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About

• The scientific Education & Pedagogy Journal aims to make the results of scientific research and practical activities in the field of pedagogy of education mutually accessible to international and Russian specialists.

• The founder of the journal is Tomsk State Pedagogical University.

The journal publishes:

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PEDAGOGY

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THE PEDAGOGICAL TOOLS OF DIGITAL DIDACTICS

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Abstract. This article provides a theoretical analysis of two didactic methods: classical didactics and digital didactics. Classical didactics, as a branch of pedagogy, explores basic principles and teaching methods and emphasizes the role of the teacher in conveying given content and developing essential skills and competencies in students. In contrast, digital didactics is an emerging field that deals with the organization of educational processes in the context of the digital transformation of society. The primary goal is to craft learning experiences that leverage modern information technologies, emphasizing active, independent student engagement. The article highlights the key principles, pedagogical tools, and educational outcomes that differentiate classical from digital didactics. At the center of the article is an explicit description of the pedagogical tools of digital didactics. It contains verified examples of the implementation of digital didactics in the Russian education system. It is stated that digital didactics is a comprehensive approach to organizing the educational process. This approach encompasses personalized learning, broadening the academic context, gamification, online learning, the application of artificial intelligence, and the ongoing enhancement of the digital learning environment.

Keywords: *adaptive educational platforms, gamification of learning, artificial intelligence, keywords, massive open online courses, pedagogical tools of digital didactics, virtual simulators, digital didactics, digital transformation of education*

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The importance of the issue arises from the objective need to adapt the education system to the requirements of the digital economy. According to the Decree of the President of the Russian Federation, “On

the national development goals of the Russian Federation for the period up to 2030" [1], digital transformation is an important goal in all areas of life, including education. However, the research on digital transformation in education in the scientific literature is still limited. Most studies are fragmented, focus on specific aspects of digitalization in education, and lack a unified didactic framework.

Classical didactics is a field within pedagogy that deals with the theory and practical application of teaching and learning [2]. It ensures effective teaching and learning while developing students' critical thinking skills. Traditional didactics focus on the role of the teacher in delivering prepared content, with the student taking a more passive role as a receiver of information [3].

In contrast, digital didactics is an emerging scientific field that deals with the organization of the educational process in the context of the digital transformation of society. The main goal of digital didactics is to organize the learning process through modern information technologies, focusing on active, independent learning of students [3, 4].

Let us outline the main principles, pedagogical tools, and educational outcomes that distinguish classical from digital didactics (Table 1).

Table 1

Principles, pedagogical tools, and educational outcomes of classical and digital didactics

Parameter	Classical didactics	Digital didactics
Basic principles	– Scientific approach – Systematic and consistent – Visibility – Accessibility	– Greater individualization – Broadening of experience and deepening of knowledge – Learning in a global context – Feasibility of the use of digital technologies
Pedagogical tools	– Lectures – Seminars – Practical exercises – Laboratory work	– Adaptive educational platforms – Simulators and virtual simulators – Gamification of learning – Massive Open Online Courses (MOOCs) – Artificial intelligence
Educational outcomes	– Subject knowledge and skills – General learning skills	– Digital literacy – Critical thinking – Creativity – Communication skills

Digital didactics naturally extends foundational didactic principles, refining and expanding them to meet the evolving demands of the digital

economy and interconnected society. The main focus is on the personalization of learning, the expansion of students' educational experiences, and the development of relevant digital skills [5].

In today's educational practice, a trend toward the integration of elements from traditional and digital didactics can be observed. Traditional teaching methods, such as lectures and seminars, are increasingly combined with digital tools, such as interactive presentations, online tests, and virtual exercises. This hybrid approach enhances visualization and interactivity, facilitates the personalization of the learning process, and fosters the development of essential digital skills in students[6].

However, it is important to note that digital technologies do not automatically improve learning effectiveness. The key factor lies in students' thoughtful methodological development and pedagogical support in using digital tools following the principles of digital didactics. Only in such a case is it possible to achieve the expected learning outcomes regarding the development of digital literacy, critical thinking, and other relevant competencies [6].

The authors do not intend to provide a detailed description of all parameters selected for the comparison between traditional and digital didactics. This article provides only a brief overview of the pedagogical tools used in digital didactics, as shown in Table 1.

Adaptive educational platforms [3] enable the personalization of learning by providing each student with an individual academic plan. These platforms are digital systems that use algorithms to customize the learning process based on the student's individual needs and level of knowledge. They adapt the content, pace, and teaching methods to the psychological and physiological characteristics of the users as they interact with the platform [7].

Researchers addressing issues related to adaptive platforms note both positive and negative effects resulting from their widespread use in educational practice.

The positive impacts of adaptive educational platforms include the following:

− Effective personalization of learning. These platforms can adapt to each student's developmental stage and learning style, significantly increasing their engagement and motivation. Students receive information tailored to their current needs and abilities, facilitating understanding at their particular stage of learning [8];

− Increased learning efficiency. Adaptive systems respond immediately to students' actions, recognizing their knowledge gaps and offering additional material. This proactive approach prevents future errors and reinforces learning [9];

− Flexibility and accessibility. Adaptive platforms allow students to learn at any time and place, making education more convenient and adapting to individual schedules [9].

The adverse effects of adaptive educational platforms include the following:

− Skepticism among experienced educators. Some educators with extensive experience in traditional teaching methods distrust innovative teaching methods and tools. This skepticism can lead to resistance to change and insufficient support for new initiatives;

− Technological dependency. Like all network-based tools, educational platforms are highly dependent on the quality of devices and stable, fast internet connections. In some regions, limited access to technology and internet issues can limit the availability and effectiveness of these platforms;

− Lack of comprehensive research. There is a lack of large-scale studies that definitively demonstrate the effectiveness of adaptive learning compared to traditional methods. The existing scattered scientific papers investigating individual aspects of digital didactics sometimes lead to contradictory results and lack a systematic character [10].

The scientific challenges related to adaptive educational platforms as a key component of digital didactics can thus be addressed through the interplay of technological, pedagogical, and social factors. This requires a comprehensive approach for their scientific validation and implementation in educational practice.

Simulators and virtual training platforms enhance students' educational experience by enabling them to develop practical skills in a safe digital environment. These interactive systems simulate real-world conditions and processes for learning and practicing algorithms for academic or professional activities.

Key benefits of simulators and virtual training platforms:

− Safety in learning. Training takes place in a controlled environment, reducing the risks associated with real-life situations, which is particularly important for high-risk professions [11];

− Simulation of different scenarios. These tools can recreate virtual emergency situations and allow students to practice responses in conditions that are difficult to recreate in real life [12];

− Personalized learning. The approach can be tailored to the psychological and physiological profile of each learner, taking into account their level of knowledge, skills, and personal experience [13];

− Accessibility and flexibility. Learners can train anytime, anywhere, and have a range of options for specific activities [10];

− Monitoring progress. Learners' progress can be monitored to identify strengths and areas for improvement, focusing on feedback and customization of learning plans [14].

Challenges of simulators and virtual training platforms include the following:

− High development costs. High-quality simulators can be expensive to develop, which may limit their availability in various educational settings;

− Psychological factors. Not all students adapt equally well to virtual learning. Some may find it less effective than traditional methods or have difficulty with the new formats;

− Need for training. Effective implementation of such tools requires training for teachers on how to integrate these tools, which requires time and resources;

− Dependence on up-to-date equipment. Constant access to modern hardware and software is essential, which can sometimes be challenging.

To summarize, simulators and virtual training platforms are indeed powerful teaching tools. However, their implementation requires a thoughtful approach that considers various factors to maximize their benefits and minimize the drawbacks.

Let us examine *gamification* as another pedagogical tool within digital didactics. Gamification is considered a promising approach to education in the context of digital transformation in all areas of human activity. It involves integrating game elements and mechanics into non-game learning environments to increase student engagement and improve learning outcomes [15]. Gamification is becoming a key component of digital didactics.

The clear benefits of gamification as a teaching tool include [16]:

− Significant increase in student motivation and engagement through the use of game mechanics such as scoring, rewards, and competition;

− Better mastery of the material through the interactive and entertaining form of information transfer;

− Safe environment to practice practical skills through the use of simulations and augmented reality technologies;

− Adaptation of the learning process to the student's characteristics due to the flexibility of gamified systems.

However, in addition to the positive effects, there are also limitations and risks associated with the transition of the educational process to a gamified learning environment:

− Lack of a universal technological approach. The development of gamified systems often requires customized solutions for each educational task;

− Need for specialized training. As with simulators and virtual platforms, teachers require training to effectively design and implement gamified systems, which may require additional resources.

− Risk of overemphasizing gamification aspects at the expense of content quality;

− Dependence on modern equipment and software. The effectiveness of gamified learning often depends on advanced technology that is not always accessible, especially in educational institutions with limited financial resources.

Overall, gamification is a promising digital didactics tool that improves motivation and learning outcomes. However, its implementation requires a careful approach, considering the educational context's specificities and the available economic resources.

Another pedagogical tool within digital didactics is Massive Open Online Courses (MOOCs), which are popular and offer broad access to high-quality educational content. MOOCs are online academic programs accessible to a wide audience, allowing users to learn at their own pace. They offer a variety of content, including video lectures, tests, assignments, forums, and

communication tools, as well as additional resources to delve deeper into specific subject areas. MOOCs usually include reward systems and assessments to motivate students and test their knowledge [17].

The positive aspects of MOOCs as a pedagogical tool in digital didactics include the following:

− Accessibility. MOOCs make education accessible to people all over the world, regardless of their location, which helps to reduce global educational inequality;

− Flexibility. Learners are free to choose the time of learning and set their own pace of coursework, which is particularly useful for those who need to balance their education with other commitments;

− Variety of content. MOOCs offer a wide range of topics and courses, allowing learners to choose programs that suit their interests and needs;

− Quality of learning materials. Many MOOCs are developed by leading universities and experts in their field, ensuring a high level of academic content and relevance of information;

− Virtual learning communities. MOOCs often include organized online communities where students can share experiences, ask questions, and receive support from peers and course instructors, which deepens learning [18].

