность к профессиональной деятельности.

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Introduction

One of the key strategic objectives of modernizing higher pedagogical education is to enhance students' practical training in alignment with professional standards and labor market requirements. It should be feasible to diagnose any organizational and content-related issues pertaining to the practical training, thereby facilitating a comprehensive assessment of its content and potential for improvement. The Concept for Teacher Training Development for 2030 identifies the necessity for introducing a vocational examination in teacher training programs (9, p. 10). In 2023/2024, the vocational (demonstration) examination will be integrated into the certification system (interim and final) for students at teacher training colleges (9, p. 16).

A.I. Astashenko's study indicates that the success of educational psychology training programs at higher education institutions can be ensured through the competency approach, which encompasses both theoretical knowledge and practical skills. The competence approach to the training of educational psychologists meets the requirements of the professional standard and significantly improves the quality of their training, thereby enabling graduating students to solve professional problems directly after graduation [2; 12; 24]. Nevertheless, the existing requirements for the assessment of training programs for pedagogical psychologists are unable to fully align with the conventional methods of organizing and implementing formal knowledge-based interim and final certification. These methods, which often take the form of traditional crediting or testing, are frequently unable to accurately determine the

extent to which acquired knowledge has been applied in practice. Accordingly, A.A. Margolis [11] asserts that the knowledge exhibited during conventional examinations is solely formal in nature and lacks practical applicability. Frequently, it is not transferable to the professional activities delineated by the standard "Pedagogical psychologist (psychologist in the field of education)" [18], which serves as a gauge for gauging the preparedness of a prospective specialist for professional practice. A significant aspect of the work of a pedagogical psychologist is the active interaction with all participants in the educational process, taking into account the specific characteristics of each individual and the particularities of the educational organization. In the view of Y.M. Zabrodin, a graduate should not only be prepared for such interaction at the training stage, but it is also necessary to provide expertise on the readiness to perform labor functions [5; 8; 13; 14].

The interim and final certification, in the form of a professional (demonstration) exam, enables students, who are pursuing a career in pedagogical psychology, to obtain an expert, independent, and objective assessment of their educational outcomes. This assessment is conducted in a manner that closely resembles the actual work environment and allows them to demonstrate the level of proficiency they have attained in their chosen field to representatives of the profession and their employers [23; 25].

The incorporation of the professional (demonstration) examination into the structure of intermediate and final certification at pedagogical universities serves to enhance the quality of practical training provided

to students. The quality of practical training, which is inherently multidimensional and complex, is contingent upon a number of factors. These include the alignment of theoretical course programs with the desired outcomes of mastering professional modules, the planned results of practical training, the correspondence of theoretical material with professional tasks, and the explanation and elaboration of knowledge acquired in theoretical courses in the context of professional tasks. The utilization of theoretical concepts for the analysis of practice and reflection on professional tasks, in addition to the advancement of professional knowledge through the generalization of knowledge, the acquisition of conceptual practical knowledge, the provision of highly qualified teachers, the material and technical infrastructure of the educational institution, the availability of practice-oriented learning technologies, practice bases and experienced on-site practice facilitators that align with training programs [4; [6; 7; 13]. It is also important to consider the graduates' opinions regarding the quality of their preparation for future professional activities when evaluating the content of the work placement.

The enhancement of practical training for students who will become pedagogical psychologists contributes to the following:

1. Enhancing the formation of university graduates' professional competencies, with consideration of the content of labor activity as outlined in the professional standard "Pedagogical psychologist (psychologist in the field of education)";

2. Cultivating communication competence, socio-psychological competence, professionally significant personal qualities, and teamwork skills in alignment with the system-activity nature of professional activity;

3. The formation of effective interaction skills for positive interaction in the conditions of educational and social organizations, the education of children with special educational needs, the prevention and overcoming of difficulties in learning and behavior of children;

4. The creation of favorable conditions for students' intellectual, spiritual and moral, creative, physical and professional development;

It thus follows that the preparation and conduct of a professional (demonstration) examination necessitates from students a high level of practical training, mastery of theoretical and practical educational material, and the capacity to rely on the evaluation criteria when analyzing the given task, as well as the ability to demonstrate the solution of problem situations in conditions as close as possible to those encountered in professional activity.

Organizational and Methodological Support for the Professional (Demonstration) Examination

The role of the pedagogical psychologist is of significant importance within the contemporary educational system, providing invaluable assistance to students, their families and teaching staff. In this regard, the degree of formation of the pedagogical psychologist's professional competences represents a key indicator of the successful fulfillment of this task.

One of the innovative forms of assessment of professional competence is the demonstration examination. This format not only tests theoretical knowledge but also its practical application, which is of particular importance in a rapidly changing society [10; 14; 15; 19; 20; 21].

The primary objective of the professional (demonstration) examination is to 'evaluate the preparedness of a graduate to undertake professional responsibilities in a realistic setting' [17, p. 2]. Consequently, it is imperative that employers, in addition to university educators, play an active role in the examination process [16; 21].

The assessment focuses on the development of the professional competencies required by the student, who is destined to become a pedagogical psychologist, to perform their duties effectively.

The content of the control and measurement materials of the professional (demonstration) examination is based on an analysis of the professional competencies defined by the requirements of the federal state educational standard of higher education in the direction 44.03.02 Psychological and pedagogical education [22], as well as labor functions and labor actions defined by the professional standard 'Pedagogical psychologist (psychologist in the field of education)' [18]. The tasks presented in the demonstration examination are based on psychological and pedagogical scenarios that a future pedagogical psychologist may encounter in their professional practice. This may be achieved through the completion of practical tasks, case studies or projects that reflect a specific component of professional activity.

In the creation of psycho-pedagogical tasks for the assessment of professional competence formation in students, the following requirements were taken into account by the developers:

1. It is essential that examination tasks are clearly correlated with the professional competencies provided by the Federal State Standard of Higher Education in direction 44.03.02, 'Psychological and Pedagogical Education'. Furthermore, the labor functions reflected in the professional standard 'Pedagogical Psychologist (psychologist in the field of education)' [18; 22] and the basic professional educational programme of higher education 'Educational Psychologist (pedagogical psychologist)' must also be taken into consideration.

2. The tasks have been designed with the objective of integrating all the components that constitute the role of a pedagogical psychologist, including theoretical skills, practical skills and personal attributes. This will facilitate a more comprehensive evaluation of the student's preparedness for professional practice.

3. The tasks should be designed to reflect the actual professional situations that a peda-

gogical psychologist is likely to encounter in the context of modern education.

4. The development of assessment tasks necessitates the integration of knowledge drawn from a range of psychological and educational domains, as well as related disciplines.

5. It is recommended that examination tasks include elements that allow for the assessment of students' reflexive abilities, defined as the capacity to analyze one's own actions, identify potential areas for improvement, and recognize one's strengths and weaknesses.

6. The content of the psycho-pedagogical assignment should encompass contemporary information technologies and pioneering methodologies employed by pedagogical psychologists.

7. The psycho-pedagogical assignment should be accompanied by transparent and comprehensible assessment criteria, enabling students to understand the criteria by which their knowledge and skills will be evaluated. This has the effect of increasing motivation and promoting more meaningful learning.

The evaluation criteria for the psycho-pedagogical assignment were based on the following components:

1. Psychological and pedagogical proficiency is the ability of the prospective pedagogical psychologist to establish favorable conditions for the educational process and to consider the individual and age-related characteristics of students when undertaking the tasks inherent to their professional role.

2. The scientific proficiency component encompasses a comprehensive understanding of the fundamental principles that underpin psychological and educational work, coupled with the capacity to effectively apply these principles in the resolution of practical challenges encountered in professional practice.

3. Instrumental proficiency encompasses an understanding of contemporary technologies, methodologies, approaches and techniques employed by pedagogical psycholo-

gists, along with the capacity to select and utilize them effectively in professional practice.

4. Communicative and digital proficiency is the capacity to establish constructive interactions with all stakeholders in the educational process, as well as the ability to utilize contemporary digital tools and technologies in professional activities [17; 26].

An independent examination involving representatives from both the academic and professional communities has become a mandatory requirement for the development of test materials. In order to conduct an expert evaluation, it is essential to accurately identify the primary criteria (analysis parameters) that are most relevant for assessing the control and measurement materials used in the professional (demonstration) examination. The experts undertake an evaluation of the following:

The structure of the assessment tool is also considered, with particular attention paid to the extent to which the subject of assessment aligns with the requisite labor functions, actions and skills as defined by the professional standard for a Pedagogical Psychologist (Psychologist in Education). The sufficiency of the list of labor functions specified in the fund of assessment tools of the professional (demonstration) examination for assessment within the framework of the final state certification must be considered. In addition, the selections of the most important skills for performing the given labor function as subjects of assessment must be evaluated. Furthermore, the possibility of subjective assessment of skills, labor actions and labor functions must be excluded. Finally, the consistency of assessment criteria and the result of the practical task must be assessed. The assessment criteria must include a comparison sample as required by the federal state educational standards, as well as defined threshold values for each criterion. Furthermore, the assessment criteria must be diagnosable for the purposes of providing psychological and pedagogical support to the educational process. Addition-

ally, the types of tasks selected for the professional (demonstration) examination must be in conformity with the competences to be assessed;

The conditions for conducting the demonstration examination, including staffing, regulatory, legal and logistical support for assessment activities:

The block of assessment tasks for the professional (demonstration) examination is composed in accordance with the competences being assessed. These tasks are characterized by the completeness of their description, the presence of an algorithm for their performance and compliance with the relevant standards. The assessment tasks must align with the assessment parameters outlined in the aforementioned specification; ‘...the presence of indications regarding the duration of the task, the location of its performance, the sources of information, and other components necessary for the completion of the task, as well as a clear indication of the format in which the results will be presented, are essential elements of the task’ [17, p. 15].

Table 1 illustrates an exemplar professional (demonstration) examination task designed to evaluate the students’ proficiency in the domain of psychological and pedagogical diagnostics. In light of the ever-evolving educational landscape and the rising prevalence of psychological issues among children, the capacity to conduct psychodiagnostics has emerged as a pivotal competency for pedagogical psychologists. The psychodiagnostic competence of an educational psychologist encompasses the utilization of contemporary psychological diagnostic tools for the analysis of “the dynamics of mental development, identification of individuals requiring psychological assistance, assessment of emotional and social competencies of students, identification of students’ aptitudes and abilities, as well as identification of learning difficulties” [16].

In evaluating the development of professional competencies in the domain of psychodiagnostics, it is essential to consider the

Table 1

Task of Professional (Demonstration) Examination of Interim Certification on the Module 'Psychological and Pedagogical Diagnostics in Education'

Event type	Psychological and pedagogical session
Subject	Diagnosis of learning difficulties in students
Contingent Category	normotypical students
Age (grade)	12 years (grade 5)
Individual characteristics of the contingent	Normotypical children with learning difficulties
Task Content	<p>1. Examine the psychological characteristics of a fifth-grade student. Vlad G., studies in the fifth grade, displays a persistent tendency to become distracted during a lesson. It is challenging for him to maintain focus on the material presented by the instructor, as his attention frequently deviates. He gazes out of the window, engages in pen play, or engages in whispered conversation with others. Throughout the lesson, Vlad demonstrates a lack of physical restraint, exhibiting behaviors such as fidgeting in his chair, standing without permission, approaching the blackboard without reason, and rubbing his desk mate. On occasion, he responds to the teacher's questions before being invited to do so, which causes the teacher to become displeased. He also displays difficulties in organizing his workspace, with his notebooks and textbooks often in a state of disarray, it's hard for him to locate the necessary materials to complete tasks. During the recess period, Vlad engages in disruptive behavior with other students, often engaging in physical contact during active games.</p> <p>2. Identify the reasons for Vlad's behavior (formulate diagnostic hypotheses).</p> <p>3. Develop a program of psychological and pedagogical diagnostics.</p> <p>4. Design a plan of further psychological work with the highlighted problem.</p> <p>4. Demonstrate a piece of the program you have developed with the help of a volunteer.</p>
Competences	<p>GPC-5. Capable of monitoring and evaluating the formation of students' educational outcomes, identifying and correcting learning difficulties (in part, it is able to assess the formation of students' educational outcomes, identify learning difficulties) [22].</p> <p>PC-2. Able to diagnose the level of developing students' personal and meta-subject educational results [22].</p>
Labor Function	Children's and students' psychological diagnostics
Labor Action	Psychological diagnostics using modern educational technologies, including information educational resources [18].

student's capacity to analyze a psychological and pedagogical issue, formulate a diagnostic hypothesis, and select an appropriate psychodiagnostic instrument that aligns with the specific requirements of the individual's age, social context, and evidence-based criteria. The ability of the student to establish contact with the learner and provide support throughout the psycho-pedagogical session is indicative of their competence in fostering constructive interaction.

The procedure for organizing and conducting professional (demonstration) examinations

In the 2023—2024 academic year, the Center for Conducting Demonstration Examinations of the Moscow State University of Psychology and Education provided the necessary conditions for the approval of professional (demonstration) examinations as a form of interim and final certification of students enrolled in the main professional edu-

educational program of higher education, namely 'Psychology of Education (Pedagogical Psychologist)'. The professional (demonstration) examination was conducted:

2nd year, 3rd semester: interim certification on the module 'Psychological and Pedagogical Diagnostics in Education';

2nd year, 4th semester: interim certification on the module 'Pedagogical Psychologist's Corrective-Developmental Work';

3rd year, 5th semester: interim certification on the module 'Psychological Counseling in Pedagogical Psychologist's Work';

3rd year, 6th semester: interim certification on the module 'Pedagogical Psychologist's Project Activity';

4th year, 8th semester: final state certification (state examination) in the form of professional (demonstration) examination.

Professional (demonstration) exams in MSUPE were conducted in accordance with the approved Procedure for Organizing and Conducting Professional (Demonstration) Examinations.

The procedure for organizing and conducting professional (demonstration) examinations on basic educational programs of higher education UGSN 44.00.00 Education and Pedagogical Sciences is developed and approved in MSUPE from 07 of June 2023 in accordance with the Concept of Teacher Training for the Education System for the Period up to 2030 (approved by the Order of the Government of the Russian Federation №1688-r of 24 June 2022) [17, p. 1].

Stages of the demonstration exam:

The initial phase preceding the demonstration examination entails the preparation of tasks, counseling support for students, familiarization with the conditions and material and technical equipment for the examination, the formation of volunteer examiners and a mandatory briefing for students and teachers.

The subsequent phase is the demonstration examination itself, which includes the receipt of the assignment, the preparation of

the requisite equipment to simulate conditions that are as close as possible to future professional activities, the student's preparation of a scenario of a psychological and pedagogical event, the performance of the task and its subsequent evaluation. A particularly crucial aspect of the second phase is the receipt of feedback from experts and volunteers, specifically statisticians.

The operational support of the professional (demonstration) exam in MSUPE encompasses the following:

— Forming an application for conducting a demo exam in the demo center;

— Creating demo exams in the Demo-exam software (creating a calendar of exams, composition of commissions, lists of students);

— Issuing individual (or subgroup) tasks of the professional (demonstration) exam to students and obtaining students' consent to participate in the demo exam;

— Familiarizing students with the equipment of the demo exam center (infrastructure sheets);

— The participants of the demonstration examination will be briefed on the procedure of the examination.

— The demonstration examinations will be supported in the Demoexam program, which includes the electronic examiner's office, grading, and the generation of an electronic report card.

— Video recordings of the demonstration examinations will be provided, including camera control, recording equipment, and sound output.

— Regular interaction with technical support will be maintained by Prosveshchenie Company [17, p. 15].

Conclusion

In the contemporary educational milieu, the updating of pedagogical psychologist training methodologies represents a crucial undertaking, necessitating the incorporation of contemporary assessment techniques and

technologies to evaluate professional competence [6]. The results of the approval process demonstrate that the introduction of the demonstration examination into the professional training of pedagogical psychologists allows for a more accurate assessment of the degree to which professional competencies are formed and of the readiness of the psychologist for professional activity. A promising avenue of inquiry is to gain a deeper understanding of the current issues pertaining to the preparation and conduct of professional (demonstration) examinations. This will facilitate improvements in the quality of educational programs and enhance interactions with prospective employers. In particular, it will be valuable to ascertain: the extent to which the programs of theoretical courses constitute part of professional modules; the precise relationship between the programs of theoretical courses and practice; and the extent to which theory in the programs of theoretical courses is contextualized in professional tasks. The extent to which practice programs reflect theoretical concepts and the manner in which theoretical knowledge is em-

ployed to analyze practice and reflect on professional tasks. The question thus arises as to whether practice knowledge is purely procedural or conceptual. It would be beneficial to ascertain whether the reflection of practice and the formation of professional knowledge are conducted through the generalization of practice [11].

The implementation of the demonstration examination in the training of pedagogical psychologists marks a pivotal advance in the enhancement of educational quality and the professional competence of future pedagogical psychologists. This approach facilitates the integration of theoretical knowledge and practical skills, enhances students' confidence in their professional actions, and ensures their preparedness to undertake complex tasks in a dynamic educational environment. Consequently, the demonstration examination serves not merely as a means of evaluation, but also as a vehicle for fostering a novel approach to the training of pedagogical psychologists that is grounded in practical experience and exacting professional standards.

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Exploring the Factors Influencing Lecturers' Reluctance to Integrate Tailored Digital Gamification

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Tailored digital gamification holds significant promise for enhancing student engagement and learning outcomes. However, its adoption by Vietnamese lecturers remains limited. This qualitative study investigates the reasons behind their reluctance to embrace tailored digital gamification and explores the role of cultural factors. Interviews were conducted with lecturers from six universities in Vietnam. Findings reveal a preference for traditional teaching methods due to their familiarity and perceived effectiveness. Barriers to adoption include perceived complexity, lack of training, and concerns about content development. Additionally, cultural factors such as hierarchy-authority, gaming perception, and collectivism were found to significantly influence lecturers' attitudes towards gamification. This research provides crucial insights into the complex challenges and factors hindering digital gamification adoption in Vietnamese universities, informing the targeted interventions to facilitate the successful integration of digital gamification into the Vietnamese landscape.

Keywords: tailored digital gamification; education; cultural values; lecturer's reluctance; innovative pedagogical approaches.

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Изучение факторов, влияющих на нежелание преподавателей внедрять адаптированную цифровую геймификацию в учебный процесс

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Адаптированная цифровая геймификация открывает широкие возможности для повышения вовлеченности студентов и улучшения результатов обучения, однако вьетнамские преподаватели не могут принять ее. В данном качественном исследовании изучаются причины нежелания преподавателей принимать адаптированную цифровую геймификацию и роль, которую играют культурные факторы. Были проведены интервью с преподавателями из шести университетов Вьетнама. Результаты свидетельствуют о предпочтении традиционных методов обучения в силу их привычности и ощутимой эффективности. Препятствия на пути внедрения геймификации состоят в сложности восприятия метода, отсутствии обучения методу и опасения преподавателей относительно разработки контента. Кроме того, было обнаружено, что культурные факторы, такие как иерархия и авторитет, восприятие игр и коллективизм, существенно влияют на отношение преподавателей к геймификации. Данное исследование позволяет понять проблемы и факторы, препятствующие внедрению цифровой геймификации во вьетнамских университетах, а также разработать целевые мероприятия, способствующие успешной интеграции цифровой геймификации во вьетнамский ландшафт.

Ключевые слова: адаптированная цифровая геймификация; образование; культурные ценности; нежелание преподавателя; инновационные педагогические подходы.

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Introduction

The landscape of education is undergoing a profound transformation, driven by the relentless evolution of digital technologies. Among the innovative pedagogical approaches gaining attention, digital gamification emerges as a promising avenue for enriching student engagement and amplifying learning outcomes. Gamification, the integration of game elements into non-game

contexts, has been recognized as a crucial tool in advancing educational technology [51]. This approach enhances engagement, motivation, and learning outcomes through various forms like digital platforms, classroom activities, and educational apps [36; 48]. Extensive research has explored its application across diverse educational levels and subject areas, demonstrating its versatility and potential in modern pedagogy [2; 4; 25; 44].

Although gamification in education has been extensively studied, tailored digital gamification, which customizes game elements for specific learners and environments [27; 42], remains under-researched. This approach rejects a one-size-fits-all model and aligns with the shift towards student-centered learning [17; 27]. Therefore, investigating tailored digital gamification is crucial for creating effective learning environments that cater to diverse student needs and promote positive outcomes [42].

Despite the potential of tailored digital gamification in education, its adoption among Vietnamese university lecturers remains slow. This research aims to explore the reasons behind their reluctance, a topic largely overlooked in the existing literature, which primarily focuses on the benefits of gamification [46; 54; 61]. Understanding these underlying factors is crucial for successful implementation. Confucian values, deeply ingrained in Vietnamese culture, emphasize hierarchy and respect for authority [6; 40; 55], potentially influencing lecturers' openness to novel teaching methods like gamification. Additionally, varying levels of technological literacy among lecturers may contribute to their resistance [40]. Examining these cultural and technological factors provides crucial insights for educational stakeholders to develop effective strategies for incorporating digital gamification into Vietnamese higher education.

This study investigates Vietnamese lecturers' perspectives on digital gamification in teaching. It fills a crucial gap in the literature, which primarily focuses on the benefits and motivations for adoption rather than reasons for hesitancy. Understanding these perspectives and their cultural context is vital for developing effective strategies to promote the successful implementation of innovative teaching methods in Vietnamese higher education.

Literature review

Digital Gamification in education

Gamification, the integration of game elements into learning environments, has emerged as a promising strategy to counter students' demotivation [15; 30; 37; 60]. By incorporating game design elements like challenges, rewards,

and competition, gamification aims to engage students, motivate their actions, and enhance learning outcomes [14; 57]. While computer-based methods are commonly employed in gamified classrooms, it is not mandatory [7; 20]. Digital gamification specifically focuses on incorporating game elements into digital platforms, while normal or traditional gamification is a more inclusive term that encompasses both digital and non-digital contexts [45; 50].

Digital gamification has shown promise in enhancing student motivation, engagement, and academic performance across various educational levels and subjects [1; 3; 12; 21; 54]. Immediate rewards in the form of points and badges, coupled with a narrative base, can effectively engage students with lower motivation levels [8; 31; 52; 58]. However, its disadvantage lies in the potential for gamified learning environments to distract students from the core educational objectives [10; 11; 47]. The potential for over-reliance on extrinsic motivators, such as rewards and competition, raises concerns about the development of intrinsic motivation and a genuine love for learning [13; 22; 56].

Tailored digital gamification in education, which has received insufficient attention from researchers, is imperative due to the profound impact of individual differences, contextual nuances, and task-related aspects on the overall user experience within gamified educational systems [18; 27; 42; 49]. While gamified classes with a one-size-fits-all approach may lead to, or exacerbate, demotivation, particularly when not accounting for students' individual differences [28; 29], a tailored approach is considered a means of enhancing students' gamification experiences [20]. Unfortunately, this aspect has received insufficient attention from scholars.

Vietnamese culture

Vietnam culture, deeply rooted in Confucian values [38; 40] plays a pivotal role in shaping the perceptions of education and gamification. It emphasizes respect for social hierarchy, maintaining harmony, and collective orientation, contributing to a tight cultural framework in Vietnam [16; 34]. This collectivist mindset is reflected in the strong emphasis on family ties, interdependence, and a

sense of belonging to larger social entities [55]. Vietnam's rapid economic development has led to increased digital engagement, including gaming, while its collectivist culture and Confucian values shape societal norms and educational practices [34]. However, the impact of these cultural factors on the adoption of digital gamification in Vietnamese education remains under-researched.

Research Gaps

This research aims to address these gaps by delving into Vietnamese lecturers' challenges, shedding light on their concerns, perceptions, and the contextual factors that influence their adoption of tailored digital gamification. While existing research explores gamification broadly, studies specifically focused on tailored digital gamification remain limited. This is a crucial area for exploration as it delves into the personalizing game elements to enhance individual learning outcomes in the evolving digital education landscape. Furthermore, existing research often focuses on student perspectives or general gamification effectiveness, neglecting the crucial role of lecturers in implementation. Understanding their concerns and perceptions is vital for developing strategies to support successful adoption in Vietnamese universities. Finally, the current literature offers limited insights into the impact of cultural factors on the acceptance of tailored digital gamification. Therefore, this research will address following research questions:

1. How do university lecturers in Vietnam perceive tailored digital gamification in the context of teaching?
2. What are the primary factors influencing lecturers' reluctance to integrate tailored digital gamification in university teaching in the Vietnamese context?
3. How do cultural factors impact lecturers' attitudes and hesitations toward the adoption of tailored digital gamification in teaching?

Methods

Research design

This study employed a qualitative approach, specifically semi-structured interviews, to gain in-depth insights into the factors influencing Vietnamese university lecturers' reluctance to integrate

digital gamification. This method allows for capturing the complex cultural, social, and institutional nuances within the Vietnamese higher education context that quantitative methods may not fully reveal [9; 53]. By allowing participants to express themselves freely, semi-structured interviews provide a deeper understanding of lecturers' lived experiences, perceptions, and decision-making processes regarding gamification adoption [53].

Sampling

In this research, stratified sampling was employed to ensure a comprehensive representation of the participant population. Participants were divided into distinct groups based on geographic location, teaching experience, education level, discipline, and previous experience with gamification. This method systematically selected participants from each subgroup, allowing for the exploration of nuanced perspectives across diverse backgrounds and regions, thereby enhancing the validity and generalizability of the findings.

Participants

The participants in this study represent a diverse cohort drawn from various demographic and professional backgrounds across different regions of Danang, Ho Chi Minh, and Hanoi (as shown in Fig. 1). The 31 participants in this study represented a diverse cohort across gender, teaching experience (under/over 5 years), educational backgrounds (primarily doctoral), disciplines (business, tourism, etc.), and prior gamification exposure. Statistical tests confirmed group homogeneity across key variables, ensuring a robust sample for analysis. To assess the homogeneity of participant groups, statistical tests (including t-test and Chi-square test) were conducted across key variables, including gender, teaching experience, education level, previous experience with gamification, and location. In this research, the homogeneity test holds paramount importance as it ensures the validity and reliability of our findings as well as enhances the generalizability of our results, allowing for broader applicability to the population or context of interest. The results indicated no significant differences among participant groups for teaching experience, age, type of institution,

Participant code	Gender	Disciplines	Education	University	Teaching exp (yrs)
1	Male	Japanese Language	PhD	Private	<5
2	Female	Business	PhD	Public	<5
3	Male	Graphic Design	PhD	Private	<5
4	Female	Tourism & Hospitality	PhD	Public	<5
5	Male	English Language	PhD	Public	>5
6	Female	Graphic Design	PhD	Public	>5
7	Male	Marketing	PhD	Private	>5
8	Female	English Language	PhD	Private	>5
9	Male	Marketing	PhD	Private	<5
10	Female	Marketing	PhD	Private	<5
11	Male	Tourism and Hospitality	PhD	Public	<5
12	Female	Business	PhD	Private	<5
13	Male	Business	PhD	Private	<5
14	Female	Tourism and Hospitality	PhD	Public	<5
15	Male	Law	PhD	Public	>5
16	Female	English Language	PhD	Private	>5
17	Male	Graphic Design	PhD	Private	>5
18	Female	Marketing	PhD	Public	<5
19	Male	English Language	PhD	Private	<5
20	Female	Computer Science	PhD	Private	>5
21	Male	Media	PhD	Private	>5
22	Female	Economics	PhD	Private	>5
23	Male	Business	PhD	Public	>5
24	Female	Business	PhD	Private	>5
25	Male	Business	PhD	Public	>5
26	Female	Japanese language	PhD	Private	>5
27	Male	Business	PhD	Private	>5
28	Female	Graphic Design	Master	Public	>5
29	Male	Tourism and Hospitality	PhD	Private	>5
30	Female	Computer Science	PhD	Public	>5
31	Male	English Language	PhD	Public	>5

Fig. 1. Profile of participants

and previous tech integration, ensuring a robust and balanced sample for the study's analyses.

Data collection

Semi-structured interviews, guided by a flexible interview guide, were conducted via Zoom or Google Meet. Each 45-minute session explored participants' understanding of gamification, their experiences, perceived benefits and challenges, and recommendations for implementation (see Appendix).

Data analysis

The data analysis for this research utilized a mixed-methods approach, combining both content analysis and thematic analysis to systematically explore the factors influencing university lecturers' reluctance to integrate digital gamification in teaching [53]. The mixed-methods approach offers a comprehensive exploration of the research topic, combining the strengths of both quantitative and qualitative methodologies [9]. This allowed for a deeper understanding of lecturers' reluctance

to integrate digital gamification, while maintaining researcher reflexivity and adhering to ethical guidelines throughout the process.

Content analysis was employed to analyze interview transcripts using a predefined coding framework based on the literature and research questions. Quantitative measures were used to identify and quantify prevalent themes [9]. Thematic analysis was used to explore overarching themes and patterns within the qualitative data

(as shown in Tab. 1). Coded segments from the content analysis were further analyzed to identify recurrent themes and relationships. Themes emerged through an iterative process of reviewing and synthesizing coded data segments, capturing the essence of participants' responses and experiences related to digital gamification in teaching. Thematic analysis allowed for a deeper understanding of the underlying meanings and connections within the data [41].

Theme	Sub-theme	Categories	Examples
Positive perception	Improved Learning Outcomes	Better comprehension	"I've noticed that when I incorporate digital gamification, students seem to grasp the material better."
		Motivation	"You can feel the difference — students are more enthusiastic, participating in discussions, and tackling assignments with a renewed sense of energy"
	Student's preference	Collaboration	"The energy in the room changes completely — students are no longer passive listeners but active participants, collaborating, competing, and fully engaged"
		Engagement	"Think of a classroom where lessons come alive with visuals, interactive exercises, and digital tools that make complex concepts easier to grasp."
Negative perception	Challenges and Concerns	Pedagogical concerns	"I appreciate the fun element, but the real challenge is making sure it doesn't overshadow the serious academic goals we're trying to achieve"
		Technical Challenges	"The technical aspect can be challenging, especially when not everyone is equally comfortable with technology, which can lead to uneven adoption"
	Integration Readiness	Alignment with curriculum	I'm open to exploring new approaches, but to do it well, I'd need proper training and support to feel confident in applying them.
		Time constraints	"The concern isn't about trying new approaches, but about how the time needed for the transition might affect the efficiency of my teaching process"
Traditional Teaching Methods	Comfort with Traditional Approaches	Change resistance	"I'm not opposed to trying something new, but it's hard to overlook the success I've had with my current approach."
		Pedagogical Philosophy	"My approach to teaching has always been grounded in traditional practices, and I've seen firsthand how well they resonate with students"
	Learning Outcomes	Fear of distraction	"One concern I have with gamification is determining whether the learning outcomes are being met as effectively as they are with traditional assessments."
Perceived complexity	Technical Hurdles	New tech unfamiliarity	"I'm not the best with technology, so figuring out how to integrate gamification into my teaching feels like a steep learning curve"
	Content Development	Design Complexity	"The challenge isn't just making gamified content enjoyable, but ensuring it's meaningful and doesn't overwhelm students or derail their focus"

Fig. 2. Themes, sub-themes, categories, examples

Theme	Sub-theme	Categories	Examples
Parental and Public Perception	Concerns about Parental Feedback	Misunderstanding of Gamification	"My concern is that parents might misinterpret gamification as merely playing games, rather than seeing it as a strategy to enhance learning."
		Perception of Academic Rigor	"The challenge lies in reassuring parents that gamification isn't about reducing academic rigor but enhancing engagement and learning outcomes"
	Public Perception	Media Portrayal and Stereotypes	"Media portrayals of gamification sometimes oversimplify its purpose, leading to skepticism that makes it challenging to highlight its educational benefits."
Cultural factors	Hierarchy and Authority	Teacher-centered approach	"In traditional classrooms, the teacher is seen as the central authority, guiding students through a structured and disciplined approach to learning."
		Formality in Education	"In our role as educators, the structure and formality of traditional teaching methods have long been the cornerstone of fostering discipline and respect among students"
	Gaming Perception	Leisure and Entertainment	"In Vietnam, gaming was often seen as a leisure activity that clashed with the traditional focus on academic excellence and discipline."
	Collectivism	Peer Influence and Collaboration	"New ideas are exciting, but they're even better when shared. Watching colleagues experiment with something like tech-based strategies gives me both motivation and guidance to consider it myself"

Fig. 2. Continuation

Results

Research question 1: How do university lecturers in Vietnam perceive tailored digital gamification in the context of teaching?

Table 1

Lecturer's perception of tailored digital gamification

Perception	Total (N=31)
Positive	
Improved Engagement	21
Improved Motivation	18
Improved academic performance	7
Foster collaboration	19
Negative	
Pedagogical concerns	16
Technical Challenges	22
Time Constraints	29
Limited alignment with Curriculum	20

The findings suggest that university lecturers in Vietnam perceive tailored digital gamification in teaching through a predominantly negative lens (as shown in Tab. 1). Overwhelmingly, par-

ticipants cited time constraints as a significant concern. This finding indicates a widespread belief among lecturers that the design, implementation, and management of tailored digital gamification require substantial time investments. As one participant shared:

"It takes a lot of time for researching and planning, and I'm not really sure about its effectiveness".

Additionally, most participants highlighted technical challenges as a major barrier. As one participant revealed: "The diverse levels of technological expertise among students introduce an additional layer of complexity. Moreover, locating tools that match our curriculum and accommodate various devices becomes a bit of a balancing act."

Participants expressed concerns that tailored digital gamification might not align with existing curricula and broader educational goals, raising doubts about its appropriateness in formal education.

Research question 2: What are the primary factors influencing lecturers' reluctance to integrate tailored digital gamification in university teaching in the Vietnamese context?

Table 2
Influencing factors for Vietnamese lecturers' reluctance to adopt digital gamification

Factors	Total (N = 31)
Comfort with Traditional Approaches	22
Perceived complexity	22
Parental Perception	14
Public Perception	17
Perceived Student Reaction	5
Professional Development Needs	7
Institutional Support	4
Lack of Evidence-Based Practices	3
Lack of incentives	3

1. The majority of participants expressed a strong preference for traditional teaching methods due to **familiar instructional approaches** (as shown in Tab. 2), creating a resistance to change. While not inherently opposed to innovation, lecturers hesitate to deviate from methods that have consistently yielded positive results over the years. When being asked about reasons for their reluctance, two participants shared:

“The way I learned during my university years was through traditional methods, and I successfully completed my education. I believe in the effectiveness of that approach, and it’s been the foundation of my teaching”.

“I feel confident in my ability to measure learning outcomes and identify areas for improvement using these traditional methods.”

Additionally, there is a prevailing concern about potential student distraction, emphasizing the need to ensure that gamified elements align with core educational goals and do not compromise focused learning.

2. Perceived complexity was a major barrier for lecturers, encompassing technical challenges, time constraints, and the intricacies of content development. Many expressed discomforts with new technologies and a lack of training in innovative teaching methods like gamification. When questioned about the reason for not implementing tailored digital gamification, participants expressed:

“Throughout my teaching career, I have yet to encounter any formal training sessions or

workshops specifically addressing gamification.”

“As someone who’s not tech-savvy, the thought of implementing gamification can be intimidating. Without access to training or workshops, it’s challenging to build the confidence to try something new.”

Furthermore, concerns about potential disruptions during gamified lessons without adequate technical support add to the apprehension. The challenges related to content development in gamified settings include concerns about aligning gamified content with the existing curriculum. They often used words like “complex”, “time-consuming”, “careful planning”. The time required to learn and adopt new gamification tools, especially when unfamiliar, adds an extra layer of complexity, further contributing to lecturers’ reservations.

3. A notable portion of participants identified **parental and public perception** as influential factors. They expressed worries that parents might misinterpret the concept of gamification, fearing that it may be perceived as mere gameplay in the classroom rather than a strategic educational tool.

“I can’t help but think about how parents might react to gamification. There’s this concern that they might not fully grasp the educational side of it and simply see it as playtime.”

Additionally, lecturers articulate concerns about how gamification is portrayed in the media, fearing that negative portrayals or stereotypes could influence public opinion: “I’ve seen articles and reports on gamification that paint it as a distraction or a fad. These stereotypes are hard to shake off.”

Research question 3: How do cultural factors impact lecturers’ attitudes and hesitations toward the adoption of tailored digital gamification in teaching?

Table 3
Cultural factors affecting lecturers' reluctance to digital gamification adoption

Factors	Total (N = 31)
Hierarchy and Authority	22
Gaming Culture	16
Collectivism	18
Uncertainty Avoidance	2
Time orientation	2

1. Findings indicate a strong influence of cultural factors, particularly **hierarchy and authority**, on Vietnamese lecturers' reluctance to adopt digital gamification (Tab. 3). When questioned about how cultural values influence their teaching style, one participant revealed:

"Our teaching tradition places teachers at the center, and it's something we've grown up with. In our Asian context, the role of a teacher is not just about imparting knowledge; it extends to being a moral guide and a figure of authority."

Some participants expressed their fear of a potential loss of control or authority when implementing gamified elements. One teacher revealed:

"I worry that embracing digital gamification might introduce an element of chaos. Our students are used to a more controlled setting, and this interactive approach feels like it could disrupt the order we've maintained in the classroom."

Lecturers emphasized the significance of formality in education: "The community we serve has a strong preference for a formal learning environment. Gamification is a bit outside the norm, and there's this worry about how it might be perceived."

2. **Gaming perception** is another significant factor due to its cultural association with leisure rather than education. This historical view of gaming as a distraction from academic pursuits in Vietnam has instilled caution among educators: "Gaming, for me, is a fantastic way to unwind and have fun. However, as agreed by many people, you cannot really focus and retain knowledge if you are having too much fun."

The traditional values of diligence and prioritizing academic success have contributed to a cautious approach, viewing gaming as "a non-serious pursuit", potentially diverting Vietnamese students' attention from their studies. This cultural lens has influenced educators to be wary of incorporating digital gamification into teaching methodologies, as it is often perceived as deviating from the serious pursuit of academic excellence.

"Parents and educators often prioritize diligence and hard work. Gaming, unfortunately, is seen as more of a distraction than a tool that can contribute to learning."

3. The **collectivist culture** in Vietnam significantly influences lecturers' attitudes toward digi-

tal gamification, with a preference for adhering to traditional methods used by colleagues. This reluctance stems from a cultural norm of collective decision-making, where deviating from established practices is discouraged. Lecturers emphasize the importance of **peer influence and collaboration** in their willingness to adopt new approaches: "If a majority of lecturers were already incorporating gamification, I'd definitely follow suit. It's all about staying in sync with the prevailing trends and approaches within the academic community. However, now, not many of my colleagues have ventured into gamification." They expressed curiosity about learning from the experiences of others, however, they need to balance between established practices and potentially transformative approaches.

Discussion

Despite the acknowledged benefits of digital gamification, lecturers are reluctant to adopt tailored digital gamification due to the preference for established traditional teaching methods, perceived as effective. This aligns with previous research highlighting resistance to change and a preference for familiarity in educational practices [5; 26; 33]. The desire to maintain the perceived effectiveness of established practices, as highlighted in this study, resonates with Hamlaoui (2021)'s argument that educators often resist changes that challenge the familiar and proven [19]. Therefore, the familiarity and comfort with the established practices can create a sense of security and confidence among lecturers, making them hesitant to venture into new approaches.

In Vietnamese context, many educators perceive digital gamification as complex and unfamiliar, requiring significant effort to design and implement effectively. This aligns with studies on technology acceptance [43] revealing that perceived technical difficulty negatively impacts adoption. The time-consuming nature of tailoring gamification to individual student profiles further compounds this reluctance [17]. Thus, targeted training, support, and resources are necessary to alleviate these concerns and promote wider adoption.