The negative effects of using MOOCs exclusively in educational practice include the following:

− Lack of face-to-face interaction. The lack of direct contact between students and teachers, as well as between students, can lead to feelings of isolation and lower motivation;

− Problems with access to technology. MOOCs require modern digital devices and a stable internet connection, which can be a problem for students in remote areas with limited resources;

− Low course completion rates. This may be due to a lack of motivation or lack of live support [19];

− Criticism of educational quality. Some researchers argue that MOOCs may not provide an adequate level of education and are not sufficient to promote critical thinking and a deep understanding of topics [18];

− Threat to traditional educational institutions. MOOCs offer alternative educational pathways that appear more attractive to students and may challenge the quality of education as a whole.

Thus, we see that MOOCs integrate videos, interactive elements, communication, and assessment into a unified system that effectively facilitates online learning on a large scale. Their flexibility and accessibility make them an indispensable tool in modern digital education. However, although they offer many advantages, online learning systems also come with various challenges and limitations.

In the current landscape of digital advancement, it is also important to consider educational tools that utilize artificial intelligence (AI) technologies [20]. The topic of AI is widely discussed today, with both educators and learners exploring the potential advantages and drawbacks of using the rapidly evolving technologies [21–24].

Without going into the positive and negative aspects of AI services, here is a brief analysis of their use in educational institutions. According to Yuri Chekhovich, Executive Director of the Russian plagiarism detection system "Antiplagiat," more than 3 million student papers were checked in the spring of 2024, of which about 600,000 showed signs of AI-generated content [25]. These figures vary widely between institutions, ranging from 2% to 58%. The use of AI-generated texts was particularly prevalent at universities in large cities.

No country has a formal legal framework for using AI at a national level. Most countries are still developing and focusing on public safety, data protection, and human rights issues. For example, some universities in China have banned students' use of AI [26].

Overall, the application of AI at Russian universities is in an active development phase, with many technological advances adapting to these emerging generative technologies. However, their use is often subject to the limitations set by the local regulations of individual educational institutions and the specific needs of different study programs and faculties.

Examples of advanced and proven digital didactics projects in Russia include the "Moscow Electronic School," a large-scale project to evaluate the didactic potential of digital platforms and tools in education [27]. Another notable initiative is the "Digital Assistants" program, which provides verified digital educational resources for students, parents, and teachers. This program focuses on structuring educational activities, creating personalized learning pathways, automating homework assessments, and using AI systems to design educational programs [28].

Various aspects of digital didactics are already being integrated into courses explicitly designed for teachers. These courses include "Digital Information Environment in Literature Education," "Modern Educational Technologies," and "Information and Communication Technologies in Inclusive Education" [2].

In addition to the national digital education projects mentioned above, other initiatives, such as the Digital Student Portfolio, are also being implemented in Russia. This tool enables students to develop digital skills, track achievements, and document learning outcomes [29].

In conclusion, Russia is actively implementing digital didactics in its educational practices, evidenced by the development of comprehensive digital education platforms and curricula. However, experts point out that the complete digital transformation of education requires further development of research work in digital didactics and an increase in teachers' digital skills [30].

The integration of digital didactics into the educational process offers significant benefits for both students and teachers.

For teachers, this transition will facilitate the development of personalized educational paths that respond to students' individual needs. This initiative will also broaden educators' pedagogical toolkit by integrating digital technologies, simulators, and gamification while advancing digital literacy to use contemporary teaching tools effectively [31].

Digital didactics is expected to improve the overall efficiency of the educational process through the integration of advanced information technologies, adaptive platforms, gaming elements, and other features [32]. This will help improve the quality of education through greater student engagement, personalized training, an enriched educational context, and the cultivation of essential competencies required for successful self-actualization in today's world.

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ПЕДАГОГИКА

ПЕДАГОГИЧЕСКИЕ ИНСТРУМЕНТЫ ЦИФРОВОЙ ДИДАКТИКИ

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Аннотация. Статья представляет собой теоретический экспресс анализ двух дидактик: классической и цифровой. Классическая дидактика, как область педагогики, исследует основные принципы и методы обучения, с акцентом на передачу учителем готового содержания и формирование у обучающихся необходимых умений и компетенций. В противоположность этому, цифровая дидактика, как новое научное направление, исследует организацию образовательного процесса в эпоху цифровой трансформации общества. Ее ключевая цель – проектирование процесса обучения с использованием современных информационных технологий, с акцентом на активную, самостоятельную познавательную деятельность обучающихся. Выделяются основные принципы, педагогические инструменты и образовательные результаты, которые отличают классическую дидактику от цифровой. Приоритет отдается экспресс-описанию педагогического инструментария цифровой дидактики. Приводятся верифицированные примеры реализации идей цифровой дидактики в российской системе образования. Делается вывод о том, что цифровая дидактика представляет собой комплексный подход к организации образовательного процесса, который включает в себя индивидуализацию обучения, расширение образовательного контекста, геймификацию, онлайн-обучение, использование искусственного интеллекта и обновление цифровой образовательной среды.

Ключевые слова: *адаптивные образовательные платформы, геймификация обучения, искусственный интеллект, ключевые слова, массовые открытые онлайн-курсы, педагогические инструменты цифровой дидактики, симуляторы и виртуальные тренажеры, цифровая дидактика, цифровая трансформация образования*

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DESIGNING RUSSIAN LANGUAGE LEARNING MATERIALS FOR KENYAN STUDENTS

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Abstract. This article explores approaches to developing culturally enriched learning materials for Russian as a foreign language tailored for Kenyan learners, integrating traditional cultural content and innovative teaching techniques.

The main aim is to create engaging learning materials that bridge cultural differences and improve language proficiency.

We will use a combination of customized software tools, surveys, and a literature review on Kenyan culture and modern language learning methods. These tools include an interactive web platform for vocabulary training, a video and subtitle extraction tool for contextualized listening and reading exercises, and lexical approach software that provides contextualized sentences from the literature. In addition, surveys on Kenyan perceptions of Russian and research on cultural differences will guide content development.

Our research findings reveal significant cultural differences between Russian and Kenyan learners, such as different proverbs, folk heroes, and unique cultural contexts. The article also describes the three software tools, including examples and manuals to demonstrate their use in the language classroom.

Developing culturally enriched language learning materials supported by innovative tools enhances the learning process, making it more effective and engaging for students and teachers. These resources can serve as a model for creating similar materials in other cross-cultural contexts.

Keywords: *Russian as a foreign language, Kenyan learners, culturally enriched materials, interactive learning, vocabulary training, lexical approach, video tools, language learning software*

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Introduction

The importance of promoting intercultural understanding through language learning has been increasingly recognized in recent years. As globalization continues to blur national boundaries, learning a new language is no longer just a communication skill but also a gateway to understanding other cultures, customs, and ways of thinking. The Russian language, rich in history and culture, offers learners a unique opportunity to gain access to a wealth of literary, philosophical, and

scientific knowledge. However, teaching Russian to non-native speakers, especially in culturally diverse regions such as Kenya, presents its own challenges. In these cases, traditional language teaching methods may not be sufficient. Therefore, customized learning materials need to be developed to meet the learners' linguistic and cultural needs.

Kenya, with its diverse linguistic landscape and growing interest in foreign languages, offers a dynamic environment for the study of Russian. The country's multilingualism, with English and Kiswahili as official languages alongside numerous indigenous languages, means that Kenyan learners approach language acquisition with a strong understanding of linguistic diversity. However, their cultural context is very different from that of Russia. When developing language learning materials for Kenyan learners, it is important to consider the cultural nuances and values that shape the way they perceive language and communication. This research explores approaches to creating Russian language learning materials that promote language proficiency and build bridges between the two cultures, making the learning experience more relevant and engaging for Kenyan students.

Culture plays a central role in language acquisition, especially when learning a foreign language. Numerous studies have shown that learners who can relate to the cultural aspects of a language are more likely to absorb and retain the learning material. For this reason, when developing Russian language materials for Kenyan learners, elements of both Russian and Kenyan culture must be incorporated to create a space for intercultural dialog within the curriculum.

In Kenya, proverbs, folklore, and storytelling are important in the communication practices of different communities. These cultural expressions teach moral lessons and serve as tools for social cohesion. Integrating Kenyan proverbs and folktales with their Russian counterparts can provide learners with a meaningful opportunity to engage with both cultures. By comparing and contrasting cultural heroes, popular proverbs, and moral teachings from both traditions, learners can draw parallels and differences between their own culture and the culture they are studying, deepening their understanding of both cultures.

In addition, Kenyan learners may approach language learning with specific goals in mind, such as studying or working in Russia, exploring tourism, or conducting academic research. Therefore, the content of Russian language material should reflect these interests. By addressing real-life scenarios and practical language use, we can ensure that the

material is culturally enriching and directly applicable to learners' aspirations.

Regarding cultural adaptation, it is equally important to use innovative methods to enhance the learning experience. Modern technology has opened up new avenues for interactive and engaging language teaching, and this project seeks to exploit the full potential of these tools. Three specially developed software programs are at the heart of this initiative: a vocabulary learning platform [https://russiantutor.ru/kenya/], a video and subtitle extraction tool, and a lexical approach software for the contextual use of sentences.

The vocabulary learning platform, for example, allows learners to practice new words in an interactive, engaging format. By incorporating elements such as word scrambling and real-time feedback, this tool helps with memorization and makes the learning process fun. Similarly, the video and subtitle extraction tool offers learners a practical way to improve their listening comprehension by providing authentic Russian speech in different contexts. This allows learners to practice real-life language use and bridge the gap between textbook Russian and everyday communication. The lexical approach software, which generates contextualized sentences from literature, deepens learners' understanding of word usage by showing how words function in different grammatical and situational contexts.

While the main aim of this project is to improve language skills, an equally important aim is to promote cultural understanding. In the case of Kenyan learners, this means providing them with tools and resources to help them overcome the cultural differences between Russia and Kenya. Our research has highlighted several key areas where these differences are most pronounced, for example, in the use of proverbs, portrayal of cultural heroes, and communication style. Kenyan learners often benefit from direct comparisons between their own cultural norms and those of Russian speakers, as this allows them to grasp both the linguistic and cultural implications of the language they are learning.

For example, while Kenyan proverbs often emphasize communal values and the connectedness of society, Russian proverbs may emphasize themes such as perseverance and individual struggle. By exploring these differences within the curriculum, we can teach language and provide valuable insights into how language reflects culture.

Materials and methods

We will use customized software tools, surveys, and a literature review on Kenyan culture and modern language learning methods. These

tools include an interactive web platform for vocabulary training, a video and subtitle extraction tool for contextualized listening exercises, and lexical approach software that provides contextualized sentences from the literature. In addition, surveys on Kenyan perceptions of the Russian language and research on cultural differences will guide content development. Thus, in 2023 and 2024, we conducted sociological surveys using online questionnaires and implemented an associative experiment. The results of the 2023 survey have already been analyzed and will be integrated into our tools [1]. The findings from the 2024 survey will also be processed and incorporated into developing the content.

Results

When developing language learning materials for Kenyan students, the language of instruction must be carefully considered, considering the learners' pedagogical needs and learning styles. Using English and Kiswahili or combining the two languages has proven to be an effective strategy in many educational contexts, as these languages fulfill complementary functions in Kenyan society. English, as the official language and primary medium of instruction in schools, provides a broad base for accessing academic content, especially in urban areas and at universities. It enables students to understand complex ideas and instructions and facilitates their grasp of new concepts, including acquiring foreign languages. However, the importance of mother tongue teaching, especially in early education, should not be overlooked [2]. The Kenya Institute of Curriculum Development (KICD) states that "learning in a language that is familiar to learners makes it easier for them to develop their own understanding" [3]. UNESCO supports this by stating that "children who start their education in their mother tongue have a better start" [4]. Furthermore, the Kenyan Ministry of Education emphasizes that "Kiswahili plays an important role in national cohesion" [5]. By integrating Kiswahili into language learning materials, educators can use students' existing language skills to make language acquisition more effective.

A gradual transition from bilingual materials (English-Kiswahili) to Russian-only lessons is recommended for Russian language acquisition. This progression allows learners to build confidence and fluency in Russian while accessing familiar language structures in the early stages. At the intermediate level, learners can begin to immerse themselves in the Russian language through exercises, dialogs, and materials provided mainly in the target language, which has been shown to improve fluency. This gradual approach aligns with language immersion theories,

which emphasize the benefits of gradually increasing the use of the target language in the classroom to improve fluency. According to Stephen Krashen's "Comprehensible Input" hypothesis, learners are given material slightly above their current level of knowledge when learning a language. This means that the material should be comprehensible to them but also contain something new [6]. Robert DeKeyser's Skill Acquisition Theory is based on the gradual acquisition of skills, starting with the cognitive phase, where explicit explanations are required, and ending with the automatization process. Robert DeKeyser applied his theory to second language learning and explained that language acquisition occurs in the same way as the acquisition of any other skill – through practice and automatization [7].

So, by balancing English, Kiswahili, and Russian in the learning materials, we create a more inclusive and effective environment for Kenyan students. This multilingual approach respects both the linguistic diversity of the learners and the cultural contexts in which they find themselves, improving both the accessibility and relevance of the materials. This approach is supported by Byram's Intercultural Communicative Competence (ICC) framework, which emphasizes that language learning is most effective when learners also develop the ability to understand and manage cultural differences [8].

To better understand Kenyan learners' cultural and linguistic context and include Kiswahili in the learning material, we conducted a comprehensive survey among representatives of different ethnic groups in Kenya. The survey included 171 respondents from various backgrounds, including Kikuyu, Luo, Kalenjin, Luhya, and Somali, representing multiple cultural traditions. Participants were asked to share traditional proverbs and idioms, describe common forms of interaction between teachers and students in their culture, and provide insights into their perceptions of language learning. We also collected information about the qualities they value in a teacher and the support they feel students need when struggling.

We aimed to capture both the universal and culturally specific elements of communication in Kenya, particularly those relevant to learning Russian as a foreign language. We also investigated the participants' familiarity with the Russian language and culture and their motivation to learn Russian. Using this data, we could tailor our language learning materials to the needs of Kenyan learners and ensure that both the linguistic content and cultural references were meaningful and comprehensible.

The survey revealed a wealth of proverbs and sayings, many of which reflect values such as perseverance, respect for elders, humility, and community responsibility. These findings are invaluable for developing language learning resources that teach Russian and make connections between Russian and Kenyan cultural values, encouraging deeper engagement with the language. Integrating these proverbs into our materials serves as a linguistic comparison tool and a bridge between the two cultures that enriches the student's learning experience.

Below, we present twenty-four notable examples, followed by the English translation and Russian equivalents that convey similar ideas [9].

1. **Akiba haiozi. (Savings do not decay.)**

Копейка рубль бережёт (*A penny saves a ruble*).

2. **Akipenda chongo huita kengeza. (Someone who loves a one-eyed person would call that condition only a squint.)**

Любовь зла, полюбишь и козла (*Love is blind, you'll even love a goat*).

3. **Amani haipatikani ila kwa ncha ya upanga. (Peace cannot be obtained except by the point of a sword.)**

Хочешь мира – готовься к войне (*If you want peace, prepare for war*).

4. **Anayeonja asali huchonga mzinga. (Someone who tastes honey makes a beehive.)**

Аппетит приходит во время еды (Appetite comes with eating).

5. **Bandu! Bandu! huisha gogo. (A log can be finished by chopping little pieces.)**

Терпение и труд всё перетрут (*Patience and work will grind everything*).

6. **Dalili ya mvua ni mawingu. (The sign of rain is clouds.)**

Нет дыма без огня. (*There's no smoke without fire*).

7. **Dua la kuku halimpati mwewe. (The curse of a hen will have no impact on an eagle.)**

Собака лает, караван идёт (The dog barks, but the caravan moves on).

8. **Haba na haba hujaza kibaba. (Little by little, it fills the bucket.)**

Копейка – рубль набежит (*A penny saves a ruble*).

9. **Hapana siri ya watu wawili. (There is no secret between two people.)**

Тайна на двоих – не тайна (*A secret between two is no secret*).

10. **Haraka haraka haina baraka. (Hurry, hurry has no blessings.)**

Поспешишь – людей насмешишь (*Hurry, and you'll make people laugh*).

Тише едешь – дальше будешь (*Slow and steady wins the race*)

11. **Kutoa ni moyo, usiseme utajiri. (Giving depends on the heart; don't say it depends on wealth.)**

Не в деньгах счастье (*Happiness is not in money*).

12. **Lisilokuwepo machoni na moyoni halipo. (What is not seen by the eye is not in the heart.)**

С глаз долой – из сердца вон (*Out of sight, out of mind*).

13. **Maji yakimwagika hayazoleki. (Spilled water cannot be gathered.)**

Что упало, то пропало (*What's fallen is lost*).

14. **Mchagua jembe si mkulima. (One who chooses a hoe is not a farmer.)**

Не важно, какой инструмент, важно как ты им пользуешься (*It's not the tool, it's how you use it*).

15. **Mchimba kisima huingia mwenyewe. (The one who digs a well gets himself inside.)**

Не копай другому яму, сам в неё попадёшь (*Don't dig a pit for someone, you'll fall into it yourself*).

16. **Mshika mawili, moja humpokonya. (One who holds two things, one will slip away.)**

За двумя зайцами погонишься, ни одного не поймаешь (*Chase two rabbits, catch none*).

17. **Mstahimilivu hula mbivu. (A patient person eats ripe fruits.)**

Терпение и труд всё перетрут (*Patience and work will grind everything*).

18. **Mtaka cha uvunguni sharti ainame. (One who wants to get something under the bed must bend.)**

Без труда не выловишь и рыбку из пруда (*Without effort, you can't even catch a fish from the pond*).

19. **Mwenye njaa hana miiko. (A hungry person does not have taboos.)**

Голод не тётка (*Hunger is not an aunt*).

20. **Mzigo wa mwenzio ni kanda la usufi. (Your companion's luggage is a load of cotton wool.)**

Чужая ноша всегда легче (*Someone else's burden always seems lighter*).

21. **Udugu wa nazi hukutania chunguni. (The brotherhood of coconuts has its meeting in the cooking pot.)**

После драки кулаками не машут (*No use swinging fists after the fight*).

22. **Usipoziba ufa utajenga ukuta. (If you do not repair a crack, you will build an entire wall.)**

Коси коса, пока роса (*Mow the grass while the dew is still there*).

23. **Usitukane wagema na ulevi ungalipo. (Don't insult winemakers while you are still drunk.)**

Не плюй в колодец – пригодится воды напиться (*Don't spit into the well, you might need to drink from it*).

24. **Wapiganapo tembo wawili ziumiazo nyasi. (When two elephants fight, it is the grass that gets trampled.)**

Лес рубят – щепки летят (*When the forest is cut, the chips fly*).

These Kenyan proverbs show a strong emphasis on resilience, effort, and humility – values that are deeply embedded in the culture. Interestingly, many Russian equivalents contain similar messages, emphasizing the universal nature of these themes. However, the different ways these values are expressed reflect the cultural context of each region. For example, while the Kenyan proverbs often refer to nature or daily life, the Russian proverbs are more about work and effort, reflecting the cultural value placed on hard work.

By incorporating these Kenyan proverbs into the Russian language learning material, learners can practice new vocabulary and make cross-cultural comparisons to deepen their understanding of how language reflects societal values. In addition, combining these proverbs with their Russian equivalents allows learners to grasp both linguistic and cultural nuances, contributing to a richer learning experience.