The surprising finding that parental and public perception significantly influences lecturers' reluctance to integrate digital gamification in uni-

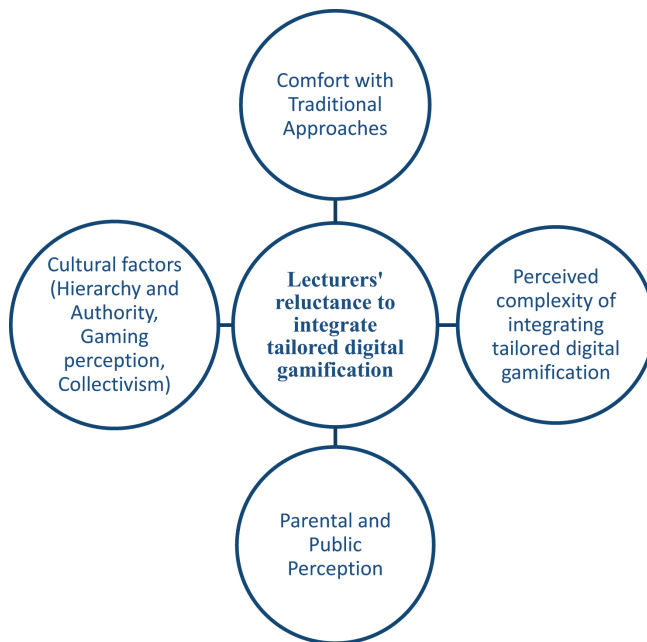


Fig. 3. Factors impacting lecturers' reluctance to integrate tailored digital gamification

versity teaching within the Vietnamese context indicates a potential lack of awareness or understanding regarding the educational value and purpose of digital gamification [62]. Additionally, parents' views on the educational merits of digital games are notably shaped by the adverse depiction of digital games in mass media [7]. Media often highlights stories linking game-playing to internet addiction. This influx of negative information could impact individuals' attitudes towards game-based learning, particularly when they possess limited fundamental knowledge of educational games [62].

Culture has strong influence on this gamification hesitation. Confucian values and a "high power distance" culture promote a traditional teacher-centered approach where students are passive learners [23]. This deeply ingrained norm, coupled with the collectivist tendency to conform to established practices [35], makes lecturers reluctant to deviate from traditional methods. The prevailing norm of collective decision-making contributes to resistance [35], as lecturers might see adopting gamification as

unnecessary when colleagues adhere to traditional methods. This tendency is particularly notable among lecturers from public universities, emphasizing the influence of collective practices within the academic community. Moreover, Vietnam's long-term orientation, characterized by a strong emphasis on hard work and persistence [6; 24], contributes to this reluctance. Lecturers may question the effectiveness of gamification in fostering long-term retention of knowledge, as the traditional mindset places a premium on enduring challenges for lasting achievement. Particularly, the reluctance of lecturers influenced by the perception of the public and societal norms, reflects the broader cultural context in Vietnam. In Vietnam, where there is less tolerance for deviant behavior [34], certain aspects of gaming might be scrutinized or viewed with caution. The emphasis on social cohesion and conformity can lead to a more conservative view of gaming activities [34; 38]. Particularly, little experience with digital educational games makes them lack insights into their potential benefits and role in enhancing the learning experience [7].

Conclusion

This study reveals that Vietnamese lecturers recognize the potential of tailored digital gamification but face barriers to adoption, including pedagogical concerns, technical challenges, and time constraints. Cultural factors and societal perceptions further complicate the integration process. To facilitate successful implementation, comprehensive strategies are needed. These strategies should include providing tailored professional development for lecturers, aligning gamified content with curricula, and fostering a supportive environment through public engagement and policy interventions. By addressing these multi-faceted challenges, stakeholders can ensure the effective and sustainable

integration of digital gamification in Vietnamese higher education.

Limitations and Recommendations

While this study offers valuable insights, caution is advised when generalizing findings due to the small sample size. Future research could address this with a larger, more diverse sample and a longitudinal design to capture evolving perceptions over time. Additionally, while content analysis provided useful insights, its structured nature may have limited the exploration of emergent themes. Future studies could expand the scope of analysis and specifically examine the mechanisms through which cultural factors influence perceptions of gamification.

Appendix

Interview Questions

1. Can you please introduce yourself, tell me about your experience as a university lecturer in Vietnam?

2. Perceptions of Tailored Digital Gamification:

- How would you define tailored digital gamification in the context of university teaching?
- Can you describe your experiences or interactions with tailored digital gamification methods in your teaching practices?
- What are your perceptions of the effectiveness/ineffectiveness of tailored digital gamification in education?

3. Factors Influencing Reluctance to Integrate Gamification:

- What are the reasons for implementing or not implementing this approach to your teaching practices?
- What are some of the main barriers or challenges you perceive in integrating tailored digital gamification into your teaching practices?
- Can you identify any institutional, technological, or pedagogical factors that may contribute to reluctance among lecturers to adopt tailored digital gamification?

4. Impact of Cultural Factors on Attitudes Toward Gamification:

- How do cultural values, beliefs, and norms influence your perceptions and attitudes toward the use of tailored digital gamification in teaching?
- Are there any cultural considerations or preferences that you take into account when designing or implementing gamified learning experiences for Vietnamese students?
- Have you observed any differences in student responses or engagement with tailored digital gamification based on cultural factors such as collectivism, hierarchy, or communication styles?
- How do you navigate cultural sensitivities or expectations when incorporating gamification elements into your teaching strategies?

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Motivation for the Admission of Orphans of Employable Categories in the Context of Various Forms of Family Structure

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The results of a study examining the motivations behind the admission of children without parental care (N=7,150 potential and actual substitute parents) from challenging categories—such as siblings, adolescents, children with disabilities, and those with high individual needs—into various forms of family arrangements (adoption, foster care, and guardianship) are presented. This research employs a resource-based approach, which views motivation as a resource for fulfilling personal and family needs. The findings indicate that the majority of informants are reluctant to accept children from these challenging categories, primarily due to associated difficulties (such as character traits, learning issues, and health problems) and fears (including concerns about heredity, developmental disorders, and doubts regarding their own competence). Adoptive parents tend to exhibit a higher level of sufficient resource motivation, while guardians and foster parents are often more focused on addressing family crises and financial challenges. The most motivated candidates are typically from intact families, where both spouses formalize their commitment to parenthood. Training in the Supportive Parenting Resource (SPR) program enhances parents' sufficient resource motivation while simultaneously reducing insufficient motivation, although it may increase levels of fears and concerns. After completing the program, candidates are more likely to transition to paid forms of guardianship.

Keywords: motivation for the admission of orphaned children; adequate and inadequate resource motivation; children in difficult-to-adjust categories; guardians; foster parents; adoptive parents; candidates for guardianship; candidates to be adoptive parents.

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Мотивация приема на воспитание детей-сирот трудноустраниваемых категорий в контексте различных форм семейного устройства, включая усыновление

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Представлены результаты исследования мотивации приема детей, оставшихся без попечения родителей, трудноустраниваемой категории (сиблинги, подростки, дети с инвалидностью и ОВЗ) на разные формы семейного устройства: усыновление, приемная семья, опека (N=7150 потенциальных и функционирующих замещающих родителей). Исследование основывается на ресурсном подходе, который рассматривает мотивацию как ресурс для удовлетворения личностных и семейных потребностей. Выделено 2 мотивационных профиля с позиции их ресурсности. Для усыновителей в большей степени характерен достаточно ресурсный мотивационный профиль. Опекуны и приемные родители чаще озабочены решением семейного кризиса и материальных проблем. Наиболее мотивированной является полная семья, где оба супруга оформляют ро-

дительство. Установлено, что подготовка в школе приемных родителей (далее — ШПР) повышает как ресурсность мотивации родителей, так и уровень их страхов и опасений. После окончания ШПР большинство кандидатов в усыновители перетекает на возмездные формы опеки. Большинство информантов не готово принимать детей трудноустраниваемой категории и объясняет это особенностями характера, проблемами в обучении, плохим здоровьем ребенка, а также собственными страхами его плохой наследственности, нарушений психического развития, сомнениями в собственной компетенции.

Ключевые слова: мотивация приема детей-сирот; достаточно и недостаточно ресурсная мотивация; дети трудноустраниваемых категорий; опекуны; приемные родители; усыновители; кандидаты в опекуны; кандидаты в усыновители.

Финансирование. Исследование выполнено в рамках государственного задания Министерства просвещения Российской Федерации от 09.02.2024 № 073-00037-24-01 «Научно-методическое обеспечение разработки мотивационных мер по развитию форм семейного устройства детей-сирот и детей, оставшихся без попечения родителей, исходя из приоритетной формы жизнеустройства ребенка, а также исследование возможностей кандидатов в усыновители принять на воспитание детей трудноустраниваемой категории (прикладное исследование)».

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Introduction

The late 1990s of the 20th century in Russia can be called the pivotal time in terms of the state's activities for protection of the rights and interests of children without parental care. The development of family forms of placement for orphans made it possible to remove more than 90% of children from institutional care. In 2023, 322,628 children were being raised in families and 31,654 children were being raised in organizations [20]. Types of compensated care, including a foster family, have become particularly attractive (the share of children in them was 30.7% in 2015 and 47.04% in 2023) [20]. The family's semi-professional status made it more open both to material support and to the establishment of special infrastructure like the foster parent school and family support services, which came to serve the entire family placement system over time. This has slowed down the rate of uncompensated care devel-

opment (57.26% of placed children in 2015 and 45.66% in 2023). Adoption, which is an individual permanent (indefinite) form of placing children without parental care, remains a priority, but the demand for it is not sufficient (19.9% in 2015 and 19.5% in 2024) [21]. For the child themselves, this form is the most stable, allowing them to grow up and start their independent life at their own pace, rather than after the placement ends. For children placed in families, the end of placement provokes a high levels of stress [16]. However, the family system with an adopted child often does not allow specialized assistance, including financial, due to the adoption secrecy.

In recent years, a serious challenge has been the prevalence of hard-to-place children category in the Federal Orphan Data Bank: teenagers (about 80%), children with disabilities (30%), and siblings, who may not be separated (more than 50%). In 2016, the government set the task to activate family place-

ment of this children category [13]. However, families are afraid to foster them [14], which is also proved by the results of the study presented in this article.

All this poses a challenge for the scientific community to study the potential and actual substitute parents' motivation to foster a child of this category [24; 25].

All over the world, the motivation is regarded as the most important predictor of the family placement efficiency, allowing us to predict the success of substitute parenting, correct both the psychological readiness to foster a child and the child-parent relationships in the course of upbringing [3; 5; 11; 12; 27].

Russian and foreign literature presents various classifications of the motivation types [18; 19; 26; 27; 28; 30; 39]. As a rule, the basis is their focus: internal, which is oriented on support and acceptance of the child and related to the child's values, standards, and personal characteristics, and external, which is conditional upon the expected reward or meeting the parents' expectations; as well as the parent's focus on the child or themselves [1; 2; 11; 15; 30; 38].

Motivation types adequate or inadequate to the tasks of foster care [18] as well as constructive and unconstructive motivation [6] are distinguished.

A number of authors consider the impact of negative motivation to foster a child on the intra-family relationships that may lead to the family abandoning the child [10; 11], and pay attention to the possibility of parental motivation transformation, depending on the growth and changes in both the parents and their children [39].

A review of international research shows that for child-oriented parents altruism is the leading motivation type [33; 41]. They prove that enhanced altruistic motivation leads to acceptance of the child and improvement of the parent's health [10], ensures that the child is loved, has a safe place they would call home, and is not abused [23]. Awareness, ethical and moral standards and principles

have been mentioned as some of the key factors in admission of a child into the family [35]. It is worth noting that financial motivation for fostering a child is most importance for Africa and Asia, but is not typical for countries like Australia and Canada [32; 36; 37]. Western researchers assign a special role to religious motivation [29], which is not typical for Russian studies [17]. In Russian studies, the leading types of motivation include "self-actualization as a parent" [17; 22].

They show that foster parents with a focus on themselves want to have more children, to provide their child with siblings, and themselves with a companion [7; 33; 34; 41]. It is also admitted that classifications of the types of motivation for fostering the hard-to-place children category are focused on children with disabilities [1; 8]. The most common motivation includes altruistic motives, "filling an empty nest", "doing a good thing", "to overcome childlessness" [1], "striving to look worthy", "being not worse than others" [8]. Attempts have been made to link the motivation with the forms of family placement, associating guardianship with forced substitution of parents by relatives [7] and adoption with the mother's altruism [10]. However, the number of such studies and their participants is limited.

Thus, the motivation for admission of an orphan child into the family is considered worldwide as a predictor of the success of their integration into the family and further socialization. Both foreign and Russian studies have developed various classifications of the motivation types. At the same time, there are certain inconsistencies in the definition of the most resourceful motivation types: in foreign psychology, they are altruism, tendency towards prosocial behavior, and Russian authors mostly mention the parent's self-actualization. In Russia, despite the impressive success in addressing the orphanhood problem, there are hard-to-place categories of children who need family placement, but cause serious concerns among potential substitute parents as to their ability to raise them in their family.

Russian studies most often focus on the specifics of motivation for admission of a child with disabilities into the family. There are limitations in the scientific publications available to the authors, due to the small sample size, insufficient disclosure of motivational resources for various forms of family placement, as well as the motivational potential of prospective and actual substitute parents in terms of bringing up hard-to-place children.

This article presents the materials of a study aimed at identifying the specifics of motivation for admission of hard-to-place orphans (siblings, children with disabilities, children with mental disorders, teenagers) in potential and functioning substitute parents, depending on the family placement form.

Objectives:

1. To analyze the availability of experience of upbringing, readiness to admit hard-to-place children into the family, as well as difficulties and fears of potential and actual substitute parents in the context of various placement forms;

2. to determine similarities and differences in the types of motivation for admission of hard-to-place children into the family among potential and actual substitute parents in various family placement forms, depending on the status of the family and participation in programs aimed at preparation of parents for placement of a child.

As a theoretical and methodological basis, the study described here used the resource-based approach, in which motivation is presented as a resource that determines a certain behavior of the subject [4]; as everything that family members have to offer each other to help meet needs or help achieve their goals [18; 27]. The authors consider the motivation for admission of a child into the family as a resource that allows family members to meet the most urgent life needs.

Scientific novelty of the discussed research consists in the identification and description of the specificity of motivational profiles of prospective and actual substitute parents in terms of admission of a hard-to-

place child into a family, depending on their participation in programs of preparation for fostering a child, their family structure and marital status, differentiation of difficulties in raising orphans in a family of substitute parents in various forms of family placement. Special attention is paid to adoption.

Organization of the study, methods and psychodiagnostic techniques used

To ensure a wider coverage of respondents, data was collected through a web-based survey service in an anonymous and voluntary manner. Data collection was supported by the regional child protection agencies and foster parent school and family support specialists. The procedure took 60 to 90 minutes and complied with the ethical standards established by the 1964 Declaration of Helsinki. The respondents were informed of the aims and objectives of the study and provided their consent to participate.

Sampling

The study involved 7,150 potential and actual substitute parents of the main family placement forms from 57 regions of the Russian Federation: prospective guardians/foster parents (N=684); prospective adoptive parents (N=560); guardians/patrons (N=2,991); foster parents (N=2,642); adoptive parents (N=273) aged 18 to 65 years, those who has grown up and is ready to become their siblings' guardian (the average age of 46.45+9.98 years old). The overwhelming majority were women (N=6,623), as they have the highest motivation to admit a child into their family [9]. Most of the respondents (56.1%) lived in villages, while the rest (43.9%) lived in urban areas. 59.7% of adoptive parents, 37.7% of foster parents, and 28.9% of guardians had higher education. Almost every 3rd parent raised their children in a single-parent family. The majority of the respondents (68.8%) had their natural children. In adoptive families, most often both the spouses are officially parents (adoptive parents —

58.6%; foster parents — 42.2%; guardians/patrons — 23.3%). Most parents, regardless of the family placement form, were raising two foster/adopted children (guardians — 83.10%; foster parents — 54.4%; adoptive parents — 77.7%). The vast majority of foster parents and adoptive parents were undergoing or had completed training in a foster parent school (foster parents — 89.4%; adoptive parents — 87.5%). As for guardians, only 25.7% of them had such training.

Methods

The following methods were used in statistical data processing: Student’s t-test, one-factor analysis of variance, factor analysis (principal component method, Varimax rotation with Kaiser normalization), Pearson’s Chi-square, and Cohen’s d criterion.

Methods

A specially designed questionnaire (147 questions) was used for the study. Only responses related to the motivation for admission were analyzed in this article.

The specifics of motivation for admission of children into a family for foster care were identified using the methodology described by V.N. Oslon in the Motivation for Admission of an Orphan Child into a Substitute Family (V.N. Oslon) [18] in order to distinguish the following types: resolving a family crisis, replacing a child after its loss, including the trauma

of infertility, altruism, “filling an empty nest” (children have grown up and left home, there is no child in the family), self-actualization as a parent (any child, regardless of health condition, behavior, etc., is a value), satisfaction of existential needs, satisfaction of financial needs, solving demographic problems (desire to have a large family, a child of a certain sex), religious motivation (duty to God).

Results

The analysis of answers made it possible to identify presence of parenting experience, willingness to admit hard-to-place children into the family, and the respondents’ fears related to bringing up such children, depending on the respondent’s status (prospective or actual substitute parent), the family placement form, and the training program participation.

Guardians and foster parents were more likely to report having experience in parenting teenagers. Foster parents indicated that they had experience in raising siblings and children with disabilities (Table 1).

Despite their experience, the majority of the respondents are not ready to admit hard-to-place children into their families (52.5%). At the same time, the highest proportion is among prospective and actual adoptive parents (Table 2).

The lack of willingness to admit hard-to-place children into the family is caused by the difficulties the parents used to face and the fears that arise from the decision to foster a child.

Table 1

Availability of experience in bringing up hard-to-place children (%)

Categories	Guardian	Foster parent	Prospective guardian	Prospective adoptive parent	Adoptive parent	Total	c ² , empirical value	p, statistical significance level	Cohen’s d
Siblings	21.5	37.8	16.1	9.5	18.7	26.0	345.6	< 0.001	0.45
Children with disabilities	16.7	41.9	7.3	3.6	19.0	24.2	781.5	< 0.001	0.70
Children with mental disabilities	6.9	16.8	3.8	1.8	8.8	10.0	241.5	< 0.001	0.37
Teenagers	55.0	72.4	16.4	8.8	25.3	53.0	1,295.3	< 0.001	0.94

The following answers were received to the question “What difficulties did you personally encounter in the course of bringing up a child?” (see Table 3).

The greatest difficulties were recorded by foster parents. They mentioned psychological problems related to the child’s char-

acter; learning problems; mental retardation; tendency towards deviant behavior; ill-manneredness and lack of self-care skills. Adoptive parents were most often worried about the child’s weak immune system. They also had difficulty because of the child’s character traits and mental retardation. The guard-

Table 2

Willingness to admit hard-to-place children into the family (%)

Statement	Guardian	Foster parent	Prospective guardian	Prospective adoptive parent	Adoptive parent	Total
Not ready to admit	50.5%	52.1%	46.5%	61.6%	73.3%	52.5%
Ready to admit teenagers into the family	6.0%	13.1%	10.2%	7.3%	6.6%	9.1%
Ready to admit children with disabilities into the family	6.2%	14.5%	1.2%	1.4%	7.7%	8.5%
Ready to admit siblings into the family	9.3%	9.7%	5.7%	1.4%	2.9%	8.2%
Chi-square=1718.07; p<0.001; Cohen’s d=1.12						

Table 3

Differences in answers to the question “What difficulties did you personally encounter in the course of bringing up a child?” (%)

Difficulties	Guardian	Foster parent	Adoptive parent	Total	Significance Chi-square	Significance level of differences, p	Cohen’s d
Weak immunity	25.1	34.3	38.8	26.2	315.15	< 0.001	0.43
Illnesses resulting from staying in an orphanage or a dysfunctional family	8.1	17.1	15.4	10.8	219.69	< 0.001	0.36
Psychological problems determined by the child’s character	31.1	46.2	24.2	32.9	509.95	< 0.001	0.55
Mental retardation	15.5	36.2	21.6	21.8	575.41	< 0.001	0.59
Difficulties in adaptation, the child’s communication among peers and at school	11.4	20.4	10.6	13.6	201.74	< 0.001	0.34
Ill-mannered, lack of self-care skills	10.4	20.2	6.6	12.8	233.00	< 0.001	0.37
Learning problems	29.7	45.1	15.4	31.1	595.37	< 0.001	0.60
Emergence of conflicts between the child and other family members	7.0	10.4	3.3	7.3	91.48	< 0.001	0.22
Difficulties in bringing up	9.2	16.9	5.9	11.0	180.14	< 0.001	0.32
No acceptance of the new family by the child	1.1	2.0	0.7	1.4	13.79	0.008	0.09
Tendency towards deviant behavior	8.6	20.3	6.6	12.1	285.04	< 0.001	0.41

ians bringing up children being their relatives mainly complained about the child’s character and learning problems. The potential parents were significantly less likely to report any difficulties. Overall, more than one-third of the respondents were concerned about psychological problems related to the child’s character and learning problems.

Prospective guardians and adoptive parents were more likely to indicate fears related to the child’s bad heredity: hereditary diseases (33% and 46.4%, respectively); hereditary tendency towards deviant behavior (36.1% and 37.1%, respectively); and fears of mental disorders in the child (33% and 35.9%, respectively). It is worth-admitting that adoptive parents also have concerns of the child’s hereditary tendency towards deviant behavior (32.8%). Doubt in their own competence in child rearing issues was most often specified by guardians (20.6%) and prospective guardians (20.5%) (Table 4).

Participation in training programs increases the proportion of the respondents, regardless to the placement form, who indicated presence of fears and concerns. Those who completed their training (15.6%) and began

to raise children have a declining proportion. Parents who were not trained (9.3%) had the lowest proportion ($\chi^2=49.8$, $p<0.01$). In the course of raising a child, the level of concerns in the respondents having completed their foster parent school training decreases.

Participation in training has an impact on the choice of the family placement form (see the figure). There is almost a threefold decrease in the number of individuals willing to adopt a child. Most of them “migrate” to the compensated forms of care. A significant proportion of the respondents who have not been trained are at a loss and do not understand which form to choose. After the training course, every fifth respondent is still unable to answer this question for themselves. Patronage, which refers to care of teenagers of 14+ years old, is unpopular with parents and the demand for it decreases after completion of the course

When analyzing the results of the methodology described in Motivation for Admission of an Orphan Child into a Substitute Family [18], two motivational profiles were identified, using factor analysis (principal component method, Varimax rotation with Kaiser normal-

Table 4

Differences in answers to the question “What doubts, concerns, fears did or do you have in connection with the decision to adopt a child, or become a guardian or a foster parent?” (%)

Fears	Guardian	Foster parent	Prospective guardian	Prospective adoptive parent	Adoptive parent	Total	Significance Chi-square	Significance level of differences, p	Cohen’s d
Fear of the child’s hereditary diseases	10.5	16.6	33.0	46.4	28.9	18.4	540.63	< 0.001	0.57
Fear of the child’s hereditary tendency towards deviant behavior	20.8	32.8	36.1	37.1	25.6	28.2	151.85	< 0.001	0.29
Fear of possible disorders in the child’s mental development as a result of being in a disadvantaged environment	15.0	21.8	33.0	35.9	20.9	21.1	198.72	< 0.001	0.33
Concerns about their own competence as a parent	20.6	19.1	20.5	16.8	17.6	19.6	6.24	0.18	

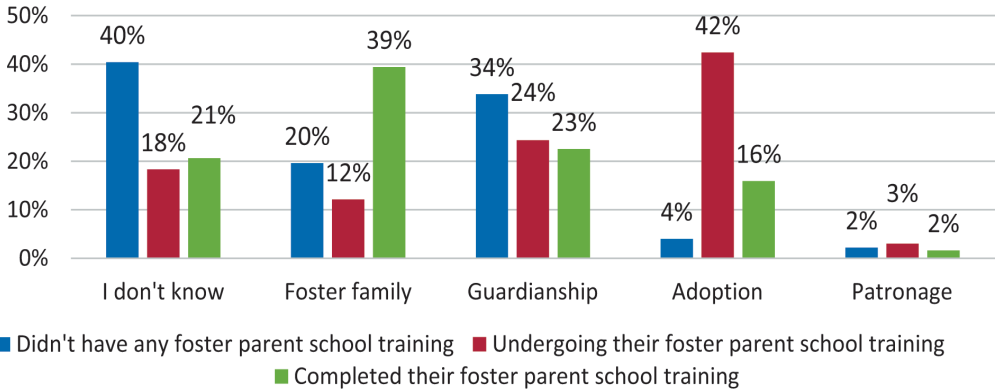


Fig. Choice of the family placement form, depending on training completion

ization, percentage of dispersion 68.76), to be given the following conditional names:

— sufficiently resourceful (36.19% of the variance), reflecting the system of deep motives for admission of a child into the family (self-actualization as a parent, altruism, satisfaction of existential needs, “filling an empty nest”);

— insufficiently resourceful (32.56% of the variance), including a system of external motives (overcoming a crisis, solving demographic problems, religious motivation, satisfaction of financial needs, child substitution) (tab. 5).

The correlation of profiles and types of motivation for admission of children into the

family (Table 6) showed that, regardless of the informant’s status, the structure is dominated by sufficiently resourceful motivation. The most preferred (“self-actualization as a parent”) and the most rejected (“overcoming a crisis”) types of motivation in all respondents were distinguished. They can be categorized as normative and socially approved choices.

Motivation of self-actualization as a parent is higher in foster parents and adoptive parents (Table 6). Prospective adoptive parents who are oriented towards lifetime adoption have a higher need for self-actualization compared to other prospective parents. Foster parents are most often driven by altruistic

Table 5

Results of factor analysis (principal component method, Varimax rotation with Kaiser normalization)

Types of motivation for admission of an orphan into the family	Component	
	1	2
Self-actualization as a parent	,889	,205
Altruism	,832	,140
Meeting existential needs	,798	,351
«Filling an empty nest»	,684	,434
Overcoming a crisis	,208	,874
Solving demographic problems	,340	,775
Religious motivation	,122	,720
Meeting financial needs	,451	,611
Child substitution	,542	,548

Table 6

Differences in the types of motivation to admit children of the difficult-to-place category into the family, depending on the respondent's status (average values and results of one-factor analysis of variance)

Respondent's status	Sufficiently resourceful motivation				Insufficiently resourceful motivation				
	Self-actualization as a parent	Altruism	Meeting existential needs	"Filling an empty nest"	Overcoming a crisis	Child substitution	Satisfaction of financial needs	Solving demographic problems	Religious motivation
Guardian/patron	3.83	3.54	3.58	3.30	2.40	3.11	3.14	2.60	2.62
Foster parent	4.02	3.69	3.67	3.48	2.20	3.09	3.23	2.58	2.54
Adoptive parent	3.92	3.60	3.69	3.20	1.92	2.95	2.77	2.41	2.27
Prospective guardian / foster parent	3.65	3.42	3.37	3.04	1.93	2.61	2.79	2.33	2.28
Prospective adoptive parent	3.75	3.32	3.51	2.70	1.73	2.60	2.56	2.23	2.06
F value	33.06	31.91	16.67	71.75	83.63	49.7	72.96	24.12	32.72
Significance level of differences, p	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Effect size η^2	0.02	0.02	0.01	0.04	0.04	0.03	0.04	0.01	0.02

motivation and "filling the empty nest" motivation. For adoptive parents, adopting a child is more often associated with the need to fulfill existential needs. They also have the lowest values for the "child substitute" type. Guardians are motivated to overcome a family crisis more often than others, as they are often forced to admit a child due to a tragedy in the extended family. However, the effect sizes are small ($\eta^2 \leq 0.04$).

In pairwise comparisons of intake motivation types, the largest effect sizes were found among adoptive parents and foster parents on the motivation to overcome a family crisis (Cohen's d of 0.48), and among adoptive parents and foster parents on meeting financial needs (Cohen's d of 0.45).

Prospective substitute parents, regardless of the family placement form, have lower average values of any type of motivation compared to the actual parents. In pairwise comparisons, the largest effect was found for prospective substitute parents and guardians

on overcoming a crisis (Cohen's d, 0.49) and child substitution (Cohen's d, 0.44); and for prospective and actual adoptive parents on "filling an empty nest" (Cohen's d, 0.44).

The motivation types also depend on the family structure (two-parent/incomplete) and on formalization of substitute parenthood by the spouse (Table 7). In two-parent families, where both the spouses take responsibility for raising the child, the values of all the types of sufficiently resourceful motivation are slightly higher. For single parents, with the absolute majority of mothers, the values of this profile are more pronounced compared to two-parent families where only one of the spouses has formalized substitute parenthood. Single mothers are more likely to be focused on satisfying altruistic, existential needs and "filling an empty nest". It is worth mentioning that in complete families with two substitute parents and incomplete families the values of insufficiently resourceful motivation types converge. The exception is the need to overcome

a family and personal crisis, which is higher in single parents.

The preference of the motivation types is also associated with participation in the foster parent school training programs (Table 8).

Parents who completed the training program, regardless of the family placement form, have statistically significantly higher types of motivation of the 1st profile and statistically significantly lower types of the 2nd profile com-

Table 7

Differences in types of motivation to admit a child into a family depending on family structure and spouse status (mean values and results of one-factor analysis of variance)

Types of families	N	Sufficiently resourceful				Insufficiently resourceful				
		Self-actualization as a parent	Altruism	Meeting existential needs	«Filling an empty nest»	Overcoming a crisis	Child substitution	Meeting financial needs	Solving demographic problems	Religious motivation
Incomplete family	1898	3.82	3.57	3.58	3.24	2.33	3.05	3.13	2.52	2.55
A two-parent family where one spouse has formalized the adoptive parenthood	3099	3.84	3.53	3.55	3.23	2.17	2.94	3.02	2.51	2.45
A two-parent family where both spouses have formalized their parenthood	2153	3.98	3.64	3.66	3.43	2.15	3.07	3.14	2.58	2.54
F value		21.2	11.2	9.1	24.3	19.9	10.4	10.1	3.0	4.7
Statistical significance level p		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Effect size h ²		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Table 8

Differences in the types of motivation to admit a child into the family, depending on the respondent's participation in the foster parent school programs, average values and comparison results (one-factor analysis of variance)

Foster parent school training before admission of a child into the family	N	Sufficiently resourceful				Insufficiently resourceful				
		Self-actualization as a parent	Meeting existential needs	Altruism	«Filling an empty nest»	Overcoming a crisis	Child substitution	Meeting financial needs	Solving demographic problems	Religious motivation
Didn't have	1140	3.81	3.57	3.51	3.28	2.58	3.21	3.24	2.69	2.74

Foster parent school training before admission of a child into the family	N	Sufficiently resourceful				Insufficiently resourceful				
		Self-actualization as a parent	Meeting existential needs	Altruism	«Filling an empty nest»	Overcoming a crisis	Child substitution	Meeting financial needs	Solving demographic problems	Religious motivation
Undergoing	531	3.70	3.42	3.42	2.93	1.934	2.65	2.73	2.31	2.26
Completed the training	5,479	3.91	3.61	3.59	3.33	2.158	3.00	3.08	2.52	2.47
F value		17.59	9.68	13.37	31.7	108.9	44.27	42.83	26.13	30.95
Significance level of differences, p		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Effect size h ²		< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.01	< 0.01	< 0.01	< 0.01

pared to those who were not trained (Table 8), which indicates the effectiveness of the foster parent school specialists' work to shape the adequate motivation, although the effects are very small. Parents who have not been trained are more likely to record financial needs and child substitution as their motivation and refer to the duty to God.

Discussion of results

The motivation to admit a child into the family can be either sufficiently or insufficiently resourceful. The identified two motivational profiles allowed us to systematize and classify the types of motivation from the position of their resourcefulness to raise a foster child. The profile of sufficiently resourceful motivation reflected the system of deep motives of child reception: self-actualization as a parent; altruism; satisfaction of existential needs; "filling an empty nest". The profile of insufficiently resourceful motivation included: overcoming a family and personal crisis; resolving demographic problems; religious motivation; satisfaction of financial needs; and child substitution.

In general, when admitting a child, informants are guided to a greater extent by sufficiently resourceful motivation. Foster parents and adoptive parents have a higher rate than guardians. Such type of motivation as self-actualization as a parent especially stands out. The

results of the study correlate with the results of the leading Russian studies [1; 2; 3; 6; 7; 8; 11].

In Russia, for foster families, fostering orphans has almost become a profession and is supported financially. Such motivation can be also considered as a need for professional self-actualization. Adoptive parents are more likely to satisfy the need for parenthood. Prospective adoptive parents have a higher level of this need compared to other prospective parents. Prospective and actual adoptive parents' motives are more focused on satisfying existential needs, while foster parents' motives are more focused on altruism and "filling an empty nest". Guardians whose admissions are more often associated with involuntary kinship care have the lowest values for profile type 1 and the highest values for profile type 2. This explains to some extent the frequent refusal of guardians to raise children when they grow up.

The resourcefulness of the motivation types depends on whether both the spouses are going to acquire the substitute parent status. In the course of raising a child a greater awareness of one's needs related to reception comes: actual substitute parents, regardless of the placement form, have higher values of any motivation type compared to prospective substitute parents.

The majority of the respondents, regardless of the placement form and their status,

are not ready to admit hard-to place children, although they have experience of bringing up such children. Participation in the training programs, on the one hand, increases the values of sufficiently resourceful motivation and reduces those of insufficiently resourceful motivation, on the other hand, increases the parents' fears and concerns and results in refusal to admit a child into the family by most prospective substitute parents. The training often results in a "migration" of those wishing to adopt a child into compensated forms of family placement. This suggests a certain ambivalence in the effect of training on the motivation.

Conclusion

The materials of our study presented here show that, regardless of the family placement form and the status of the respondent, the motivation for admission of a child into the family is resourceful. The obtained results clarify and expand the ideas of the specifics of motivation to admit hard-to-place children in representatives of various family placement forms. Parents' unwillingness to admit children of this category into a family, ambivalence of the impact of training programs on potential parents, especially adoptive parents, require revision of their content and focus.

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Conclusions:

1. Foster parents and guardians are most experienced in raising hard-to-place children. Foster parents are characterized by having experience in raising almost all the categories of such children. The majority of the respondents are not ready to admit hard-to-place children into their families. This is especially true for adoptive parents. The reasons are psychological problems determined by the specifics of the child's character, learning difficulties, poor health and fears related to bad heredity, as well as concerns about their own competence as a parent and the programs' focus on the development of compensated placement forms.

2. All the respondents are characterized by the sufficiently resourceful motivation (self-actualization as a parent, altruism, satisfaction of existential needs, "filling an empty nest"). However, against the background of other groups, guardians and foster parents are more often guided by such motives as overcoming a family crisis, child substitution and satisfaction of financial needs. The motivation to admit a child into the family depends on the family structure. The highest motivation is shown by a two-parent family in which both the spouses formalize their parenthood.

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Ethnic, Civic and Global Identities of Russian High Schoolers and their Correlation with Values

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The article examines the relationship between individual values and the ethnic, social, and global identities of Russian high school students. In the context of social self-determination and the identification of individuals with various social groups during the transition to adulthood, it is essential to explore the resource potential of different types of social identity in relation to the motivational and value dimensions of personality. The sample comprised 155 participants from Moscow (54% female), 156 from Smolensk (63% female), and 173 from Khabarovsk (66% female), all aged 15 to 18 years and identifying as Russian. Respondents completed the S. Schwartz “Portrait Value Questionnaire” (PVQ-RR) and the modified “Identification with Humanity” (IWAH) technique by S. McFarland, as adapted by T.A. Nestik. As a result of regression analysis, it was determined that the primary predictor of ethnic identity among Russian high school students, regardless of their region of residence, is the meta-value of Conservation. Conversely, the primary predictor of global identity is the meta-value of Self-Transcendence, which aligns with findings from similar studies with adults. We identified a number of correlations of individual values with three types of identity specific to each sample. The interpretation of the research results considered the socio-economic context of the regions studied.

Keywords: individual values; ethnic identity; civic identity; global identity; early adolescence; Russian high school students.

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Этническая, гражданская и глобальная идентичности русских старшекласников: связь с ценностями

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Статья посвящена анализу характера взаимосвязи индивидуальных ценностей с этнической, гражданской и глобальной идентичностями у старшекласников из Смоленска, Хабаровска и Москвы, идентифицировавших себя как русские. Установлено, что общим предиктором этнической идентичности у русских старшекласников, независимо от региона проживания, выступают ценности, входящие в метаценность *Сохранение*, а общим предиктором глобальной идентичности — ценности, входящие в метаценность *Самопреодоление*. Выявлен ряд специфических для каждой выборки связей индивидуальных ценностей с тремя видами идентичности: ресурсом поддержания этнической и гражданской идентичностей у московских старшекласников выступает ценность блока *Самопреодоление (Универсализм)*; ресурсом глобальной идентичности у смоленских старшекласников выступает ценность блока *Сохранение (Безопасность)*, у хабаровских — ценность блока *Открытость изменениям (Самостоятельность)*, а у московских — ценность блока *Самоутверждение (Достижение)*. Делается вывод о том, что наличие специфических связей обусловлено различиями в географическом и социально-экономическом положении исследуемых регионов.

Ключевые слова: индивидуальные ценности; этническая идентичность; гражданская идентичность; глобальная идентичность; раннеюношеский возраст; российские старшекласники.

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Introduction

In dynamically changing environment, the scientific interest in the problem of development and manifestation of various social identity types has become just one consequence of individuals' increasing subjective importance of their involvement in greater social communities, such as ethnicity, country and humanity as whole. The research findings show that the feeling of being a member of these groups together with the emotional and value-related manifestations of such membership enables an individual to meet the basic needs for psychological safety, acceptance, self-respect [2; 4; 9; 10; 11; 17].

Confirming the important role of ethnic, civic and global identity in ensuring personal psychological safety and stability challenges the researchers to reveal the correlations between the given types of identities and values. The values vs. ethnic, civic and global identities relationship study is particularly important for early adolescence or high school age, since such is the period for a person to self-determine intensively in society, to identify themselves with diverse social groups and to develop a value-related attitude towards them [21; 22].

Certain scientific empirical data concerning the relations between ethnic and civic identities and individual values have been gained [5; 7; 16; 18; 28]. Thus, according to S. Roccas and her peer researchers' study, the identification with a nation is positively related to the *Conservation* values and negatively — to the *Openness to change* values [28]. In Z.H. Lepshokova's study, the Russian ethnic majority sampling data revealed a positive interrelation between the *Conservation* values and the positivity of ethnic (Russian) and civic (Rossiyskiy) identities [7]. The results coincident to some extent with those in the previous studies were obtained from the sample of Russians in V.A. Fedotova's research: the social focus values (*Conservation* and *Self-Determination*)

were positively correlated with Russians' positive ethnic and civic identities formation, while the personal focus values (*Openness to change* and *Self-Enhancement*) were negatively related to their formation. In addition, the *Tradition* value held the greatest contribution to the relationship between values and ethnic and civic identities [16].

At the same time, more diverse correlations between values and ethnic identity were gained from the sample of Serbian students, depending on whether they were able to speak one or two languages. Among the monolingual students, the focus on the *Tradition* value (part of the *Conservation* meta-value) was positively correlated with a form of ethnic identity such as ethnic bigotry; the focus on the *Universalism* value (part of the *Self-Transcendence* meta-value) was positively correlated with ethnic nihilism; and finally, the focus on the *Stimulation* value (part of the *Openness to change* meta-value) was positively correlated with positive ethnic identity. With the bilingual students, a single significant positive interrelation was recognized: between the focus on the *Hedonism* value (part of the *Self-Enhancement* meta-value) and such type of ethnic identity as ethnic isolationism [5].

The results of the studies suggested above were obtained from the samples of adults. Whereas the studies that reveal the relationship between ethnic and civic (national) identities and values at the stage of maturation, in adolescence and early adulthood are quite rare. Among recent studies, the foreign longitudinal (at intervals of one year) research should be mentioned, that was conducted in groups of Jewish adolescents — Israelis (majority) and Israeli Arab adolescent citizens (minority) [20]. In both groups, positive interrelations between national identity and the *Conservation* values were identified, as well as negative correlations between the *Universalism* (the *Self-Transcendence* meta-value)

and *Openness to change* values. However, if the stated interrelations between national identity and the *Conservation* and *Universalism* values were found in both longitudinal sections, the correlation between national identity and *Openness to change* value occurred only in the second section. In addition, among the minority Arab adolescents, the positive correlation between the *Power* value (the *Self-Enhancement* meta-value) and national identity was revealed, thereby demonstrating the focus on realization of their status ambitions, influence and resource control to reinforce the identification of Arab adolescents as Israelis [20]. Another study conducted by foreign colleagues revealed positive correlations between national identity and all higher order values in Chinese students (according to Sh. Schwartz): *Conservation*, *Self-Transcendence*, *Self-Enhancement*, *Openness to change* [23].

We have not found any studies on the interrelation between values and global identity over the past five years. At the same time, the global identity is known to be closely associated with such fundamental personality characteristics as low level of ethnocentrism, authoritarianism and social domination; high level of intercultural competence, friendliness, trust in people; personal belief in benevolence and meaningfulness of the world; existence of moral stance [11; 26; 27]. In turn, the absence of authoritarianism and ethnocentrism, the presence of a high level of intercultural competence include such features as openness, interest, tolerance to the new, different, dissimilar, which are positively related to the *Openness to change* values. And the features like high friendliness and high consciousness are positively related to caring for people and nature values or the *Self-Transcendent* values [1]. According to other studies, global worldview includes such components as cosmopolitanism, flexibility, depth and critical thinking [25], ability to communicate effective-

ly, positive attitude to globalization changes and ability to adapt rapidly to them [30].

Consequently, the availability of scientific data on the ambiguous and contradictory nature of the relations between individual values and ethnic and civil identities on the one hand, and the lack of data regarding their direct relationships with global identity on the other hand, mainstream the issue of the need to consider motivation and value-related determination of ethnic, civic and global identities in early adulthood or high school age as the most sensitive period to self-determine in society and to identify themselves with different social groups.

The research objective is to determine the nature of the interrelation between individual values and ethnic, civic and global identities among Russian high school students from different country's regions.

Our focus was on Russian high school students residing in the central (Smolensk and Moscow) and far eastern (Khabarovsk) regions of Russia with a high (more than 90%) share of Russian population [14]. The selection of these cities was also specified by possible distinctions in value priorities among residents, related to the geographical location of the cities and the orientation of the residents towards so-called «western» (proximity of Smolensk to European countries) or «eastern» (proximity of Khabarovsk to China and Japan) values, as well as closeness (Smolensk) or remoteness (Khabarovsk) from the capital and the largest metropolis (Moscow) [3, 6, 13]. Another value distinction line, according to the inter-generational value change theory [24], can be related to the socio-economic particular features in the regions studied by us [12]. In 2023, therefore, the Smolensk region was the least favorable ranking 51st, while the Khabarovsk region — 31st and the Moscow region — 1st in the Quality of Living among Russian regions [15]. However, it is quite difficult to provide

for some possible distinctions in the nature of the relation between individual values and ethnic, civic and global identities in Russian high school students, the- residents from the central and far-eastern regions of the country, but the availability of such distinctions has been suggested in the research data confirming the interregional diversity of value-related priorities in Russian youngsters [8; 19]. We have raised a research question: are there universal and specific interrelations between individual values and ethnic, civic and global identities in Russian students from Moscow, Smolensk and Khabarovsk?

Sampling, procedure and research methods

The study involved 484 Russian high school students, Russian citizens, aged 15 to 18 who identified themselves as Russians. The sample of the central region included 155 students from Moscow ($M = 16$, $SD = 0.79$, 54% females) and 156 high schoolers from Smolensk ($M = 16$, $SD = 0.49$, 63% females). 173 students from Khabarovsk ($M = 16.8$, $SD = 0.71$, 66% females) constituted the far east region sample from.

Between May and December 2023, the socio-psychological survey using anketolog.ru online platforms was held in person at secondary comprehensive schools of Smolensk, Moscow, Khabarovsk.

Measuring techniques. To identify ethnic, civil and global identities we used the extended and modified «Identification with humanity» (IWAH) technique by S. McFarland [27] and adapted by T.A. Nestik [11], comprising 9 questions with 5 answers given per one question, like a five-point Likert-type scale, to reflect respondents' attitude 1) to people of their ethnicity, 2) to citizens of Russia and 3) to people living on our planet. (Example of a statement: how much do you think there is in common between you and these groups of people? Answer options: 1 — absolutely

nothing in common, 2 — little in common, 3 — something in common, 4 — quite a lot in common, 5 — very much in common»). Cronbach's Alpha coefficients for each scale are presented in Table 1.

Individual values were measured using the adapted on the Russian sample and updated Sh. Schwartz «Portrait Value Questionnaire» (PVQ-RR) [29] of 57 statements, all of which had to be rated on a scale of 1 to 6 depending on the similarity degree between the person described and the respondent [18].

The control variables used in the research were age, sex and family income level of the respondents' families, which was determined according to the scale: 1 — at present my family is experiencing economic poverty; 2 — my family is having money only for the most basic needs now; 3 — at the moment my family is not experiencing economic poverty, we can afford a lot; 4 — the current family income affords me to spend it to the fullest.

Data processing and analysis was performed with the IBM SPSS Statistics 23 statistical package. Descriptive statistics methods, regression analysis were applied. The data verification of distribution normality was carried out by means of the Kolmogorov-Smirnov test. Ethnic, civic and global identities served as dependent variables in regression analysis. 10 basic individual values functioned as predictors.

Study results

The data verification of distribution normality by means of the Kolmogorov-Smirnov criterion (Lilliefors significance correction) proved their conformity with the distribution normality (at the 0.05 significance level) in all three samples estimated.

Descriptive statistics according to the study results are presented in Table 1.

Hierarchical regression analysis with control for main socio-demographic variables was applied to analyze the interrelations between ethnic, civic and global identities and individ-

Table 1

**Mean values, standard deviations and scale consistency (Cronbach's Alpha)
for the estimated main variables in Russian high school students from Smolensk (N = 156),
Khabarovsk (N = 173) and Moscow (N = 155)**

Scales	Smolensk			Khabarovsk			Moscow		
	M	SD	Cronbach's Alpha	M	SD	Cronbach's Alpha	M	SD	Cronbach's Alpha
	Individual Values (acc. to Sh. Swarts) (min = 1, max = 6)								
Stimulation	4,26	0,81	0,80	4,13	1,08	0,72	4,13	1,01	0,81
Hedonism	5,10	0,2	0,75	4,93	0,92	0,71	4,98	0,83	0,84
Achievement	4,95	0,78	0,77	4,77	1,05	0,81	4,78	0,97	0,81
Tradition	3,64	1,28	0,72	<i>3,04</i>	1,35	0,84	3,57	1,44	0,82
Self-Direction	5,17	0,55	0,71	<i>5,04</i>	0,66	0,83	5,04	0,69	0,81
Power	3,60	1,04	0,81	<i>3,49</i>	1,18	0,83	3,53	1,07	0,79
Security	4,88	0,74	0,84	4,74	0,75	0,81	4,68	0,83	0,82
Conformism	4,30	0,79	0,86	4,07	0,93	0,79	4,07	0,91	0,72
Universalism	4,53	0,78	0,80	4,12	0,82	0,72	<i>4,11</i>	0,9	0,74
Benevolence	5,33	0,56	0,81	5,15	0,71	0,75	<i>5,11</i>	0,82	0,81
Types of social identity (min = 1, max = 5)									
Ethnic identity	3,46	0,88	0,85	<i>3,23</i>	0,97	0,81	3,42	0,9	0,76
Civic identity	3,6	0,86	0,80	<i>3,39</i>	0,91	0,77	3,54	0,91	0,71
Global identity	3,23	0,83	0,76	<i>2,91</i>	0,99	0,82	3,14	0,99	0,72

Note: each estimated characteristic obtained from high school students of the three regions is emphasized in bold — for highest mean values, (in italics — for lowest ones).

ual values. As the first step, the contribution estimate of socio-demographic high schoolers' characteristics (sex, age, family financial situation) to the variance of the three types of identities was done, and the next step — the values contribution estimate.

No significant correlations between the three types of identity and the respondents' family income has been revealed (table. 2). The age of Moscow and Khabarovsk students is not related to dependent variables either. But on the other hand, for a bit older Russian students from Smolensk, there has been a more pronounced identification with Russian ethnicity representatives ($\beta=0.20$, $p<0.01$) and citizens of their own country ($\beta=0.20$, $p<0.01$). The ethnic ($\beta=-0.28$, $p<0.000$) and civic ($\beta=-0.21$, $p<0.01$) identities in Khabarovsk

male students are more pronounced than in females, meanwhile Smolensk high school students demonstrate the similar dependence in respect of ethnic identity ($\beta=-0.18$, $p<0.05$) only. Ethnic ($\beta=-0.16$, $p<0.05$) and civic ($\beta=-0.19$, $p<0.01$) identities are pronounced to a larger extent in Moscow male students than in female ones.

The positive correlation between ethnic identity and the *Tradition* value has been recognized with all (Smolensk, Khabarovsk, Moscow) high school students. Furthermore, ethnic identity is positively related to the *Security* and *Conformism* values in the Smolensk citizens, negatively — to the *Power* value with the Khabarovsk group, and positively — to the *Achievement* and *Universalism* values among the Moscow students.

Table 2

Hierarchical regression analysis of the relations between ethnic, civic and global identities in Smolensk (N = 156), Khabarovsk (N = 173) and Moscow (N = 155) high school students and their individual values when controlling for socio-demographic variables

Predictors	Dependent variables								
	Ethnic identity			Civic identity			Global identity		
	C	X	M	C	X	M	C	X	M
Age	0,20**	0,03	0,10	0,20**	0,01	0,08	0,1	0,002	0,01
Sex 1 — m, 2 — f	-0,18*	-0,28***	-0,16*	-0,12	-0,21**	-0,19**	0,11	-0,06	-0,003
Family income	-0,06	0,02	0,04	-0,03	-0,02	0,01	-0,03	0,02	-0,03
Values (acc. to Sh. Swarts)									
Stimulation	0,13	-0,08	0,08	0,08	-0,07	0,10	-0,02	-0,13	0,12
Hedonism	0,01	-0,05	-0,07	0,05	0,03	-0,05	0,04	-0,08	-0,04
Achievement	-0,07	0,14	0,20*	-0,06	0,17	0,19	-0,16	0,07	0,25**
Tradition	0,21*	0,35***	0,30**	0,25**	0,23**	0,15	0,07	0,08	-0,05
Self-Direction	-0,12	0,14	-0,19	-0,14	0,13	-0,17	0,09	0,20**	-0,15
Power	0,08	-0,18*	-0,18	0,10	-0,24**	-0,16	0,11	-0,06	-0,15
Security	0,34***	0,11	0,16	0,28**	0,12	0,24*	0,28**	-0,19	-0,15
Conformism	0,23*	-0,04	-0,16	0,33**	0,05	-0,06	0,10	0,04	0,17
Universalism	0,08	0,19	0,20*	0,04	0,14	0,25*	0,28*	0,37**	0,42***
Benevolence	-0,09	-0,10	0,11	-0,12	-0,13	-0,03	-0,10	-0,08	-0,03
R ²	0,41***	0,31***	0,31***	0,36***	0,27***	0,21***	0,18***	0,17***	0,22***
F	7,43	6,97	4,85	7,71	4,55	4,15	3,64	3,71	4,40
ΔR ²	0,36	0,30	0,28	0,38	0,24	0,25	0,21	0,23	0,29

Note: the symbols for column headings: «S» — Smolensk citizens, «Kh» — Khabarovsk citizens and «M» — students from Moscow; the table shows the second step regression model values; presents standardized regression coefficients (β); *p < 0.05, **p < 0.01, ***p < 0.001; R2 (adjusted) is the proportion of explained variance of a dependent variable; R2 changes are significant at p < 0.001 in all models; F is Fisher's statistics. VIF — the multicollinearity coefficients for all the model regressors have acceptable values (in the range from 1.04 to 1.63). The tables displaying the correlations between centered values and dependent variables are presented in the Annex.

Correlations, common to the three groups of high school students, between civic identity and individual values haven't been found. By contrast, the Smolensk group has demonstrated a similar (as with ethnic identity) pattern of the relation between civic identity and *Tradition*, *Security* and *Conformism* values. Civic identity in the Khabarovsk students is positively related to the *Tradition* value and negatively — to the *Power* value, while it is positively related to the *Security* and *Universalism* values among the Moscow students.

In the analysis of the correlations between global identity and values, it has been revealed both the positive relation between global iden-

tity and the *Universalism* value, common to all high school students, and regionally specific relationships: positive correlations between global identity and the *Security* value in the Smolensk group, the *Self-Direction* value — the Khabarovsk group, and the *Achievement* value in the Moscow group.

Discussion of the results

When analyzing the relations between individual values and ethnic identity, it has been discovered that the *Tradition* value (a component of the *Conservation* meta-value) serves as that the common predictor of ethnic identity expressiveness in all high school

students, regardless of their residence region, i.e. the Russian students' expressed ethnic identity is associated with the acceptance and preservation of traditional norms, views, rules, life models. Similar results were obtained on the base of other Russian samples [7; 16]. This effect was most pronounced in the Smolensk students, who, along with the *Tradition* value, also specified two other values belonging to the *Conservation* meta-value as the predictors of ethnic identity expressiveness: the *Conformism* value (limiting the motives and actions that cause harm to other people or disturb social harmony) and the *Security* value (stability, harmony of society, immediate environment and individuals themselves). Interestingly, that the Smolensk students proved the *Conservation* values to be also a predictor of the civic (Rossiskaya) identity, which is consistent with the study data obtained by Z.H. Lepshokova and confirms that the confluence of ethnic (Russian) and civil (Rossiskaya) identities into a single ethnic-national identity is characteristic of Russian ethnic group representatives as the ethnic majority of the Russian Federation [7].

With the Khabarovsk students, ethnic and civic identities are also associated with the same value predictors — the positively significant value of *Tradition* (as part of the *Conservation* meta-value) and the negatively marked value of *Power* (as part of the *Self-Determination* meta-value). In other words, if the focus on the tradition preservation and the society stability maintenance values are a factor of identification the Khabarovsk students with the Russian ethnic group and citizens of Russia, then the orientation towards achieving a higher status, prestige, influence other people is not such a factor. Our data obtained from the Russian school students representing the ethnic majority in the Russian regions studied, are generally consistent with the data gained through sampling among Jewish adolescents, the Israeli ethnic major-

ity, but differ considerably from those of Arab adolescents belonging to the ethnic minority in Israel [20]. Considering that today's societies, including the Russian one, have become more multicultural, the studying of Russian school students who make up ethnic minorities in the RF regions is much required.

For high school students from Moscow, as well as for those from Smolensk and Khabarovsk, the *Conservation* values serve as the predictors of ethnic (the *Tradition* value) and civic (the *Security* value) identities. However, unlike the Smolensk and Khabarovsk students, Moscow high school students name the *Universalism* value (comprehension and maintaining the welfare of all people, caring for nature) which is part of the *Self-Transcendent* meta-value, as a predictor of ethnic, civic, and global identities. In other words, the consciousness of Moscow students with a pronounced focus on concern for the welfare of others manifests itself in identification both with Russians and with citizens of Russia, and with humanity on the whole. Perhaps this is because a metropolitan person's relationship with others is largely determined by the notions of equality and freedom for every human being [9].

The presence of the correlations between global identity and the *Universalism* value, a part of the *Self-Transcendence* higher-order value dimension (evolving beyond one's own ego), confirms the thesis of several researchers that identification with humanity is directly related to the individual's level of moral maturity [26]. And yet, our study has revealed a number of regionally specific positive relations between global identity and the values included in the meta-values that are (according to Sh. Schwartz) in opposition to each other: the *Security* value (the *Conservation* meta-value) in the Smolensk high school students, the *Self-Direction* value (the *Openness to change* meta-value) in the Khabarovsk high school students, the *Achievement* value (the *Self-Enhancement* meta-value) among the

Moscow high school students. The fact that the *Security* value serves as a global identity determinant (as well as ethnic and civil) with the Smolensk high school students may be explained by their residency proximity to the RF western borders, as well as by recognition that the implementation of safety, stability and harmony values for a society, family, human being, especially in the current social and political conditions, depends on many people. The *Security* value relevance, therefore, may contribute to increased identification of Smolensk high school students with larger social group representatives: an ethnic group, country citizens, humanity in general. The *Self-Direction* value significance in the sense of being the whole humanity representative in the Khabarovsk high school students, in our opinion, can be explained as follows. On the one hand, Russia's eastward reorientation in recent years, promotion of various cooperation and collaboration forms with the Far East and China have provided opportunities for the population of Khabarovsk Krai to get extensively involved in globalization processes and global identity development among its inhabitants [3; 6]. On the other hand, China, densely populated, economically advanced and neighboring with sparsely populated territory of Khabarovsk Krai, is perceived as a threat to the Russian security and «Russianness» [13], which in turn probably triggers the needs for autonomy, independence, and self-reliance in the Russian-China frontiersmen to be mainstreamed.

The *Achievement* values have contributed considerably to the identification of the Moscow high school students with the whole humanity, which may also be stemmed from the characteristics of the socio-cultural context. Young people from Moscow, compared to those from Smolensk and Khabarovsk, have a greater potential to achieve personal success and career growth, at the global level, in particular [17]. In the capital, there are in-

comparably more international companies than in regional cities, the demand for foreign language skills is greater, opportunities for international internships are more available etc. This may be also, probably, why the focus on the *Achievement* value serves as a predictor of global identity expressiveness among the Moscow high school students.

Conclusions

1. The *Conservation* values serve as the universal predictor of ethnic identity with the Russian high school students surveyed, regardless of their residence region. In this case, the greatest contributor to ethnic identity is the *Tradition* value.

2. The *Conservation* values are the common predictors of civic identity in the Smolensk and Khabarovsk high school students. The presence of similar values, which determine the expressiveness of ethnic (Russian) and civic (Rossiyskaya) identities among the Russian high school students from Smolensk and Khabarovsk emphasizes an inherent link of identification processes with Russian ethnicity representatives and country citizens, and testifies to the ethnic and national identity unity in the Russian high school students from Smolensk and Khabarovsk.

3. Along with the *Conservation* values (the *Tradition* and the *Security* values) the significance of the *Self-Transcendence* value unit (the *Universalism* value) serves as the resource to maintain ethnic and civic identities in the Moscow high school students. And this is probably related to the fact that a metropolitan conflict-free social life is impossible without comprehension and rights and duties abundance, respectful attitude to each other.

4. The *Universalism* value (part of the *Self-Transcendence* meta-value) as a manifestation of the relevance of people welfare concern appears to be a shared predictor of global identity in the Smolensk, Khabarovsk and Moscow high school students. Namely,

evolving beyond one's ego performs a universal determinant for Russian high school students to be identified with the whole humanity.

5. In addition to the universal predictor (the *Universalism* value) the specific for each high school student group global identity predictors have been revealed: the *Security* value of security — for the Smolensk high school students, the *Self-Direction* value — for the Khabarovsk students, and the *Achievement* value — for the Moscow group. In other words, the global identity resource is represented by different values belonging, according to Sh. Schwartz, to various meta-value units, sometimes being in opposition to each other. Thus, we can speak of Russian high schoolers' global identity as a phenomenon determined both by the universal factors and unique to each region ones, specified by their particular socio-cultural context.

Limitations and prospects of the study.

First, the questionnaire did not exclude the likelihood of social desirability in the respondents' answers. Second, the study participants are residents of the three regions and ethnic Russian representatives, that limits the

extrapolation of results to other ethnic groups and other regions. The sampling coverage should be extended in future, as well as additional socio-demographic parameters should be included in the model (for instance, staying abroad experience, involvement in youth patriotic activities, number of friends of other nationalities, inter-ethnic contact frequency, etc.). In our view, the promising direction is for high school students to learn the substantive content of such concepts as «Russians», «citizens of Russia», «people of the world» using both quantitative and qualitative research methods.

The results obtained and the study conclusions can be actively applied by school psychologists and teachers to prepare thematic materials on the formation of moral guidelines underlying the ethnic (Russian), civic (Rossiskaya) and universal human identities. Appreciation of the value determination of ethnic, civic and universal identity formation allows us to define evidence-based approaches to structuring counseling and psycho-corrective activities with students facing difficulties in social self-determination and identification with different social groups, as well as forming a value attitude towards them.

ANNEX

Table 1

Pearson correlation coefficients between centered values and dependent variables (Smolensk sample)

	STI	HED	ACH	TRA	SEL	POW	SEC	CON	UNI	BEN	Et I	Cv I	GI I
STI	1	,336**	,113	-,187*	,318**	,229**	-,295**	-,465**	-,220**	-,192*	-,121	-,180*	-,113
HED	,336**	1	,282**	-,367**	,191*	,326**	-,156	-,523**	-,456**	,056	-,269**	-,274**	-,225**
ACH	,113	,282**	1	-,193*	,140	,406**	-,081	-,365**	-,496**	-,082	-,136	-,134	-,154
TRA	-,187*	-,367**	-,193*	1	-,356**	-,321**	,004	,226**	,176*	-,111	,300**	,333**	,105
SEL	,318**	,191*	,140	-,356**	1	,069	-,159*	-,387**	-,162*	-,042	-,259**	-,313**	-,109
POW	,229**	,326**	,406**	-,321**	,069	1	-,234**	-,500**	-,617**	-,247**	-,114	-,121	-,130
SEC	-,295**	-,156	-,081	,004	-,159*	-,234**	1	,119	,067	-,097	,289**	,268**	,262**
CON	-,465**	-,523**	-,365**	,226**	-,387**	-,500**	,119	1	,266**	-,015	,212**	,281**	,103
UNI	-,220**	-,456**	-,496**	,176*	-,162*	-,617**	,067	,266**	1	,040	,137	,117	,257**
BEN	-,192*	,056	-,082	-,111	-,042	-,247**	-,097	-,015	,040	1	-,191*	-,200*	-,149

	STI	HED	ACH	TRA	SEL	POW	SEC	CON	UNI	BEN	Et I	Cv I	GI I
Et I	-,121	-,269**	-,136	,300**	-,259**	-,114	,289**	,212**	,137	-,191*	1	,916**	,595**
Gr I	-,180*	-,274**	-,134	,333**	-,313**	-,121	,268**	,281**	,117	-,200*	,916**	1	,551**
GI I	-,113	-,225**	-,154	,105	-,109	-,130	,262**	,103	,257**	-,149	,595**	,551**	1

Designation: STI — Stimulation, HED — Hedonism, ACH — Achievement, TRA — Tradition, SEL — Self-direction, POW — Power, SEC — Security, CON — Conformism, UNI — Universalism, BEN — Benevolence, Et I — Ethnic Identity, Cv I — Civic Identity, GI I — Global Identity. * Correlation of significance at 0.05 (bilateral). **Correlation of significance at 0.01 (bilateral).

Table 2

**Pearson correlation coefficients between centered values and dependent variables
(Khabarovsk sample)**

	STI	HED	ACH	TRA	SEL	POW	SEC	CON	UNI	BEN	Et I	Cv I	GI I
STI	1	,768**	,734**	,478**	,798**	,709**	,622**	,481**	,627**	,687**	-,026	-,017	-,065
HED	,768**	1	,757**	,521**	,823**	,668**	,750**	,645**	,699**	,775**	-,060	,003	-,069
ACH	,734**	,757**	1	,514**	,777**	,729**	,726**	,576**	,606**	,719**	,022	,054	-,033
TRA	,478**	,521**	,514**	1	,595**	,403**	,683**	,691**	,740**	,703**	,334**	,258**	,166*
SEL	,798**	,823**	,777**	,595**	1	,664**	,852**	,717**	,808**	,849**	,052	,075	,042
POW	,709**	,668**	,729**	,403**	,664**	1	,596**	,416**	,484**	,544**	-,150*	-,156*	-,146
SEC	,622**	,750**	,726**	,683**	,852**	,596**	1	,816**	,825**	,855**	,121	,135	,058
CON	,481**	,645**	,576**	,691**	,717**	,416**	,816**	1	,856**	,816**	,143	,175*	,136
UNI	,627**	,699**	,606**	,740**	,808**	,484**	,825**	,856**	1	,877**	,171*	,166*	,189*
BEN	,687**	,775**	,719**	,703**	,849**	,544**	,855**	,816**	,877**	1	,098	,101	,064
Et I	-,026	-,060	,022	,334**	,052	-,150*	,121	,143	,171*	,098	1	,852**	,555**
Gr I	-,017	,003	,054	,258**	,075	-,156*	,135	,175*	,166*	,101	,852**	1	,600**
GI I	-,065	-,069	-,033	,166*	,042	-,146	,058	,136	,189*	,064	,555**	,600**	1

Designation: STI — Stimulation, HED — Hedonism, ACH — Achievement, TRA — Tradition, SEL — Self-direction, POW — Power, SEC — Security, CON — Conformism, UNI — Universalism, BEN — Benevolence, Et I — Ethnic Identity, Cv I — Civic Identity, GI I — Global Identity. * Correlation of significance at 0.05 (bilateral). ** Correlation of significance at 0.01 (bilateral).

Table 3

**Pearson correlation coefficients between centered values and dependent variables
(Moscow sample)**

	STI	HED	ACH	TRA	SEL	POW	SEC	CON	UNI	BEN	Et I	Cv I	GI I
STI	1	,139	,066	-,119	,416**	,195*	-,284**	-,372**	-,168*	-,156	-,095	-,100	-,032
HED	,139	1	,133	-,236**	-,030	,211**	-,146	-,262**	-,213**	-,029	-,212**	-,207**	-,160*
ACH	,066	,133	1	-,227**	,145	,335**	,069	-,386**	-,348**	-,056	,018	-,009	-,024
TRA	-,119	-,236**	-,227**	1	-,352**	-,301**	,067	,166*	,044	-,128	,371**	,299**	,081
SEL	,416**	-,030	,145	-,352**	1	-,017	-,092	-,312**	-,195*	-,009	-,259**	-,224**	-,145
POW	,195*	,211**	,335**	-,301**	-,017	1	,040	-,517**	-,528**	-,338**	-,191*	-,242**	-,321**
SEC	-,284**	-,146	,069	,067	-,092	,040	1	-,074	-,157	-,218**	,116	,169*	-,161*
CON	-,372**	-,262**	-,386**	,166*	-,312**	-,517**	-,074	1	,195*	,100	,015	,092	,214**
UNI	-,168*	-,213**	-,348**	,044	-,195*	-,528**	-,157	,195*	1	,012	,145	,204*	,395**
BEN	-,156	-,029	-,056	-,128	-,009	-,338**	-,218**	,100	,012	1	,021	-,043	,036
Et I	-,095	-,212**	,018	,371**	-,259**	-,191*	,116	,015	,145	,021	1	,856**	,545**
Gr I	-,100	-,207**	-,009	,299**	-,224**	-,242**	,169*	,092	,204*	-,043	,856**	1	,611**

	STI	HED	ACH	TRA	SEL	POW	SEC	CON	UNI	BEN	Et I	Cv I	GI I
GI I	-,032	-,160*	-,024	,081	-,145	-,321**	-,161*	,214**	,395**	,036	,545**	,611**	1

Designation: STI — Stimulation, HED — Hedonism, ACH — Achievement, TRA — Tradition, SEL — Self-direction, POW — Power, SEC — Security, CON — Conformism, UNI — Universalism, BEN — Benevolence, Et I — Ethnic Identity, Cv I — Civic Identity, GI I — Global Identity. * Correlation of significance at 0.05 (bilateral). ** Correlation of significance at 0.01 (bilateral).

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Development and Validation of the School Adjustment Scale

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The results of earlier studies indicate that school maladaptation is associated with a number of negative consequences, including poor academic performance, increased anxiety and unpopularity of the child among peers. However, reliable instruments for timely identification of school adaptation difficulties are not yet available in the Russian-speaking space; the use of foreign instruments is not possible due to cultural differences and peculiarities of the organisation of the educational process in different countries. This study highlights the development of a school adjustment questionnaire, including determining its optimal structure and assessing the feasibility of relying on self-reported information about school adjustment. Two identical versions of the questionnaire were developed, one for children and one for teachers. Sixteen teachers and 232 first-grade pupils participated in the study. Through a combination of exploratory and confirmatory factor analysis, a four-factor model of the teacher questionnaire was found to have the highest goodness of fit, including scales assessing cognitive activity, behaviour regulation, social inclusion and psycho-emotional stress. Data from children themselves did not prove to be reliable enough for differentiated assessment of aspects of school adaptation. The study has drawn the necessary conclusions for the further development of an instrument to assess school adaptation of children in Russia.

Keywords: school adaptation; adaptive stress; tool development; psychometric assessment.

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Разработка инструмента оценки школьной адаптации: оптимальная структура и возможность опоры на субъективные переживания детей

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Авторы статьи отмечают, что в русскоязычном пространстве еще не представлено надежных инструментов для своевременного выявления трудностей школьной адаптации, в то время как применение зарубежных не представляется возможным ввиду культурных различий и особенностей организации учебного процесса в разных странах. В статье освещаются основные этапы разработки русскоязычного инструмента для оценки школьной адаптации, включая определение его оптимальной структуры и оценку возможности опоры на информацию о школьной адаптации, предоставленную самими детьми. Описываются результаты психометрического тестирования версий предлагаемого инструмента (для детей и учителей). Участниками исследования были 16 учителей и 232 ученика первых классов. Показано, что результаты проведенного исследования с сочетанием эксплораторного и конфирматорного факторного анализа дают возможность говорить о наиболее высокой пригодности четырехфакторной модели опросника для учителей. В нее вошли шкалы, оценивающие познавательную активность, регуляцию поведения, социальную включенность и психоземциональное напряжение учеников. Отмечается, что данные, полученные от первоклассников, следует признать недостаточно надежными для дифференцированной оценки аспектов школьной адаптации. Делается вывод о необходимости дальнейшей доработки версии инструмента для учителей в соответствии с выявленной оптимальной четырехфакторной моделью.

Ключевые слова: школьная адаптация; адаптационный стресс; разработка инструмента; психометрическая оценка.

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Introduction

The transition from kindergarten to school is carried out by children at different ages, depending on the specifics of the country's education system [7; 18]. The importance of this period in a child's life is emphasised by researchers all over the world [15; 28; 30]. The beginning of school education is associated with a significant restructuring of activities and daily routines [31], the adaptive response to these changes is experienced over a long period of time and is associated with psychological and physiological stress [17; 33]. Despite the significance of the problem, instruments for early identification of school adaptation problems that would successfully pass the assessment of psychometric properties are currently lacking in the Russian-language literature.

School adaptation is defined as the process of adjustment of a child to the role of a student and to various aspects of the school environment [9; 28; 31]. Its opposite is school maladaptation, which is associated with disruption of the educational process and social integration of the child [1; 19; 25; 26]. Difficulties in school adaptation can lead to a decrease in independence and learning motivation [10; 23]. The complexity of the school programme with unformed basic subject ideas may leave no opportunity to 'catch up' with peers without the intervention of specialists [3; 14; 29]. It is important to note that the formed components of psychological school readiness are not a guarantee of successful school adaptation [7; 8]. In fact, the transition from kindergarten to school is ambiguously related to school readiness: in a new social situation, children may experience difficulties in applying previously acquired skills. For this reason, it is not possible to fully rely on the

results of diagnostics of children's psychological readiness for school education in predicting the success of school adaptation [11].

The existing methods are mainly of the questionnaire type and involve obtaining data on school adjustment from parents, teachers, and, less frequently, children themselves. The most commonly used English-language instruments with relatively high validation and reliability are the School Liking and Avoidance Questionnaire (SLAQ) [24], the Teacher Rating Scale of School Adjustment (TRSSA) [13], and the Teacher Rating Scale of School Adjustment Short Form (TRSSA-SF) [12]. They assess emotional and social indicators through the child's visible behavioural displays in the classroom. In the first of them (SLAQ), the developers focused only on the child's emotional acceptance of school. Over time, the focus shifted to the child's behaviour in the classroom (TRSS). In the most recent instruments, developers have all but given up the attempts to assess the child's emotional attitude towards school and focus on the child's inclusion in the educational process (TRSSA-SF).

In the period of transition to schooling, psychological support is required to improve children's adaptive abilities and provide the necessary support [8; 20; 32]. However, the use of foreign methods is impossible due to cultural differences and peculiarities of the organisation of the educational process in different countries. The authors set the goal of the study to search for the optimal structure and development of an instrument for assessing school adaptation of primary school students.

Validation for the development of a school adjustment tool

The questionnaire developed to assess school adaptation was tested in our study. It

included items describing children's behavioural and emotional displays during lessons and breaks, related to cognitive activity, submission of behaviour to existing rules, and interaction with teachers and other children. The items were formulated based on the theoretical principles of understanding school adaptation and its components from the perspective of cultural-historical and activity-based approaches, taking into account the specifics of school education in our country [7; 10].

From the point of view of the cultural-historical approach, the transition from kindergarten to school falls during the period of differentiation of the inner and outer sides of the child's personality [4]. By the age of 7, a stable self-esteem begins to form, and at the same time there is a loss of children's spontaneity. Entering the school environment, the child faces not only new obligations and responsibilities in relation to learning activities but also new norms and values. Therefore, successful adaptation requires, on the one hand, understanding the structure of school life, rules, and requirements and, on the other hand, mastering the cultural means that will allow one to function successfully in the new environment and cope with the tasks [5]. Social interaction acquires a certain specificity. Communication becomes meaningful, and cooperation with classmates and teachers is now necessary to cope with learning tasks and feel more comfortable in the new social environment. The activity theory views school adaptation from a slightly different perspective. School learning in the framework of this theory is considered not only as the acquisition of knowledge or skills but as a complex process built on a close interweaving of motivation, goals, and learning tools available to the child [6]. The key point is the transition from play activity, which dominates in preschool age, to learning activity, which will become the leading one in this period of

development. During this period, the ability to concentrate, logical thinking, independent learning, and teamwork skills are developed. As the child matures, he or she also begins to recognise how his or her activities fit into a broader social and cultural context [6].

Like many other aspects of child development, adaptation to schooling is culturally specific [27]. When developing the instrument in this study, the frontal learning format [16] and big class sizes associated with the peak birth rate between 2014 and 2016 [21] were taken into account. During this period, the birth rate in Russia approached the 2 million per year mark, which has not happened since 1989. Therefore, up to 2024 there is a systematic exceeding of the recommended number of students in primary school classes. In the described context, a first-grader is expected to follow the rules perfectly (e.g., no noise, no talking in class, no distractions, raising the hand, sitting up straight, not bending low when writing) and to control emotions. From a psychological point of view, this should also include aspects related to children's emotional comfort. And not only during lessons, but also during breaks, when children are relaxing and socialising with each other. After all, relations with peers are important for emotional comfort and children's adjustment to school [22].

Present study

The study conducted by the authors tested several models of the School Adjustment Questionnaire and analysed the psychometric characteristics of the data collected from students and teachers. The empirical data were expected to have a three-factor (Cognitive Activity, Behaviour Regulation, Social Interaction) or four-factor structure (Cognitive Activity, Behaviour Regulation, Social Inclusion, Psycho-emotional Stress) rather than a one-factor structure.

The main research question was whether it made sense to assess psycho-emotional strain characteristics separately in addition to cognitive activity, behaviour regulation, and social interaction (which together correspond to the three-factor model) when studying school adjustment. An additional research question concerned the feasibility of relying on self-reported information about school adjustment. An additional research question concerned the possibility of relying on data presented by students themselves. Can the data obtained from first-graders using the verbal diagnostic method be considered reliable? Or the level of development of self-knowledge, reflection, and speech cannot yet ensure their reliability.

Programme and methods of the study

Participants

The study participants were 232 first-grade students from 5 public schools in Moscow and their teachers ($n=16$). The children's age at the time of the study averaged 7 years 3 months ($M=88.7$ months, $SD=6.75$ months). The ratio of children by gender was close to equal (53% girls).

Methods of the study

School adjustment

The study described tested a questionnaire developed by the authors to assess the school adjustment of primary school students. For exploratory research purposes, it was administered in two versions (for teachers and children). Both versions include 16 statements, each relating to the child's behavioural and emotional displays at school. The items of both versions were administered in the same sequence with minimal differences in wording.

Teachers were asked to complete protocols for each child. The instruction was formu-

lated as follows: 'This questionnaire is aimed at assessing the peculiarities of first-graders' adaptation to school learning. Before answering the questions, please remember how your child behaves during lessons and breaks. It is important that your assessment should be based on a general picture formed on the basis of many situations rather than on a single case of observation. The assessment is made on a 4-point scale. For each statement, choose one of the numbers depending on how well the statement corresponds to the child's behaviour at school: 0 = absolutely not typical behaviour; 1 = rather not typical behaviour, but sometimes occurs; 2 = rather typical behaviour, quite often occurs; 3 = typical behaviour, always or almost always occurs' (see Appendix).

Children were invited to a separate, quiet, bright room in the school, where they were asked to answer questions using visual stimulus material (a schematic picture of a staircase with several steps and an attractive figure) in a one-to-one conversation format. The instructions to the children were as follows: 'Think back to your typical day at school. I'm going to read you different statements, and for each one, put the figure on the step that best describes you at school. These are the steps: 0 = you never do this; 1 = you sometimes do this; 2 = you often do this; 3 = you always or almost always do this'.

Data processing

Statistical analyses were conducted using the jamovi project 2.2 computer software in several stages. First, descriptive statistics were prepared and reviewed to examine the structure of the data. Then the consistency scores of teacher and child data were calculated. The internal consistency of the scales (Cronbach's alpha) in the two versions of the methodology was assessed. Validation of the questionnaire structure was fulfilled by a combination of confirmatory and exploratory factor analysis.

Results

Descriptive statistics and consistency of data

Descriptive statistics and the results of analysing the consistency across the items and scales of the questionnaire using Cohen's kappa coefficient are presented in Table 1. This coefficient reflects a measure of the consistency of responses within each teacher-child pair, ranging from 0 to 1.

The most consistent are the data related to the learning process: the child can easily cope with tasks at the lessons; the child copes well with independent tasks; the child keeps up with the teacher's explanations and instructions; the child actively participates at the lessons, raises his/her hand, and responds; the child has a good understand-

ing of what the teacher is explaining. The statements are listed in descending order of Cohen's kappa coefficient of consistency (0.343 to 0.231). The lowest consistency was found for items related to emotional experiences and the child's demand in the children's group. Children were more likely to report experiencing joy from success in their studies, desire to learn something new, and being alone during school breaks than their teachers. Conversely, children were less likely to report feeling embarrassed when approaching the teacher or speaking in front of the class, as well as their own ability to hold back negative emotions, compared to teacher ratings.