To further enrich the learning experience, it is equally important to supplement these linguistic elements with cultural narratives that bring the language to life more physically.

One of the most effective ways to engage learners in language learning is through cultural narratives – stories and characters that embody a society's values, struggles, and aspirations. By introducing Kenyan learners to figures from Russian history, literature, and folklore, we can create a deeper connection to the language they are learning. However, this exchange works best when we simultaneously recognize and explore the cultural heroes that Kenyan learners already identify with. In this way, we can make meaningful parallels between their

heritage and the foreign language they are learning and make the language acquisition process more comprehensible and immersive.

In our survey, respondents named various Kenyan folklore and historical figures that are particularly close to their hearts. For example, Wangu wa Makeri, an influential Kikuyu leader known for her strength and determination, was named as a figure who had a lasting impact on Kenyan history. This reminds us of figures such as Catherine the Great, a figure in Russian history and a woman who wielded considerable power and influence. These two women led at a time when female leaders were rare, and their stories can teach learners about the shared experience of leadership, struggle, and resilience in both cultures. For Kenyan students, these connections can bring the Russian language to life and bridge seemingly distant cultural histories.

Similarly, protagonists of Kenyan folklore offer valuable lessons and insights that can be compared to Russian folklore figures. Mogumo, a trickster from the Kikuyu stories, embodies cunning and quick-wittedness, outwitting his adversaries despite being considered weak or simple-minded. This character can be compared to Ivan the Fool in Russian folklore, who, despite his perceived stupidity, often finds clever ways to triumph and is always lucky. Both characters teach important lessons about intelligence, ingenuity, and the triumph of the underdog - universal themes found in many cultures. Introducing such characters into the language classroom allows students to make connections between the familiar and the new while exploring the linguistic nuances of each story.

The strength of these cultural narratives lies in their ability to bring language to life by transforming words and grammar into meaningful, relatable content. When Kenyan learners recognize elements of their own culture in Russian stories, they acquire linguistic knowledge and participate in a rich intercultural dialog. This approach deepens their language engagement and promotes competence, curiosity, and empathy.

To make the learning material even more engaging, it would be useful to include photos and illustrations of key cultural figures such as Wangu wa Makeri and popular figures such as Mogumo and Ivan the Fool. Visuals like these help students understand the material more easily as they can connect a concrete image to the stories and figures they are learning about. This way, the characters become more tangible, and learners can memorize the lessons better. In Figure 1, you can see a series of images that show different characters from both cultures.

Fig. 1. Collection of characters from Kenyan and Russian folklore and history

The image shows a collection of characters from Kenyan and Russian folklore and history and provides a visual representation that connects these two cultural narratives.

From Kenyan culture, we encounter the determined Mekatilili wa Menza, a strong female leader who symbolizes resistance against the colonial powers. Then, there is Lwanda Magere, who is portrayed as an invincible warrior. His strength is emphasized by the legends about his ability to resist spears. Fumo Liyongo, depicted with a sword and poetry, represents a Swahili hero with intellect and martial skill. A Maasai warrior standing with a spear next to a lion symbolizes courage and the Maasai's deep connection with nature. With his pensive expression, Mugo wa Kibiru embodies the role of a prophetic seer who foresaw the arrival of the Europeans. The cunning hare is a well-known trickster in African folk tales. Finally, Mũmbi Muthiga appears as a calm and nurturing figure, the revered mother of the Kikuyu people, symbolizing the origins of the Kikuyu tribe.

In parallel, we are introduced to figures from Russian folklore, starting with the towering presence of Dobry`nia Nikitich, a heroic figure known for his strength and bravery. He stands next to Zmei Gorynych, a fearsome three-headed dragon. Baba Yaga, the mysterious witch of Russian folklore. In his traditional winter attire, ded Moroz, the bearer of gifts during the Russian New Year, is accompanied

by Snegurochka, the Snow Maiden, a Russian fairytale and New Year character, the granddaughter of Father Frost, his constant companion and assistant. Finally, a playful Snegovik (snowman) completes the scene.

Illustrations play an important role in memory as they visually represent dual coding concepts that reinforce what has been read or heard. When students are exposed to text and images, the brain processes this information through different visual and verbal channels, creating stronger cognitive connections. This is known as dual coding theory, which states that combining visual and verbal elements increases the likelihood that the information will be retained in memory. According to A. Paivio, "Human cognition is unique in that it is specialized to deal simultaneously with language and with non-verbal objects and events. Moreover, the language system is specialized to deal directly with linguistic input and output (in the form of speech or writing) while simultaneously performing a symbolic function with respect to nonverbal objects, events, and behaviors. Any representation theory must consider this dual function" [10]. Later, J. Clark, R. Moreno, R. Mayer, and O. Caviglioli contributed to understanding how using verbal and visual information, based on the principles of dual coding theory, improves the learning process and knowledge retention [11–14].

When learners engage with the characters and stories depicted in the visual materials, they build not only a linguistic but also a cultural connection to the language. However, the success of any language learning program also depends on how relevant the content is to learners' real-life needs and desires. To further strengthen this connection, tailoring the material to Kenyan learners' specific interests and goals is important.

For many Kenyan learners, learning Russian goes beyond cultural curiosity. For some, the language opens the doors to academic opportunities at Russian universities, providing access to higher education and research programs in fields such as engineering, medicine, and science. The government of the Russian Federation annually allocates a significant number of scholarships (quotas) for international students wishing to study at Russian universities [15]. These quotas allow students to study in Russia utterly free of charge. The number of quotas for Kenyan citizens has tripled in the last five years. Russian language skills increase students' chances of getting an education under the quota system.

For others, it is a route to professional development, as the ability to speak Russian can prove valuable in areas such as business, trade, and international relations. Trade between Russia and Kenya has increased. Russia exports fertilizers, petroleum products, and machinery to Kenya and imports tea, coffee, and horticultural products. Both countries are actively working to deepen economic ties, particularly in agriculture, energy, and trade diversification. According to the Kenya National Bureau of Statistics, the volume of wheat imported from Russia in the first half of 2024 amounted to Ksh. 43.30 bn, an increase of 396.56% from Ksh. 8.72 bn in the same period last year. [16].

This trend is reflected in the growing interest of Russian companies in hiring African professionals, especially in the trade and IT sectors. According to the online recruitment platform hh.ru, Kenya is at the forefront of growth in job offers from Russian companies. The number of vacancies is expected to increase 39-fold in the first half of 2024 [17]. Russia is increasingly establishing its presence in Kenya and finding new economic and cultural opportunities [18]. According to the former Russian Ambassador to Kenya, Dmitry Maksimychev, "areas of trade cooperation focus on agricultural products, chemicals, fertilizers and construction materials, among others." He also explains that "our trade is growing steadily, as according to Kenyan statistics, the volume of trade between Russia and Kenya has reached 500 million dollars (81 billion Ksh)" [19]. The repeated visits of Foreign Minister Sergei Lavrov to Kenya also confirm the willingness of both countries to engage in dialog [20].

Tourism also plays an important role in the cultural exchange between the two nations [21]. The influx of tourists from Russia to Kenya is steadily increasing, creating a need for skilled workers who can communicate in Russian in the hospitality and tourism industry, especially in Mombasa, Nairobi, and the Masai Mara regions [22]. These learners will likely benefit from practical dialogs, vocabulary, and scenarios related to tourism interactions. By focusing on such practical applications, the learning material can address the immediate needs of those seeking a career in tourism, further enhancing the appeal and usefulness of the language.

The deepening relationship between Russia and Kenya offers Kenyan learners potential career opportunities in both Kenya and Russia. The inclusion of topics on Russian businesses, tourism, and cultural exchange in the learning material can make the content more interesting and practical for students interested in these growing connections.

The inclusion of practice-oriented topics, such as business-related situations, is supported by theories and resonates with students. This is underlined by the concept of Situational Learning Theory, which emphasizes the importance of learning in real-life contexts [23], as well as the Task-Based Language Teaching (TBLT) approach developed by N. Prabhu, which focuses on the use of tasks in practical situations for more effective language acquisition [24]. Discussions about the role of Russian companies in sectors such as energy, agriculture, and technology, as well as potential employment opportunities in these areas, make the language more relevant to learners' career aspirations.

When developing language learning materials, it is important to consider these different motivations. For learners aspiring to study or do business with Russian companies, materials should include relevant vocabulary and scenarios, such as applying for a job, navigating Russian university life, or attending a job interview. For those focusing on personal or cultural interests, lessons might include topics on Russian art, history, and customs that appeal to learners' curiosity about Russia. These tailored approaches ensure that the content is engaging and meets the specific objectives of different learner groups.

By tailoring the material to learners' interests and motivations, we can create a more personalized and goal-oriented learning experience that ultimately increases learner engagement and success in mastering the language. This balance between practical, job-oriented topics and rich cultural content gives Kenyan learners the tools to enhance their learning experience.

Based on the motivations of Kenyan learners to study Russian – whether for academic, professional, or personal reasons – it is important to recognize how the cultural differences between Russia and Kenya impact the learning experience. These differences affect how learners interact with the language and the design of teaching materials to suit their cultural background. Learners interacting with the Russian language and culture will encounter contrasts in communication styles, social norms, and non-verbal behaviors. Addressing these differences helps create an inclusive learning environment where learners feel more comfortable with linguistic and cultural nuances. Research in this area presents several theories that explain how cultural contexts influence communication, information processing, and learning strategies.

Several scholars have made important contributions in exploring these influences, each providing a framework that deepens our

understanding of how cultural differences shape educational and communication processes. Geert Hofstede's theory of cultural dimensions identifies several key parameters that can be used to analyze how different cultures deal with power, collectivism, uncertainty avoidance, long-term orientation, and other factors that may influence students' perceptions [25]. Applying Hofstede's theory of cultural dimensions in developing language learning materials for Kenyan students enables consideration of their cultural characteristics and preferences. Recognizing the collectivist nature of Kenyan culture, for example, enables the design of group tasks and projects that promote collaboration and interaction among learners.