The most expressed positive characteristics of school adjustment based on

Table 1

Descriptive statistics and measures of consistency between teacher and child responses across all questionnaire items

	Teachers		Students		Cohen's kappa (%)
	M	SD	M	SD	
The child is interested in learning new things	2.49	0.623	2.49	0.797	0.124 (50.3)
The child actively participates at the lessons, raises his/her hand, responds	2.08	0.950	1.98	0.954	0.242 (40.1)
The child can easily cope with tasks at the lessons	2.12	0.779	2.04	0.843	0.343 (44.0)
The child is happy when he/she does well in his/her studies	2.58	0.639	2.87	0.393	0.023 (61.2)
The child has a good understanding of what the teacher is explaining	2.29	0.796	2.34	0.757	0.231 (45.9)
The child breaks the rules of behaviour at school*	0.71	0.930	0.45	0.695	0.164 (54.1)
The child calls other children names or may push, hit*	0.49	0.822	0.29	0.590	0.225 (61.9)
The child handles school supplies responsibly	2.23	0.839	2.59	0.756	0.168 (44.9)
The child is able to contain negative emotions (e.g. resentment, anger)	2.30	0.849	1.69	1.099	0.026 (28.8)
The child keeps up with the teacher's explanations and instructions	2.19	0.825	1.94	0.956	0.253 (37.4)
The child copes well with independent tasks at the lessons	2.15	0.828	2.25	0.818	0.282 (36.1)
Other children want to socialise with the child	2.42	0.712	1.93	0.854	0.147 (34.0)
The child is left all alone during the school break*	0.43	0.804	0.55	0.805	0.029 (44.1)
The child is shy or anxious when answering in front of the class *	1.24	0.987	1.08	1.082	0.067 (21.1)
The child is embarrassed to approach the teacher if he/she does not understand something *	0.97	1.017	0.78	1.089	0.049 (35.4)
The child is eager to socialise with classmates	2.60	0.628	2.63	0.703	0.152 (50.3)

Note: M — mean; SD — standard deviation; Cohen's kappa (%) — Cohen's kappa coefficient with percentage agreement (in parentheses); responses to items marked with "*" were assessed on an inverse scale.

teachers' observations are the desire to communicate with classmates and the joy of success in learning. Fear to showing activity and initiative at the lessons, difficulties in performing independent tasks, and shyness when answering in front of the class are the most frequent difficulties. Children's answers point to such positive aspects of school adjustment as the joy of learning success and good behaviour. Among difficulties, unpopularity among peers, shyness when answering in front of the class and inability to restrain emotions were most frequently mentioned in children's answers.

Testing the structure of the teachers' version of the questionnaire

Factor structure

Exploratory factor analysis (maximum likelihood factorisation method in combination with Oblimin rotation) was applied to examine the actual structure of the data.

The suitability of the data for this analysis was tested using the Kaiser-Meyer-Olkin (KMO) test. The overall KMO was 0.880, which is higher than the recommended value (0.6) and indicates that the variables are not multicollinear. Bartlett's test of sphericity was significant ($\chi^2(120)=2299, p<0.001$). The number of factors was determined using parallel analysis. The minimum factor loading was established with a value of 0.4. As a result, four factors were identified (see Table 2). They correspond almost completely to the assumed four-factor structure, except for a few discrepancies. Namely, the items 'The child is happy when he/she does well in his/her studies' and 'The child handles school supplies responsibly' were not included in any of the factors. The item 'Child actively participates at the lessons' loaded two factors: 'Cognitive activity' with a loading factor of 0.416 and 'Social inclusion' with a slightly lower loading factor of 0.406.

Table 2

Factor structure of data obtained using the teacher version of the questionnaire

	1	2	3	4	Uniqueness
The child copes well with independent tasks at the lessons	0.947				0.113
The child has a good understanding of what the teacher is explaining	0.945				0.126
The child keeps up with the teacher's explanations and instructions	0.910				0.179
The child can easily cope with tasks at the lessons	0.887				0.211
The child is interested in learning new things	0.466				0.434
The child actively participates at the lessons, raises his/her hand, responds	0.416		0.406		0.331
The child calls other children names or may push, hit		0.871			0.310
The child breaks the rules of behaviour at school		0.793			0.333
The child is able to contain negative emotions (e.g. resentment, anger)		-0.560			0.573
The child handles school supplies responsibly					0.606
The child is eager to socialise with classmates			0.867		0.303
Other children want to socialise with the child			0.663		0.423
The child is left all alone during the school break			-0.440		0.771
The child is happy when he/she does well in his/her studies					0.669

	1	2	3	4	Uniqueness
The child is embarrassed to approach the teacher if he/she does not understand something				0.863	0.247
The child is shy or anxious when answering in front of the class				0.826	0.320

Internal reliability of scales and correlations between them

The internal consistency of the questionnaire scales was assessed by calculating Cronbach's alpha. The overall internal consistency is characterised by a high value (Cronbach's alpha=0.881). Testing of the three-factor structure of the questionnaire was based on the assumption that the items of the instrument version form three scales capable of providing a differentiated assessment of the following aspects of school adjustment: cognitive activity, behaviour regulation, and social interaction. As a result of testing internal reliability by calculating Cronbach's alpha, it was shown that all three scales in the teacher version of the instrument have high or acceptable internal reliability values: Cognitive activity — Cronbach's alpha=0.869, Behaviour regulation — Cronbach's alpha=0.768, social interaction — Cronbach's alpha=0.738.

The four-factor structure was tested in order to check whether it is likely that the process of school adaptation, in addition to such characteristics as cognitive activity, behaviour regulation, and social interaction (which together correspond to the three-factor model described above), should be described separately by the characteristics of the child's psycho-emotional stress. In this case, the scales 'Cognitive activity' and 'Behaviour regulation' remain unchanged, and their internal reliability indicators are identical to those obtained when testing the three-factor version of the instrument. And the third scale ('Social Interaction') is subdivided into two scales: 'Social Inclusion' and 'Psychoemotional Stress' in order to provide a more differentiated description of the first grader's social and emotional experience.

In the teacher version, the internal reliability of these two scales is characterised as close to acceptable ('Social Inclusion' — Cronbach's alpha=0.669) and high ('Psychoemotional Stress' — Cronbach's alpha=0.809).

The relationship between the scales in all the models considered was assessed using correlation analysis (Pearson's correlation coefficient). In the three-factor model, all scales were statistically significantly related to each other with a strength of association from 0.264 to 0.575 ($p < 0.001$). In the four-factor model, all scales were statistically significantly related to each other with the strength of association from 0.084 to 0.735 ($p < 0.001$), except for the scale 'Social Inclusion', which was not significantly related to the scale 'Behaviour Regulation' ($p > 0.05$).

Consistency with the theoretical model

Confirmatory factor analysis was applied to test the one-, three-, and four-factor structure of the questionnaire. A total of three models were constructed (see Table 3). In accordance with the recommendations of Hu & Bentler (1999), their accuracy was assessed by the following indicators: comparative fit index (CFI) > 0.90, standardised root mean square residual (SRMSR) ≤ 0.08, root mean square error of approximation (RMSEA) < 0.08. The goodness of fit of the four models is summarised in Table 3.

The obtained results indicate that the structure of the data obtained during the teachers' questionnaire has the greatest correspondence with the four-factor model, which includes the following scales: 'Cognitive activity,' 'Behaviour regulation,' 'Social inclusion,' 'Psycho-emotional tension.'

Table 3

Indicators of goodness of fit of estimated questionnaire models for data obtained using the teacher version of the questionnaire

Model	χ^2	df	CFI	SRMR	RMSEA (90% CI)
Four-factor model	529***	98	0.809	0.104	0.140 (0.128 — 0.152)
Three-factor model	543***	87	0.784	0.122	0.150 (0.138 — 0.162)
One-factor model	787***	104	0.699	0.125	0.168 (0.157 — 0.179)

Note: ** — $p < 0,01$, *** — $p < 0,001$.

The last step was to evaluate the suitability of the four-factor model with three changes dictated by the loadings of the exploratorily identified factors (see Table 2). Two statements that were not included in any of the factors were removed from the tested model. The item that loaded two factors was taken into account in the model as an item of the Cognitive Activity scale according to the principle of the highest factor loading. In this case, the model is characterised by high accuracy: CFI=0.923, SRMSR=0.073, RMSEA=0.097 (0.083-0.112).

Thus, the four-factor model of the questionnaire with three edits made on the basis of the actual factor configuration revealed by exploratory analysis should be recognised as the optimal model.

Testing the structure of the children’s version of the questionnaire

Factor structure

Exploratory factor analysis was also conducted following a similar pattern to reveal the actual structure of the data collected from the children. The data successfully passed the test of appropriateness for analysis: KMO=0.694; Bartlett’s Test of Sphericity ($2(120)=426$, $p < 0.001$). However, only two factors were identified that could not be considered close enough to any of the theoretically hypothesised questionnaire scales. The first is loaded only with items with positive connotations; the second is loaded only with negative connotations. The identified factor structure may be the result of the so-called ‘global self-esteem’

peculiar to preschool and primary school-age children. This indicates difficulties in obtaining a differentiated assessment of school adaptation when interviewing children.

Internal reliability of the scales and correlations between them

The data do not have an acceptable level of internal consistency when testing the one-factor model (Cronbach’s alpha=0.691), the three-factor model (‘Cognitive activity’ — Cronbach’s alpha=0.538, ‘Behaviour regulation’ — Cronbach’s alpha=0.233, ‘Social interaction’ — Cronbach’s alpha=0.233), and the three-factor model (‘Social interaction’ — Cronbach’s alpha=0.233), — Cronbach’s alpha=0.351) and four-factor model (‘Cognitive activity’ — Cronbach’s alpha=0.538, ‘Behaviour regulation’ — Cronbach’s alpha=0.233, ‘Social inclusion’ — Cronbach’s alpha=0.247, ‘Psycho-emotional tension’ — Cronbach’s alpha=0.382).

The intercorrelations between the scales of the children’s version of the instrument were not assessed in any of the models due to unacceptably low values of internal consistency of the scales.

Accuracy of the theoretical model of the questionnaire

Confirmatory analyses were implemented to test the potential one-, three-, and four-factor structure of the questionnaire. The results indicate that none of the three hypothesised models of the children’s version of the questionnaire has sufficient accuracy to describe the empirical findings (see Table 4).

Table 4

Indicators of goodness of fit of estimated questionnaire models for data obtained using the child version of the questionnaire

Model	χ^2	df	CFI	SRMR	RMSEA (90% CI)
Four-factor model	202***	98	0.689	0.081	0.084 (0.068 — 0.101)
Three-factor model	219***	101	0.645	0.087	0.089 (0.072 — 0.105)
One-factor model	222***	104	0.647	0.085	0.087 (0.071 — 0.103)

Note: ** — $p < 0,01$, *** — $p < 0,001$.

Discussion

Timely identification of school adaptation difficulties can significantly harmonise the process of children's transition from kindergarten to school. However, Russian-language literature today does not provide reliable tools for diagnosing school adjustment. The use of foreign instruments is not possible due to cultural differences and peculiarities of the organisation of the educational process in different countries. This study presents the results of psychometric evaluation of an instrument being developed to study the school adaptation of primary school students. The main objective of this stage was to clarify the optimal factor structure of the proposed questionnaire, as well as to assess the prospects for its use when relying on the observations of not only adults but also children themselves.

A positive answer was obtained to the main research question of the study, whether psycho-emotional stress of the child should be separately assessed in addition to cognitive activity, behaviour regulation, and social interaction when studying school adaptation. Psychometric indicators of the suitability of the developed questionnaire are improved when indicators of child tension and embarrassment are identified as a separate scale rather than as a component of social interaction. Not only does the reliability of the scales themselves increase, but also the degree of consistency of the empirical data with the described theoretical model. The greatest correspondence of the structure of the data obtained from teachers was recorded when

this model was finalised by making three corrections based on the results of factor analysis. Thus, it is reasonable to consider the following scales: 'Cognitive activity,' 'Behaviour regulation,' 'Social inclusion,' 'Psycho-emotional tension.'

The additional research question of whether it makes sense to rely on self-reported information on school adjustment for research and diagnostic purposes was answered in the negative. Psychometric validation showed that data collected from a sample of first-grade students did not differentiate between different aspects of school adjustment and could not be considered reliable. This result points to the need for cautious use of verbal diagnostic methods in diagnosing primary school-aged children. As discussed in the Introduction of this study, the low quality of the data obtained can be explained by the insufficient development of self-knowledge, reflexion and speech. Although this result is not unexpected, this work was necessary both to assess the reliability of children's observations and to understand the degree of consistency between child and teacher observations [2]. The greatest consistency of children's and teachers' answers was observed for the items that are directly related to the learning process. Responses about children's emotional experiences and their demand among peers are least consistent.

Conclusion

This article presents the results of psychometric testing of an instrument for assessing

the features of school adaptation in primary school students and determining its optimal structure. We hope that in the future this work will provide an opportunity for differentiated assessment of school adaptation processes in primary school students.

The study is limited by a relatively small sample (232 students and 16 teachers). To work on overcoming this limitation, it is possible to conduct a focus group with primary school teachers and parents of first-graders who experience difficulties

with school adaptation. This measure will provide the factual material necessary to verify the adequacy of the scales. In addition, a significant expansion of the sample, including the involvement of teachers from other regions of the Russian Federation, will also make it possible to increase the validity and reliability of the developed instrument. Nevertheless, the results of this work can already contribute to the identification and correction of school adaptation problems in primary school students.

Appendix

School adjustment questionnaire (teacher version)

Instructions

This questionnaire is aimed at assessing the peculiarities of first-graders' adaptation to school learning. Before answering the questions, please remember how your child behaves during lessons and breaks. It is important that your assessment should be based on a general picture formed on the basis of many situations rather than on a single case of observation. The assessment is made on a 4-point scale. For each statement, choose one of the numbers depending on how well the statement corresponds to the child's behaviour at school:

- 0 = absolutely not typical behaviour;
- 1 = rather not typical behaviour, but sometimes occurs;
- 2 = rather typical behaviour, quite often occurs;
- 3 = typical behaviour, always or almost always occurs

It may be difficult to give an accurate assessment for some statements. In such cases, choose what seems right to you at the moment.

№	Statements	Typical behaviour			
		0	1	2	3
1	Other children want to socialise with the child	0	1	2	3
2	The child is interested in learning new things	0	1	2	3
3	The child actively participates at the lessons, raises his/her hand, responds	0	1	2	3
4	The child can easily cope with tasks at the lessons	0	1	2	3
5	The child breaks the rules of behaviour at school	0	1	2	3
6	The child is left all alone during school breaks	0	1	2	3
7	The child calls other children names or may push, hit	0	1	2	3
8	The child is shy or anxious when answering in front of the class	0	1	2	3
9	The child is embarrassed to approach the teacher if he/she does not understand something	0	1	2	3
10	The child is able to contain negative emotions (e.g. resentment, anger)	0	1	2	3
11	The child can keep up with the teacher's explanations and instructions	0	1	2	3
12	The child has a good understanding of what the teacher is explaining	0	1	2	3
13	The child copes well with independent tasks at the lessons	0	1	2	3
14	The child is eager to socialise with classmates	0	1	2	3

Key

The questionnaire provides information on the following aspects of school adaptation: 'Cognitive activity' (items: 2, 3, 4, 11, 12, 13), 'Behaviour regulation' (items: 5*, 7*, 10), 'Social interaction' (items: 1, 6*, 14) and 'Psycho-emotional tension' (items: 8, 9). (items: 1, 6*, 14) and 'Psycho-emotional tension' (items: 8, 9).

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New Perseverance Scale for Adolescents: Its Development and Testing

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The study presents a new questionnaire Perseverance Scale for Adolescents. It was developed on the Russian context and represents perseverance multidimensionality. The Perseverance Scale contains three subscales: Perseverance in achieving goals, Perseverance in overcoming difficulties, and Inappropriate Persistence. Adolescents from different regions of the Russian Federation were recruited for the study (N=1,718; age from 12 to 18 years; average age 14 ± 1 years; 53,8% female). Confirmatory factor analysis showed a good fit of the three-factor model to the data (GFI=0,95; IFI=0,94; CFI=0,94; SRMR=0,048; RMSEA=0,078 [0,072; 0,083]). The validity of the Perseverance Scale is confirmed by the expected correlations with the subscales of the “Multidimensional Students’ Life Satisfaction Scale” (MSLSS) and “Multidimensional School Engagement Scale”. The validity of the New Perseverance Scale is also verified by the differences obtained between groups of students with different academic achievements. We have noticed higher rates of perseverance in achieving goals and perseverance in overcoming difficulties among well-performing students. There was no difference in Inappropriate Persistence. The Perseverance Scale can be used for individual research to assist in psychological practice.

Keywords: perseverance; persistence; Perseverance Scale; Perseverance in achieving goals; Perseverance in overcoming difficulties; Inappropriate persistence; Grit; adolescents; academic success.

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Шкала настойчивости для подростков: разработка и апробация нового инструмента

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Представлена апробация новой методики «Шкала настойчивости» для подростков, отражающей многоаспектность данной категории. Шкала настойчивости содержит три субшкалы: настойчивость в достижении целей, настойчивость в преодолении трудностей, неуместная настойчивость. Апробация проведена на выборке подростков из разных регионов Российской Федерации (N=1718; возраст — от 12 до 18 лет; средний возраст — 14 ± 1 лет; 53,8% женского пола). Конфирматорный факторный анализ показал хорошее соответствие трехфакторной модели данным (GFI=0,95; IFI=0,94; CFI=0,94; SRMR=0,048; RMSEA=0,078 [0,072; 0,083]). Валидность Шкалы настойчивости подтверждается ожидаемыми корреляционными связями со шкалами методик «Шкала удовлетворенности жизнью» (ШУДЖИ) и «Многомерная шкала школьной вовлеченности». О валидности Шкалы настойчивости говорят и полученные различия между группами учеников с разной успеваемостью: более высокие показатели настойчивости в достижении цели и настойчивости в преодолении трудностей у хорошо успевающих учеников. Различий по неуместной настойчивости не выявлено. Шкала настойчивости может быть использована для индивидуальных исследований для выстраивания практики психологической помощи.

Ключевые слова: настойчивость; упорство; Шкала настойчивости; настойчивость в достижении целей; настойчивость в преодолении трудностей; неуместная настойчивость; Grit; подростки; академическая успешность.

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Introduction

The development of perseverance plays a crucial role during adolescence — a period characterized by rapid changes in physiological, social, emotional, and cognitive domains — amid increasing stress, declining academic performance, and other challenges. The concept of perseverance is complex, retaining its significance over many years while remaining highly debated. In the past decade, the concept of *Grit*, introduced by Duckworth, has gained widespread recognition. *Grit* is considered a non-cognitive personality trait characterized by perseverance of effort and constancy of interests, contributing to personal achievements in professional and educational activities regardless of intellectual abilities [18, 19].

Attempts have been made to analyze constructs that are similar to and closely overlap with *Grit*, such as conscientiousness [26] and persistence [21]. Erofeeva and Nartova-Bochaver, exploring the semantic nuances of *Grit* and the meaning of perseverance embedded in Rubinstein's works, concluded: 'It is the Russian word perseverance that best reflects the content of the Grit construct' [4, p. 23].

In Russian psychology, perseverance is interpreted as a systemic personality trait within the framework of Krupnov's system-functional model. It consists of:

1. A motivational-semantic component, including attitudinal-goal, motivational, cognitive, and productive subcomponents; and
2. An instrumental-dynamic component, encompassing dynamic, emotional, regulatory, and reflexive-evaluative features [6].

These components collectively ensure a stable desire to implement decisions, achieve long-term goals, maintain sustained activity, engage in targeted self-regulation, and demonstrate reasonable persistence in the face of obstacles [1, 13].

Perseverance is also considered a special personal resource that reliably protects against burnout and reduces fatigue in schoolchildren [33]. It also enhances engage-

ment and academic performance [30, 31], provides protection against stressors [22], anxiety, and depression [23], increases subjective well-being [36], predicts the growth of intellectual abilities [37], etc. Classified as a mental resource [7], perseverance enables individuals to actively express themselves in various types of activities. In contemporary research, particular attention is paid to the dependence of academic performance on perseverance. It has been established that adolescents with higher levels of perseverance achieve better academic outcomes [27, 30, 31]. A cross-cultural meta-analysis [25] including 137 studies with 156 independent samples (N = 285,331) showed a relationship between the general perseverance indicator and academic achievements. Furthermore, motivational sources of perseverance have been discovered [3].

It has been noted both in Russian [1, 7] and foreign [21] literature that virtually any human characteristic can have negative consequences under certain circumstances. In this context, Russian psychological literature introduces the concept of hypertrophied perseverance (getting stuck on a task, unwillingness to take into account the positions of others, working to the detriment of one's health) [1], and foreign psychology refers to inappropriate perseverance (perseverance in achieving a meaningless or futile goal). Failing to recognize inappropriate persistence not only wastes time and resources on a doomed activity but also leads to psychological disorders [21].

In the model of cognitive-behavioral self-transforming character activity, the following aspects are identified: *I want* (motivation, meanings, and goals); *I can* (the productivity of activity); *I act* (the transformative nature of activity aimed at achieving a useful result) [9]. However, the *must* component, which reflects mature forms of behavior, persistence in achieving a goal and overcoming internal and external obstacles, is lost. This was noted by Ushinsky, 'If a person who is amazed at the ingenuity of a genius could look at the process

of these inventions, he would be amazed not at the mind, but at the willpower, passion, and perseverance of the inventor' [12, p. 428]. Thus, perseverance can be considered as a mental resource

Thus, perseverance can be considered as a mental resource that includes motivational-semantic (the persistent pursuit of a meaningful goal) and instrumental-dynamic (active overcoming of external and internal barriers) components that ensure long-term, steady, directed activity and reasonable persistence to achieve a useful result.

Many psychodiagnostic instruments have been developed to measure perseverance. The most popular are *Grit* [18] and *Grit-S* [19] scales, used in different countries and adapted in Russia [34]. However, as studies have shown, the *Grit Scale* does not always work well in collectivist cultures [17], and its structure remains unclear [34, 35]. Therefore, attempts have been made to either expand this construct or to find alternatives. Let us mention just a few of these:

1. *Persistence Scale* (PS-20) (Poland) [29] includes 20 items and a single scale. Persistence is considered as a resource associated with adaptive behavior, mental stability, and self-regulation of the individual.

2. *Multidimensional Persistence Scale* (MPS) (USA) [21] consists of 13 main items, three subscales (*Persistence Despite Difficulty* (PDD), *Persistence Despite Fear* (PDF), and *Inappropriate Persistence* (IP)), as well as an additional subscale, *Goal Time Preference Scale* (GTP). This instrument was created through a three-study process based on the factor structure.

3. *Grit Psychological Resources Scale*, GPRS (Australia) [28] was developed based on the analysis of Duckworth's works and the constructs similar to *Grit*. It identifies several psychological resources of perseverance, including stability of interests, persistence in achieving goals, persistence in overcoming difficulties, life engagement, hope for success, and others. The scale consists of 20 points corresponding to four resources (*Passion, Persistence, Life Engagement, and Hope*).

4. *Triarchic Grit Scale* (TMG) for high school students (Philippines) [17] includes 10 items and three subscales, two of which (*Perseverance of efforts* and *Consistency of interests*, four items each) were taken from *Grit-S*. The third subscale, *Adaptability to situations*, was added by the authors. It characterizes the acceptance of changes, flexibility, and the desire to overcome difficulties as they arise.

5. *Three-dimensional Grit Scale* (India) (3-D Grit Scale) [24] includes 17 items and three subscales: *Perseverance-Commitment*, PC (long-term goal-oriented behavior); *Interest-Passion*, IP (the level of passion and intrinsic motivation concerning goals), and *Goal-directed Resilience*, GR (an individual's ability to recover from the setbacks associated with pursuing long-term goals).

6. *Perseverance Test* by Krupnov (eight forms and 112 items) [6].

7. *Perseverance questionnaire* by Ilyin and Feshchenko (18 items and one scale) [5].

8. *The Questionnaire of Grit and Stability of Learning Interests* by Gizhitsky, Gordeeva, and Gavrichenkova (includes only six items of Duckworth *Grit* subscale *Persistence of Effort*) [2].

9. *Volitional Personality Traits Questionnaire* for adolescents by Chumakov (83 items, nine subscales, one of which is *Persistence*) [15].

The questionnaires developed in Russia to measure persistence/perseverance are either too long [6], measure only a single aspect of persistence [2], are part of the structure of the volitional personality traits framework [15], or have not undergone psychometric testing [5].

Thus, numerous persistence/perseverance scales have been developed around the world, some of which are aimed at adolescents. Some instruments reflect a single perseverance scale [2, 5, 18, 29], but most have a multi-component structure [6, 14, 17, 21, 24, 28]. In recent years, the main characteristics of perseverance have been identified and summarized: perseverance in achieving goals; stability of interest (passionate absorption in the activity); perseverance in achieving success; tenacity in overcoming difficulties,

as well as inappropriate persistence (meaninglessness and uselessness of efforts). However, a psychodiagnostic instrument that allows for measuring all these characteristics has not been developed. Such an instrument is especially important for adolescents, whose perseverance largely determines the success of self-actualization across various activities [22, 23, 27, 30, 31, 32, 37]. This encouraged us to develop a new scale for measuring perseverance in adolescents, which initially included 20 items and five subscales (four items each). These subscales reflect the multidimensional nature of perseverance: *Perseverance in achieving goals*; *Stability of interests*; *Perseverance in overcoming difficulties*; *Perseverance in achieving success*, and *Inappropriate persistence*. The process of creating a new scale involved multiple stages and was built on the basis of previous studies and experts' work (N = 30), who formulated items reflecting five criteria of perseverance, selected statements from folklore, and conducted two pilot studies. After each study, the wording of the items was adjusted taking into account participants' feedback. The resulting *Perseverance Scale* is not an adaptation of a ready-made foreign questionnaire; it includes some statements from folk wisdom on persistence and two statements of the subscale of *Inappropriate persistence* from the *Multidimensional Persistence Scale* [21]. Thus, the purpose of this study was to test the new *Perseverance Scale* for adolescents aged 12–18 years.

Method

Participants. The study involved 1,718 adolescents from different regions of the Russian Federation aged 12 to 18 years (53.84% female). The average age was 14 ± 1 years (median = 14 years). The respondents were divided into three age groups: 12-13 years (N1 = 673), 14-15 years (N2 = 718), and 16-18 years (N3 = 327).

Research instruments. The initial version of the *Perseverance Scale* had 20 items that were supposed to make up five subscales, but exploratory factor analysis showed that

only three scales could be identified (three factors had eigenvalues greater than one and explained 53% of the total variance), and not all items were included in the identified factors with significant loadings. As a result, three subscales with four items each were left: *Perseverance in achieving goals*, *Perseverance in overcoming difficulties*, and *Inappropriate persistence*. Contrary to our expectations, *Stability of interests* and *Perseverance in achieving success* were not identified as separate subscales. This may be due to the following: in the first case, the subscale *Stability of interests* might not relate directly to perseverance as a psychological construct [16], and in the second case, cultural values may contribute. Thus, a systematic review of adolescent concepts of success showed that Russian adolescents most strongly associate success with goal achievement, feeling proud of their efforts, the fulfillment of their talents, and the ability to overcome obstacles, suggesting that success is the result of hard work and effort [20]. The appropriateness of identifying three subscales also corresponds to Krupnov's system-functional model [6], in which the category of inappropriate persistence is identified [21], as well as the following categories: 1) persistence/perseverance, which includes such characteristics as an active attitude to work, striving for a set goal, and inner strength to overcome obstacles, and 2) stubbornness: childish forms of behavior (capriciousness, negativism, and meaninglessness) [11]. The final text of the *Perseverance Scale* with keys is given in Appendix 1.

To test external validity, the *Multidimensional Satisfaction with Life Scale* (MSLSS) [10], the *Multidimensional Scale of School Engagement* [14], and a questionnaire containing questions on age, gender, place of residence, and academic performance ("I have mostly A's / mostly B's / mostly C's") were used. Respondents were divided by their academic performance as follows: high, mostly A's (N1 = 448); average, mostly B's (N2 = 899); low, mostly C's (N3 = 360).

Procedure. The data were collected using specially designed forms implemented

in the Anketolog system. Participation in the study was anonymous and voluntary. Written consent was obtained from the adolescents' parents in advance. The data collection procedure took approximately 20 minutes. The data are presented in the repository of psychological research and tools of the Moscow State University of Psychology & Education, RusPsyDATA [8].

Statistical analysis included descriptive statistics; confirmatory factor analysis (CFA) and Cronbach's alpha calculation to assess the internal consistency and structure of the questionnaire. Correlation analysis and ANOVA were conducted to test external validity. CFA was performed in Amos SPSS, while other calculations were conducted in STATISTICA.

Results and Discussion

Internal consistency. Confirmatory factor analysis showed a good fit of the three-factor model to the data: $GFI = 0.95$; $IFI = 0.94$; $CFI = 0.94$; $SRMR = 0.048$; $RMSEA = 0.078$ [0.072; 0.083]; $AIC = 634.27$; $BIC = 781.39$. At the same time, it was noted that factors 1 and 2 are closely related to each other (Fig. 1), which gives grounds for assuming a two-factor model in which factors 1 and 2 (*Perseverance in achieving goals* and *Perseverance in overcoming difficulties*) can be combined into one. However, the two-factor model showed a worse fit: its fit indices were lower, and the AIC and BIC coefficients were higher ($GFI = 0.94$; $IFI = 0.93$; $CFI = 0.93$; $SRMR = 0.049$; $RMSEA = 0.079$ [0.074; 0.085]; $AIC = 676.17$; $BIC = 812.39$). This result, as well as the structure of age differences (see below in the section *Gender and age differences*), indicate that it is appropriate to distinguish three aspects of perseverance. The three-factor structure appeared to be invariant to gender and age (Appendix 2).

Descriptive statistics and internal consistency indices (Cronbach's alpha) for all subscales of the questionnaires used are presented in Table 1. The internal consistency of all subscales of the *Perseverance Scale* is satisfactory to good, with Cronbach's alpha

values ranging from 0.68 to 0.85. Correlations between subscales 1 and 2 with subscale 3 are low ($r = 0.39$ and $r = 0.42$, respectively), while a strong relationship is observed between subscales 1 and 2 ($r = 0.76$). These results align with the confirmatory factor analysis (CFA) findings (Fig. 1).

External validity. To evaluate the scale's validity, correlations were calculated between the subscales of the *Perseverance Scale* and the subscales of the *Multidimensional Students' Life Satisfaction Scale* (MSLSS) and the *Multidimensional School Engagement Scale*. The results (Table 2) indicate that the subscales *Perseverance in Achieving Goals* and *Perseverance in Overcoming Difficulties* exhibit the strongest correlations with satisfaction across various life domains and school engagement.

Gender and age differences. A two-way ANOVA with *Gender* and *Perseverance Scale subscales* as factors did not reveal statistically significant differences by gender. Both the main effect of *Gender* and its interaction with *Perseverance Scale subscales* were not significant ($F(1, 1716) = 2.72$; $p = 0.10$; $\eta^2 = 0.002$ and $F(2, 3432) = 2.99$; $p = 0.051$; $\eta^2 = 0.002$, respectively). Thus, it can be concluded that adolescent girls and boys do not differ in perseverance scores.

A similar analysis was conducted to examine age-related changes in perseverance. Results indicated that perseverance increased with age (main effect $F(2, 1715) = 6.04$; $p = 0.002$; $\eta^2 = 0.01$), although the effect was small. The interaction effect was more pronounced ($F(4, 3430) = 18.06$; $p < 0.0001$; $\eta^2 = 0.02$), indicating that different components of perseverance changed differently across age groups (Fig. 2). Tukey's post hoc test revealed that for 12—13-year-olds, all perseverance indicators significantly differed: *Perseverance in Overcoming Difficulties* was statistically significantly higher than *Inappropriate Persistence* ($p = 0.0028$), and *Perseverance in Achieving Goals* was statistically significantly higher than *Perseverance in Overcoming Difficulties* ($p = 0.0002$). For adolescents aged 14—15 and 16—18, the

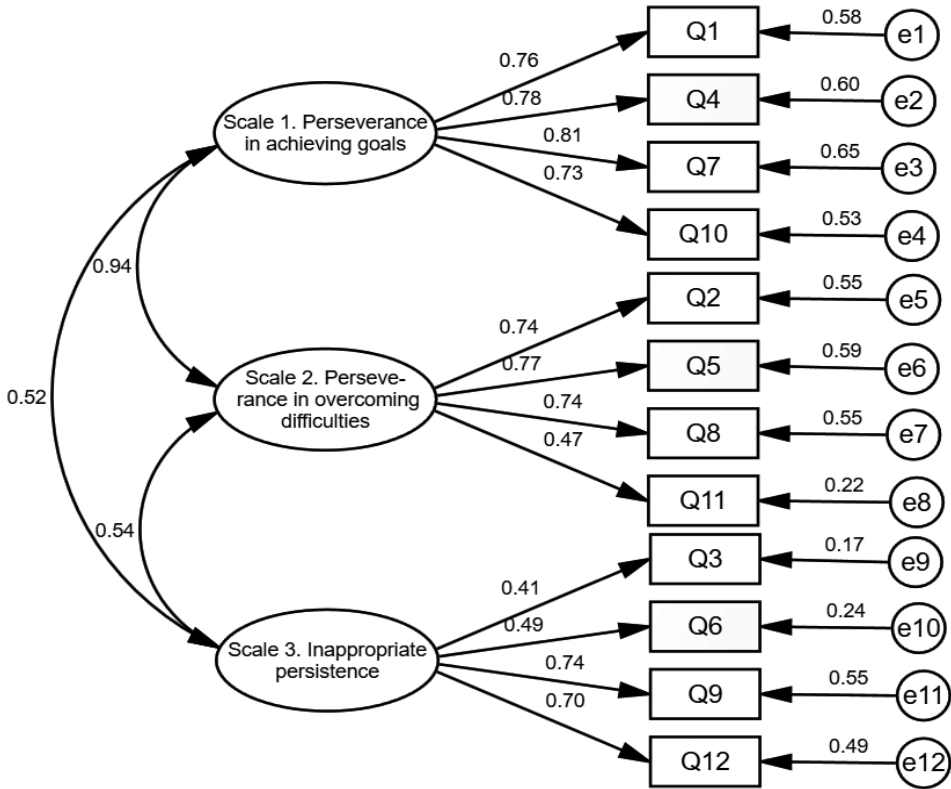


Fig. 1. Confirmatory factor analysis results: weight coefficients for the three-factor model
 (GFI = 0.95; IFI = 0.94; CFI = 0.94; SRMR = 0.048; RMSEA = 0.078 [0.072; 0.083])

Table 1

Descriptive statistics and internal consistency of questionnaire subscales

Scales	M ± s	Me [LQ; UQ]	α
Perseverance Scale			
Scale 1. Perseverance in achieving goals	19.4 ± 5.0	20 [16; 23]	0.85
Scale 2. Perseverance in overcoming difficulties	18.9 ± 4.6	19 [16; 22]	0.77
Scale 3. Inappropriate persistence	17.3 ± 4.3	17 [15; 20]	0.68
Multidimensional Students' Life Satisfaction Scale (MSLSS)			
Family	23.8 ± 5.2	25 [20; 28]	0.88
School	19.1 ± 5.1	19 [16; 23]	0.85
Teachers	20.6 ± 5.5	21 [17; 25]	0.90
I myself	22.6 ± 5.1	23 [19; 27]	0.88
Friends	25.3 ± 4.8	27 [23; 29]	0.89
Multidimensional School Engagement Scale			
Behavioral Engagement	13.7 ± 3.4	14 [11; 16]	0.76

Scales	M ± s	Me [LQ; UQ]	α
Cognitive Engagement	18.8 ± 4.1	19 [16; 22]	0.83
Emotional Engagement	18.5 ± 4.1	19 [16; 22]	0.81
Social Engagement	18.6 ± 4.2	19 [16; 22]	0.80
Behavioral Indifference	15.0 ± 6.5	13 [10; 19]	0.90
Cognitive Indifference	4.2 ± 1.9	4 [3; 5]	0.64
Emotional Indifference	10.0 ± 4.1	10 [7; 13]	0.84
Social Indifference	7.6 ± 3.4	7 [4; 10]	0.79

Note: M, mean; s, standard deviation; Me, median; LQ, lower quartile; UQ, upper quartile; α, Cronbach's alpha

Table 2

Pearson correlation coefficients between the subscales of the Perseverance Scale and the subscales of MSLSS and the Multidimensional School Engagement Scale

Subscales	Perseverance Scale		
	Scale 1. Perseverance in achieving goals	Scale 2. Perseverance in overcoming difficulties	Inappropriate persistence
Multidimensional Students' Life Satisfaction Scale (MSLSS)			
Family	0.47**	0.40**	0.14**
School	0.42**	0.40**	0.06*
Teachers	0.43**	0.42**	0.11**
I myself	0.53**	0.42**	0.14**
Friends	0.43**	0.36**	0.12**
Multidimensional School Engagement Scale			
School Engagement			
Behavioral	0.50**	0.48**	0.15**
Cognitive	0.56**	0.56**	0.20**
Emotional	0.49**	0.46**	0.16**
Social	0.51**	0.46**	0.17**
School Indifference			
Behavioral	-0.41**	-0.39**	-0.05*
Cognitive	-0.43**	-0.41**	-0.05*
Emotional	-0.34**	-0.30**	0.03
Social	-0.38**	-0.32**	-0.03

Note: ** p < 0,01; * p < 0,05.

indicators of *Perseverance in achieving goals* and *Perseverance in overcoming difficulties* do not differ significantly ($p = 0.28$ and $p = 0.52$, respectively). However, scores for *Perseverance in Overcoming Difficulties* increased significantly with age, rising from approximately 18 points at ages 12–13 to 19 points at ages 14–15, and 20 points at ages 16–18. Changes in *Perseverance in Overcoming Difficulties* were the most substantial

(approximately 2 points), followed by changes in *Perseverance in Achieving Goals* (approximately 1.5 points). Conversely, changes in *Inappropriate Persistence* were negligible, statistically insignificant, and fluctuated within 0.5 points. Norms for all subscales of the *Perseverance Scale* across different age groups are provided in Appendix 3.

Correlation with academic performance. Prior studies [3, 22, 25, 27, 30, 31, 32] sug-

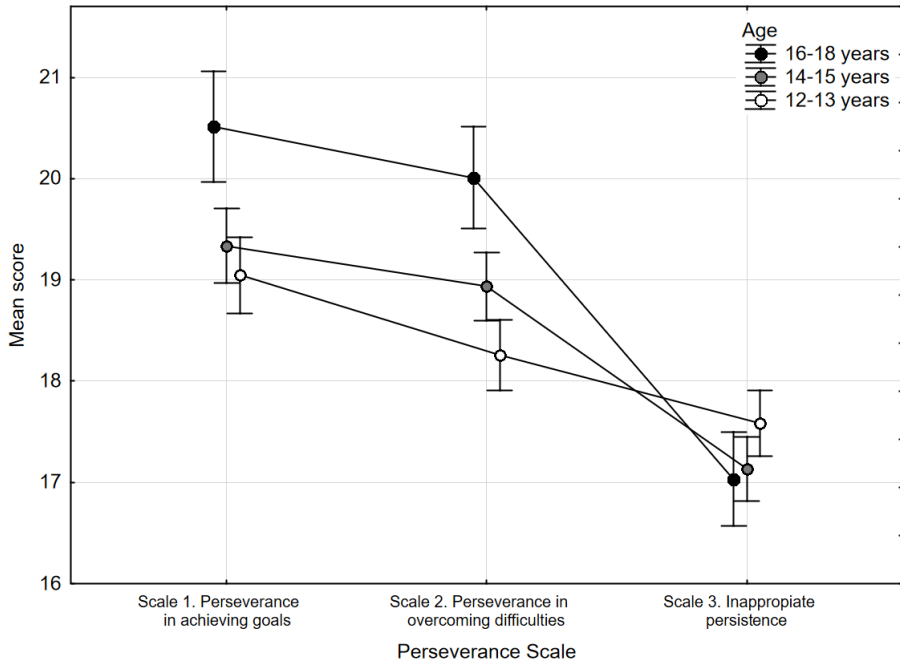


Fig. 2. Mean scores for the subscales of the *Perseverance Scale* for adolescents of different ages (vertical bars denote 95% confidence intervals)

gested that high-achieving students would demonstrate higher perseverance scores.