In addition, Edward T. Hall's concept of high-context and low-context cultures provides valuable insights into how Kenyan learners belonging to a high-context culture prefer context-rich communication styles in educational settings and emphasize indirect and nonverbal cues [26]. Similarly, Trompenaars' seven dimensions of culture, such as collectivism vs. individualism and the importance of relationships in decision-making, offer a practical guide for creating materials that suit Kenyan students' relational and collaborative tendencies [27]. Finally, Stella Ting-Toomey's Face Negotiation Theory emphasizes the importance of respecting learners' social 'face' in collectivist cultures and ensuring that materials create a supportive and respectful learning environment that meets learners' cultural expectations [28]. Research on cultural values and their interpretation through folklore highlights the significant role of traditional narratives in understanding the worldview of different communities. For example, Kim-Maloni [29] explores the unique cultural dimensions of Kenyan ethnic groups and their neighboring regions, demonstrating how folklore serves as a lens for interpreting shared values and beliefs.

These cultural differences are summarized in Table 1 and illustrate the main differences between Kenya and Russia.

Understanding these cultural differences is critical to designing and presenting effective learning materials for Kenyan students learning Russian. By tailoring learning content to these nuances, we can create materials that facilitate language acquisition and a deeper cross-cultural understanding. By understanding how Russians and Kenyans communicate, interpret nonverbal cues, and approach social interactions, educators can create learning experiences that are both engaging and culturally sensitive.

Table 1

Key Cultural Differences Between Russia and Kenya

Aspect	Russia	Kenya
Acoustic Channel	Moderate volume in speech, more reserved	Speech is often louder and more expressive
Optical Channel	Eye contact is important but should not be prolonged	Prolonged eye contact can be seen as aggressive
Tactile Channel	Minimal physical contact; formal interactions	Physical contact is more common, including hugs and handshakes
Non-verbal Communication	Gestures and body language are restrained	Gestures and body language are more expressive and dynamic
Speech Pauses	Pauses are common and indicate reflection or thought	Fewer pauses; silence may be interpreted as discomfort or disagreement
Distance in Communication	Larger personal space, especially in formal settings	Smaller personal space and closer physical proximity are common
Group Interaction	Formal, often hierarchical	Informal and more egalitarian group dynamics
Politeness and Forms of Address	Clear distinction between “ты” (informal) and “Вы” (formal)	Less emphasis on formal forms of address
Religious Practices	Orthodox Christianity has a moderate influence on daily life	Christianity, Islam, and traditional beliefs; religion play a significant role in daily life
Color Meanings	White symbolizes purity; red represents happiness and celebration	White can signify mourning; red also represents happiness, celebration, and strength
Ethnic Identity	Various ethnic groups are unified under one national identity	Over 40 ethnic groups, each with their own traditions
Linguistic Norms	Russian language, both formal and informal communication styles	Kiswahili and English, along with tribal dialects, communication is often informal
Ethnocentrism	Moderate level.	Low level, with a high tolerance for other cultures
Family Conversations	Reserved, respectful	Open, more emotional
Social Events	Varied formats, sometimes formal	More social, community-focused
Country’s Symbols	Bear, balalaika, matryoshka dolls	Lion, elephant, Maasai people
Clothing and Dress Code	Formal clothing for work and official events	Traditional clothing for official events and casual attire is more relaxed

For example, in Kenyan culture, learners are more accustomed to physical proximity and expressive body language, whereas in Russia, personal distance and reserved gestures are often the norm. To take this

into account, learning materials should include practical scenarios that emphasize these differences. A role-play could include a Russian business meeting where students have to practice maintaining formal distance and using more reserved gestures so that they understand not only the language but also the cultural expectations behind these behaviors. Such activities would promote cultural awareness and ensure learners are prepared for real-life interactions in a Russian-speaking context.

The way silence is interpreted in Russian and Kenyan communication is also very different. In Russian culture, pauses in conversation are often used for reflection or agreement, whereas in Kenya, silence can be perceived as discomfort or disapproval. The learning material should reflect these differences by including dialogs in which students learn how to appropriately deal with these silent cues. One task could be to listen to a recorded conversation between two Russian speakers and ask learners to recognize when pauses indicate thoughts.

Another important aspect is the role of religious practices and their influence on social norms. In Kenya, religion plays an important role in daily life and often shapes public behavior and communication. Orthodoxy is still of cultural importance in Russia, but its influence on everyday interactions is moderate. When creating learning materials, it is important to provide content that considers these differences. For example, when teaching your students how to talk about holidays or traditions, you can point out that religious holidays such as Christmas carry more social and communal weight in Kenya than in Russia, where secular traditions such as New Year are more commonly celebrated.

When structuring group activities, it is also helpful to understand the differences between collectivism and individualism in both cultures. In Kenya, where community and family ties are central, students may respond well to tasks that involve teamwork and group discussion. While still valuing collective effort, Russian culture often emphasizes individual responsibility within the group. Therefore, learning tasks should balance these two approaches and encourage Kenyan students to practice teamwork and independent problem-solving in Russian contexts.

By incorporating these cultural differences into the language learning materials, we ensure that Kenyan learners not only master the mechanics of Russian but also develop a better sense of the social and cultural contexts in which the language functions. This holistic approach promotes both language proficiency and cultural competence, equipping

learners to communicate effectively and respectfully in Russian-speaking environments.

Returning to our survey of 171 participants, we would like to analyze the respondents' answers to the following questions: "What support should a teacher offer to students who have difficulties?" and "Why did you decide to learn Russian?" Several recurring themes for inclusion in language learning materials for Kenyan students can be derived from the responses regarding the support that teachers should provide to students with learning difficulties. These responses point to important considerations for content creation:

Many respondents emphasized the need for individual tutoring and personalized support for students with learning difficulties. When creating language learning materials, it would be beneficial to design exercises tailored to different proficiency levels. Including personalized tasks and activities where the pace of learning can be self-determined helps students engage according to their individual learning speed. Responses from the survey: "Personalized attention, tutoring," "Mentoring and encouragement," and "Understanding the child's perspective."

Next, the ideas of mentorship, encouragement, and emotional support were frequently mentioned in the responses. To reflect this in language learning content, we should consider adding motivational content, such as positive reinforcement for small successes, and providing guided mentoring activities or peer support frameworks. Recurring responses from the survey: "Mentorship and motivation," "Personalized instruction and time to learn," and "Motivation, moral support, encouragement."

Students who have difficulties should be offered additional lessons and revision materials. Language learning materials can include additional worksheets for practice, grammar and vocabulary lessons, and additional learning aids that students can use outside regular class time. Recurring responses from the survey: "Additional lessons/materials for the course," "Conducting tutoring sessions and personal assessments during additional lessons," and "Additional help, including individual support."

Patience was a core value frequently mentioned in the responses. This means that learning materials should foster an environment where students feel comfortable taking time to learn. Self-study tasks and explanations in gradual, understandable steps can support this. Examples from the survey: "Patience, understanding and comprehensiveness" and "Provide step-by-step explanations and relevant tasks."

Based on our research and the data collected in the survey, we have taken an innovative approach to improving the learning experience for prospective students of Russian as a foreign language in Kenya. Recognizing learners' diverse needs and preferences, we developed a comprehensive platform and two key tools to make language learning more dynamic, engaging, and contextualized.

• The first tool is the Vocabulary Learning and Practice Tool, which you can find at https://russiantutor.ru/kenya/. This interactive platform allows learners to personalize their vocabulary practice by selecting the words they want to learn and accessing a range of resources. Learners can listen to the correct pronunciation, view translations, look at contextual images, and even find relevant videos on YouTube using the vocabulary in authentic contexts. In addition, the tool offers a practice component that allows learners to improve their spelling and typing skills by writing down the selected words.

• The second new feature is the video and subtitle extraction tool specifically aimed at teachers. With this tool, teachers can extract short video clips containing the vocabulary to be learned and combine them into a coherent video file. The accompanying subtitles are generated automatically, making it easier for learners to follow and engage with the content. This tool provides a multimedia approach to learning, allowing learners to see the language in action, hear native pronunciation in real-life contexts, and develop listening comprehension and speaking skills through repeated use of the vocabulary in everyday life.

• Finally, we have introduced a tool for extracting vocabulary from sentences. This tool uses a large database of Russian books and literature to find sentences containing the target vocabulary. By using authentic sentences from novels and other literary works, teachers can provide students with examples that show how the words are used by native speakers in context. This helps to understand a word's meaning and how it works in different sentence structures and situations. This tool encourages learners to go beyond mere translation and develop a deeper, more nuanced understanding of the words they are learning. This aligns with the lexical approach to language learning, which is about understanding words used in real-life situations rather than finding them in isolated vocabulary lists.

The first tool developed for learning Russian vocabulary is an innovative way to meet the different needs of language learners. This tool supports auditory, visual, and kinesthetic learning styles by providing a multi-layered approach that promotes holistic language

acquisition. According to Oxford Theory, accommodating different learning styles promotes language retention and comprehension by considering students' natural preferences when processing information. By integrating different strategies – such as auditory repetition, visual aids, and kinesthetic tasks – language learning can be tailored to the different needs of learners, leading to more effective and individualized acquisition [30]. Similarly, Dörnyei and Ryan emphasize that acknowledging individual differences, including cognitive styles, helps optimize the learning experience and improve engagement and retention [31]. Furthermore, Skehan points out that cognitive styles play a crucial role in language learning as they influence how learners process, store, and retrieve new information, making using different strategies even more important for successful language acquisition [32].