To test this hypothesis, a two-way ANOVA was performed, comparing two contrasting groups of students with differing academic performance: high-achieving students (those receiving predominantly A's, $N = 448$) and low-achieving students (those receiving predominantly C's, $N = 360$) across all subscales of the *Perseverance Scale*. The analysis revealed a statistically significant interaction between academic performance and the subscales of the *Perseverance Scale*, indicating distinct perseverance profiles for high- and low-achieving students ($F(2, 1612) = 69.77$; $p < 0.0001$; $h^2 = 0.08$). Specifically, high-achieving students exhibited higher levels of *Perseverance in Achieving Goals* and *Perseverance in Overcoming Difficulties*, whereas their levels of *Inappropriate Persistence* did not differ significantly from those of low-achieving students (Fig. 3).

Among low-achieving students, the scores across all subscales of the *Perseverance Scale* do not differ significantly, with values close to four points. This indicates that, on average, their responses tend to reflect neutrality (e.g., 'it depends'). In contrast, high-achieving students demonstrate greater variability in subscale scores: *Perseverance in Achieving Goals* scores are the highest, followed by *Perseverance in Overcoming Difficulties*, while *Inappropriate Persistence* scores are the lowest.

These findings suggest that high-achieving students are characterized by strong purposefulness, perseverance in achieving goals, a consistent desire to complete tasks, resilience in overcoming internal and external obstacles, hard work, and patience. The results align with the conclusions of the meta-analysis by [25], which found the most significant differences between groups with differing academic performance on the *Perseverance in Achieving Goals* subscale.

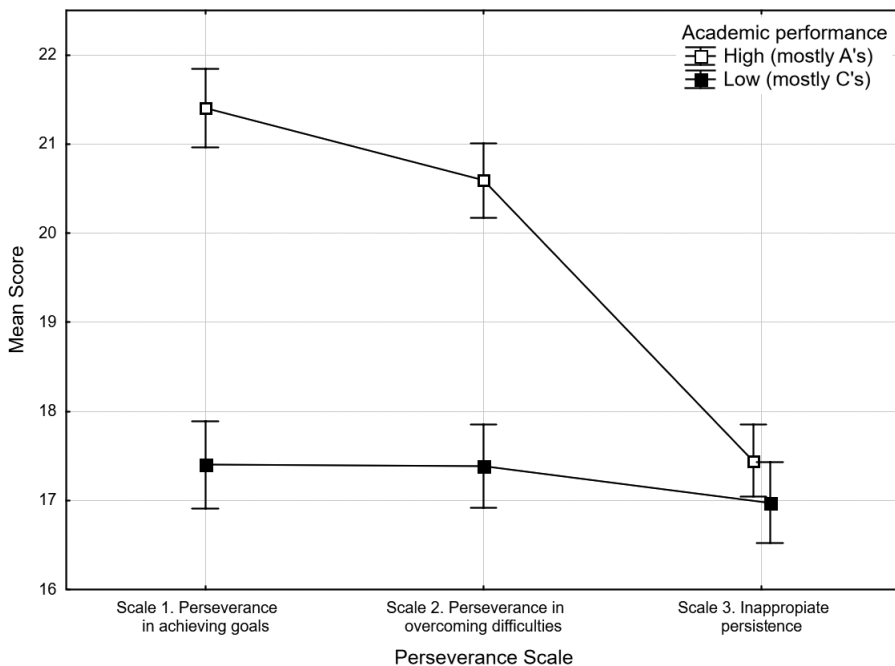


Fig. 3. Mean scores for the subscales of the *Perseverance Scale* for students with different academic achievement levels (vertical bars denote 95% confidence intervals)

Conclusions

The new *Perseverance Scale* comprises three components, allowing for the differentiation of *Perseverance in Achieving Goals*, *Perseverance in Overcoming Difficulties*, and *Inappropriate Persistence*. It is suitable for adolescents aged 12—18 years.

The expected correlations between the subscales of the *Perseverance Scale* and indicators of life satisfaction across different domains (family, school, teachers, self, friends), as well as various aspects of school engagement and indifference (behavioral, cognitive, emotional, and social), support the validity of the questionnaire. While adolescent girls and boys do not differ significantly in perseverance indicators, the components of perseverance evolve differently with age. For adolescents aged 12—13, the three subscales are highly differentiated: the highest scores are observed for *Perseverance in Achieving Goals*, fol-

lowed by *Perseverance in Overcoming Difficulties*, and the lowest scores for *Inappropriate Persistence*. As adolescents age (14—15 years and 16—18 years), the scores for *Perseverance in Achieving Goals* and *Perseverance in Overcoming Difficulties* become more balanced. Notably, *Perseverance in Overcoming Difficulties* increases significantly with age, reflecting the development of more mature forms of behavior in older adolescents.

High-achieving students exhibit higher scores of *Perseverance in achieving goals* and *Perseverance in overcoming difficulties*, alongside lower scores for *Inappropriate persistence*. In contrast, the perseverance profiles of low-achieving students appear “flattened,” with no significant differences between the three subscales. This finding highlights the need for targeted interventions for low-achieving students. It is recommended to focus on fostering their perseverance in

achieving meaningful goals and overcoming difficulties.

The limitations of this study include insufficient data on the external validity of the *Inappropriate Persistence* subscale and the inability to identify a distinct subscale for *Perseverance in Achieving Success*, which

remains an area for further development. These limitations also present opportunities for future research.

In conclusion, the new *Perseverance Scale* has potential applications in school psychological practice to provide psychological support, while accounting for the identified limitations.

APPENDIX 1

Perseverance Scale

Instructions: How do you usually behave in different situations?

For each statement below, indicate the extent to which you agree or disagree. When answering, think about your overall behavior, not about how you think you should be or want to be. There are no right or wrong answers, so please answer honestly.

Response Options

- 1 — Strongly Disagree
- 2 — Disagree
- 3 — Partially Disagree
- 4 — It depends
- 5 — Partially Agree
- 6 — Agree
- 7 — Strongly Agree

1. I can be called a goal-oriented person.
2. I patiently study something new until I understand the essence.
3. Sometimes I catch myself continuing to do something, even if it is pointless.
4. I always achieve my goals.
5. Despite difficulties, I persistently continue to act until I solve the problem.
6. I will keep trying to do something, even if I know that my actions are useless.
7. The phrase: 'Where there's a will, there's a way' is about me.
8. My motto is 'Little strokes fell great oaks' ('Patience and perseverance surmount every difficulty').
9. Nothing will make me change my mind.
10. I can maintain interest in a task that needs to be completed for a long time.
11. People fail much more often due to lack of persistence than due to lack of talent.
12. In an argument I defend my opinion to the end.

For all scales, the sums of points are calculated:

Scale 1. Perseverance in achieving goals = $Q1 + Q4 + Q7 + Q10$

Scale 2. Perseverance in overcoming difficulties = $Q2 + Q5 + Q8 + Q11$

Scale 3. Inappropriate persistence = $Q3 + Q6 + Q9 + Q12$

Comparison of the models for invariance tests for the Persistence Scale for gender and age invariance

Groups	Invariance	$\chi^2(df)$	CFI	RMSEA	RMSEA CL [-90%; +90%]	SRMR	$\Delta\chi^2 (\Delta df)$	ΔCFI	$\Delta RMSEA$	$\Delta SRMR$
Age	Configural	702.14** (153)	0.934	0.046	[0.042; 0.049]	0.0556	—	—	—	—
	Metric	717.82** (171)	0.934	0.043	[0.040; 0.046]	0.0553	15.67 (18)	<0.001	0.003	<0.001
	Scalar	760.17** (189)	0.931	0.042	[0.039; 0.045]	0.0554	42.36** (18)	0.003	-0.001	<0.001
Gender	Configural	666.60** (102)	0.933	0.057	[0.053; 0.061]	0.0503	—	—	—	—
	Metric	682.01** (111)	0.932	0.055	[0.051; 0.059]	0.0530	15.41 (9)	0.001	0.002	0.003
	Scalar	702.71** (120)	0.930	0.053	[0.049; 0.057]	0.0531	20.70* (9)	0.002	-0.002	<0.0001

Note: age groups N1 = 673 (12-13 years), N2 = 718 (14-15 years), N3 = 327 (16-18 years); gender groups N1 = 793 (male), N2 = 925 (female); χ^2 , chi-square test empirical value; *df*, degrees of freedom; *CFI*, comparative fit index; *RMSEA*, root mean square error of approximation; *RMSEA CL* [-90%; +90%], 90% confidence limit for *RMSEA*; *SRMR*, standardized root mean square residual; $\Delta \chi^2$, the difference in χ^2 between models; Δdf , the difference between *df* between models; ΔCFI , the difference in *CFI* between models; $\Delta RMSEA$, the difference in *RMSEA* between models; $\Delta SRMR$, the difference in standardized root mean square residuals between models; * — $p < 0.05$; ** — $p < 0.01$.

APPENDIX 3

Norms for subscales of the Persistence Scale for adolescents of different ages: low level, scores below the lower quartile for the subscale; high level, scores above the upper quartile for the subscale

Level	Scale 1. Perseverance in achieving goals		Scale 2. Perseverance in overcoming difficulties		Scale 3. Inappropriate persistence	
	Low	High	Low	High	Low	High
Age	12—15 years					
	4—15 points	16—23 points	4—15 points	16—22 points	4—14 points	15—20 points
	16—23 points	24—28 points	16—22 points	23—28 points	15—20 points	21—28 points
Gender	16—18 years					
	4—16 points	17—24 points	4—16 points	17—23 points	4—14 points	15—20 points
	17—24 points	25—28 points	17—23 points	24—28 points	15—20 points	21—28 points

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Group Intellectual Test (GIT): Standardization of the Methodology of Mental Development of Primary School Children

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The paper presents the results of the standardization of the methodology for mental development diagnostic of primary school children Group intellectual test (GIT). The methodology consists of 7 subtests, which are devoted to various aspects of the intelligence. 2512 children studying in the 4th grade ($M=9,97$ years, $SD=0,41$), 51,1% boys were recruited for this study. The Cronbach's Alpha consistency score was used to assess the internal consistency of the subtests, which showed good consistency of all elements of the methodology (Cronbach's Alpha=0,9). Exploratory factor analysis confirmed that all 7 subtests add up to one factor explaining 63,4% of the total variance. The general model of the questionnaire was tested using confirmatory factor analysis, which showed good data consistency: SRMR=0,02; CMIN/df=13,09; GFI=0,98; IFI=0,98; CFI=0,98; RMSEA=0,07.

Keywords: diagnostics of intellectual development; group intellectual test (GIT); constructive validity of the test; reliability of the test; stans; primary school students.

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Групповой интеллектуальный тест (ГИТ): стандартизация методики умственного развития младших школьников

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Приводятся результаты проведенной авторами работы по стандартизации адаптированной методики диагностики умственного развития детей младшего школьного возраста «Групповой интеллектуальный тест (ГИТ)». В исследовании приняли участие 2512 детей, учащихся в 4-ом классе ($M=9,97$ лет, $SD=0,41$), мальчиков 51,1%. Указывается на то, что методика состоит из 7 субтестов, каждый из которых посвящен различным аспектам интеллекта. Для оценки внутренней согласованности субтестов опросника использовалась оценка согласованности Альфа Кронбаха, которая показала хорошую согласованность всех элементов методики (Альфа-Кронбаха=0,9). Эксплораторный факторный анализ подтвердил, что все 7 субтестов складываются в один фактор, объясняющий 63,4% общей дисперсии. Общая модель опросника проверялась с помощью конфирматорного факторного анализа, который показал хорошее соответствие данных: $SRMR=0,02$; $CMIN/df=13,09$; $GFI=0,98$; $IFI=0,98$; $CFI=0,98$; $RMSEA=0,07$. Делается вывод о том, что созданная электронная версия опросника ГИТ позволяет оценивать сформированность интеллектуальных операций познавательных универсальных учебных действий. Данная версия опросника ГИТ обладает хорошими психометрическими свойствами и может использоваться для оценки интеллектуальных способностей у младших школьников.

Ключевые слова: диагностика интеллектуального развития; групповой интеллектуальный тест (ГИТ); конструктивная валидность теста; надежность теста; стаяны; младшие школьники.

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стандартизированного психодиагностического инструментария в цифровом формате для оценки индивидуально-психологических особенностей обучающихся на разных уровнях образования».

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Introduction

The relevance of standardizing the Russian version of the Group Intellectual Test (GIT) on a sample of primary school students is determined by the needs of psychological services in education in valid and reliable tools for assessing the developmental potential of the educational program of primary general education, which is especially important for overcoming learning difficulties [6; 7; 9]. The Federal Educational Standard of Primary General Education (FSES PGE) rightly prioritizes the cognitive development of students, since researchers unanimously emphasize scientific, theoretical, and reflexive thinking as the most important new formation of junior schoolchildren's development [1; 2; 3; 4; 5; 13; 14].

In the FSES PGE cognitive development of students is represented by three groups of cognitive universal learning actions: basic logical, research, and work with information. Each of the groups of cognitive actions includes a set of intellectual actions and operations realized on the material of various academic subjects. The Group Intellectual Test allows assessing the formation of intellectual operations included in each of the groups of cognitive universal learning actions.

The task of assessing educational outcomes is set by the FSES PGE. The Standard states: "The results of mastering the program of primary general education, including a separate part or the whole volume of a subject, academic course (including extracurricular activities), academic module of the program of primary general education, are subject to evaluation taking into account the specifics and characteristics of the subject of evaluation" [12]. [12].

The Federal Educational Program for Primary General Education (FEP PGE) provides a detailed description of the system for assessing the achievement of planned outcomes of the educational program. It is noted that the system of assessing the achievement of planned outcomes is part of the system of assessment and management of the quality of education in the educational organization and serves as a basis for the development of the relevant local act by the educational organization. As one of the main directions and goals of assessment activities in the educational organization, the assessment of educational achievements of students at different stages of education as the basis for their interim and final certification, as well as the basis for the procedures of internal monitoring of the educational organization, monitoring studies at the municipal, regional and federal levels is defined.

It is specified that the evaluation system includes internal and external evaluation procedures. Internal assessment includes: initial diagnostics, current and thematic assessment, portfolio, psychological and pedagogical observation, internal monitoring of students' educational achievements. External evaluation includes: independent assessment of the quality of education, monitoring studies of municipal, regional and federal levels [11]. We believe that GIT can act as a tool for both internal and external assessment of educational results of primary education.

The Group Intellectual Test has undergone the standardization procedure for diagnosing the formation of meta-subject educational results, the degree of mastering by elementary school students of certain

intellectual operations included in the group of universal educational cognitive actions: basic logical, research, work with information. The choice of grade 4 as a sample of standardization is determined primarily by practical needs. The obtained results of cognitive development diagnostics can be used in the work of a teacher-psychologist in solving the following tasks: prevention of risks of school failure, identification of the causes of learning difficulties and the development of an individual program of overcoming them by a teacher-psychologist together with a teacher, determination of the zone of the nearest development of a student and the forecast of his/her further development, development of programs of psychological and pedagogical support in the transition of students to the main level of general education.

The GIT was developed to diagnose the cognitive development of students aged 9-12 years (junior schoolchildren and junior adolescents). The test was developed by Slovak psychologist J. Vana. Translation of the test and adaptation to the Russian sample were carried out by psychologists M.K. Akimova, E.M. Borisova, V.T. Kozlova, G.P. Loginova under the supervision of K.M. Gurevich. The reliability and validity of the adapted version of diagnostics were confirmed by statistical indicators [10]. The need for this standardization is determined by the introduction of the new federal standard, the federal educational program of primary general education, the unified didactic system "School of Russia" for elementary school. In addition, in the modern world, online questionnaires are increasingly introduced, which simplify data collection and make the sample more diverse (due to the results from different regions) and, as a consequence, more representative.

The GIT diagnostic test (see Appendix) is aimed at identifying the students' mastery of words and concepts offered to them in the tasks, as well as the ability to perform logical actions with them. The test includes seven

subtests, each of which is given a certain period of time (from 1.5 to 6 minutes). Each subtest consists of a certain number of questions (from 20 to 200). The questions within a subtest are aimed at a certain skill and are quite homogeneous, therefore, considering the time constraints, they are not analyzed separately.

1. "Execution of instructions" — is aimed at studying formal-dynamic characteristics of thought processes. The performance of this subtest depends on the speed capabilities in thinking and speech activity: the ability to quickly perceive an instruction and accurately perform a simple task. The subtest consists of 20 tasks.

2. "Arithmetic tasks" — determines the degree of learning skills given by mathematics. The subtest consists of 20 tasks and requires performing simple arithmetic operations when solving problems: oral counting, performing a variety of arithmetic operations, finding a part of a whole, determining the percentage of a number.

3. "Completing sentences" is a test of the examinee's vocabulary, his/her ability to correctly and logically construct sentences using different syntactic structures. The subtest contains 20 sentences in each of which one or two words are missing. The student must extract the meaning of each sentence and fill in the blanks with the appropriate words.

4. "Determination of similarity and difference of concepts" — diagnoses the formation of the comparison operation and awareness of the concepts of different content. This subtest is a set of 40 pairs of words, which the learner is asked to examine and determine whether the words in each pair are similar or different. For example, "quiet-calm".

5. "Numerical series" — provides an opportunity to identify aptitudes for mathematical disciplines. In this subtest 20 tasks are given, in which the student needs to discover the rule (algorithm) of building a number series and, applying the identified rule, to continue the series with two numbers.

6. “Analogies” — reveals the dynamics of age-related changes in the development of thinking of schoolchildren. The subtest includes 40 tasks, when performing which the student needs to perform a number of thinking operations: comparing two words, establishing a logical relationship between them, analyzing the third word and the words from which to make a choice, selecting a word by analogy.

7. “Symbols” — aimed at identifying the speed characteristic in thinking and speech activity. The subtest, according to the authors, is characteristically different from the previous ones. The learner is asked to identify the digit that is under each symbol in the key and fill in the free spaces in the horizontal stanzas. In this subtest, special accuracy and speed of task performance are required, as the examinee is given 200 tasks with nine occurring symbols.

This test provides the possibility of individual and group presentation. The subtests of this diagnostic show differentiating power and are aimed at studying different aspects of mental development of students.

Sampling and standardization procedure for the adapted version of the questionnaire

Sampling. The study involved 2512 students from different regions of the Russian Federation (Lipetsk, Volgograd and Samara regions, Republic of Tatarstan and Chuvash Republic). All participants were 4th grade students (mean age=9.97±0.41 years), 51.1% were boys. Considering the specifics of the test, namely, time limitation, the data often contained blank answers for which the examinees did not have enough time and which, according to the methodology, are counted as incorrect. If a subtest was not completed, it was assumed that the participant did not take the subtest. Thus, 2,342 students completed the VIT questionnaire in full, and statistical indicators were calculated with pairwise exclusion.

Procedure. The study was conducted in 2022 online in the Anketolog system. Study participants were presented with the VIT methodology (Form A) [10] and standard social-demographic questions (gender, age). Testing was conducted in the classroom by a teacher or educational psychologist in strict accordance with the classical instruction. The only difference was that the material was offered to students not on a printed form, but in an online questionnaire on a computer. The transition to the corresponding pages, the beginning and the end of each subtest were carried out according to the instructions. The data are presented in the repository of psychological studies and instruments of the Moscow State Psychological and Pedagogical University RusPsyDATA [8].

Results and Discussion

Cronbach’s α score was used to assess the internal consistency of the questionnaire. The GIT questionnaire showed excellent internal consistency (standardized Cronbach’s Alpha=0.90), indicating the necessity of each subtest in the methodology. Descriptive statistics for subtests and total score of the questionnaire are presented in Table 1.

Cronbach’s Alpha calculated for each subtest separately also showed high internal consistency of all subtests of the questionnaire. Exploratory factor analysis showed that the 7 subscales add up to a single factor that explains 63.4% of the total variance. This is also evidenced by rather strong correlations between the subtests of the questionnaire (Table 2).

Confirmatory factor analysis was used to validate the model of the questionnaire, based on the results of which we can conclude that the model fits the data well: SRMR=0.02; CMIN/df=13.1; GFI=0.98; IFI=0.98; CFI=0.98; RMSEA=0.072 [0.063; 0.081]. The structure of the questionnaire is presented in the figure below.

Table 1

Descriptive statistics and Cronbach's Alpha values for subtests and total GIT questionnaire score

Subtest	Number of subjects who completed the subtest	Mean \pm standard deviation	Median [Lower quartile; Upper quartile]	Cronbach's alpha at removal	Cronbach's alpha subtest
Subtest 1	2501	8,33 \pm 4,26	7,0 [5,0; 11,0]	0,82	0,83
Subtest 2	2490	5,93 \pm 3,62	5,0 [4,0; 7,0]	0,82	0,88
Subtest 3	2481	6,58 \pm 3,56	6,0 [4,0; 8,0]	0,82	0,85
Subtest 4	2481	16,6 \pm 9,75	18,0 [10,0; 24,0]	0,83	0,93
Subtest 5	2443	7,98 \pm 3,89	8,0 [5,0; 10,0]	0,82	0,86
Subtest 6	2465	20,05 \pm 8,7	19,0 [14,0; 25,0]	0,80	0,93
Subtest 7	2411	14,12 \pm 9,98	12,0 [8,0; 15,0]	0,83	0,99
GIT, total	2342	80,1 \pm 33,99	74,0 [58,0; 93,0]		

Table 2

Subtest	Standardized RMR	GFI	NFI	IFI	CFI	RMSEA
Subtest 1	0,0385	0,9590	0,9270	0,9330	0,9330	0,0650
Subtest 2	0,0422	0,9390	0,9230	0,9280	0,9280	0,0710
Subtest 3	0,0377	0,9350	0,9030	0,9050	0,9050	0,1130
Subtest 4	0,1173	0,8000	0,8300	0,8360	0,8340	0,0990
Subtest 5	0,0230	0,9840	0,9750	0,9780	0,9780	0,0480
Subtest 6	0,0488	0,9070	0,9170	0,9260	0,9250	0,0570

Note: ** — level $p \leq 0,01$.

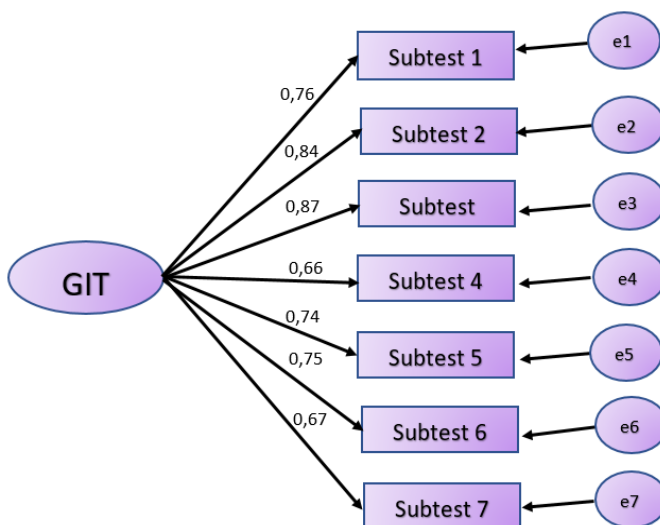


Fig. CFA results: structure of the questionnaire with seven subtests

A CFA was also conducted to evaluate the model of each subtest. The results showed good structure for subtests 1, 2, 3, 5 and 6 and satisfactory for subtest 4. The model quality data are presented in Table 3.

Invariance analyses were conducted to test the model across gender and age. The main objective of the analysis is to check that there are no differences in the questionnaire models for different groups (configural invariance), no differences in the factor loadings of items for different groups (metric invariance), and no differences between the contributions of different subscales to the outcome variable for different groups (scalar invariance). For each variable under study (gender, age), all 3 types of invariance were calculated, which showed that the GIT questionnaire exhibited complete invariance at all three levels in both gender and age comparisons. The results of invariance analysis are presented in Table 4.

A two-factor analysis of variance was conducted to assess differences in the sex and age structure of the GIT questionnaire. The main effect of the variable 'gender' was statistically insignificant ($F(1,2320)=0.14$; $p=0.706$). Despite a statistically significant interaction between sex and age ($F(2,2320)=5.20$; $p=0.0056$) and the main effect of the variable 'age' ($F(2,2320)=24.32$; $p<0.0001$), the magnitude of the effects was quite small ($\eta^2=0.004$ and 0.021 , respectively). When analysed by subtest, effect sizes were also extremely small ($\eta^2 \leq 0.02$). Thus, we can conclude that there are no differences between study participants according to gender and age on our questionnaire. Based on these results, we can identify uniform norms for 4th grade schoolchildren regardless of gender. For this purpose, we calculated stanines based on the 4th, 11th, 23rd, 40th, 60th, 77th, 89th

Table 3

Results of confirmatory factor analysis for each of the subtests of the methodology

Субтест	Standardized RMR	GFI	NFI	IFI	CFI	RMSEA
Субтест 1	0,0385	0,9590	0,9270	0,9330	0,9330	0,0650
Субтест 2	0,0422	0,9390	0,9230	0,9280	0,9280	0,0710
Субтест 3	0,0377	0,9350	0,9030	0,9050	0,9050	0,1130
Субтест 4	0,1173	0,8000	0,8300	0,8360	0,8340	0,0990
Субтест 5	0,0230	0,9840	0,9750	0,9780	0,9780	0,0480
Субтест 6	0,0488	0,9070	0,9170	0,9260	0,9250	0,0570

Table 4

Invariance analysis of the GIT model

Invariance	gender	CFI	RMSEA	SRMR	$\Delta\chi^2$ (Δdf)	Δ CFI	Δ RMSEA	Δ SRMR
	χ^2 (df)							
configurational	187,0* (28)	0,983	0,049	0,024	-	-	-	-
metric	207,5* (34)	0,981	0,047	0,028	20,5* (6)	0,002	0,002	0,003
Scalar	346,6* (40)	0,967	0,057	0,028	139,1* (6)	0,014	0,010	0,000
	age							
configurational	229,7* (42)	0,979	0,044	0,032	-	-	-	-
metric	300,8* (54)	0,972	0,044	0,044	71,1* (12)	0,007	0,000	0,012
Scalar	329,0* (66)	0,97	0,041	0,044	28,2* (12)	0,002	0,003	0,001

Note:* — $p<0,01$.

and 96th percentiles, which are presented in Table 5.

For ease of use, it is common to stop at 3 levels: low, medium and high. We would recommend to separate the 3rd stanine separately into the level ‘Closer to Normal’, so that there would be some gap between the result ‘Normal’ and ‘Low level of intelligence’ for a more relaxed attitude of parents to the child’s test results. Thus, the authors propose the interpretation of the results presented in Table 6.

The obtained results agree well with the norms of the original questionnaire. The original questionnaire has norms for 3rd grade (normal level 70—90) and for 5th grade pupils (normal level 80—100), which are quite close to those we obtained for 4th grade pupils. It should be noted that the authors of the original questionnaire

give a very small interval for the norm, but also single out separately the ‘level close to normal’, similar, in fact, to ours. The high level is estimated in the original questionnaire as more than 90 and 100 points for 3rd and 5th graders respectively, which is fully consistent with our high level for 4th grade pupils.

Conclusion

The standardisation of the adapted electronic version of the GIT questionnaire, which allows assessing the formation of intellectual operations of cognitive universal learning actions, has been carried out. According to the results of the work, it can be stated that the electronic version of the GIT questionnaire has good psychometric properties and can be used to assess the intellectual abilities of young schoolchildren.

Table 5

GIT normative values for 4th grade students

Level	Stanine	Points
low	1 stanine	0—36
	2 stanine	37—45
	3 stanine	46—56
medium	4 stanine	57—68
	5 stanine	69—81
	6 stanine	82—96
high	7 stanine	97—121
	8 stanine	122—167
	9 stanine	168—200

Table 6

Results of the GIT methodology for 4th grade students

Level	Scores
Low IQ	0 — 45 points
Close to a normal IQ level	46 — 56 points
Normal IQ level	57 — 96 points
High IQ level	97 points and more

Приложение

Групповой интеллектуальный тест (ГИТ): диагностика умственного развития младших школьников (9—10 лет) (компьютерная модификация для 4 класса Е.И. Исаев, М.А. Сафронова)

Форма А

Инструкция по проведению:

После того, как дети указали код, пол и возраст, ведущий говорит: «Нажмите кнопку «Далее» — только один раз. К выполнению пока не приступайте. На этой странице написано «Тест 1»».

Необходимо проверить, все ли нажали «Далее», и осуществлять такую проверку перед выполнением остальных тестов. Время на выполнение каждого теста указано в таблице ниже.

Тест	1	2	3	4	5	6	7
Время	4 минуты	6 минут	5 минут	1,5 минуты	4 минуты	3 минуты	4 минуты

Инструкция для обработки результатов:

Все ответы делятся на 3 типа:

свободный ответ — участнику дается поле для ввода ответа, куда он вписывает ответ,

одиночный выбор — участнику дается список ответов, из которых он может выбрать лишь один,

множественный выбор — участнику предлагается несколько списков ответов, в каждом из которых можно выбрать один вариант.

Варианты правильных ответов в таблицах ниже указываются через запятую, пустые ответы (когда нужно оставить ячейку пустой) указываются нижним подчеркиванием.

Тест 1.

Время выполнения — 4 минуты.

Инструкция

К выполнению пока не приступайте. Под названием «Тест 1» написана инструкция. Я ее буду читать, а вы внимательно следите по вашему экрану. Затем по указанию «Начинайте» вы будете выполнять задания. Старайтесь работать быстро и правильно. Прочитайте сначала все предложение, обдумайте, что в нем от вас требуется, и сделайте это. Работайте до тех пор, пока я не скажу: «Достаточно, закончили».

Сообщение на экране:

Инструкция

Прочти внимательно следующие указания и постарайся выполнить их как можно быстрее и точнее.

Далее зачитывается инструкция и дается указание: «Начинайте». Через 4 минуты дается указание: «Достаточно, закончили». Необходимо проверить, все ли выполнили инструкцию.

Вопрос	Поле для ввода	Ответы
1. Поставь три крестика между следующими двумя именами: Иван _____ Саша	Свободный ответ	xxx или +++
2. Выбери самое маленькое из следующих чисел: 9 3 5 7	Одиночный выбор	3
3. Выбери среднюю букву: К Л М Н О	Одиночный выбор	М
4. Выбери самое длинное слово: отец, сестра, дочка	Одиночный выбор	сестра
5. Если Международный женский день отмечается иногда в июле, напиши крестик, если это не так, то допиши отсутствующее слово в предложении: Солнце _____ на востоке	Свободный ответ	восходит

Вопрос	Поле для ввода	Ответы
6. Если ты убежден, что Наполеон не открыл Америку, то дополни соответствующим числом следующее предложение: у собаки ____ ноги	Свободный ответ	4
7, 8. Прочитай внимательно следующие слова: фрукты грибы дерево утро. Впиши в поле предпоследнюю букву во втором слове и вторую букву в предпоследнем слове	Свободный ответ	б е
9. Независимо от того, является ли Ярославль самым большим городом России, выбери дважды слово «да»	Множественный выбор	да / да
10. Напиши в поле любое число, которое будет неправильным ответом на вопрос: Сколько минут в одном часе?	Свободный ответ	Любое число, не равное 60
11, 12. Напиши в первое поле любую букву, кроме буквы Р, и во второе — напиши «нет», если результат $8 \times 9 = 72$ является правильным	Группа свободных ответов	Любая буква, кроме р / Нет
13. Посмотри на следующие числа: 4 и 3. Если железо тяжелее воды, то напиши число, которое больше	Свободный ответ	4
14. Если в слове «копейка» больше букв, чем в слове «спасибо», то выбери первую букву в слове «сон». Если в нем меньше букв, то выбери последнюю букву в этом слове, но в любом случае выбери среднюю букву	Одиночный выбор	о
15. Если можно в Ереван попасть на теплоходе, то реши следующую задачу: $8 \times 4 = \underline{\quad}$, если это невозможно, то напиши вместо результата вопросительный знак	Свободный ответ	?
16. Если не противоречит опыту утверждение, что опасно стоять в грозу под высоким деревом, то напиши крестик во второй строке, если это не так, то напиши третью букву алфавита в первой строке	Группа свободных ответов	_ / x
17. Выбери в следующем утверждении неправильный ответ: 13×3 больше/меньше, чем 7×6	Одиночный выбор	больше
18. Только три слова из следующих: парус добрый случай корень содержат одну и ту же букву; выбери слово, в котором эта буква отсутствует	Одиночный выбор	случай
19, 20. Напиши в строке первую букву названия месяца, который следует после июля, в последнюю из трех строк и последнюю букву названия месяца, который предшествует июню, напиши в первую из строк	Группа свободных ответов	й / _ / а

Тест 2.

Время выполнения — 6 минут.

Инструкция

Нажмите кнопку «Далее». К выполнению пока не приступайте. Наверху написано: «Тест 2». Под ним вопросы. Это задачи по математике. Решайте их быстро и правильно. Если не сможете в уме, считайте на бумаге. Начинайте.

Сообщение на экране:

Инструкция

Ответь быстро и правильно на следующие вопросы.

Через 6 минут дается инструкция: «Достаточно, закончили». Необходимо проследить, чтобы все школьники выполнили указание.

Вопрос	Поле для ввода	Ответы
1. Сколько будет, если к 16 яблокам прибавить 7 яблок?	Свободный ответ	23
2. Если разделить 32 ореха на 4 одинаковые кучки, сколько орехов будет в каждой кучке?	Свободный ответ	8

Вопрос	Поле для ввода	Ответы
3. У Саши было 12 конфет, ему дали еще 3 конфеты, 6 конфет он съел. Сколько конфет у него осталось?	Свободный ответ	9
4. Велосипедист проехал 96 км за 6 часов. Сколько км он проезжал в среднем за один час?	Свободный ответ	16
5. Сколько учеников в 9-ти классах, если в каждом классе по 30 учеников?	Свободный ответ	270
6. Сколько слов содержит книга, состоящая из 20 страниц, если на каждой странице 15 строчек и в каждой строчке 10 слов?	Свободный ответ	3000
7. Сколько мячей можно купить на 12 рублей, если 3 мяча стоят 2 рубля?	Свободный ответ	18
8. Я купил 4 кг помидоров и 3 кг клубники. 1 кг помидоров стоит 2 рубля, а 1 кг клубники — 2 рубля 30 копеек. Сколько я получил сдачи, если я дал продавцу 20 рублей?	Свободный ответ	5 рублей 10 копеек
9. На заводе изготовили несколько машин стоимостью 27000 рублей. Их продали за 31000 рублей. Продажная цена каждой машины больше ее себестоимости на 500 рублей. Сколько машин изготовили?	Свободный ответ	8
10. Аквариум вмещает 500 куб. дм воды. Если длина аквариума 10 дм, а высота 5 дм, какова его ширина?	Свободный ответ	10
11. У Наташи в три раза больше денег, чем у Вани. У Вани на 50 копеек больше денег, чем у Гриши. У Гриши 2 рубля. Сколько денег у всех вместе?	Свободный ответ	12
12. В двух коробках находятся 34 карандаша. В большой коробке на 8 карандашей больше, чем в маленькой. Сколько карандашей находится в большой коробке?	Свободный ответ	21
13. Я купил $\frac{3}{4}$ кг груш за 72 копейки. Сколько стоит 1 кг груш?	Свободный ответ	96
14. Если 5 рабочих вырыли канаву длиной 200 м за 4 дня, сколько требуется рабочих, чтобы вырыть эту канаву за полдня?	Свободный ответ	40
15. 2 курицы несут 2 яйца за 2 дня. Сколько яиц снесут 6 кур за 6 дней?	Свободный ответ	18
16. Бригада из трех человек получила премию 63 рубля. Эту сумму необходимо разделить таким образом, чтобы А получил 3 части, Б — 2 части и В — 2 части. Сколько рублей получит А?	Свободный ответ	27
17. Сколько раз нужно прибавить $\frac{3}{2}$ к 6, чтобы получить 15?	Свободный ответ	6
18. Во вторник в 12 часов дня я установил на своих часах точное время, на следующий день в 18 часов я заметил, что они убежали на 15 секунд. На сколько секунд они уйдут вперед за полчаса?	Свободный ответ	$\frac{1}{4}$
19. Во сколько раз тяжелее половина груза весом полторы тонны, чем груз весом полтонны?	Свободный ответ	1,5
20. В дно реки вбили сваю, которая возвышалась над водой на 40 см. $\frac{1}{3}$ сваи находится в земле, $\frac{1}{4}$ — в воде. Какова длина сваи?	Свободный ответ	96

Тест 3.

Время выполнения — 5 минут.

Инструкция

Нажмите кнопку «Далее». К выполнению пока не приступайте. Наверху написано: «Тест 3». В предложения напишите в строку недостающие слова. На место каждого пропуска надо вписать только одно слово. Объясните пример: «Ученик... задачу». Какое слово надо вписать?

Следующий пример: «У лошади четыре...»

К выполнению пока не приступайте. Когда я дам команду, начинайте вписывать в строку недостающие слова в предложения так, чтобы каждое предложение имело смысл.

Помните, что в каждый пропуск можно вписать только одно слово. Начинайте.

Сообщение на экране:

Инструкция

Напиши пропущенные слова в следующих предложениях. В каждый пропуск впиши только одно слово.

Примеры:

Ученик решает задачу.

У лошади четыре ноги.

Через 5 минут дается инструкция: «Достаточно, закончили. Нажмите кнопку «Далее». У всех открыт тест 4?»

Проверьте, чтобы все нажали кнопку «Далее».

Вопрос	Поле для ввода	Ответы
1. Рабочий на заводе	Свободный ответ	работает
2. Собака — полезное	Свободный ответ	животное
3. Ноябрь — предпоследний в году	Свободный ответ	месяц
4. восходит утром и вечером	Свободный ответ	солнце заходит
5. Осенью желтеют и с деревьев	Свободный ответ	листья падают
6. Мы пишем карандашом, или	Свободный ответ	или ручкой
7. Тяжелый груз только тот, у много	Свободный ответ	поднимет кого силы
8. в воскресенье будет погода, мы с братом пойдем прогулку	Свободный ответ	Если хорошая на
9. В письме, я получил, были плохие	Свободный ответ	которое вести
10. Я не навестил тебя сегодня, я должен остаться дома, моя мама	Свободный ответ	потому что болеет
11. Чистота является сохранения	Свободный ответ	условием здоровья
12. Холодная хорошо утоляет	Свободный ответ	вода жажду
13. Время иногда человека, деньги	Свободный ответ	для дороже чем
14. Вторая девятнадцатого является эпохой крупных технических	Свободный ответ	половина века открытый
15. Только изредка человек жалеет, мало говорил, но жалеет, что много	Свободный ответ	что часто говорил
16. Каждый должен прежде всего сам на , а на помощь	Свободный ответ	надеяться себя не(потом) другого
17. Мудрый человек иногда общения с неинтересными людьми, не скучать	Свободный ответ	избегает чтобы
18. Если цена товара, то его качество быть хорошим	Свободный ответ	высокая должно
19. Практический человек больше в научного исследования, в, с помощью которых они были	Свободный ответ	заинтересован результатах чем методах достигнуты
20. О можно говорить тогда, когда в данного явления принимает участие столько различных факторов, что их воздействие нельзя заранее	Свободный ответ	случайности возникновении предвидеть

Тест 4.

Время выполнения — 1,5 минуты.

Инструкция

Читайте инструкцию. Если два слова имеют одинаковое или очень похожее значение, то выберите между ними букву «С», если у них разные значения, то выберите между ними букву «Р».

Разберитесь с детьми 3 примера, приведенных в описании теста.

«Примеры:

большой Р маленький

мощный С сильный

сухо Р мокро

Аналогично будете выполнять все задания. Начинайте».

Сообщение на экране:

Инструкция

Если два слова имеют одинаковое или очень сходное значение, выбери С.

Если у них разные значения, выбери Р.

Примеры:

большой Р маленький

мощный С сильный

сухо Р мокро

Через 1,5 минуты дается команда: «Достаточно! Закончили».

Вопрос	Поле для ввода	Ответ
1. Холодный горячий	Одиночный выбор	Р
2. Светлый темный	Одиночный выбор	Р
3. Да нет	Одиночный выбор	Р
4. Гладкий шероховатый	Одиночный выбор	Р
5. Платье одежда	Одиночный выбор	С
6. Жидкий твердый	Одиночный выбор	Р
7. Заснуть проснуться	Одиночный выбор	Р
8. Трудность проблема	Одиночный выбор	С
9. Правда ложь	Одиночный выбор	Р
10. Поднять бросить	Одиночный выбор	Р
11. Разрешить запретить	Одиночный выбор	Р
12. Середина край	Одиночный выбор	Р
13. Доверять подозревать	Одиночный выбор	Р
14. Болезненный закаленный	Одиночный выбор	Р
15. Тихий спокойный	Одиночный выбор	С
16. Начало конец	Одиночный выбор	Р
17. Ошибка заблуждение	Одиночный выбор	С
18. Близкий далекий	Одиночный выбор	Р
19. Больной хворый	Одиночный выбор	С
20. Уставший бодрый	Одиночный выбор	Р
21. Согласие общность	Одиночный выбор	С
22. Обязательный сомнительный	Одиночный выбор	Р
23. Обыкновенный исключительный	Одиночный выбор	Р
24. Успех удача	Одиночный выбор	С
25. Крутой обрывистый	Одиночный выбор	С
26. Мнение взгляд	Одиночный выбор	С
27. Общий частный	Одиночный выбор	Р
28. Приятный милый	Одиночный выбор	С
29. Застенчивый робкий	Одиночный выбор	С

Вопрос	Поле для ввода	Ответ
30. Согласиться одобрить	Одиночный выбор	С
31. Растерянный беспомощный	Одиночный выбор	С
32. Легкомысленный беззаботный	Одиночный выбор	С
33. Частичный полный	Одиночный выбор	С
34. Ограничить снизить	Одиночный выбор	С
35. Вечный бесконечный	Одиночный выбор	С
36. Раздражитель стимул	Одиночный выбор	С
37. Предпосылка условие	Одиночный выбор	С
38. Причина следствие	Одиночный выбор	Р
39. Современник сверстник	Одиночный выбор	С
40. Подавить ограничить	Одиночный выбор	С

Тест 5.

Время выполнения — 4 минуты.

Инструкция

Нажмите кнопку «Далее». К выполнению пока не приступайте. Наверху написано «Тест 5». Прочитайте детям инструкцию и разберите примеры. «Посмотрите на первый пример. Как сгруппированы эти числа? Какая цифра идет после 12-ти?... А потом? ...» и т.д.

Затем ведущий говорит: «Дальше идут ряды чисел, каждый ряд составлен по своему особому принципу. Внимательно просмотрите каждый ряд, еще раз пересчитайте и на пустые места справа напишите два числа таким образом, чтобы ряд продолжался правильно. К каждому ряду припишете только два числа. Начинайте».

Сообщение на экране:

Инструкция

Внимательно прочитай каждый ряд чисел и на два свободных места напиши в поле такие два числа, которые продолжают данный числовой ряд.

Примеры:

Через 4 минуты дается инструкция: «Достаточно! Закончили».

Вопрос	Поле для ввода	Ответы
3 4 5 6 7 8 __ __	Свободный ответ	9 10
5 10 15 20 25 30 __ __	Свободный ответ	35 40
8 7 6 5 4 3 __ __	Свободный ответ	2 1
9 9 7 7 5 5 __ __	Свободный ответ	3 3
3 6 9 12 15 18 __ __	Свободный ответ	21 24
8 2 6 2 4 2 __ __	Свободный ответ	2 2
5 9 13 17 21 25 __ __	Свободный ответ	29 33
27 27 23 23 19 19 __ __	Свободный ответ	15 15
8 9 12 13 16 17 __ __	Свободный ответ	20 21
1 2 4 8 16 32 __ __	Свободный ответ	64 128
22 19 17 14 12 9 __ __	Свободный ответ	7 4
4 5 7 10 14 19 __ __	Свободный ответ	25 32
12 14 13 15 14 16 __ __	Свободный ответ	15 17
24 23 21 20 18 17 __ __	Свободный ответ	15 14
16 8 4 2 1 1/2 __ __	Свободный ответ	1/4 1/8

Вопрос	Поле для ввода	Ответы
18 14 17 13 16 12 __ __	Свободный ответ	15 11
12 13 11 14 10 15 __ __	Свободный ответ	9 16
2 5 10 17 26 37 __ __	Свободный ответ	50 65
21 18 16 15 12 10 __ __	Свободный ответ	9 6
3 6 8 16 18 36 __ __	Свободный ответ	38 76

Тест 6.

Время выполнения — 3 минуты.

Инструкция

Нажмите кнопку «Далее». К выполнению пока не приступайте. Наверху написано: «Тест 6». Далее следует прочитать инструкцию и разобрать примеры. Прочитав первый пример, говорите: «Вам надо выбрать одно из 4-х слов. Какое выберете?» Следующие примеры разберите аналогичным образом.

«Как и в примерах, в следующих заданиях выберите то из 4-х слов, которое связано с третьим словом так же, как первое со вторым».

Сообщение на экране:

Инструкция

Прочти внимательно первые три слова в каждой строчке. Первые два связаны между собой. Найди к третьему слову такое четвертое, которое будет с ним связано так же, как первое со вторым, и выбери его.

Примеры:

ботинок: нога = шляпа: пальто нос видеть голова

птица: петь = собака: кусать лаять сторожить бегать

небо: синее = трава: растет лето зеленая высокая

платье: ткань = ботинки: бумага гуталин гулять кожа

Через 15 минут дается инструкция: «Достаточно, закончили».

Вопрос	Поле для ввода	Ответы
1. Ручка: писать = нож: ____	Одиночный выбор	резать
2. Сидеть: стул = спать: ____	Одиночный выбор	кровать
3. Город: дома = лес: ____	Одиночный выбор	деревья
4. Сладкий: сахар = кислый: ____	Одиночный выбор	уксус
5. Волк: овца = кошка: ____	Одиночный выбор	мышь
6. 2: 20 = 30: ____	Одиночный выбор	300
7. Воробей: птица = щука: ____	Одиночный выбор	рыба
8. Нос: лицо = палец: ____	Одиночный выбор	рука
9. Вода: пить = хлеб: ____	Одиночный выбор	есть
10. Март: апрель = среда: ____	Одиночный выбор	четверг
11. Картина: стена = ковер: ____	Одиночный выбор	пол
12. Пить: напиток = есть: ____	Одиночный выбор	пища
13. Склад: товар = библиотека: ____	Одиночный выбор	книги
14. Растение: стебель = дерево: ____	Одиночный выбор	ствол
15. Слезы: горе = смех: ____	Одиночный выбор	радость
16. Ручка: чернила = кисть: ____	Одиночный выбор	краска
17. Лыжи: зима = велосипед: ____	Одиночный выбор	лето
18. Роза: цветы = яблоко: ____	Одиночный выбор	фрукты

Вопрос	Поле для ввода	Ответы
19. Человек: дом = птица: ____	Одиночный выбор	гнездо
20. 8: 40 = 3: ____	Одиночный выбор	15
21. Россия: Москва = Венгрия: ____	Одиночный выбор	Будапешт
22. Художник: картина = писатель: ____	Одиночный выбор	книга
23. Есть: толстый = голодать: ____	Одиночный выбор	худой
24. Есть: голод = пить: ____	Одиночный выбор	жажда
25. Охотник: ружье = рыболов: ____	Одиночный выбор	удочка
26. Красивый: уродливый = привлекать: ____	Одиночный выбор	отвращать
27. Часы: время = термометр: ____	Одиночный выбор	температура
28. Восток: запад = А: ____	Одиночный выбор	я
29. Вверху: внизу = крышка: ____	Одиночный выбор	дно
30. Ложка: суп = вилка: ____	Одиночный выбор	мясо
31. Хороший: плохой = длинный: ____	Одиночный выбор	короткий
32. Час: день = день: ____	Одиночный выбор	неделя
33. Мороз: лед = кипение: ____	Одиночный выбор	пар
34. Уважение: презрение = друг: ____	Одиночный выбор	враг
35. Покупка: продажа = приобрести: ____	Одиночный выбор	потерять
36. Класс: учитель = завод: ____	Одиночный выбор	директор
37. Болезнь: здоровье = разрушать: ____	Одиночный выбор	строить
38. Минерал: растение = растение: ____	Одиночный выбор	животное
39. Туловище: человек = часть: ____	Одиночный выбор	целое
40. Сомнительный: вероятный = вероятный: ____	Одиночный выбор	достоверный

Тест 7.

Время выполнения — 4 минуты.

Инструкция

Нажмите кнопку «Далее». К выполнению пока не приступайте. Наверху написано «Тест 7». Далее следует прочитать инструкцию и объяснить обозначения.





В ключе нарисованы различные значки и под ними в квадратиках цифры от 1 до 9. Ваша задача — написать под каждым значком ту цифру, под которой этот значок находится в ключе. Работайте быстро и правильно. Не пропускайте ни одного квадратика. Номера значков ставьте в той последовательности, в какой они идут друг за другом. Будет ошибкой, если вы напишете сначала только единицы, потом — только двойки и т.д. Начинайте!

Через 4 минуты дается инструкция: «Достаточно. Закончили. Нажмите кнопку «Завершить тест»». Проверьте выполнение указания. Следите, чтобы в это время никто не работал.

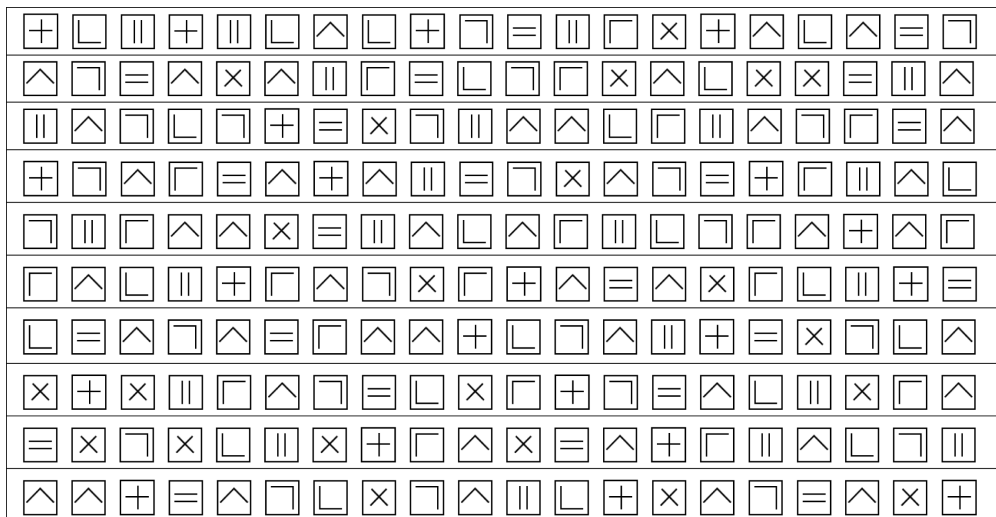
Сообщение на экране:

Инструкция

В пустые клетки под каждым значком последовательно вписывай такие же цифры, которыми обозначены соответствующие значки в ключе. Прокрути значки вправо до конца.

					=			
1	2	3	4	5	6	7	8	9

КЛЮЧ



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The Role of a School Theater in the Development of Communication of Adolescents: Results of a Longitudinal Study

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The article analyzes the influence of theatrical activities on enhancing students' of-line communication skills and overall socialization. The authors present the results of a two-year theater project conducted in 2023 and 2024. This project included training in scriptwriting and acting, the production of various digital and creative products, as well as group discussions and reflection sessions. The article provides an analysis of data collected during three testing episodes. The research design incorporated Rozhkov's test for assessing the socialization levels of adolescents, the Children's Assertive Behavior Scale (CABS) adapted by Y.Z. Gilbukh, and interviews with both teachers and students. A total of 79 adolescents aged 13 to 15 participated in the project, which consisted of two experimental groups with varying levels of educational motivation and skills in independent and creative work, along with one control group. It has been empirically established that specially organized theatrical activities within the framework of Digital Theater pedagogical technology contribute to adolescents internalizing humanistic values, improving indicators such as social adaptation and social activity, and strengthening their competence in communication. The communication skills acquired during the first year of the project proved to be sustainable, as demonstrated by subsequent measurements. The article indicates that the best results were achieved by students in the experimental group who were highly engaged in independently performing all tasks as well as participating in creative and production processes. In contrast, students in the second experimental group required more support and time from adults to develop the necessary skills. In conclusion, it is essential to consider the unique characteristics of students and their groups when implementing theatrical activities.

Keywords: adolescents; theatrical activity; communication skills; communicative position; socialization; adaptation.

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Роль школьного театра в развитии коммуникации подростков: результаты лонгитюдного исследования

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Материалы статьи посвящены анализу влияния театральной деятельности на совершенствование у школьников навыков офлайн-коммуникации и повышение уровня социализированности в целом. Авторы представили результаты организованного ими двухгодичного театрального проекта (в 2023 и 2024 гг.), который включал режиссерские и актерские тренинги, создание цифровых и творческих продуктов, групповые дискуссии и рефлексивные сессии. В ходе лонгитюдного исследования проанализированы данные трех срезов по Тесту коммуникативных умений Л. Михельсона для подростков и старшеклассников (в адаптации Ю.З. Гильбуха) и Методике изучения социализированности подростков М.И. Рожкова, а также интервью с педагогами и подростками. Выборка составила 79 подростков 13-15 лет — две экспериментальные группы с разным уровнем учебной мотивации и навыками самостоятельной и творческой работы, а также одна контрольная. Установлено, что специально организованная театральная деятельность по педагогической технологии «Мультимедиа-театр» способствует интериоризации гуманистических ценностей подростками, развитию социальной адаптированности и активности подростков, укреплению компетентной позиции в общении. Приобретенные в ходе первого года проекта коммуникативные навыки обладали устойчивостью и сохранились к последующему измерению. Показано, что наиболее быстрых результатов достигли те учащиеся экспериментальной группы, которые были максимально включены в самостоятельное выполнение всех заданий и стремились проявить себя в творческом процессе. Учащимся из второй экспериментальной группы потребовалось больше внимания взрослых и времени для приобретения соответствующих навыков. Делается вывод о необходимости учета особенностей школьного коллектива при реализации театральной деятельности.

Ключевые слова: подростки; театральная деятельность; коммуникативные навыки; коммуникативная позиция; социализированность; адаптированность.

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Introduction

Communication with peers and building social connections as a part of it is priority activity for adolescents. At the same time, new agents of socialization, such as social networks and virtual communities, directly influence the form and content of communication, creating a priority for online interaction [6]. Today, many researchers are concerned with the situation when face-to-face communication is being replaced with virtual communication in order to compensate for the lack of attention from peers as well as in attempt to expand the circle of communication. However, the overuse of online communication often results in developing by adolescents an avoidant position in offline social interactions [3; 19].

In many ways, the threat to adolescents is seen in a decrease in skills and desire to communicate, in a reduction of the time of face-to-face communication, in increase in social anxiety and competition [15]. As information technologies change communication channels, new forms of interaction appear to affect the phenomenon of friendship, quality and duration of communication [5]. In addition to the fact that new forms of communication should be studied, it is also necessary to consider their roles in changing face-to-face interpersonal interactions, which lead to emerging problems in socialization.

Though today the scientific society is in search for tools to improve the effectiveness of offline communication of adolescents [10; 11; 13:14]. In foreign practice, one of such tools is theatrical activity (school theater, drama in education, etc.), that not only helps to satisfy the age-related needs of adolescents and socialize them effectively, but also improves the pedagogical process itself by bringing the class community together, developing the value of friendship and healthy emotional attachment, improving the psychological climate in classes, resolving conflicts both with peers and adults [12; 16; 17; 18].

The Russian analogue in the field of drama pedagogy is the activity technology “Digital Theater”. This pedagogical technology is aimed at resolving age-related problems and complex development of adolescents, including the development of meta-subject competencies and communication skills as a part of them [9]. The focus of the drama projects within “Digital Theater” keeps on the process of preparing a

performance — master classes on acting, communicating and playwriting, trainings on articulation, oratory, imagination and free improvisation.

The set of measures described and the fulfillment of specially designed tasks help teachers work with the Zone of Proximal Development (ZPD) of adolescents. Such tasks and exercises for students are based on research and productive activities, they are also aimed at collecting information and data for further script writing as well as creating material and non-material products for the theatre performance. Activities, including theatrical ones, are modeled in such a way as to provide the emergence of “microdramas” in adolescents or specific emotional experiences (“*perzhivanie*” in L. Vygotsky terms) that are based on the material analyzed or played. Such activities help to experiment with certain roles and psychological objects, try safely new activities, get into the role/character and gain new experience [9]. Staging the play is also an inevitable part of the work. It is a must to include into the play some digital products, created by students (animation, videos, digital stories, etc.). While working on a performance, teachers are considered to pay attention not so much to its artistic value or to revealing the acting potential of students, but to the creation of a favorable environment and equal opportunities for all the participants, trying to involve the maximum number of students into the process, and to lessen competition and rivalry [8].

In order to examine the effectiveness of the application of this technology to the work with adolescents a theatrical project was carried out for two years. The project was headed by O.V. Rubtsova and took place in School No. 4, Kashira town, Moscow Region. The article presents an analysis of the influence of theatrical activities on improving schoolers’ communication skills, developing their pro-social positions and increasing the level of socialization in general.

Organization and research methods

The study involved 79 teenagers, within them 42 girls and 37 boys aged 13—14 years in 2023 (these adolescents became 14—15 years old in 2024). After the interviews with school teachers, three classes were selected for the project. They had following characteristics:

Experimental group 1 (EG1) (N=27, 15 girls and 12 boys): intergroup disunity, most students

had low learning motivation, difficulties in learning material acquisition, lack of independent research skills, problems in solving new tasks. They also had an earlier formed habit to redo tasks in order to improve grades and academic performance. In addition, the group included several adolescents with mental disabilities.

Experimental group 2 (EG2) (N=31, 15 girls and 16 boys): adolescents presented rather close-knit team, who seemed to show respect towards classmates and teachers. Also, most of the teenagers had high motivation for learning and social activities, they were ready and able to work on tasks independently.

Control group (CG) (N=21, 12 girls and 9 boys): the majority of students had high learning motivation with a focus on satisfaction of their personal interests. They had an average level of intergroup cohesion, a lack of interest in social activities in both school and after school life, they demonstrated an average level of independent work skills.

The methods used in the study:

L. Mikhelson's test of communication skills for teenagers and high school students (adapted by Yu.Z. Gilbukh) [4]. The test contains 27 communicative situations, a respondent has to choose 1 out of 5 responses to each situation which he/she considers the most adequate. The test determines three positions in communication — dependent (concessions, neglect of one's interests), aggressive (verbal attacks, forcing the interlocutor to defend himself or experience negative emotions) and competent (establishing sustainable and effective communication to one's own benefit). The predominant number of answers in one of three categories determines the respondent's communication style.

The method for studying the level of adolescents' socialization developed by M.I. Rozhkova [7]. The test was designed to identify the level of development of such indicators as social adaptation, moral education (commitment to humanistic standards of life), activity and autonomy. It contains 20 statements that should be assessed from 0 to 4. Then the sum of points for each subscale should be divided by 5. The indicator is considered to be low if the number is up to 2 points, average if it is from 2 to 3 points, or high if its more than 3.

The theater project was implemented in two stages. **The first stage** was from February to May, 2023. It consisted of 24 theatre sessions mainly with each experimental group separately. The main task was to motivate teenagers to work within their groups, build connections, make them "see" each other and realize the importance of each member of the team, develop a willingness to cooperate and teach them to work in a team. Drama classes included trainings on acting and script writing, creating cartoons, writing essays, intellectual/quiz games, tasks to develop stage interaction, improvisation, imagination, emotional intelligence and reflection skills. A. Chekhov's short stories were chosen to work on during theatre sessions and to stage. Those stories touched upon issues of professional duties, ethics and moral choice, friendship, dignity and philanthropy. The performance was presented in the form of a talk show that became a framework for combining literary material of different styles and transforming it into sketches.

The second stage took place from January to May, 2024. It also included 24 theatre sessions but this time all the adolescents from EG1 and EG2 took part in them together. The drama classes focused on the ways how to resolve conflicts and develop conflict-free behavior strategies (analysis of clashes of motives and interests, causes of emotional tension, development of various ways of responding in conflict situations and skills to overcome stress). Theater sessions included trainings in acting, journalism, video creation, interviewing, tasks aimed at developing self-discipline, self-organization, improvisation, imagination, reflection, communication with adults and peers. The goal of this stage was not only to bring together and establish friendly relations between teenagers from EG1 and EG2, but also to strengthen adolescents' connections with families and friends, teach them to communicate with acquainted and unacquainted adults while collecting documentary material about the World War II for the script of the performance.

During the project three testing episodes were completed. The first testing had taken place in February, 2023, before the theater sessions started. The second testing was done in May, 2023, after the first performance was played to the audience. The third testing was completed after the second performance was played.

In addition to psychological testing methods, the study was also based on interviews with teachers and adolescents and observation of teenagers' behaviors during the project.

The data was analyzed with the use of statistical tests of Kruskal-Wallis, Friedman, Mann-Whitney, Wilcoxon, with the method of multiple and pairwise comparisons. The normal distribution was checked with Kolmogorov-Smirnov test. Calculations were carried out with the use of the statistical software IBM SPSS Statistics 27.

Analysis and Results of the Experimental Study

The effectiveness of the strategy to work with teenagers via theatrical activities was confirmed by the results of empirical research.

According to the results obtained on L. Michelson's test of communicative skills and their value interpretation, all three groups had numerically the leading indicator of a competent position in all three testings (indicators of aggressive and dependent positions had lower values). The results obtained indicate that all

adolescents maintained fairly effective interpersonal communication throughout the study. However, the dynamics for each of the indicators might help to identify the effect of theatrical activities on the adolescents' communication characteristics.

In the 1st testing no significant differences were found between the three groups according to any of the analyzed subscales (the Kruskal-Wallis criterion, "dependent position" $\alpha=0.348>0.05$; "competent position" $\alpha=0.100>0.05$ and "aggressive position" $\alpha=0.219>0.05$, Table 1). Consequently, the levels of all three positions studied in all groups were the same.

In the 2nd and 3rd testings significant differences between the groups on all subscales were revealed. EG2 demonstrated the highest values of the indicator of a competence position in both testings compared to the other two groups with the use of the Kruskal-Wallis criterion (2nd testing $\alpha=0.001\leq 0.001$, pairwise comparisons of ranks: EG1 — 30.02, CG — 35.21, EG2 — 51.94; 3rd testing $\alpha=0.016\leq 0.05$, EG1 — 31.26, CG — 38.76, EG2 — 48.45).

Table 1

Comparison of values between groups EG1, EG2, CG according to L. Michelson's method in three testings (in the analysis of differences between groups there were used the Kruskal—Wallis test, the method of multiple comparisons and paired comparisons, the Mann-Whitney)

Subscale	Kruskal—Wallis statistical tests	Significance level	The significance level in the multiple comparison method, pairwise comparisons by class (with Bonferroni correction)
The first testing			
Dependent position	2,109	0,348	-
Competent position	4,598	0,100	-
Aggressive position	3,033	0,219	-
The second testing			
Dependent position	8,272	0,059*	-
Competent position	14,492	0,001	EG1 and CG; $\alpha=1,000>0,05$ EG1 and EG2; $\alpha=0,001\leq 0,001$ CG and EG2; $\alpha=0,029\leq 0,05$
Aggressive position	8,252	0,016	EG1 and CG; $\alpha=0,012\leq 0,05$ EG1 and EG2; $\alpha=0,04\leq 0,05$ CG and EG2; $\alpha=0,884>0,05$
The third testing			
Dependent position	11,522	0,003	EG1 and CG; $\alpha=1,000>0,05$ EG1 and EG2; $\alpha=0,003\leq 0,05$ CG and EG2; $\alpha=0,085>0,05^{**}$

Subscale	Kruskal—Wallis statistical tests	Significance level	The significance level in the multiple comparison method, pairwise comparisons by class (with Bonferroni correction)
Competent position	8,252	0,016	EG1 and CG; $\alpha=0,777>0,05$ EG1 and EG2; $\alpha=0,013\leq 0,05$ CG and EG2; $\alpha=0,401>0,05$
Aggressive position	4,936	0,085***	-

Notes to table 1: α — significance level; «-» — there are no significant differences. The indicators with the significance level $\alpha\leq 0.05$ are in bold.

In the same group (EG2) occurred the lowest values on the subscales of a dependent position and an aggressive position in both testings. Let's present this conclusion in more detail. So, according to the Mann-Whitney criterion, differences in the indicator of a dependent position in the 2nd testing between EG2 and CG ($\alpha=0.045\leq 0.05$) were revealed. In EG2, the values of this indicator are lower than in CG (mean Me =5.9, standard deviation SD =3.28 and in CG Me =8.1, SD=3.62). Based on the Kruskal-Wallis criterion, differences were found in the indicator of a dependent position in the 3rd testing ($\alpha=0.003\leq 0.01$), while the values in EG2 are lower than in the other two groups (ranks EG1 — 49.20, CG — 43.62, EG2 — 20.53). Further, the Kruskal-Wallis criterion showed significant differences in the indicator of an aggressive position in the 2nd testing ($\alpha=0.016\leq 0.05$), with the lowest values for this indicator in EG2 (ranks: EG1 — 49.56, CG — 39.87, EG2 — 32.31). Finally, the Mann-Whitney criterion revealed significant differences in the indicator of an aggressive position in the 3rd testing ($\alpha=0.034\leq 0.05$). It turned out that the values in EG2 are lower than in EG1 (Me=5.3, SD=3.46 and in EG1 Me=7.3, SD=3.73).

The differences between EG1 and EG2 were especially pronounced. So, in EG1 the indicator of an aggressive position is higher than in EG2 whereas in EG2 the indicator of a competent position is higher than in EG1. It is worth noting that no significant changes were found between EG1 and CG in the 2nd and 3rd testings.

During the experiment, in CG there were fixed an increase in the indicator of an aggressive position and a decrease in the indicator of a competent position in the 2nd and 3rd testings in relation to the 1st testing. Based on the Wilcoxon criterion, a significant increase in indicators was revealed from the 1st to the 2nd testings $\alpha=0.004\leq 0.01$ and from the 1st to the 3rd test-

ings $\alpha=0.007\leq 0.01$ (the number of “-” (negative) ranks is 2, “+” (positive) ranks is 13 and “.” ranks is 6 and “+” ranks is 14, respectively). On the scale of competent position, the Wilcoxon criterion showed a significant decrease from the 1st to the 2nd testings ($\alpha=0.031\leq 0.05$, “-” ranks 12 and “+” 5) and from the 1st to the 3rd testings ($\alpha=0.033\leq 0.05$, “-” ranks 13 and “+” 7).

The intra-group dynamics of the indicators of an aggressive and a competent positions in EG1 is similar to the situation in CG — there is an increase in the value of the indicator of an aggressive position and a decrease in the value of the indicator of a competent position (but in EG1, a decrease in a competent position was found only between the 1st and 3rd testings). In the data analysis, the Wilcoxon criterion was applied, which revealed a significant increase in the indicator of an aggressive position from the 1st to the 2nd testings $\alpha=0.009\leq 0.01$ and from the 1st to the 3rd testings $\alpha=0.040\leq 0.05$ (ranks: “-” 7 and “+” 16, “.” 9 and “+” 15, respectively), as well as a decrease in the indicator of a competent position between the 1st and 3rd testings ($\alpha=0.029\leq 0.05$, “-” 16 and “+” 8).

There were no significant differences found within EG2 for all the methods used.

It should be noted that in all the studied groups there were no significant differences between the 2nd and 3rd testings, and, also, there was no intra-group dynamics of the indicator of a dependent position.

Thus, participation in the theater project did not affect the intra-group dynamics in EG2, but, in comparison to CG and EG1, in EG2 in the 2nd and 3rd testings, the indicator of a competent position is higher whereas the indicators of a dependent and aggressive positions are lower. As for EG1, the situation is opposite — no significant differences were found in the 2nd and 3rd testings in comparison to CG, while within

Table 2

Dynamics of intra-group indicators for the first, second and third testings in EG1, EG2, KG according to the L. Michelson’s method (Friedman’s criterion, the method of multiple comparisons and paired comparisons, the Wilcoxon criterion were applied)

Subscales	The significance level of the Friedman criterion	The significance level in the method of multiple comparisons, paired comparisons by groups (with Bonferroni correction)	The significance level of the Wilcoxon criterion. An additional analysis to the Friedman criterion was carried out.	The trend of shifts (negative and positive ranks are compared)
EG1				
Dependent position	0,413	-	-	-
Competent position	0,180	-	1 st and 2 nd testings; $\alpha=0,102>0,05$ 1st and 3rd testings; $\alpha=0,029\leq 0,05$ 2 nd and 3 rd testings; $\alpha=0,775>0,05$	- entrance > output -
Aggressive position	0,181	-	1st and 2nd testings; $\alpha=0,009\leq 0,01$ 1st and 3rd testings; $\alpha=0,040\leq 0,05$ 2 и 3 срезы; $\alpha=0,892>0,05$	entrance < output entrance < output -
CG				
Dependent position	0,912	-	-	-
Competent position	0,152	-	1st and 2nd testings; $\alpha=0,031\leq 0,05$ 1st and 3rd testings; $\alpha=0,033\leq 0,05$ 2 nd and 3 rd testings; $\alpha=0,895>0,05$	entrance > output entrance > output -
Aggressive position	0,024	1 st and 2 nd testings; $\alpha=0,092>0,05$ 1 st and 3 rd testings; $\alpha=0,076>0,05$ 2 nd and 3 rd testings; $\alpha=1,000>0,05$	1st and 2nd testings; $\alpha=0,004\leq 0,01$ 1st and 3rd testings; $\alpha=0,007\leq 0,01$ -	entrance < output entrance < output -
EG2				
Dependent position	0,581	-	-	-
Competent position	0,589	-	-	-
Aggressive position	0,559	-	-	-

Notes to table 2: α — significance level; «-» — there are no significant differences. The indicators with the significance level $\alpha\leq 0.05$ are in bold.

the group, the indicator of an aggressive position increased and the indicator of a competent position decreased during the project.

The score interpretation of the results of the M.I. Rozhkov’s method showed a similar situa-

tion with the interpretation of the results of the L. Mikhelson’s test of communicative skills. Before the project was started, in all three groups the scores of all four subscales demonstrated a medium level of the indicators of socializa-

tion with the exception of EG2 in the 1st testing, which had a low level of adherence to humanistic norms at the entrance to the project (this is reflected in the statistical analysis of the data).

The analysis of the 1st testing showed no significant differences between the groups on all scales (the Kruskal-Wallis criterion, $\alpha > 0.05$, Table 3). But, since the value of $\alpha = 0.061$ on the subscale of the adherence to humanistic norms (indicates the presence of a trend), an additional analysis was carried out using the Mann-Whitney criterion. It turned out that the values of this indicator of EG2 are significantly less than in CG ($\alpha = 0.01 \leq 0.01$, in EG2 Me = 1.8, SD = 0.43 and in CG Me = 2.3, SD = 0.61).

The analysis of intergroup differences in three groups in the 2nd and 3rd testings showed that EG2 had significantly higher values of indicators compared to CG and EG1 on all subscales, except for the indicator of autonomy (Table 3). The values of the indicator of adherence to humanistic norms in EG2 in the 2nd and 3rd testings are higher in comparison to CG and in the 2nd testing in comparison to EG1 (the Kruskal-Wallis criterion, 2nd testing $\alpha = 0.001 \leq 0.001$, paired comparisons of CG and EG2 $\alpha = 0.002 \leq 0.05$, and EG1 and EG2 $\alpha = 0.003 \leq 0.05$, ranks: EG1 — 32.70, CG — 30.81, EG2 — 52.58; 3rd testing $\alpha = 0.022 \leq 0.05$, paired comparisons of CG and EG2 $\alpha = 0.025 \leq 0.05$, ranks: EG1 — 37.09, CG —

Table 3

Comparison of the values of the indicators between groups EG1, EG2, CG according to the M.I. Rozhkov's method in three testings (in the analysis of differences between groups, the Kruskal—Wallis criterion, the method of multiple and paired comparisons, the Mann-Whitney criterion were used)

Subscale	Kruskal—Wallis statistical tests	Significance level	The significance level in the method of multiple comparisons, paired comparisons by groups (with Bonferroni correction)
The first testing			
Social adaptation	0,713	0,700	-
Autonomy	2,671	0,263	-
Social activity	2,520	0,284	-
Adherence to humanistic norms	5,604	0,061*	-
The second testing			
Social adaptation	10,478	0,005	EG1 and CG; $\alpha = 0,267 > 0,05$ EG1 and EG2; $\alpha = 0,337 > 0,05$ CG and EG2; $\alpha = 0,004 \leq 0,01$
Autonomy	4,760	0,093**	-
Social activity	4,897	0,086***	-
Adherence to humanistic norms	15,525	<0,001	EG1 and CG; $\alpha = 1,000 > 0,05$ EG1 and EG2; $\alpha = 0,003 \leq 0,01$ CG and EG2; $\alpha = 0,002 \leq 0,01$
The third testing			
Social adaptation	2,511	0,285	-
Autonomy	0,991	0,609	-
Social activity	1,869	0,393	-
Adherence to humanistic norms	7,650	0,022	EG1 and CG; $\alpha = 1,000 > 0,05$ EG1 and EG2; $\alpha = 0,180 > 0,05$ CG and EG2; $\alpha = 0,025 \leq 0,05$

Notes to table 3: α — significance level; «-» — there are no significant differences. The indicators with the significance level $\alpha \leq 0.05$ are in bold.

31.36, EG2 — 48.39). Further, in EG2, the indicator of social adaptation in the 2nd testing is significantly higher compared to CG (the Kruskal-Wallis criterion, $\alpha=0.005\leq 0.01$, paired comparisons of CG and EG2 $\alpha=0.004\leq 0.01$, ranks: EG1 — 39.26, CG — 27.85, EG2 — 48.81). The analysis with the use of the Mann-Whitney criterion revealed that in EG2 the values of the indicator of social activity in the 2nd testing are significantly higher than in EG1 ($\alpha=0.038\leq 0.05$, in EG2 Me=2.8, SD=0.60 and in EG1 Me=2.4, SD=0.67).

Thus, the participation of the adolescents from EG1 in the theater project contributed to an increase in the indicator of social activity by the end of the study, but there were no significant differences in comparison to CG found. In EG2, intra-group dynamics is visible on all scales and significantly higher indicators compared to CG on all scales, except for the indicator of autonomy.

During participation in the theater project there were significant changes fixed in EG2 in the 2nd and 3rd testings in relation to the 1st testing: on all subscales there are significant increases in indicators (Friedman’s criterion $\alpha\leq 0.001$ on the subscale of social activity (paired comparisons: 1st testing— 1.45, 2nd testing — 2.32, 3rd testing — 2.23) and on the subscale of adherence to humanistic norms (1st testing — 1.31, 2nd testing — 2.40, 3rd testing — 2.39); in the analysis of indicators of social adaptation and autonomy the Wilcoxon criterion was used, the 1st and 3rd testings on both scales $\alpha\leq 0.05$, according to the indicator of social adaptation, also between the 1st and 2nd testings $\alpha=0.017\leq 0.05$, Table 4).

The other experimental group (EG1), along with CG, was able to keep the initial indicators same for the most part during the study. A significant increase in EG1 was achieved only in the

Table 4

Dynamics of intra-group indicators in the first, second and third testings in EG1, EG2 and CG according to the M.I. Rozhkov’s method (Friedman’s criterion, the method of multiple and paired comparisons, the Wilcoxon criterion were applied)

Subscales	The significance level of the Friedman criterion	The significance level in the method of multiple comparisons, paired comparisons by groups (with Bonferroni correction)	The significance level of the Wilcoxon criterion. An additional analysis to the Friedman criterion was carried out.	The trend of shifts (negative and positive ranks are compared)
EG1				
Social adaptation	0,075	-	-	-
Autonomy	0,932	-	-	-
Social activity	0,017	1 st and 2 nd testings; $\alpha=0,403>0,05$ 1st and 3rd testings $\alpha=0,016\leq 0,05$ 2 nd and 3 rd testings; $\alpha=0,588>0,05$	-	-
Adherence to humanistic norms	0,358	-	-	-
CG				
Social adaptation	0,276	-	-	-
Autonomy	0,030	1st and 2nd testings; $\alpha=0,041\leq 0,05$ 1 st and 3 rd testings; $\alpha=0,161>0,05$ 2 nd and 3 rd testings; $\alpha=1,000>0,05$	-	-

Subscales	The significance level of the Friedman criterion	The significance level in the method of multiple comparisons, paired comparisons by groups (with Bonferroni correction)	The significance level of the Wilcoxon criterion. An additional analysis to the Friedman criterion was carried out.	The trend of shifts (negative and positive ranks are compared)
Social activity	0,078	-	-	-
Adherence to humanistic norms	0,549	-	-	-
EG2				
Social adaptation	0,158	-	1st and 2nd testings; $\alpha=0,017\leq 0,05$ 1st and 3rd testings; $\alpha=0,025\leq 0,05$ 2 nd and 3 rd testings; $\alpha=0,102>0,05$	entrance < output entrance < output -
Autonomy	0,103	-	1 st and 2 nd testings; $\alpha=0,059>0,05$ 1st and 3rd testings; $\alpha=0,046\leq 0,05$ 2 nd и 3 rd testings; $\alpha=0,536>0,05$	- entrance < output -
Social activity	<0,001	1st and 2nd testings; $\alpha<0,002\leq 0,01$ 1st and 3rd testings; $\alpha<0,007\leq 0,01$ 2 nd and 3 rd testings; $\alpha=1,000>0,05$	-	-
Adherence to humanistic norms	<0,001	1st and 2nd testings; $\alpha<0,001$ 1st and 3rd testings; $\alpha<0,001$ 2 nd and 3 rd testings; $\alpha=1,000>0,05$	-	-

Notes to table 4: α — significance level; «-» — there are no significant differences. The indicators with the significance level $\alpha\leq 0.05$ are in bold.

3rd testing on the scale of social activity (Friedman criterion, $\alpha=0.017\leq 0.05$, method of multiple and paired comparisons: between the 1st and 3rd testings $\alpha=0.016\leq 0.05$, ranks: 1st testing — 1.60, 2nd testing — 2.02, 3rd testing — 2.37).

In CG an increase in the indicator of autonomy is found in the 2nd testing (Friedman's criterion, $\alpha=0.030\leq 0.05$, the method of multiple comparisons using paired comparisons: 1st testing — 1.35, 2nd testing — 2.31, 3rd testing — 2.14).

There were no significant differences between the 2nd and 3rd testings in all groups. Using the example of EG2, this can be interpreted as resistance to external influences during the year. The adolescents from EG2 managed to

retain the communication skills acquired during participation in the theater project till the end of it.

Even though both experimental groups had the same positions at the beginning of the study, their results differed significantly at the end. To understand such differences, the test results were supplemented with an analysis of interviews with teachers, class supervisors and adolescents from EG1 and EG2 in order to indicate meaningful characteristics in the behavior of the children. The following influencing factors were identified:

- *readiness to do a creative activity.* EG2

had already had a variety of experience in creative work before participating in the theatrical project, for example, from time to time the adolescents of EG2 would take part in the literary

performances. Also, during the theatre classes, adolescents of this group, unlike EG1, demonstrated more developed skills in semantic reading, reading aloud and analyzing what they had just read. Most schoolers from EG2 tend to complete their homework (for example, writing a review on their visit to Chekhov's estate Melikhovo, searching and selecting documentary material on the particular topic, rewriting the events of the short story in the form of a newspaper news report or a poetic fable). On the contrary, EG1 avoided doing these tasks.