By integrating audio support, the tool allows learners to hear the word, reinforcing correct pronunciation. By hearing the correct pronunciation, learners can internalize the phonetic structure of the new vocabulary, which provides a solid foundation for speaking and listening. When students see the word, its translation, and the accompanying pictures, they also benefit from the visual representation, which makes abstract words more tangible and easier to remember. Visualizing the vocabulary and the translations helps students make mental connections according to the principles of dual coding theory, which states that information is better retained when presented in both verbal and visual form.

The tool's ability to type out the vocabulary learned introduces a kinesthetic dimension that promotes muscle memory and familiarizes students with spelling and structural patterns. As students type the vocabulary, they actively recall it, which is much more effective for retention than passive recognition. Active recall forms the basis for retrieval training, a language learning strategy that strengthens long-term memory by actively engaging cognitive processes.

Another important feature of this tool is the contextualized sentences in which the vocabulary is used. By presenting the words in sentences, the tool provides context and helps learners understand the role and function of the word in real-life situations. This approach is in line with the lexical theory of language learning, which assumes that words are not understood and learned in isolation but as part of larger linguistic structures. Contextual understanding, therefore, promotes the ability to use the language naturally and effectively, which is a crucial element for students aiming for fluency.

In addition, the integration of video content ensures that students can see and hear the words used in different situations. According to Mayer's cognitive theory of multimedia learning, people acquire knowledge more effectively when they see words and images together than when they see only words. Video adds multimedia to the learning experience, allowing students to relate vocabulary to real-life scenarios and bridging the gap between passive comprehension and active application [33].

A broader research base supports this approach to using multimedia to increase vocabulary. In addition, Paivio's dual-coding theory emphasizes the cognitive benefits of combining visual and verbal information for deeper processing, a concept further explored in his later work on the neurocognitive mechanisms of visual and verbal reasoning [34]. Sweller's cognitive load theory also highlights the importance of minimizing unnecessary cognitive demands in multimedia environments [35]. Clark and Mayer also examine how multimedia elements should be integrated to avoid cognitive overload and maximize learning efficiency [36]. Taken together, these theories emphasize that well-designed multimedia tools improve comprehension and memory performance by presenting information through multiple cognitive channels. These findings demonstrate the potential of multimedia to transform language acquisition by linking abstract concepts to concrete, real-world contexts.

In practice, teachers or learners can adapt and customize the tool depending on the specific language learning objectives. For example, a teacher could select thematic vocabulary related to academic contexts and create a list of relevant words for students to practice using the tool. Through various media formats, including audio recordings, images, sentences, and videos, this tool supports the integration of vocabulary into long-term memory and keeps learners engaged with the content.

Figure 2 below shows a screenshot of the user interface and the user-friendly design, allowing easy navigation and interaction with the tool's features. The user interface is designed so learners can intuitively access all aspects of vocabulary learning, from listening to pronouncing a word to typing the word and viewing its contextual use. This streamlined design allows learners to focus on learning without being overwhelmed by complex navigation elements.

This vocabulary tool is an example of a comprehensive approach to language learning that utilizes technology and modern pedagogical theories to create a dynamic, engaging, and highly effective learning experience for Kenyan students of Russian. The holistic design ensures

that every learner, regardless of their preferred learning style, can benefit from a coherent platform that promotes language mastery through repetition, engagement, and contextual understanding.

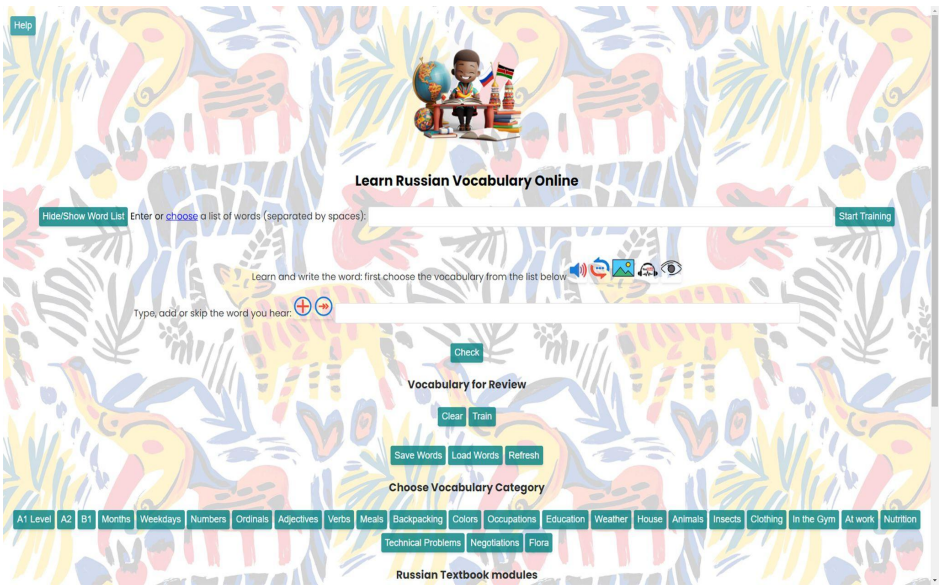

Fig. 2. Screenshot of the user interface of the vocabulary learning program with integrated auditory, visual, and kinesthetic functions

The second tool developed in this research project, a video and subtitle extractor, represents a transformative approach for language teachers who want to immerse their students in authentic Russian language content. This tool is a testament to the advances in computer-assisted language learning and a versatile tool for teachers who value contextually rich language skills and multimodal learning.

The tool has an extensive database of media, from feature films and documentaries to cartoons and songs, all in Russian. This variety of content allows teachers to cater to their students' interests and linguistic needs and teach them the language used in different genres and registers. Teachers can enter specific vocabulary or phrases into the tool's search function and filter the results by media type – be it movies, cartoons, or music videos. This flexibility allows teachers to assemble a collection of short clips tailored to their lesson's thematic or lexical focus, aligning the content with the learning objectives of a particular unit or class.

Once the desired content is determined, teachers can refine their selection by adjusting each clip's start and end times, ensuring that only the most relevant excerpts are included in the final compilation. By

merging multiple clips, the tool creates a cohesive video in which the selected vocabulary or expressions are shown in different contexts. This feature is particularly beneficial for implementing the lexical approach to language learning, emphasizing vocabulary acquisition in meaningful contexts. When students observe how native speakers use the language, they develop a deeper understanding of the nuances, collocations, and pragmatic aspects of words and sentences.

The automatic insertion of subtitles in both Russian and English further enhances the learning experience. The switchable subtitles serve a dual purpose: they visually reinforce the spoken language and offer learners a reference point to check their understanding. By seeing the Russian subtitles alongside the English translations, learners can decipher complex sentences and idiomatic expressions that would otherwise be difficult to understand. The tool also offers an option to automatically translate subtitles, which saves teachers valuable time and ensures consistency when translating content. When used effectively, subtitles can improve students' reading ability, vocabulary acquisition, and pronunciation as they link spoken and written language directly.

The tool's ability to combine video and audio components with visual text supports the lexical approach and can also be explained by Swain's output hypothesis [37]. This theory states that language learning is greatly enhanced when learners are encouraged to produce language rather than consume it. Swain explains that output "can be the trigger that forces learners to pay attention to the means of expression they need to successfully convey their own intended meaning" [38]. By providing learners with video content featuring native speakers, this tool not only offers learners the opportunity to observe language in authentic contexts but also to actively reproduce the spoken elements. For example, learners can be asked to voiceover the speech patterns of the native speakers in the videos– to deepen their understanding of pronunciation, intonation, and contextual use of vocabulary.

Through repeated viewing and active participation, learners can internalize the language structures and become more confident in producing the language independently. In addition, the process of listening, repeating, and comparing their own language with that of native speakers is consistent with the idea that the output serves as a mechanism for learners to test their hypotheses about language forms and structures. This iterative process allows them to identify gaps in their own language production and encourages them to self-monitor and refine their language skills. In this way, the tool facilitates

comprehension through visual and auditory channels and encourages productive language use. This is in line with Swain's emphasis on the importance of language production in achieving a higher level of fluency.

The finished video created with this tool can serve as a versatile learning tool. Teachers can use it as a listening comprehension exercise, where students transcribe the spoken dialog, or as a pronunciation exercise, where students record themselves dubbing the video and imitating the intonation and rhythm of native speakers. These videos can also be made available to students for self-study so that they can work through the material at their own pace.

Teachers can also use video compilation for analytical tasks, e.g., to identify speakers' cultural references, humor, or rhetorical strategies. This analytical engagement promotes higher-order thinking and cultural awareness, which are critical components of language mastery. The tool's flexibility in customizing and combining clips allows teachers to tailor the content not only to the language level of their students but also to the course's specific cultural and communicative goals.

Teachers can bridge the gap between classroom learning and real-life language use by incorporating authentic audiovisual material into their lessons. This approach improves students' listening comprehension and language skills, enriches their overall language experience, and fosters a deeper and more meaningful connection with the language.

Figure 3 below shows a visual representation of the software's main menu. It illustrates the user-friendly interface and the wide range of customization options available to teachers. If you are interested in exploring this tool's full potential, don't hesitate to get in touch with this article's authors.

For further exploration, the sample video file can be downloaded here [https://russiantutor.ru/zip/Tishe.zip]. This file shows how teachers can use the tool to create engaging and pedagogically meaningful video compilations tailored to the needs of different learners.

The third tool, a sentence extraction mechanism, perfectly aligns with the principles of the lexical approach, which assumes that language comprehension and production are primarily determined by knowledge of multi-word units, collocations, and sentence phrases rather than by isolated grammar rules. This tool uses an extensive database of literary works, academic texts, and colloquial expressions to generate numerous contextualized examples for each vocabulary word or idiom, allowing teachers to integrate authentic, real language into the classroom.

Fig. 3. Screenshot of the main window of the video and subtitle extractor with the search options, media categories, and settings for subtitle translation

By extracting hundreds, sometimes even thousands, of sentences for a single query, the tool provides a rich reservoir of language input that can be used for various pedagogical activities. One effective application is to use these sentences to teach collocations and lexical units – an approach that promotes deeper lexical knowledge and improves fluency. For example, learners can complete exercises to identify recurring word combinations or categorize collocations according to their frequency and thematic relevance, improving their ability to naturally recognize and produce these structures.

The adaptability of this tool to different levels of learning and contexts also makes it invaluable for differentiated teaching. Teachers

can customize the database to meet the needs of their curriculum and select texts that reflect specific genres, registers, or cultural themes. By familiarizing students with the language as it appears in various sources, whether in classical Russian literature or modern dialogs, the tool helps learners build an authentic and comprehensive lexicon.

The practical applications of this tool are manifold. For example, students can create cloze texts based on the extracted sentences, in which they have to identify and insert missing words to deepen their understanding of word meanings and syntactic structures. Alternatively, teachers can use these sentences to illustrate nuanced language use, e.g., the pragmatic functions of certain expressions in different social interactions. This not only helps learners to internalize vocabulary but also to understand how language works in its cultural and situational context.

Another compelling feature of the tool is its ability to support learning idiomatic expressions and proverbs – key elements of the lexical approach that reflect the cultural foundations of a language. Take, for example, a search query for the proverb "Тише едешь, дальше будешь (eng: Slowly but surely)" The tool finds a variety of sentences in which this proverb appears and shows how it is used in different contexts, from formal literary works to casual conversations. By presenting these varied examples, the tool enables learners to grasp the semantic range and pragmatic implications of the expression, thus deepening their lexical repertoire and improving their cultural competence.

This method also aligns with Michael Lewis' concept of lexical syllabus, which prioritizes teaching high-frequency lexical units over isolated grammar points [39]. The sentence extraction tool supports this by allowing learners to see vocabulary in its most natural setting – within sentences that reveal the language's broader syntactic and semantic patterns. By providing learners with these authentic contexts, the tool helps to bridge the gap between vocabulary and language use, promoting a holistic and integrated approach to language learning.

In Figure 4, we show the user interface of the tool using a search query for the proverb "Тише едешь, дальше будешь." The resulting list of ten sentences illustrates the contexts in which this proverb occurs and highlights the tool's potential to support a nuanced and culturally enriched understanding of the Russian language through the lexical approach.

Fig. 4. Interface of the sentence extraction tool with the results for the Russian proverb “Тише едешь – дальше будешь”

Conclusion

Developing Russian language learning materials for Kenyan students demonstrates the importance of integrating cultural and technological tools into the language classroom. These materials bridge cultural differences while improving language skills by incorporating Kenyan and Russian proverbs, cultural narratives, and customized technological solutions. Tools such as the vocabulary learning platform, the video and subtitle extraction tool, and the sentence search tool provide an interactive and context-rich learning experience. Survey results indicate a need for culturally relevant content emphasizing mentorship, personal support, and practical applications aligning with students’ academic, career, and personal goals. This approach facilitates effective language acquisition, fosters deeper cross-cultural understanding, and prepares learners for meaningful engagement in Russian-speaking contexts. Future efforts should focus on refining these resources and expanding their applicability to other multicultural settings.

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ПРОЕКТИРОВАНИЕ УЧЕБНЫХ МАТЕРИАЛОВ ПО РУССКОМУ ЯЗЫКУ ДЛЯ КЕНИЙСКИХ СТУДЕНТОВ

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Аннотация. Статья посвящена разработке учебных материалов по русскому языку как иностранному для кенийских студентов, ориентированных на культурную адаптацию и использование современных инновационных методик обучения.

Цель статьи описать процесс создание учебных материалов, способствующих преодолению культурных различий и улучшению языковой компетенции обучающихся.

В ходе исследования использованы комбинированные подходы, включая разработку и внедрение специализированных программных инструментов, проведение опросов, а также изучение научной литературы о культуре Кении и современных методах преподавания языков. В числе разработанных инструментов: интерактивная веб-платформа для тренировки лексики, программа для извлечения субтитров и фрагментов видео для контекстного обучения аудированию и чтению, а также программное обеспечение, основанное на лексическом подходе, предоставляющее примеры употребления слов в литературных текстах. Ключевую роль сыграли также опросы восприятия кенийскими студентами русской культуры и исследования культурных различий.

Исследование выявило значительные культурные различия между российскими и кенийскими обучающимися, включая особенности пословиц, образов героев и уникальные культурные контексты. В статье представлены описания трёх программных инструментов с примерами их применения и инструкциями для использования в учебной практике.

Разработка культурно обогащённых учебных материалов с использованием инновационных технологий способствует повышению эффективности и вовлечённости в образовательный процесс. Эти ресурсы могут стать основой для создания аналогичных материалов в других межкультурных контекстах.

Ключевые слова: *русский язык как иностранный, кенийские обучающиеся, культурно обогащённые материалы, интерактивное обучение, лексическая тренировка, лексический подход, видеоинструменты, программное обеспечение для изучения языков*

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INTEGRATION OF LOGICAL AND INTUITIVE STUDENT EXPERIENCE AS A CONDITION FOR UNDERSTANDING MATHEMATICS

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Abstract. Recent studies in psychology and pedagogy explore the duality of human thought, where two opposing systems – heuristic and analytical – interact in a dialectical unity. This leads to two corresponding ways of understanding the world: logical and intuitive. Focusing solely on developing students' logical abilities may result in them being able to solve only a small number of typical problems and fail to promote their overall personal development. Therefore, more emphasis is now placed on promoting a deeper understanding of topics by moving away from formal approaches. This is done by encouraging active learning and integrating logical and intuitive thinking, which helps students absorb the information at a deeper level. This article explores how these two styles of thinking can be combined in the mathematics classroom and the impact this has on student learning.

Keywords: *intelligence, cognitive thinking styles, intentional experience, conscious learning*

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Unlike other sciences, mathematics relies on logic and evidence rather than observation to derive conclusions from true premises that lead to new knowledge. Academician A. Kolmogorov [1] attributes this distinction to the influence of the ancient Greeks, who viewed nature as something rational, systematic, and ultimately mathematical. The early Greek scholars systematically organized the first mathematical theories that arose from solving practical problems shaped by the needs of everyday life. In this way, they established the unique status of mathematics.

However, scientific breakthroughs are not achieved through logic alone. Galileo Galilei, a physicist, philosopher, and mathematician, pointed out that although logic is useful for verifying the correctness of conclusions drawn from logic, it does not produce logic itself [2]. The French mathematician Henri Poincaré [3] similarly argued that logic is necessary for proof, but intuition is essential for invention. The Russian mathematician V. Steklov believed that intuition is the only method for making discoveries and inventions, as no one has ever achieved a breakthrough through purely logical thinking.

In the 18th century, the foundations of differential and integral calculus, which were developed by the physicist Isaac Newton and the mathematician Gottfried Leibniz to solve important practical problems of their time, were based on the concept of infinitesimal calculus, which at the time could only be explained intuitively. There are many such examples in history.

Recent psychological research has confirmed the existence of two opposing but interacting systems by which the human brain processes information – known as dual process theory – consisting of a heuristic (intuitive) system and an analytical (logical) system [4].

D. Zavalishina states that according to modern psychological viewpoints, "human experience is no longer considered a secondary component of intelligence... but becomes its leading component, a potential reservoir of new operational and substantive knowledge that often emerges in difficult situations as non-instrumental signals and intuitive mechanisms" [5].

The topic of intuition in mathematics, as well as in scientific knowledge in general, has not yet been sufficiently explored. Intuition manifests itself in various aspects of life and professional activity. In jurisprudence, for example, a judge relies not only on the letter of the law but also on its spirit, with the judge's conviction playing an important role in the decision-making process. In medicine, a doctor may correctly diagnose an illness immediately but may have difficulty articulating its reasons. In linguistics, specialists develop, among other things, the so-called feeling for language. Experts usually base their problem-solving processes on fundamental principles and generalized, often implicit knowledge that presents itself as complex, intuitive representations that are not always clearly verbalized. Intuition is therefore seen as "the ability to unconsciously arrive at an intellectual result based on the emergence of a subjective feeling of the unconditional correctness of a particular solution" (M. Kholodnaya) [6].

Intelligence is usually associated with logical, rational, and analytical thinking. However, it is important not to overlook the forms of mental experience that underlie conceptual knowledge, metacognition, intuition, and similar phenomena (M. Kholodnaya) [6].

In her research, psychologist M. Kholodnaya proposes a new approach to the study of the nature of intelligence by analyzing the characteristics of an individual's mental experience, focusing in particular on such components as cognitive, metacognitive, and intentional experience (intentions – individual intellectual inclinations and preferences). In this context, intentional experience is seen as a source of intuition.

M. Kholodnaya writes: "A legitimate question arises as to what happens to a child's intellectual development if their existing intentional experiences are ignored or rejected altogether? What happens is what actually occurs with children in the context of traditional school education: the intellectual development of school-age children slows down considerably compared to preschoolers, and, perhaps most regrettably, the child's creative potential declines. This is not surprising, as intentional experiences are probably one of the most powerful sources of intuition" [6].

In the applied part of M. Kholodnaya's research, the goals of stimulating the intellectual development of students are defined within the framework of an innovative enrichment model for teaching, as shown by the example of a school math course. This approach is implemented with the help of math textbooks for students in grades 5–9, which are supported by the foundation "Mathematics. Psychology. Intelligence" project team (led by E. Gelfman and M. Kholodnaya) based on the enrichment model. The results of these studies and the psycho-didactic approach to creating teaching texts in these textbooks are intended for teaching in various academic subjects.

In mathematics, intuition helps connect the whole with its parts before making logical considerations. Logic plays a crucial role in the phase of proof and analysis, but the integration of the parts is usually achieved through intuition. Attempts to model human thinking by computers cannot surpass humans in their intuitive abilities, which are based on synthesizing the whole and its parts. An intuitive hypothesis cannot be logically derived from facts; it is a product of creative imagination.