- *readiness to work independently and self-regulation.* EG2 carried out the research tasks with great interest, contacted different people and organizations if necessary. For example, adolescents from this group wrote a letter of inquiry to the local historic museum and created a questionnaire for interviews. Adolescents from EG2 had already largely developed motivation to solve complex tasks and the readiness to try a new activity, while teenagers from EG1 had the fear of not completing a new task: they were constantly looking forward to receiving clear guidance and help from adults, which, ultimately, can be considered as a weak initiative. In practice, these differences between the two experimental groups led to the division of functions: EG1 took responsibility for technical support for the process of creating and presenting performance (editing videos, drawing posters, sound engineering and camera work), while EG2 completed both scripts for performances for two years.

Thus, despite the fact that according to the first testing in terms of the indicators of communication and socialization, adolescents from all three groups were in equal positions. The key role in taking opportunities in theatrical activities played previous experience of participation in school life, the development of particular skills (for example, reading skills and self-organization skills), as well as readiness to take up new challenges in learning.

For EG2, the activity-based technology "Digital theater" became a platform they used to develop and reinforce their social and communication skills, while teenagers from EG1 were just trying themselves in new roles and activities, relying on the support of adults and the help of more experienced peers from EG2. Thus, schoolers from EG1

concentrated on technical skills and game aspects rather than on creative and productive ones.

It is important to note that in the interviews teenagers from both experimental classes outlined qualitative improvements in communication, boosting a number of social contacts both with the classmates and with peers from other classes: "We have already had a friendly class, but we began to communicate more with others" (student D., EG2), "We became more united, we started to support each other" (girl Er., EG2), "A vivid memory is that how we got together, spent time together, it was very nice to see everyone together" (girl Ver, EG2).

Interestingly, many teenagers from both groups emphasized the growth of productivity of work in teams and the establishment of strong interpersonal relationships precisely in the first year of the study. Also, in interviews, teenagers tended not to notice changes in communication in the second year of the project. For example, the student of EG2 Mac. said: "... this year [the second stage of the study], we were all friends... oh, yes, thanks to the last year, we began to be friends in both classes." The statements of the students from EG2 also confirm the strengthening of a competent position in communication both in his group and in comparison to EG1 and CG.

It is worth to mention that the teachers' observations of the students from EG1 coincide with the opinion of the students from EG2 about the improvement in communication and the establishment of friendly relations, which was not confirmed during the statistical analysis of the test results. Thus, the teacher of Russian and Literature, who worked in EG1, paid attention not only to the general atmosphere in the classroom, but also to the improvements in students' communication with adults: "... The psychological climate in the classroom has changed, the children began to communicate quite calmly with each other... now they communicate more warmly, the awareness occurred in their relationships. The schoolers now try to find ways to resolve conflicts... The theatre project contributed to the friendship among both classmates and teenagers from other classes. Communication with adults changed too, it became politer and more moderate. Adolescents began to cope with emotions — they began to reflect before express their opinions to adults...".

The schoolteachers also expressed the opinion that possibly the increase in the indicator of an aggressive position in EG1 and CG was because of the superimposed stress due to the end of the school year (the 2nd and 3rd testings were conducted in May of 2023 and 2024 years, respectively).

Conclusion

The data obtained in the study allows to identify the possibilities of theatrical activities for practical application in school education. The main conclusion of the study is that specially organized work with adolescents contributes to the internalization of humanistic values, which means their acceptance on the basis of free choice with following reproduction/reflection in behavior while communicating.

Students from EG2 demonstrated high involvement into the project: they participated in all events and completed creative tasks, many of which were designed for teamwork or better comprehension of the material they worked on. As a result, their “competent position” increased compared to the CG at the end of the experiment and intra-group indicators of social adaptability, social activity, adherence to humanistic norms increased significantly.

The students from EG1 mostly showed interest in the technical support of the process of creating a theatrical performance, also they more often needed support from adults as well as they took more time to acquire new skills. Nevertheless, quantitative data revealed an increase in the indicator of social activity within the group in the 3rd testing. A qualitative analysis of interviews with teachers and adolescents showed an improvement in the psychological climate, the emergence of constructive practices of social interactions between each other. However, the indicator of an aggressive position increased when

the indicator of a competent position decreased.

Contemporary research shows that aggression in communication can play a positive role in the process of growing up — aggression can be an “activator for self-affirmation”, a way to assert oneself, defend one’s opinion, compete and provoke interaction among others, or, conversely, to protect oneself from peers, to rebuild one’s attitude by taking a different place in the hierarchy in the group [1; 2]. In the future, additional research is required to investigate the role of an aggressive position in adolescence in its connection with a theatrical activity.

In the CG, intra-group changes are also noted — a decrease in values of the indicator of a competent position and an increase in values of the indicator of an aggressive position. Perhaps negative changes in the CG occurred due to stress associated with the end of the academic year, since the 2nd and 3rd testings were carried out in May 2023 and 2024, respectively (which in Russia is the most tough time for schoolers as it is period of assessments, grading and rating). On the other hand, without influence of theatrical activities adolescents of the control group did not change their position in relation to other classes (did not make friendly relations, new social contacts), also they stayed detached from the social school life and concentrated on their individual achievements, which is confirmed by the increase in the indicator of autonomy between the 1st and 2nd testings.

The results of the longitudinal study demonstrate the sustainability of the communication skills acquired by adolescents from both experimental groups during participation in the theater project and resistance to external influences. Comparison of the data of the 2nd and 3rd testings, especially according to the results of EG2, did not reveal significant differences: the values of the indicators in the 2nd and 3rd testings are almost alike.

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Individual Typological Trajectories of School Engagement in Adolescents: A Longitudinal Study

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In recent years, the research on school engagement has increasingly focused on studying this phenomenon at the individual typological level. The purpose of the present study was to identify individual typological trajectories of school engagement and to analyze the predictive and resource roles of conscious self-regulation in determining these trajectories among adolescents in grades 6 to 8. The sample for this longitudinal study consisted of 80 students from secondary schools. The research methods employed M.- T. Wang et al.'s "Multidimensional school engagement scale" adapted into Russian by T.G. Fomina and V.I. Morosanova; V.I. Morosanova's Profile of Learning Activities Questionnaire Five — Children's Version, adapted into Russian by S.B. Malykh et al.; the of Academic Motivation of Schoolchildren by T.O. Gordeyeva et al.; and the methodology by A.D. Andreeva and A.M. Prikhozan, modified by I.N. Bondarenko et al. The results revealed two typological groups of students characterized by different profiles of school engagement: one group exhibited low engagement, while the other demonstrated high engagement across all components. Notably, 60% of the students displayed a stable engagement trajectory. Among those with a variable trajectory, half showed high engagement in the 6th grade, which subsequently declined in the 7th and 8th grades. Additionally, these students exhibited lower levels of regulatory-personal traits such as responsibility and reliability, as well as a personal disposition toward conscientiousness, alongside a decrease in cognitive activity during their transition from 6th to 7th grade. For the first time, this study demonstrates that the development of self-regulation is associated with the formation of a harmonious engagement profile characterized by high levels of all components during the transition from 7th to 8th grade. During the transition from 6th to 7th grade, the establishment of such a profile is facilitated by openness to new experiences. The findings of this study can be applied in psychological and pedagogical practice to develop programs that support school engagement through the enhancement of conscious self-regulation among secondary school students.

Keywords: individual-typological approach; school engagement; conscious self-regulation; prognostic resources; adolescents.

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Индивидуально-типологические траектории школьной вовлеченности у подростков: лонгитюдное исследование

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Представлены результаты лонгитюдного исследования, целью которого было выявить индивидуально-типологические траектории школьной вовлеченности и прогностическую роль осознанной саморегуляции в их детерминации у подростков 6—8-ых классов. В работе приняли участие 80 обучающихся общеобразовательных школ. Были использованы следующие методики: «Многомерная шкала школьной вовлеченности» в адаптации Т.Г. Фоминой и В.И. Моросановой, опросник В.И. Моросановой «Стиль саморегуляции учебной деятельности (ССУД-М 52)», опросник «Большая пятерка — детский вариант» в адаптации С.Б. Малых и коллег, опросник Т.О. Гордеевой и коллег «Шкала академической мотивации школьников (ШАМ-Ш)», методика А.Д. Андреевой и А.М. Прихожан в модификации И.Н. Бондаренко и коллег «Отношение к учению в средних и старших классах школы». Результаты проведенной работы позволили описать две типологические группы обучающихся с различными профилями школьной вовлеченности: с низкой и высокой выраженностью всех ее компонентов. Получены данные о том, что 60% обучающихся характеризуются стабильной траекторией вовлеченности. Обнаружено, что у половины учеников, характеризующихся изменчивостью траектории, наблюдается высокая вовлеченность в 6-ом классе, а затем ее снижение в 7-ом и 8-ом классах. Наряду с этим у них наблюдаются более низкие показатели регуляторно-личностных свойств ответственности и надежности, личностной диспозиции добросовестности, а также снижение познавательной активности при переходе из 6-го в 7-ой класс. Впервые показано, что развитие осознанной саморегуляции связано с формированием гармоничного профиля с высокой выраженностью всех компонентов вовлеченности у обучающихся при переходе из 7-го в 8-ой класс. При переходе из 6-ого в 7-ой класс формирование такого профиля обеспечивается открытостью новому опыту. Полученные результаты могут быть использованы в психолого-педагогической практике для разработки программ поддержки вовлеченности в период обучения в средней школе за счет развития осознанной саморегуляции.

Ключевые слова: индивидуально-типологический подход; школьная вовлеченность; осознанная саморегуляция; прогностические ресурсы; подростки.

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Introduction

In recent years, the research on school engagement has increasingly focused on studying its effects on maintaining academic success, developing the skills and social capital necessary for adolescents to successfully transition to adulthood [32]. Leading researchers in the area suggest to define school engagement as sustainable and active participation of students in educational activities and school life in general, including cognitive, behavioral, emotional, and social components [23; 33]. School engagement is a relatively new construct in both foreign and domestic psychology [17]. There are closely related constructs actively studied in Russian psychology, in particular, motivation for learning, attitude towards learning, and the internal position of a student [2; 3; 9]. However, these concepts relate rather to the motivational-emotional sphere, whereas the school engagement also includes behavioral and regulatory (cognitive) components. Their development allows the student to accept school norms and rules, develop learning strategies, demonstrate flexibility in solving learning problems, and make efforts aimed at mastering knowledge and skills [17]. Recent works on this topic focus mainly on its relationships with psychological variables that are important for ensuring academic success [24; 25; 28]. Research shows that a high level of school engagement is associated with developed conscious self-regulation

and high academic performance [18; 28]. It has been shown that the development of conscious self-regulation in the middle school (8th grade) prevents a decrease in cognitive engagement and cognitive activity in the high school [5].

A current trend in research is the study of individual-typological manifestations of school engagement [23]. In contrast to the classical understanding of the individual-typological approach, which emphasizes individual differences in the temperament and the nervous system, in modern psychological works in the field of developmental psychology and educational psychology, its implementation usually involves investigating into differential psychological characteristics of students. Differences between typological groups are revealed on the basis of identifying the “profiles” considered as naturally occurring combinations of related psychological phenomena at the individual level [26]. The use of the individual-typological (or differential) approach allows to most accurately reflect the manifestations of multidimensional psychological phenomena [14]. Studies of individual manifestations of school engagement convincingly demonstrate that students with a profile distinguished by high cognitive and behavioral engagement are characterized by the highest academic performance [30] as well as high self-regulation [21; 22].

Despite the increased interest in the study of individual-typological features of school en-

gagement, there is a small number of works aimed at investigating the dynamics of engagement profiles (e.g., [34]). In this regard, it seems necessary to study both the variability of engagement profiles and the resources for its maintenance throughout schooling. In line with the differential and resource approaches [11; 12], a large amount of data has already been accumulated indicating the role of conscious self-regulation as a meta-resource not only in ensuring educational results, but also in maintaining and developing school engagement (e.g., [11; 28]). Nevertheless, no attempt has previously been made to comprehensively study the individual-typological trajectories of school engagement and their dynamics as well as the resource role of conscious self-regulation in ensuring them.

The study presented in this article aimed to reveal the individual-typological trajectories of school engagement and the prognostic role of conscious self-regulation in their determination in adolescents educated in grades 6—8. Research questions: 1) What are the individual-typological trajectories of school engagement in the students of 6-8th grades? 2) What are the dynamics of the individual-typological trajectories of school engagement in the students of 6-8th grades? 3) What are the regulatory and personality characteristics of students with “variable” individual-typological trajectories of school engagement? 4) What are the prognostic effects of self-regulation in determining individual-typological trajectories of school involvement in students in grades 6—8?

Sample and methods

The sample of the longitudinal study consisted of students of the 6th grade from schools in cities of Moscow and Kaluga (105 individuals, average age — 12 y.o., 48% were girls), of the 7th grade (83 individuals, average age — 13 y.o., 48.2% girls), and 8th

grade (80 individuals, average age — 14.26 y.o., 48.8% girls).

The following methods were used in the study:

1. Wang et al.’s “Multidimensional School Engagement Scale” [33] adapted by Fomina, Morosanova [16]. Scales: behavioral, cognitive, emotional, social engagement, integrative indicator — general level of school engagement.

2. Morosanova’s “Self-Regulation Profile of Learning Activity Questionnaire” (SRPLAQ-52). Scales: planning, modeling, programming, results evaluation, flexibility, reliability, independence, responsibility, integrative indicator — general level of conscious self-regulation of learning activity.

3. “Big Five — Children’s Version” adapted by Malykh et al. [10]. Scales: extraversion, agreeableness, neuroticism, conscientiousness, openness to experience.

4. “Scale of Academic Motivation of Schoolchildren” by Gordeeva et al. [6]. Scales: cognitive motivation, achievement motivation, self-development motivation, self-respect motivation, motivation for parents’ respect, introjected motivation, external motivation, amotivation.

5. Andreeva, Prikhodzhan’s questionnaire “Attitude to Learning in Middle and Senior School” [1] modified by Bondarenko et al. [4]. Scales: cognitive activity, achievement motivation, anxiety, anger, motivation to avoid failure.

Statistical analysis was performed by specifying and analyzing latent profile and transition models using the AIC, BIC, and BLRT information criteria, logistic regression analysis using the AIC and BIC information criteria as well as Nagelkerke and Tjur’s R², and comparing mean values using the Wilcoxon test. The JASP program (ver. 0.18.3.0) and the R statistical environment were used for the analysis: the tidy

LPA package for specifying and analyzing latent profile models, the lme4 package for specifying and analyzing latent transition models.

Data Analysis Procedure

The data analysis was carried out in the logic of our previous studies of the individual trajectories of students' psychological characteristics using the Latent Profile Analysis (LPA) method (e.g., [27]). LPA is a powerful technique that allows for identifying the types or groups of individuals with different structures and parameters of psychological characteristics profiles based on the data on their "latent" aspects [31]. In this study, engagement profiles were identified at each of the three longitudinal points: in the 6th, 7th, and 8th grades. Two types of models with two, three, and four profiles were compared: with fixed/free variances and zero/non-zero covariances of profile components (behavioral, cognitive, emotional, and social engagement).

Latent transition analysis (LTA) is an extension of latent profile analysis (LPA) used to model the changes between them over time by calculating transition probabilities [29]. In this study, LTA was carried out in the logic proposed by K. Nylund-Gibson [29]: in the first stage, latent profiles were analyzed and then, in the second stage, the results of this analysis were used to study the transition probabilities between the identified profiles.

Results

1. Latent Profile Analysis (LPA)

In the first stage of the study, we conducted a latent profile analysis for each longitudinal point. The model was selected based on the AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) as well as the bootstrap likelihood ratio test (BLRT), in which a low probability value ($p < 0.05$) indi-

cates the likelihood of improving the model by identifying a larger number of profiles. According to the obtained results, the following models turned out to be the best in terms of information criteria: 4 profiles with fixed variances and zero covariances between components in the 6th grade (AIC=809.9, BIC=864.7, BLRT_ $p=0.01$) and 2 profiles with free variances and non-zero covariances in the 7th grade (AIC=747.2, BIC=816.3, BLRT_ $p=0.03$) and in the 8th grade (AIC=741.6, BIC=810.7, BLRT_ $p=0.01$). Nevertheless, since for the analysis of prognostic effects and transition probabilities between profiles we need them to be structurally and configurally similar, we tried to select the same number of profiles at each point of the longitude. Thus, the model with two profiles was chosen as the best one as it was significant at all three points of the longitudinal study and had acceptable fit indices in the 6th grade (AIC=834.2, BIC=865.2, BLRT_ $p=0.01$), 7th grade (AIC=840.6, BIC=871.5, BLRT_ $p=0.01$), and 8th grade (AIC=813.9, BIC=844.8, BLRT_ $p=0.01$). Notably, the identification of a large number of typological groups, including, in particular, the group characterized by the average values of engagement, led to a decrease in the classification quality and in the significance of the models. Figure 1 shows the profiles identified in the 6th, 7th, and 8th grades.

Thus, the analysis results revealed two groups of students with profiles that are stably reproduced at all three points of the longitudinal study: with low and high values of all engagement components. The identified groups are characterized by a similar quantitative composition as well as similar mean values of engagement components that underlie them. It should be noted that the ratio of students with "high" and "low" profiles of engagement changes when they transition from the 6th to the 7th and 8th grade. Thus, in the 6th grade 62% of the total sample are

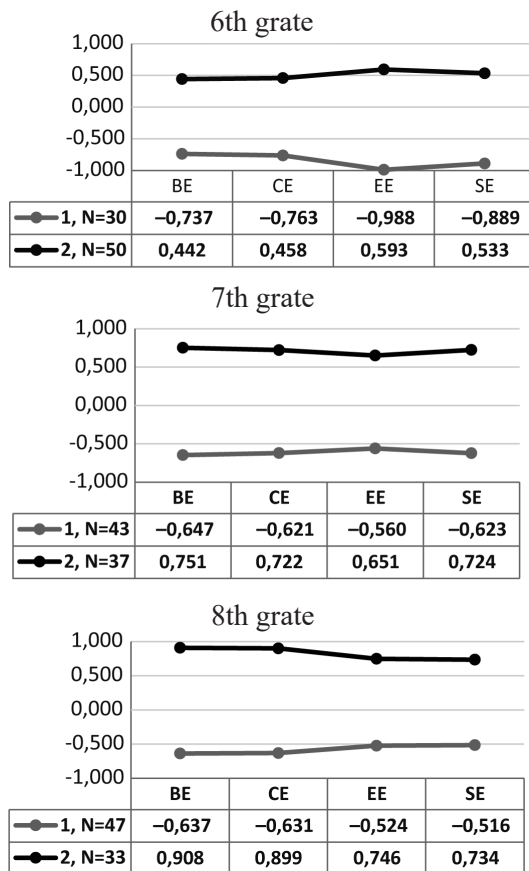


Fig. 1. Profiles of school engagement in grades 6, 7, and 8: BE — behavioral engagement, CE — cognitive engagement, EE — emotional engagement, SE — social engagement

the students with a high level of engagement and 34% — with its low level, whereas in the 7th grade — 47% with a high level and 53% with a low level, and in the 8th grade — 42% with a high level and 58% with a low level of engagement. Note that in this case we are not talking about the dynamics of engagement trajectories, but only about the quantitative ratio of groups with “high” and “low” engagement in each of the grades. The dynamics of engagement trajectories, their stability and variability will be discussed in the corresponding section below.

Next, we conducted logistic regression analysis to identify the predictive effect of personal and regulatory resources on engagement at the later points in the longitudinal study. The group (profile) membership was a dependent variable (DV), and the independent variables (IV) were the general level of conscious self-regulation, integrative indicator of attitude toward learning, indicators of cognitive motivation, extroversion, neuroticism, and openness to new experience. The results of the analysis are presented in the table below.

Table

Logistic regression models of predictive effects of profile membership in grades 7 and 8

Model 1. DV — profile membership in grade 7, IV — regulatory and personality indicators in grade 6 $\chi^2=83,67$, $df=76$, $AIC=87,67$, $BIC=92,39$, $Nagelkerke R^2=0,357$, $Tjur R^2=0,279$, $p=0,001$		
Predictor	B	Odds ratio
Openness to new experience	0,15**	1,165
Model 2. DV — profile membership in grade 8, IV — regulatory and personality indicators in grade 7 $\chi^2=57,87$, $df=73$, $AIC=63,87$, $BIC=70,87$, $Nagelkerke R^2=0,611$, $Tjur R^2=0,519$, $p=0,001$		
General level of conscious self-regulation	0,16**	1,174
Extraversion	0,14**	1,154

Note: ** — $p < 0.01$. Low profile membership is coded as 0, high profile membership — 1, for all regression models.

According to the results (see table), high openness to new experience in the 6th grade serves as a resource for forming a profile with a high engagement in 7th-graders, while for the 8th-graders such resources are developed conscious self-regulation and high extroversion in the 7th grade.

2. Latent transition analysis (LTA)

To identify the dynamics of individual-typological trajectories of school engagement during transition from grades 6 to 8, we performed latent transition analysis (LTA). For this purpose, the transition probabilities between groups with “high” and “low” engagement profiles were calculated. Figure 2 shows a model describing the averaged transition probabilities between a profile with high en-

gagement and a profile with low engagement at all three points.

According to the obtained results, the identified individual-typological trajectories of school engagement are, in general, quite stable: students with both low and high engagement are more likely to maintain their engagement level and the corresponding profile. At the same time, while probability of increasing engagement is extremely low (close to zero), the probability of decreasing it is quite high. In this regard, we analyzed in more detail the ratio of stable and variable groups. According to the obtained data, 60% of the entire sample of students ($N=48$) are characterized by stable trajectories of engagement. Among students with variable trajectories (40% of the sample, $N=32$), the most common groups are

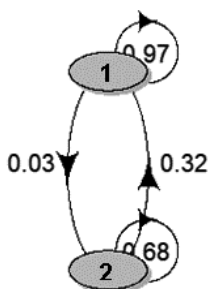


Fig. 2. Average probabilities of transitions between a profile with high engagement and a profile with low engagement: 1 — profile with low engagement, 2 — profile with high engagement, 2->1 — average probability of transition from a group with a high engagement profile to a group with a low engagement profile, 1->2 — average probability of transition from a group with a low engagement profile to a group with a high engagement profile, circular arrows — average probability of keeping the engagement profile unchanged

those characterized by a decrease in engagement upon transition to senior grades (75% of students from the sample with variable trajectories, $N=24$), which correlates with the results of the latent transitions analysis. Notably, 18.75% of students with variable trajectories ($N=6$) are characterized by an increase in engagement. Among the students with variable trajectories one can very rarely ($N=2$, 6.25%) find the students with a decrease in high engagement in the 7th grade and its increase in the 8th grade ($N=1$) or with an increase in low engagement in the 7th grade and its decrease in the 8th grade ($N=1$). The most common variable group ($N=16$, 50% of students from the sample with changeable trajectories) is characterized by the following dynamics of engagement: high engagement in the 6th grade, low engagement in the 7th and just as low engagement in the 8th grade.

We then analyzed this group to identify the indicators responsible for this change using the Wilcoxon test. According to the data obtained, a decrease in engagement is observed in this group during transition from the 6th to the 7th grade, mainly due to a decrease in its cognitive component ($W=-3.26$, $p<0.001$). The general level of self-regulation in this group changes insignificantly, probably due to an increase in the modeling indicator ($W=2.11$, $p<0.01$), although the regulatory-personal properties of reliability ($W=-2.64$, $p<0.01$) and responsibility ($W=-2.58$, $p<0.01$) significantly decrease. The cognitive activity significantly decreases ($W=-2.53$, $p<0.05$). The group average indicator of conscientiousness significantly decreases as well ($W=-2.28$, $p<0.05$), which is probably associated with a decrease in cognitive engagement.

Discussion

The results revealed two groups of students with different profiles of school engage-

ment: with low and high expression of all its components. The identified typological groups are stably reproduced at all three points of the longitudinal study and are characterized by a similar quantitative composition and mean values of engagement components, but a variable frequency ratio. The results obtained are consistent with the data of previously conducted studies [15; 21].

For the first time, the study analyzed the dynamics of individual-typological trajectories of school engagement of students during transition from grades 6 to 8. It was found that most students (60% of students) are highly likely to maintain the level and corresponding profile of engagement. However, the variable trajectories were also found, and the most common group among them (50% of students) was characterized by a profile with high engagement in grade 6 and its decrease in grades 7 and 8. The obtained result is consistent with the data on the decrease in school engagement among adolescents, especially in grades 7 and 8 [19].

The study presented an analysis of the regulatory-personal characteristics of a group of students with the most common "variable" trajectory of school engagement. It was found that a decrease in engagement during the transition from the 6th to the 7th grade in this group is associated with a decrease in cognitive engagement, which apparently occurs due to a decrease in the regulatory-personal features of responsibility and reliability as well as the personality trait of conscientiousness. A significant decrease in cognitive activity is also found, which correlates with the results of research on the dynamics of school engagement in a sample of secondary school students [5]. Thus, the data obtained in the study confirm the well-known patterns of age-related development of adolescents aged 12—15 which are described in the context of the cul-

tural-historical approach, namely: changes in the motivational sphere, reorientation of adolescents to personal self-determination, a change in the leading activity from learning to intimate and interpersonal communication [3; 7].

For the first time, it has been shown that development of conscious self-regulation in the 7th grade is a significant resource for the formation of a profile with high engagement in the 8th grade, which correlates with the data on the resource role of conscious self-regulation in maintaining high school engagement in the 8th grade and confirms its predictive role in maintaining engagement at the later stages of education [15]. In addition, the study revealed the resource role of extraversion in the formation of such a profile during the transition to the 8th grade, which also correlates with research data [24]. It was found that a “high” profile of engagement in the 7th grade is observed in the students with high indicators of openness to experience in the 6th grade. As research demonstrates, openness to experience is associated, first of all, with the emotional and social components of engagement [8]. It can be assumed that the formation of a “high” profile of school engagement at this age is associated primarily with the development of these aspects. However, this assumption requires further empirical verification.

Conclusion

1. The study has revealed the groups of students characterized by two individual-typological profiles of school engagement: with low and high values of all its components. The identified groups are stably reproduced at all three points of the longitudinal study, but their frequency ratio changes during the transition from the 6th to the 7th and then to the 8th grade.

2. It is shown that 60% of students are characterized by a stable trajectory of school engagement. Half of the students with variable trajectories demonstrate high engagement in the 6th grade, and then its decrease in the 7th and 8th grades. This group is characterized by lower indicators of the regulatory-personal features of responsibility and reliability, the personality trait of conscientiousness, and cognitive activity during the transition from the 6th to the 7th grade.

3. It has been demonstrated that development of conscious self-regulation is associated with the formation of a harmonious profile of school engagement with high values of all its components in the students during their transition from the 7th to the 8th grade. During the transition from the 6th to the 7th grade, the formation of such a profile is ensured by openness to experience.

The obtained results are of high practical importance, since they make it possible to predict the dynamics of school engagement at the individual-typological level, as well as to develop the programs to support it at the “critical” moment of its greatest decline — in the middle school.

A limitation of this study is the small sample size, which does not allow for identifying a larger number of informative typological groups that are distinguished by greater variability in both the general level of school engagement and its components. In this regard, the prospects for further research into the dynamics of individual-typological trajectories of school engagement are associated with a thorough empirical verification of the identified patterns on the larger longitudinal samples. A promising direction also seems to be the study of individual-typological trajectories and psychological resources of school engagement at senior levels of school education.

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Enhancing Chess Education through Interactive Teaching Strategies: A Comprehensive Approach

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This study aims to identify the correlation between interactive teaching strategies and chess teaching effectiveness in Armenian primary schools. Traditional chess teaching methods often involve rote memorization and abstract rules, while interactive strategies emphasize active learning and practical application of learned knowledge. The authors advocate the inclusion of interactive methods in chess education, such as heuristic conversation, the use of information and communication technologies, modeling, collaborative learning, problem solving, and reflection. The article examines various empirical studies and theoretical approaches that support the effectiveness of interactive learning strategies in developing critical thinking, active student participation, and knowledge retention. 476 students of 5th grade from 42 schools of Armenia (50,2% male) took part in the study, they had learned chess in previous three years (in 2—4th grade). The study's results demonstrate that all indicators of interactivity, according to students' perceptions, significantly correlated with the results of the chess test. Analysis of the results allows us to confirm the hypothesis about the correlation between interactive learning strategies and the effectiveness of chess learning. We propose reconsidering pedagogical approaches, restructuring curricula, and providing training and professional development opportunities for chess teachers to effectively implement interactive methods in their teaching.

Keywords: interactive teaching strategies; chess education; group work; cooperation; reflection; games and simulations; heuristics; critical thinking.

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Совершенствование шахматного образования с помощью интерактивных стратегий обучения: комплексный подход

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Представленные в статье материалы посвящены проблеме эффективности интерактивных стратегий обучения шахматам в начальной школе. Авторы ставили целью выявление взаимосвязи стратегий интерактивного обучения и эффективности преподавания шахмат в начальных школах Армении. В статье рассматриваются различные эмпирические исследования и теоретические подходы, подтверждающие эффективность интерактивных стратегий обучения в развитии критического мышления, активного участия учащихся и сохранении знаний. Авторы выступают за включение в шахматное образование интерактивных методов, таких как эвристическая беседа, использование информационно-коммуникативных технологий, моделирование, совместное обучение, решение проблем и рефлексия. В проведенном эмпирическом исследовании приняли участие 476 учащихся 5-х классов из 42 школ

Армении (50,2% мужского пола), которые в предыдущие три года (в 2—4 классах) обучались шахматам. Анализ результатов позволяет подтвердить гипотезу о взаимосвязи интерактивных стратегий обучения и результативности обучения шахматам. В заключение предлагается пересмотреть педагогические подходы, реструктурировать учебные планы и предоставить преподавателям шахмат возможности для обучения и повышения квалификации с целью эффективного использования интерактивных методов в своем обучении.

Ключевые слова: Стратегии интерактивного обучения; шахматное образование; групповая работа; сотрудничество; рефлексия; игры и симуляции; эвристика; критическое мышление.

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Introduction

In the Republic of Armenia, chess has been successfully taught as a stand-alone subject in primary schools for over 13 years. However, directive strategies, which focus on memorisation and abstract rules, remain prevalent in chess education, while interactive strategies emphasising active learner learning and practical tasks are less widespread. Empirical studies [15; 16; 29] highlight the potential of interactive teaching strategies to enhance the effectiveness of instruction across various subjects, offering new opportunities for learner engagement, improved learning outcomes, and the development of critical thinking and other cognitive skills.

Research findings [27] indicate the need to revise teaching methods for chess in schools. Educational materials for teaching chess in primary schools should be improved in line with pedagogical principles such as providing models, presenting material step-by-step, ensuring learner comprehension, engaging a large number of learners inclusively, and maintaining equity in instructional resources

with regard to learners' knowledge and skills. These materials should also connect new content to prior learning.

Consequently, it is advisable to continue research aimed at refining approaches to teaching chess. Furthermore, the effectiveness of teaching chess through interactive strategies from the perspective of children remains underexplored. We believe that an approach based on the cultural mediation of the game and accounting for children's perspectives aligns better with the ideas of L.S. Vygotsky's cultural-historical theory [1] and his followers [5; 6; 7; 38]. The idea that education plays a leading role in development, foundational in cultural-historical psychology [1] as noted by researchers [6], underpinned the introduction of chess (including as a cultural element, considering its prevalence in Armenia) into the mandatory primary education curriculum.

The study aims to identify the relationship between interactive teaching strategies and the effectiveness of chess instruction in Armenian primary schools.

By employing interactive methods and strategies, learners become more engaged in the learning process, retain more information, and experience greater satisfaction [35].

An interactive teaching strategy is a learning approach designed to actively involve learners in the educational process through participation, collaboration, and interaction. It encompasses various methods and techniques that enhance learners' engagement with course content, instructors, and peers, fostering more profound understanding, critical thinking, and knowledge retention.

According to researchers [28; 34], interactive teaching strategies include, but are not limited to, classroom discussions, goal-oriented learning activities, group work, utilisation of information and communication technologies (ICT), collaborative learning, catering to diverse learning styles, reflection, independent learning, practical exercises, games, and simulations where learners apply theoretical knowledge to real-life situations, and problem-based learning.

The OECD (2016) [28] (Organisation for Economic Cooperation and Development) classifies widely used teaching strategies into three main types: active learning strategy, where learners engage in weekly projects and/or ICT-based classwork and perform self-assessments while group collaboration is encouraged for problem-solving; cognitive activation strategy, where teachers explore various methods for solving complex problems and require explanations, with particular attention to real-world applications, and homework is widely used; directive strategy (teacher-led instruction), where teachers present learning objectives and repeat tasks until they are mastered. This strategy also involves summarising information and providing immediate feedback, as well as offering differentiated instruction.

However, in our view, this classification does not fully delineate the techniques and methods employed within different teaching strategies. For example, problem-solving does not exclude project work, and reflection on acquired knowledge should not be considered solely a component of directive strategies. Therefore, we tentatively group these tactics under interactive teaching strategies, as they generally involve active interaction between learners and teachers during the educational process.

Within the framework of interactive teaching strategies, we identify essential methods that can be tentatively classified according to various teaching approaches. We begin with the consideration of methods such as heuristic dialogue and decision-making.

Heuristic Dialogue and Decision-Making

The ability to ask questions is a fundamental teaching method that fosters critical thinking and an active role for learners. It encourages learners to engage actively and develop a deeper understanding of the subject [12]. Questioning techniques and heuristic dialogue are critical components of chess teacher training programmes [30]. The questioning technique is associated with the principles of the algo-heuristic theory [24]. Researchers from the National Institute of Chess Studies hypothesised a connection between chess and algorithmic thinking [20].

According to R. Trinchero and G. Sala [37], chess is an effective tool for solving mathematical problems among primary school children, but only if the instruction incorporates heuristic methods for solving such problems. Considering the existing research findings on the effectiveness of heuristic methods in teaching chess, it is worth noting that the MirMe tool [25], which is essentially based on heuristic techniques, has revealed

a significant influence of chess education on the decision-making skills of primary school children in chess education studies.

Use of ICT, Games, and Simulations

The integration of multimedia resources, such as videos and interactive technologies, can enhance the learning process by providing visual and auditory stimuli suitable for different learning styles [26]. Gamification and simulations can make learning more interactive, engaging, and memorable by immersing learners in realistic scenarios and allowing them to apply theoretical knowledge in practice [9]. According to Khachatryan et al. [20], chess can stimulate learners' ability to navigate changing and non-standard situations.

In 2021, alongside the development of new educational standards, the chess curriculum standard was revised. Each topic includes a practical mini-game and a "live game." All these games are digital and were developed for online platforms. Chess is taught to children as a game, an enjoyable "battle." The child not only remembers what a checkmate is but also experiences satisfaction when delivering a checkmate during practical games.

In 2021, the World Chess Federation (FIDE) approved an international chess teacher training programme developed with the participation of specialists from the National Institute of Chess Studies. The course programme included numerous modern teaching methods adapted for online chess teacher training. It also utilised various electronic online tools and platforms widely employed in contemporary distance learning processes. These methods and ICT tools, combined with modern game-based and group learning technologies, are gaining increasing popularity, contributing, in our opinion, to the improvement of chess education quality.

Practical exercises can provide concrete experiences that ensure the reinforcement

and development of skills [11]. Although the OECD [28] included this component in directive strategies, we are inclined to view problem-solving primarily within the framework of interactive strategies, as skill development and practical activities are inconceivable without active interaction among learners.

Setting Learning Objectives and Independent Learning

Granting learners autonomy in choosing their learning paths enhances motivation, responsibility, and an individualised approach to learning [13]. Clear learning objectives determine direction and focus, helping learners understand what is expected of them and aiding teachers in designing effective teaching methods [39]. Among a wide range of motivational factors, only responsibility and a positive attitude towards chess lessons have a significant positive impact on chess achievements [4].

Independent learning refers to a process in which individuals take responsibility for their own learning paths. When analysing the outcomes of chess teacher retraining, special attention is given to the formulation of professional training programme goals. Consequently, we implemented an approach based on planned learning outcomes [3]. Moreover, the chess curriculum standard was built on the basis of Bloom's educational objectives [10]. Thus, we can assert that the outcome-based approach was fully realised at both school (for children) and university (for teachers) levels.

It is important to note that chess activities, by developing critical thinking [21], also foster independence in this process, thereby enhancing the autonomy of learning.

Collaborative Learning, Problem-Solving, and Reflection

Collaborative learning technology is a critical tool in chess education as it is used both

in teacher training and in teaching learners. Collaborative activities are also fundamental to cultural-historical psychology. “The most important concept for understanding the relationship between learning and development, and the role of the adult in this relationship, is the concept of the zone of proximal development (ZPD) [2]. This is the domain of activities that a child cannot perform independently but can accomplish with the help of an adult” [6].

It is essential to highlight that considerable attention is devoted to collaborative problem-solving, which is a cornerstone of chess education in schools. Problem-solving fosters critical thinking, creativity, and resilience, preparing learners to tackle real-world problems [19]. Collaborative learning, problem-solving, and critical thinking are directly linked to the development of learners’ reflective abilities. This is particularly evident in chess, given the constant analytical work aimed at evaluating various positions.

An example of problem-solving through collaborative technologies is tasks that take no less than a week to complete. In our previous research, we found that “increasing the frequency of problem-solving in lessons raises the average score on chess tests” [3].

The analysis and discussion of collaborative activities are among the fundamental principles of applying a reflective-active approach to teaching chess in schools [5]. Reflective practices promote more profound understanding, metacognition, and continuous improvement, encouraging learners to critically assess their learning experiences [14]. Our studies [33] also identified a strong correlation (0.58) between chess scores and learners’ reflective learning styles. Developing reflective skills is also a mandatory component of chess teacher training [30].

Long-term tasks lasting more than a week are integral components of an interactive approach to chess education. The updated gen-

eral education standard, particularly for the subject of chess, aims to significantly expand the scope of project-based tasks, emphasising the importance of teamwork and shared goals in completing these tasks [22]. Project-based learning is also extensively incorporated into teacher training programmes [30].

It is also crucial to emphasise the importance of learners’ perceptions and inner states for the effectiveness of teaching strategies. Research [18; 36] has shown that learners’ motivation, active participation, and sense of belonging significantly influence their learning experiences and academic achievements. Moreover, the same teaching approach may be perceived differently by learners depending on their individual preferences, prior knowledge, and cultural backgrounds [8].

Organisation of the Study and Methods Used

In 2021, an empirical study was conducted to determine the impact of various factors on chess education in Armenia. The study employed the following tools and methods from both quantitative and qualitative research: tests, questionnaires, and practical investigations.

Participants, including learners, were provided with questionnaires developed in collaboration with teachers, psychologists, and chess players. Among the many questions in the questionnaire, a special section focused on the methods and conditions of chess education in schools. Specifically, learners were asked whether they had engaged in the following learning activities during their chess education:

1. completed project work requiring at least one week;
2. used information technologies/devices during classwork;
3. completed tasks requiring several class hours;

4. assessed their own achievements in chess;
5. solved chess problems in more than one way;
6. verbally explained how they solved a problem;
7. solved mathematical problems together with the entire class;
8. worked in small groups to find a standard solution;
9. discussed homework that they had failed to solve.

The survey, conducted using a random sampling method, included participation from across the Republic of Armenia, including the capital, Yerevan. A total of 42 schools were selected. The study involved 476 fifth-grade learners (239 boys and 237 girls) who had studied chess during the previous three years (from grades 2 to 4).

To achieve the research goal, a chess knowledge test was developed by a researcher from the National Institute of Chess Studies, who is also an international women's chess grandmaster. This test was designed to assess the level of knowledge gained by learners over their three years of chess education. Psychologists, sociologists, and re-

searchers from the National Institute of Chess Studies contributed to its development. The test was based on the educational standards for chess instruction in primary schools in the Republic of Armenia and consisted of eight chess problems. For each task completed, participants received one point.

The analysis of the results utilised the IBM SPSS 26 statistical software. Since most of the measured variables were ordinal, Spearman's correlation coefficient was applied.

Results

The results of the correlation analysis are presented in the table below.

It was found that correctly solved tasks have a positive correlation with project-based learning ($r=0.25$, $p<0.01$), indicating the potentially positive role of project work in learners' academic achievements. The identified relationship between correctly solved tasks and learners' self-assessment of progress ($r=0.19$, $p<0.01$) may suggest a beneficial role of reflection in the learning process. Additionally, significant correlations were observed between correctly solved tasks and learners' engagement in commenting on assignments ($r=0.18$, $p<0.01$), indicating that learners who

Table

Inter-correlation matrix of indicators of interactive learning strategies and chess education outcomes

	Correct problem solution	Project-based activity	Learners assessing their success	Learners' feedback on the assignment	Small learners' group work
Project-based teaching/learning	0,25**				
Learners assess their success	0,19**	-0,09			
Learners' feedback on the assignment	0,18**	0,54**	0,25**		
Small learners' group work	0,15*	0,25**	0,04	0,31**	
Reflection on the homework	0,29**	0,16*	0,37**	0,15*	-0,13

Note: * — correlation is significant at the 0.05 level; ** — correlation is significant at the 0.01 level.

generally provided comments on assignments tended to perform better in solving chess problems. Statistical analysis also revealed a correlation between academic achievements (chess problem-solving results), participation in small group work ($r=0.15$, $p<0.05$), and reflection on homework ($r=0.29$, $p<0.01$). The latter reflects the essence of reflexivity, as, during task review, learners not only recall information but also reflect on their knowledge, problem-solving methods, and learning strategies. This process helps them identify their strengths and weaknesses, understand errors, and plan further actions to improve their results.

As shown by the results of the correlation analysis (see table), all interactivity indicators, as perceived by learners, were statistically significantly correlated with the results of the chess test (with the variable "Correctly Solved Tasks"). For example, according to the classification we proposed, project work, reflection in the form of commentary and self-assessment of one's work, and small group work are components of an interactive learning strategy. Components of the interactive strategy that are challenging for learners to assess, such as heuristics, critical thinking, problem-solving, and decision-making, were deliberately excluded from the questionnaire.

Discussion of Results

The discussion of the study results must begin with a comparison of theoretical approaches and empirical data. As a result of the comprehensive approach to the problem of the relationship between interactive learning strategies and the outcomes of chess education, it became clear that a considerable amount of experience has been accumulated in the application and research of interactive learning within chess education.

When examining the issue of interactive methods of teaching chess within the frame-

work of cultural-historical psychology, it is evident that it is necessary to analyse not only the application but also the effectiveness of these methods from the perspective of learners. Cultural-historical psychology, developed by L.S. Vygotsky [1], emphasises the influence of cultural and historical factors on the development of the human psyche. The results of the correlation analysis demonstrated a connection between interactivity and the effectiveness of chess education. Meanwhile, numerous studies [3; 4; 8] on the impact of chess on children's mental development, including within the framework of cultural-historical psychology and the reflective-activity approach [5], have shown that learning chess contributes to the development of learners' higher mental functions. The above findings confirm the hypothesis of the relationship between interactive learning strategies and the effectiveness of chess education.

Saraji and Zuhri [31] confirmed that interaction influences critical thinking processes, especially during teaching and learning. Regarding problem-solving, research [17] indicates that when teachers help learners solve various chess problems, learners become aware of their improved problem-solving abilities not only in chess but also beyond. In other words, teacher competence strongly influences learners' self-efficacy, which can be considered one of the key factors in their motivation. Self-efficacy in solving chess problems helps foster self-efficacy in addressing life challenges. Motivational components of interactive chess learning strategies were also explored in our previous studies [4]. Research into the influence of psychological factors on PISA test results (the Programme for International Learner Assessment) highlights the significant role played by intrinsic motivation and related factors, as well as belief in one's abilities [23].

The analysis of experimental study results [21] revealed that in the experimental group, where second-grade learners were taught chess using interactive game technologies, they solved chess problems more effectively. Moreover, the average number of incorrect solutions in the experimental group was lower than in the control group. These findings support the hypothesis that the game-based method of teaching chess is more effective.

A review of previous studies shows that approximately half of the learners play chess once a week. According to our research findings [4], playing chess once or twice a month, with games tied to the topics covered for reinforcement, is sufficient to improve chess proficiency. In this case, learners achieve higher chess test results, indicating better problem-solving performance.

Therefore, diversity in classroom activities is not only valuable but also essential for achieving educational goals. Considering that some educational activities, such as problem-solving, independent thinking, and strong intrinsic motivation, are primarily driven by the nature of chess itself, we deemed it necessary to include them within the framework of interactive learning strategies.

The results obtained once again underscore the need to reassess the pedagogical approaches used in teaching chess in educational institutions. Consequently, achieving the successful integration of interactive learning strategies into the practice of chess education requires ensuring the following conditions.

The effective integration of interactive learning strategies into educational practice necessitates a reassessment of chess training programmes and the professional development of chess teachers aimed at improving their qualifications in employing these innovative teaching approaches. Furthermore, it would be desirable to explore

the possibility of integrating the principles of interactive learning into broader educational reforms and initiatives. This may include allocating resources for the development of educational games, supporting research on effective pedagogical strategies, and encouraging schools to adopt innovative teaching methods.

Conclusions

The analysis of various teaching strategies within the realm of chess education reveals that the challenges associated with teaching chess transcend a simplistic classification. Strategies that incorporate reflection, heuristic discussions, ICT integration, collaborative learning, problem-solving, and independent learning interact dynamically, resulting in enhanced learning outcomes.

Heuristic discussions, practical exercises, independent learning approaches, reflection, collaborative work, problem-solving strategies, and the incorporation of multimedia resources and gamification in chess education not only accommodate diverse learning styles but also play a pivotal role in cultivating critical thinking skills essential for addressing real-world challenges. Furthermore, interactive learning strategies broaden learners' capabilities, fostering independence and facilitating a more individualised learning experience.

The investigation of this issue within the framework of cultural-historical psychology has substantiated the hypothesis regarding the connection between interactive strategies and the effectiveness of chess education. All examined components of the interactive strategy — such as project work, reflection, and group work — demonstrated statistically significant correlations with the results of the chess test. This finding underscores that the application of interactive learning strategies significantly enhances the overall effectiveness of chess education.

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Characteristics of Unfamiliar People Personality in the Assessments of Observers with Different Teaching Experience

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The study analyzes the professional ability of teachers to accurately perceive and evaluate the student's personalities. Teachers with varying levels of professional experience (1—4 years and 5 years and above) as well as individuals without teaching experience were recruited for this study. Video recordings of the behavior of six posers (three women and three men) during an interview were used as stimuli. From the video recordings, fragments lasting 1 minute were extracted, containing the poser's speech and their responses to the interviewer's questions. The audio track in the video clips was removed. Participants, both with and without pedagogical experience, evaluated the posers using a specially designed semantic differential that included 25 scales. These scales describe various aspects of personality as self-regulation, organizational and communication skills, empathy, and more. Prior to this evaluation, participants had been assessed using the same semantic differential scales. Subsequently, they were asked to rate, on a ten-point scale, the success of their current or potential professional activity as a teacher in high school, college, and university. The forecast of potential teaching activities was also conducted in relation to the posers being assessed. The results of the study in all groups showed that the mean scores on the scales did not differ significantly. The method of semantic universals made it possible to identify the characteristics of each of the posers. The sets of semantic universals varied, but participants with different professional backgrounds highlighted different sets of characteristics. However, a number of characteristics were consistently emphasized in all groups. A similar factor structure was obtained, containing four common factors: factor 1 "responsiveness", factor 2 "discipline", factor 3 "activity" and factor 4 "stress resistance", i.e. we can say that the perception of an unfamiliar poser by all individuals is based on the same latent variables. However, factor 4 "stress resistance" has the greatest weight in the group of teachers with extensive teaching experience (5 years and more).

Keywords: nonverbal communication; teacher's professional experience; first impression; semantic differential.

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Характеристики личности незнакомого человека в оценках наблюдателей с разным педагогическим опытом

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Представленное в статье исследование посвящено проблеме умений педагога воспринимать и оценивать личность учащегося. Его участниками были педагоги с разным профессиональным опытом (1—4 года; 5 лет и выше) и контрольная группа испытуемых без педагогического опыта. В качестве стимульного материала использовались видеозаписи поведения шести натурщиков (трех женщин и трех мужчин), проходящих собеседование. Из полученных видеозаписей выделялись фрагменты длительностью 1 мин., содержащие речь натурщика и его ответы на вопросы интервьюера. Звуковая дорожка в видеофрагментах была удалена. Участники (без педагогического опыта и с педагогическим опытом) оценивали натурщиков по специально разработанному семантическому дифференциалу, содержащему 25 шкал. Шкалы описывают различные аспекты личности, связанные с саморегуляцией, организационными и коммуникативными способностями, эмпатией и др. Предварительно была произведена самооценка участников по тем же шкалам семантического дифференциала. Далее участникам предлагалось по десятибалльной шкале оценить успешность своей текущей (или дать прогноз возможной) профессиональной деятельности как педагога в образовательных учреждениях разного уровня — в средней школе, в колледже и в вузе. Прогноз возможной педагогической деятельности выполнялся и по отношению к оцениваемым натурщикам. Результаты исследования во всех группах испытуемых, независимо от опыта педагогической деятельности, говорят о том, что средние профили оценок по шкалам значимо не различаются. Метод семантических универсалий позволил выделить

характеристики каждого из натурщиков, одинаково оцениваемых значимым большинством однородной группы испытуемых. Наборы семантических универсалий варьируют в зависимости от конкретного натурщика, но при этом участники с разным профессиональным опытом выделяют разные наборы характеристик натурщиков. Вместе с тем ряд характеристик стабильно выделяется в оценках натурщиков всеми группами испытуемых. Получена сходная факторная структура, содержащая по четыре общих фактора: фактор 1 «отзывчивость», фактор 2 «дисциплинированность», фактор 3 «активность» и фактор 4 «стрессоустойчивость», т.е. можно говорить о том, что восприятие незнакомого натурщика всеми испытуемыми происходит с опорой на одни и те же латентные переменные. Однако фактор 4 «стрессоустойчивость» имеет наибольший вес в группе педагогов с большим педагогическим опытом (5 лет и более).

Ключевые слова: невербальная коммуникация; профессиональный опыт педагога; первое впечатление; семантический дифференциал.

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Introduction

The studies of interpersonal communication in the course of professional activity hold a special place in psychological science, as it indicates the communicative competence of specialists in a wide variety of professions. Thus, in pedagogical occupation, a teacher needs to monitor constantly the situation in the classroom and make a variety of decisions that mainly depend on the behavior of students [17]. Some researchers even note that the main specificity of a teacher's work lies in the need to continuously observe students' behavior and track their reactions [19; 32]. Based on this, of particular interest to researchers is the ability of a teacher to perceive and adequately interpret not only the students' behavior, but also their individual and personal characteristics.

A number of authors have studied how accurately teachers assess the characteristics of students, with the main focus on judgments about their individual cognitive or motivational and affective characteristics [28]. The studies have shown that teachers assess students' academic knowledge more accurately than

their general cognitive abilities, self-esteem, or interest. In addition, teachers tend to perceive students holistically and to mix up different student characteristics when asked to evaluate, for example, only student performance or motivation [35].

In other studies, student profiles obtained from teacher assessments were compared with student self-assessments [27; 35]. These studies have shown that teachers consistently tend to rate their students' performance in a predominantly homogeneous manner, as "generally strong", "generally weak", and most often "generally average". However, the profiles obtained from student assessments are much more varied, including contradictory patterns such as underestimation, overestimation, or lack of interest [27].

The studies of the accuracy of teachers' assessment of individual characteristics of students have shown that teachers assess self-esteem, motivation for learning, and positive and negative emotions of students with low to moderate accuracy [18; 25; 34]. No evidence was found for a general ability to

accurately assess students' personality traits: most correlations between different components of accuracy within a trait, and the same components between traits, were insignificant [34]. Four factors have been revealed based on the description of personal characteristics of students by their school teachers: behavior in the classroom; dominance; physical health; sense of beauty [26].

The first impression that a teacher forms of students, as well as their expectations and prejudices, can affect further interaction during the educational process and the academic performance of students.

As the length of teaching experience increases, a number of personal characteristics of teachers can change significantly [6]. In particular, in the first years of service, school teachers have a reduced tendency to experience the emotion of joy, but an increased tendency to experience sadness, fear, and anger. As the length of service increases, this tendency changes to the opposite [13]. Also, as the length of service of school teachers increases, their empathy increases, but emotional burnout becomes more pronounced, and latent aggression increases [10].

The present study was conducted in the paradigm of "thin slices" of human behavior and activity [15; 16; 29]. This approach is well-established in psychology, sociology, medicine and communication studies [14; 30; 33]. It is based on the phenomenon that an adequate representation of an unfamiliar person's personality can be formed on the basis of a short-term exposure to their non-verbal behavior. Such thin "slices" of behavior provide evolutionarily significant and ecologically valid information about the possibility of interaction and communication with a given interlocutor, or the need to avoid them [36; 37]. Significant theories of interpersonal perception, such as the lens model, the ecological approach, and others, consider the "thin slices" approach as

an effective and adequate way to study a person in specific life situations. It has been shown that key personality traits are unconsciously manifested in nonverbal behavior [20—24; 31]. According to studies, thin sections allow for a reliable and valid assessment of the behavior of an unfamiliar person [30].

Unlike previous studies, our aim was to study the peculiarities of perception and assessment of personal traits of strangers made by teachers with different professional experience. The importance to study the first impression of teachers is in the first impression of students that the teacher forms, as well as their expectations and prejudices, that can affect further interaction during the educational process and the academic performance of students. A set of personality traits that, according to experts, are significant during the educational process, were used as individual psychological characteristics. We were interested in whether the perception and assessment of personality would change depending on the length of professional service of a teacher. If the professional experience indeed changes the first impression, we expect to obtain differences between the groups of novices and experienced teachers. If the first impression is not related to the professional experience of a teacher, similar assessment profiles are expected for all groups of participants.

Methods

Participants. One-hundred and five people (115 women and 20 men aged 19 to 71 years, median age 35 years) took part in the study. They were students and teachers of Moscow universities, and had normal or corrected-to-normal vision. Based on their teaching experience, the participants were divided into three groups:

- participants with no teaching experience (84 people: 71 women and 13 men; age 19—53, median 32 years);

- participants with less than 5 years of teaching experience (23 people: 20 women and 3 men; age 24—50, median 38 years);
- participants with 5 years or more of teaching experience (28 people: 24 women and 4 men; age 29—71, median 40 years).

Stimuli and apparatus. We recorded videos of six people (three women and three men) who were interviewed by a researcher. They were students of second higher education (Psychology), and had different occupations. We aimed at recording their natural non-verbal behavior during an autobiographical interview. They answered questions asked by the interviewer, who sat in a chair in front of them at a distance of 150 cm. We used Panasonic HC-V720MEE video cameras (Full HD, shooting frequency 50 Hz) to record the communication process from different points of view. The camera filming the interviewee's face was located at a distance of 200—250 cm at their eyes level. The face and shoulders of the interviewee were filmed at three-quarter. We extracted 1-minute fragments from the resulting video recordings, that included the interviewee's answers to the interviewer's questions. The sound track in the video fragments was deleted. As the main objective of the current study was to examine the ability of teachers with different teaching experience to determine the individual psychological characteristics of unfamiliar people based on their non-verbal behavior, the interview was used as a model communication situation in which the non-verbal component of communication is expressed clearly. Therefore, the particular content of the interview is not a significant factor in the study.

Procedure. The study was conducted online using jspsych 6.3.0. The stimuli were presented via a web browser in full-screen mode, and the participants' responses were recorded. The technical requirements included a minimum screen resolution of 800 600 pixels

and usage of a computer or laptop. The procedure included two parts. First, participants provided information about their gender, age, occupation, and teaching experience. Then they were asked, using scale from -3 to +3, to complete a self-assessment on bipolar scales that were prepared on the basis of scientific literature about the leading professionally important qualities of a teacher [5]. The scales describe various aspects of personality associated with self-regulation, organizational and communicative abilities, empathy, etc. [7]. The scales for the semantic differential were selected based on the ideas about the leading professionally important qualities of a teacher. Initially, the widest possible list of such qualities was formed, then synonyms were excluded from it. Then the list was reviewed by experts (experienced teachers), and the least relevant qualities were excluded. Despite the fact that formal validation was not carried out, we conducted a pilot study to refine the initial list. The final list included the following 25 bipolar seven-point scales: "attentive — inattentive"; "disciplined — undisciplined"; "friendly — unfriendly"; "initiative — uninitiative"; "critical — uncritical"; "loving children — not loving children"; "observant — unobservant"; "sociable — unsociable"; "objective — inobjective"; "optimistic — pessimistic"; "responsible — irresponsible"; "responsive — unresponsive"; "far-sighted — short-sighted"; "independent — dependent"; "able to see the potential of others — unable to see the potential of others"; "capable of self-regulation — incapable of self-regulation"; "empathetic — lacking empathy"; "able to lead — unable to lead"; "fair — unfair"; "striving for self-development — not striving for self-development"; "stress-resistant — not stress-resistant"; "tactful — tactless"; "demanding — undemanding"; "sensitive — insensitive"; "energetic — passive". Then the participants were asked to rate on a ten-point

scale the success of their current (or give a forecast of possible) professional activity as a teacher in educational institutions of different levels: at school, college and university.

Next, the participants were sequentially shown video clips of people undergoing interview, in randomized order. The video clips lasted 1 min and were shown without sound. The participants' task was to assess each interviewee using the same scales that were used at the first stage of the study, and to predict the success of the person's possible professional activity as a teacher. Each video was shown only once. The linear dimensions of the stimuli were 500×500 pixels. Before the video clips began, a fixation cross was shown in the center of the screen (duration 1 s), and after the end of the video clip, a blank light-gray screen was shown (duration 200 ms).

Data analysis. We used Statistica 10 and R 3.6.3 to analyze the data. In each of the three groups of participants, the structure of the assessments was revealed using Factor analysis (Principal components method) with Varimax normalized rotation. A comparison of assessments between different groups of participants was conducted using the Mann—Whitney U test with the Benjamini—Hochberg correction for multiple comparisons. Additionally, we used the method of semantic universals to analyze the responses [2; 12]. A semantic universal for a given stimulus is a list of evaluations that are rated similarly by a significant majority of a homogeneous group of subjects [12, p. 259]. It is a data-driven structure of presenting experimental data, which has an advantage over formal mathematical models, based on the properties of a set of real numbers and the conditions for the applicability of quantitative methods [12, p. 22].

Results

Self-assessment of personal qualities, performed by teachers with different profes-

sional experience, were compared using U Mann—Whitney test. The results showed significantly higher results in the most experienced teachers, compared to participants with no experience, on the following scales: “observant — unobservant” ($U = 1522$; $p = .012$); “objective — inobjective” ($U = 1504$; $p = .017$); “fair — unfair” ($U = 1454.5$; $p = .039$), however, after applying the correction for multiple comparisons, the differences became non-significant. Also, compared to participants with no experience, teachers with the most experience rated higher the success of their professional activity as a university teacher ($U = 738.5$; $p = .003$). No significant differences were found between the groups of participants with little and much experience, as well as between teachers with little experience and the control group.

The semantic universals were identified based on the results of self-assessment. Two of them coincide in all groups of participants: “striving for self-development” and “not stress-resistant”. Additionally, in the group of participants without teaching experience, we revealed the universals “responsible” and “empathetic”.

The comparison of personality assessments of the interviewees between different groups of participants using the Mann—Whitney U criterion did not reveal any significant differences (all $p > .05$).

The method of semantic universals allowed us to identify the characteristics of each of the interviewees, similarly assessed by a significant majority of the homogeneous group of subjects. The results are presented in Table 1. As in our previous work [8], the sets of the semantic universals vary depending on the poser. Participants with different professional experience identify different sets of characteristics of the unfamiliar people. At the same time, a number of characteristics are consistently identified by all groups of subjects.

Factor analysis revealed four factors common for all groups of participants. The results are presented in Tables 2—4.

Factor 1 (contribution to the total variance: 22.6% — control group; 20.3% — teachers with 1 to 4 years of experience; 20.0% — teachers with 5+ years of experience) is interpreted as

“responsiveness”. It includes high loadings on the variables: “friendly — unfriendly”, “loving children — not loving children”, “responsive — unresponsive”, “empathetic — lacking empathy”, “sensitive — insensitive”.

Factor 2 (contribution to the total variance: 17.8% — control group; 16.0% —

Table 1

Semantic universals identified during the assessment of the interviewees by participants with different professional experience

Interviewee	Control group	Experience 1—4 years	Experience 5+ years
S01	Sociable Energetic Uncritical Undemanding	Sociable Optimistic Uncritical	Sociable Optimistic Energetic Uncritical Unable to lead Undemanding
S02	Friendly Objective Responsible Independent Fair Stress-resistant Tactful Passive	Disciplined Stress-resistant Pessimistic Unable to lead Passive	Capable of self-regulation Stress-resistant Unable to lead
S06	Responsible Independent Fair Tactful Passive	Attentive Disciplined Critical Observant Responsible Independent Passive	Friendly Critical Objective Responsible Capable of self-regulation Fair Tactful Pessimistic Passive
S08	Friendly Empathetic Tactful Unable to lead Undemanding	Friendly Tactful Uninitiative Unable to lead Undemanding	Friendly Unable to lead
S11	Responsible Far-sighted Independent Unsociable Passive	Observant Responsible Tactful Unable to lead	Attentive Responsible Capable of self-regulation Striving for self-development Pessimistic Unable to lead
S12	Responsible Insensitive	Disciplined Insensitive	Disciplined Responsible Far-sighted Pessimistic

Note. For each interviewee, the universals that coincide in the three groups of observers are shown in bold.

teachers with 1 to 4 years of experience; 20.6% — teachers with 5 years of experience and above) is interpreted as “discipline” and includes high loadings on the variables: “attentive — inattentive”, “disciplined — undisciplined”, “observant — unobservant”, “responsible — irresponsible”.

Factor 3 (contribution to the total variance: 14.5% — control group; 23.4% — teachers with 1 to 4 years of experience; 15.6% — teachers with 5+ years of experience) is interpreted as “activity” and includes high loadings

on the variables: “initiative — uninitiative”, “sociable — unsociable”, “able to lead — unable to lead”, “energetic — passive”.

Factor 4 (contribution to the total variance: 1% — control group; 1% — teachers with experience from 1 to 4 years; 12.8% — teachers with 5+ years of experience) is interpreted as “stress resistance”. It includes high loadings on the variables: “capable of self-regulation — incapable of self-regulation” and “stress-resistant — not stress-resistant”.

Table 2

Factor loadings (control group)

Scales	Factor 1 “responsiveness”	Factor 2 “discipline”	Factor 3 “activity”	Factor 4 “stress resistance”
Attentive — Inattentive	.189127	.800778	.127447	-.035043
Disciplined — Undisciplined	.189795	.763324	.118751	.079760
Friendly — Unfriendly	.775085	.103556	.265396	-.035213
Initiative — Uninitiative	.192875	.330917	.758442	.151555
Critical — Uncritical	-.305026	.581412	.166947	.298543
Loving children — Not loving children	.746768	.106162	.318212	.028706
Observant — Unobservant	.241363	.743902	.172912	.133233
Sociable — Unsociable	.401998	.067045	.777842	.022192
Objective — Inobjective	.509103	.368349	-.116839	.346865
Optimistic — Pessimistic	.541728	.049059	.649760	.094215
Responsible — Irresponsible	.331119	.668633	.064527	.237607
Responsive — Unresponsive	.780421	.101679	.323812	.069600
Far-sighted — Short-sighted	.047595	.667822	.046510	.256036
Independent — Dependent	.046896	.509971	.241157	.486098
Able to see the potential of others — Unable to see the potential of others	.463689	.395504	.249183	.302784
Capable of self-regulation — Incapable of self-regulation	.314748	.301940	.104693	.601070
Empathetic — Lacking empathy	.793781	.111711	.311594	.036688
Able to lead — Unable to lead	.115507	.320639	.667242	.464015
Fair — Unfair	.645805	.132416	-.033432	.504923
Striving for self-development — Not striving for self-development	.382025	.417704	.328682	.268636
Stress-resistant — Not stress-resistant	.003022	.196362	.198488	.744447
Tactful — Tactless	.724632	.101819	-.078396	.185486

Scales	Factor 1 "responsiveness"	Factor 2 "discipline"	Factor 3 "activity"	Factor 4 "stress resistance"
Demanding — Undemanding	-.283578	.523383	.385268	.275964
Sensitive — Insensitive	.783184	.079176	.293706	-.017936
Energetic — Passive	.225160	.178543	.843361	.162687
Contribution to total variance	22.6%	17.8%	14.5%	1.0%

Note. Loadings >.6 are highlighted in bold.

Table 3

Factor loadings (group of teachers with experience from 1 to 4 years)

Scales	Factor 1 "responsiveness"	Factor 2 "discipline"	Factor 3 "activity"	Factor 4 "stress resistance"
Attentive — Inattentive	.153970	.744808	.416895	.019330
Disciplined — Undisciplined	.215076	.817902	-.016460	.116818
Friendly — Unfriendly	.734277	.376838	.151815	-.191996
Initiative — Uninitiative	.226424	.365308	.738019	.082911
Critical — Uncritical	-.552224	.281560	.199711	.337001
Loving children — Not loving children	.635600	.235330	.404453	-.084583
Observant — Unobservant	.072781	.656888	.376918	.104751
Sociable — Unsociable	.418271	.047721	.732936	-.042405
Objective — Inobjective	.453063	.576166	.114291	.370816
Optimistic — Pessimistic	.511444	.112287	.712360	.133267
Responsible — Irresponsible	.261894	.746237	.266842	.191513
Responsive — Unresponsive	.835957	.170221	.251073	-.052340
Far-sighted — Short-sighted	-.006753	.599303	.560450	.221681
Independent — Dependent	-.090293	.365759	.622664	.286981
Able to see the potential of others — Unable to see the potential of others	.364235	.197101	.569291	.227065
Capable of self-regulation — Incapable of self-regulation	.120595	.189574	.441726	.665174
Empathetic — Lacking empathy	.724957	.107460	.314902	.000465
Able to lead — Unable to lead	.039009	.316246	.743263	.314661
Fair — Unfair	.567035	.212129	.211958	.383371
Striving for self-development — Not striving for self-development	.290226	.233124	.722945	.163904
Stress-resistant — Not stress-resistant	-.069709	.156521	.160905	.848333
Tactful — Tactless	.739757	.051961	-.017181	.254288
Demanding — Undemanding	-.372628	.414107	.482560	.396782
Sensitive — Insensitive	.672320	.141881	.355307	.000638

Scales	Factor 1 “responsiveness”	Factor 2 “discipline”	Factor 3 “activity”	Factor 4 “stress resistance”
Energetic — Passive	.256024	.110019	.861131	.166065
Contribution to total variance	20.3%	16.0%	23.4%	1.0%

Table 4

Factor loadings (group of teachers with 5+ years of experience)

Scales	Factor 1 “responsiveness”	Factor 2 “discipline”	Factor 3 “activity”	Factor 4 “stress resistance”
Attentive — Inattentive	.228923	.687531	.144332	.145281
Disciplined — Undisciplined	.208167	.809103	-.004106	.135618
Friendly — Unfriendly	.752899	.056986	.226978	.061285
Initiative — Uninitiative	.214697	.349507	.724145	.240076
Critical — Uncritical	-.165299	.675062	.365994	.054627
Loving children — Not loving children	.766301	.067815	.230816	.105651
Observant — Unobservant	.266289	.655465	.329604	.194472
Sociable — Unsociable	.490751	.065169	.749772	.104051
Objective — Inobjective	.287317	.463307	.079460	.541366
Optimistic — Pessimistic	.503702	.077122	.699580	.161659
Responsible — Irresponsible	.223220	.684853	.061433	.461298
Responsive — Unresponsive	.820304	.018108	.268887	.183207
Far-sighted — Short-sighted	.126238	.699954	.154864	.428606
Independent — Dependent	.039406	.499152	.281667	.610443
Able to see the potential of others — Unable to see the potential of others	.487225	.341664	.464316	.304995
Capable of self-regulation — Incapable of self-regulation	.045789	.379426	.273549	.605972
Empathetic — Lacking empathy	.794871	.191337	.150730	-.046349
Able to lead — Unable to lead	.089923	.377697	.638200	.447061
Fair — Unfair	.500685	.243452	.094673	.633649
Striving for self-development — Not striving for self-development	.243685	.622941	.308808	.226135
Stress-resistant — Not stress-resistant	-.048202	.126189	.303223	.805641
Tactful — Tactless	.602163	.502724	-.180308	.079714
Demanding — Undemanding	-.047604	.570110	.435102	.286522
Sensitive — Insensitive	.816434	.223828	.108250	.041499
Energetic — Passive	.257108	.228093	.792186	.238113
Contribution to total variance	20.0%	20.6%	15.6%	12.7%

Since the contribution of a factor to the total variance of results is an indicator of its power, we can say that for the control group (participants without teaching experience), the most important is factor 1 “responsiveness”, i.e. the characteristics included in this factor are the most important and essential for pedagogical activity, according to the participants. For the second group (teachers with 1—4 years of experience), the most important characteristics are those included in factor 3 “activity”. For the group of experienced teachers (teaching experience of 5 years or more), the most important are the characteristics included in factor 2 “discipline” and factor 1 “responsiveness”. Thus, as the duration of teaching experience increases, the ratio of the contribution of each of the identified factors changes.

Notably, factor 4, which has a low contribution to the total variance (1%) in the group of participants without experience and in the group with 1—4 years of teaching experience, becomes more powerful in the case of experienced subjects (5 years of teaching experience or more), i.e. such characteristics as stress resistance and the ability to self-regulate are more important qualities to this group of subjects, and more experienced teachers pay attention to them. We assume that these same individual psychological characteristics, which are part of the representation of another person, are important for the professional activities of teachers. This factor was also identified in our previous work [8] when using the “Personality Differential” method on a group of teachers with 5+ years of experience. Thus, since the same factor is identified with different versions of the semantic differential, it can be assumed that the results obtained in the current study reflect a stable semantic structure of the perception of an unfamiliar person by experienced teachers.

Discussion

The results of the current study indicate that in all groups of participants, regardless of their teaching experience, the average profiles of assessments do not differ significantly.

A similar factor structure is distinguished in all groups, containing four common factors: factor 1 “responsiveness”, factor 2 “discipline”, factor 3 “activity” and factor 4 “stress resistance”, i.e. we suggest that the perception of an unfamiliar model by all subjects is based on the same latent variables. However, when analyzing the contribution of each factor to the overall dispersion of the results, we revealed differences as the length of teaching experience increases. In particular, factor 4 “stress resistance” has the greatest weight in the group of teachers with extensive teaching experience (5 years or more), i.e. it can be assumed that the variables included in this factor become more important for this group than for the control group and the group with low professional experience (1 to 4 years), which is consistent with previously obtained data [8].

The key role of stress resistance in the effectiveness of the professional activity of teachers is confirmed by a number of other studies. Stress resistance, or emotional stability, is considered a professionally important quality that influences the productivity of pedagogical activity and contributes to the personal realization of the teacher [1; 3; 11]. The structure of stress resistance of teachers includes such components as balance, activity, desire for self-development, ability to set goals and achieve results, communication skills, etc. [4]. Teachers who are highly successful in their professional activity have a more effective adaptation to stress, while less successful ones experience “pseudo-adaptation” [3]. It has also been shown that young teachers with up to three years of experience,

who have a higher level of stress resistance, implement more productive styles of pedagogical activity, which indicates a higher level of their professional realization [9].

Semantic universals, which reflect for a given stimulus a set of scale ratings, equally assessed by a significant majority of a homogeneous group of subjects, indicate that in all groups of subjects, different posers are assessed differently, but the distinguished individual characteristics of a particular model are present in all three groups of subjects. We suggest that such characteristics remain stable in the perception of a given person.

Conclusion

1. Observers are able to assess the personality of a stranger based on their video recording during an interview.

2. The set of semantic universals obtained in the assessments of varies with the teaching experience. At the same time, a number of semantic categories, such as “sociable”, “friendly”, “stress-resistant”, remain unchanged for individual posers, as in our previous study.

3. A similar structure of assessment of posers in all study groups was obtained. Four

common factors were identified: factor 1 “responsiveness”, factor 2 “discipline”, factor 3 “activity”, factor 4 “stress resistance”.

4. In the group of experienced teachers (experience of 5 years or more), factor 4 “stress resistance” is more powerful (contribution to total variance 12.7%), compared to the groups without teaching experience and with experience from 1 to 4 years (contribution to total variance 1%). Perhaps, the characteristics included in this factor become more significant for the more experienced teachers than for the control group and the group with little professional experience (1 to 4 years), which is consistent with the previously obtained data.

To conclude, the hypothesis about the influence of teaching experience on the perception of personality traits of an unfamiliar person is partially confirmed. We further plan to analyze the relationship between the assessments of the models’ professional success prediction and the assessments of their individual psychological characteristics, to reveal which personality traits are the most professionally important qualities, according to teachers.

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Additional Education of Children — the Example of the Republic of Kazakhstan

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This article discusses the possibilities of additional education for children in Kazakhstan to fully realize their potential. The work reflects the advantages and effects of additional education for children in the individualization of the educational trajectory. Methods for optimizing additional education for children are considered and proposed, which will allow for a greater development of abilities, the development of giftedness and talents of the younger generation, which actualizes further, more in-depth study of the issues of optimal organization of additional education for children.

Keywords: additional education; inclinations; abilities; giftedness; talent; human potential.

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Дополнительное образование детей на примере Республики Казахстан

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В настоящей статье обсуждаются возможности дополнительного образования детей в Казахстане для более полного раскрытия их потенциала. В работе отражены преимущества и эффекты дополнительного образования детей в индивидуализации образовательной траектории. Рассматриваются и предлагаются способы оптимизации дополнительного образования детей, которые позволят в большей мере развивать способности, раскрывать одаренность и таланты подрастающего поколения, что актуализирует дальнейшее более глубокое изучение вопросов оптимальной организации дополнительного образования детей.

Ключевые слова: дополнительное образование; задатки; способности; одаренность; талант; человеческий потенциал.

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One of the Sustainable Development Goals set by the UN for 2030 is to ensure inclusive and equitable quality education for all [8]. In the Kazakh education system, alongside compulsory school education, there is an additional education for children (AEC). A crucial function of the AEC is that participation in it helps children to better understand themselves, develop their abilities, and unleash their potential. By combining various programs and formats within the AEC, it is possible to highly individualize a child's development trajectory [7], taking into account their unique characteristics and potential.

The purpose of this article is to initiate a discussion and raise awareness of specific issues related to AEC in Kazakhstan, proposing an authorial approach to improving the accessibility of AEC in the country.

Issues and problems related to the development of children's abilities and giftedness, as well as the fuller realization of a child's potential, remain among the most pressing concerns in fields such as psychology and education.

When discussing the child education system in Kazakhstan, it must be acknowledged that the foundations of educational systems in the post-Soviet space are generally based on compulsory secondary education. In the Republic of Kazakhstan, AEC acts as a process of upbringing and education aimed at moral, intellectual, cultural, and physical development. AEC is designed to meet diverse needs and create conditions for personal development, self-determination, creativity, the development

of abilities, social adaptation, the formation of civic consciousness, general culture, a healthy lifestyle, and the organization of meaningful leisure activities. In Kazakhstan, the provision of AEC and the approval of the state educational order for AEC fall within the competence of local executive bodies (the Akimat) [6].

It is worth noting that in recent years, a trend has emerged in the general secondary education system where, alongside compulsory subjects, so-called elective subjects have begun to appear. And, perhaps taking into account the importance of the right to choose that exists in the AEC system, certain opportunities for the realization of this right have begun to appear in the state general education standards of the Republic of Kazakhstan. For example, relatively recently, there have been certain shifts in the education system, and in the general education standards, along with the invariant component of the academic load, i.e., the compulsory one, a variable component, i.e., elective, has begun to appear [11]. If earlier practically all components of the academic load were compulsory, now a process of revision and introduction of the variable component of the academic load is underway, and based on their educational needs, students have the right to choose elective courses.

General pedagogical practice demonstrates that by the sixth or seventh grade, children, their parents, and teachers have already formed a certain understanding of the child's abilities and the types of activities for which the child is more inclined. Starting

from the seventh or eighth grade, it makes sense to focus on choosing a specific direction of activity for which the child has abilities. This is why, in Kazakhstan, enrollment in various specialized schools, such as the Republican Physics and Mathematics School [10] or the Republican Specialized School of Olympic Reserve [9], usually begins around the seventh or eighth grade. In other words, in such schools, specialization begins from the seventh or eighth grade, which implies that children have already made their choice.

As is known, one of the indicators of the success of social policy in the field of education is the percentage of coverage of AEC. It is no coincidence that this particular indicator is used in annual National Reports on the state and development of the education system of the Republic of Kazakhstan [5]. Speaking of such an indicator as the coverage of AEC, it should be noted that we have previously conducted a number of studies, the results of which, on the one hand, indicate that there is a certain correlation between the level of coverage of AEC and the proportion of juvenile delinquency. In some regions of Kazakhstan, the correlation coefficient was so high that it allows us to call this correlation deterministic, i.e., it can be said that the level of AEC coverage is interrelated with the level of juvenile delinquency. At the same time, the obtained results showed that in those regions where there are higher rates of AEC coverage, there are lower rates of juvenile delinquency, and in those regions where there are lower rates of AEC coverage, there are higher rates of juvenile delinquency [1]. On the other hand, the results of our other study show that regions of Kazakhstan with higher rates of AEC coverage also have higher average scores on the Unified National Testing (analogous to the Unified State Exam), and in those regions where

there are lower rates of AEC coverage, there are also lower average scores on the Unified National Testing [2]. That is, at the state level, the special value and importance of the AEC system is evident, when, on the one hand, it contributes to the prevention of juvenile delinquency, and on the other hand, it helps in career guidance. As experts note, it is precisely in career guidance of students based on the integration of general and AEC that the very important role of AEC is also manifested [12].

It is advisable to develop a system AEC where children would have the opportunity to attend various clubs (intellectual, creative, physical, etc.) in the afternoon after school. Moreover, we believe that the types and forms of AEC activities throughout the day and the school week should be coordinated with the school schedule and with each other in terms of the types and forms of academic load.

Given the critical importance of the age up to 12 for determining the direction in which a child should develop, it is necessary to create a system AEC that allows children to attend a wide variety of clubs where they can find activities that suit their abilities. There is a need to increase the variability of clubs attended by children under 12. Accordingly, children will have the opportunity to try their hand at a greater number of activities.

Given the factors of urbanization, we believe that one way to improve the organization of AEC in populated areas is to create a system AEC based on the material and technical base of the general education system, such as schools, colleges, universities, etc. In one of our previous works, we highlighted possible options for organizing a system AEC in order to optimize its work, increase the coverage of children, and provide children with broader opportunities to reveal their potential. In particular,

we developed and proposed a model of an indicative map of the additional school education network [3]. In general, specialists note that there is an obvious need to understand the organizational foundations of the integration of general and AEC [4].

It is necessary to improve the accessibility of AEC and increase the coverage of AEC among children under 12 in the Republic of Kazakhstan. In our opinion, the system AEC has certain untapped and underutilized opportunities in this area.

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