Therefore, the nature of argumentation and proof in mathematics is not limited to logical analysis alone. It is always complemented by a

synthesis rooted in intellectual intuition, and both aspects are equally important.

The work of the Dutch mathematician, logician, and methodologist L. Brouwer on the role and importance of intuition in mathematics led to the movement known as intuitionism. This school of thought drew attention to the problem of intuition in mathematics and inspired philosophical investigations on the subject, particularly on the role of intuition in significant mathematical discoveries.

Let us consider the main directions of research in intuitionism:

– The a priori intuition in mathematics (as explored by I. Kant, A. Schopenhauer, and L. Brouwer). In his justification of mathematics, L. Brouwer relied on praxeological intuition – a concept of numbers that differs from empirical intuition and has an indisputable certainty.

– Development of the methodological and philosophical aspects of intuition in mathematical understanding. According to the phenomenological description of the philosopher E. Husserl, the idea of order in number theory is an essential feature of intuition as a process.

– The development of methodological ideas among various scientists. Thus, George Pólya, who distinguishes between two types of mathematical reasoning – demonstrative and plausible – writes: "The difference between the two kinds of reasoning is great and manifold. Demonstrative reasoning is safe, beyond controversy, and final. Plausible reasoning is hazardous, controversial, and provisional. Demonstrative reasoning penetrates the sciences just as far as mathematics does, but it is in itself (as mathematics is in itself) incapable of yielding essentially new knowledge about the world around us. Anything new we learn about the world involves plausible reasoning, which is the only kind of reasoning we care about in everyday affairs." [7].

This duality also affects how students understand and absorb educational material, including mathematics, during the learning process. Consequently, it should be reflected in the concept of modern mathematics education.

The current technocratic approach in this area will eventually lead to a civilizational crisis. The shift towards a more humanistic approach is still often interpreted in a narrow and literal way, often leading to a reduction in mathematics teaching in favor of humanities subjects. In practice, this frequently results in merely transmitting knowledge in a ready-made form rather than promoting deep understanding. This was due to the views of mathematics as an abstract science, the study of

which exclusively develops logical thinking, as promoted by the Bourbaki group concept. In this view, mathematical education is primarily reduced to the mastery of formal logic.

In modern times, many renowned scientists such as Henri Poincaré, Morris Kline, and Vladimir Arnold, among others, have recognized the living nature of mathematics. They believe it is only natural to give logic and intuition their rightful place in mathematics. Poincaré said: "Logic, which alone can give certainty, is the instrument of demonstration; intuition is the instrument of invention" [3]. He also stated that "the mechanism of mathematical creativity... is not fundamentally different from the mechanism of any other form of creativity" [3], with the only difference being that mathematical creativity is validated not by experimentation but by deductive proof.

Other scientists' research supports Henri Poincaré's conclusions. Jacques Hadamard says: "There are practically no purely logical discoveries. Activating the unconscious is necessary, at least as a starting point for logical work" [8].

As Nassim Nicholas Taleb puts it, a creative individual who retains antifragile qualities [9] in every domain – especially in light of the increasingly common phenomenon of 'black swans' [10] – is a crucial necessity in modern society. Taleb suggests that we can better recognize talent if we break away from conventional logical frameworks. Today's education system aims to produce well-educated human individuals.

Therefore, integrating logical and intuitive cognitive styles and applying them to learning math is essential. "Mathematics as an expression of the human mind reflects the active will, the contemplative reason, and the desire for aesthetic perfection. Its basic elements are logic and intuition, analysis and construction, generality and individuality. Though different traditions may emphasize different aspects, it is only the interplay of these antithetic forces and the struggle for their synthesis that constitute mathematical science's life, usefulness, and supreme value." [11].

Mathematics has long been considered the best discipline for developing rational thinking. However, without a true understanding of the subject by students, they cannot fully achieve this goal. It is crucial to investigate whether all students can engage with mathematics, as this issue is of great importance to the topic at hand. The popular belief is that 'humanities-oriented children lack mathematical ability' and that 'girls are less gifted in math than boys'. However, research has shown that everyone has the potential to succeed in math. According to

G. Hardy, this ability is innate in most people, much like the ability to enjoy music. While not all students are expected to pursue a career in math, every math teacher can use the humanistic potential inherent in the subject to develop the abilities and talents of their students. Human psychology suggests that a weakness in one area does not preclude the possibility of success in activities that depend on the same ability [2].

From a psychological point of view, three types of understanding of teaching material can be distinguished:

1. Rationalistic understanding (understanding as knowledge and explanation)
2. Hermeneutic understanding (understanding as interpretation)
3. Existential understanding (understanding as comprehension) [12].

The first type is concerned with understanding both the symbolic form and the actual content of the information. In this phase of grasping a mathematical concept, students rely on verbal definitions and personal experience. When they encounter a new concept, it is important to facilitate understanding through verbal explanations and symbolic representations such as diagrams, drawings, sketches, and tables. This includes comparing the new concept with other concepts, contrasting it with alternatives, and analyzing a range of examples and counterexamples. In addition, informal verbal descriptions and vivid metaphors can help to create a deep inner picture and encourage personal associations with the concept.

When introducing new material, there is also a shift towards the second type of understanding (understanding as interpretation) when the information is presented in different ways. Here, the term ‘interpretation’ is used not only in the sense of translation but also as an ‘enrichment’ of formulas and symbols to make connections between abstract knowledge and objective reality. Through this process of interpretation, students arrive at a more profound and more precise understanding. This expands interpretative understanding, which can be achieved by applying learned rules and drawing on personal experience, associations, and intuition, considering each student’s unique way of thinking.

Understanding is linked to grasping the essence of a mathematical concept or object in the hermeneutic phase. Explanations from teachers or classmates cannot facilitate this process, as it depends on students’ inner activity, intuition, creativity, and self-awareness. Students develop the need to internalize the information they receive, to make it personal by translating it into their own inner language and relating it to their own experiences. The teacher’s role is to suggest options and guide students

on their individual journey by creating the conditions for the transition from hermeneutic understanding (interpretive understanding) to existential understanding (understanding as apprehension).

This transition to a deeper understanding of the material is characterized by the student asking higher-order questions such as: Why? For what purpose? With what aim? What follows from this? From what is this derived? On what basis is this assertion made? And others that he asks himself and the teacher. Teachers should create an appropriate (creative and reflective) research environment in the classroom. Such an environment fosters personal growth, the development of critical thinking, the mindset of a researcher, and the cultivation of intellectual intuition.

A meaningful environment is critical to developing a deeper understanding of academic material. In this environment, learning goes beyond simple explanations and the transmission of knowledge. The emphasis is on developing new ideas and enriching understanding through new meanings. This approach is based on the student's personal experiences (both logical and intuitive) and their unique perception of information. It promotes mastery of the meanings inherent in the material and encourages students to develop their own personal meanings.

The understanding of the mathematical teaching material is achieved through the application of the students' logical and intuitive experiences. This process is based on a previously acquired system of knowledge, skills, and the ability to extrapolate this knowledge, which is often initiated by conjecture, insight, and intuition.

The integration of logical and intuitive experiences is particularly important for the teaching of geometry in school. Traditionally, geometry has been the source of many mathematical discoveries. The study of geometry instills a sense of beauty, develops intuition, and encourages analytical thinking. However, it can also present students with great challenges regarding understanding.

It is important to specifically teach students the ability to conjecture and hypothesize, beginning with learning new theoretical knowledge – definitions of mathematical concepts, theorems, rules, algorithms, and methods for solving important examples.

The main stages of the methodology for studying theorems related to the integration of the student's logical and intuitive experience are described below:

I. Preparation for perception (activation and motivation)

II. Perception (acquisition of new knowledge)

III. Comprehension and reflection on information

IV. Consolidation and application

V. Evaluation (summarizing the results)

Following these stages, students become engaged in the process of formulating hypotheses and proving them, which integrates their intuitive and logical experiences, ultimately leading to a deeper understanding of the educational material.

Let us illustrate these phases by using the example of deriving the formula for the area of a trapezoid. The teacher leads a guided discussion with the class and gradually fills the board with notes.

I. Preparation for perception

This stage begins with repeating the previous material, motivating, and creating a relevant problem context.

Teacher: "What is the area of a polygon? What are its properties?"

Students: "The area is always a positive number and has the following properties:

1. Equal polygons have equal areas.

2. The area of a polygon that consists of several polygons is equal to the sum of the areas of these polygons.

3. The unit of measurement for the area is the unit square, a square with a side length of one unit.

Teacher: "What area of a polygon could we calculate with these properties?"

Students: "A square"

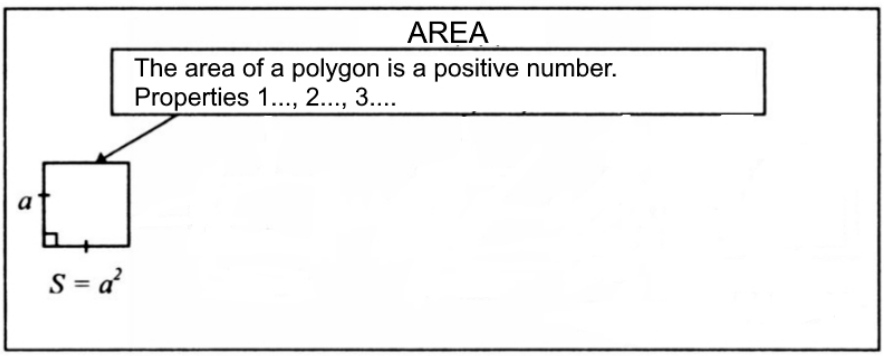


Fig. 1.

Teacher: "What other shapes do we know how to find the area of? "

Students: "A rectangle"

Teacher: “How did we find the formula to determine the area of a rectangle with sides a and b?”

Students: “We completed it to a square with side length (a + b) and then divided it into squares and rectangles.”

Teacher: “What is this method called? “

Students: “Completing the shape to a square with a known area and dividing it into squares and rectangles.”

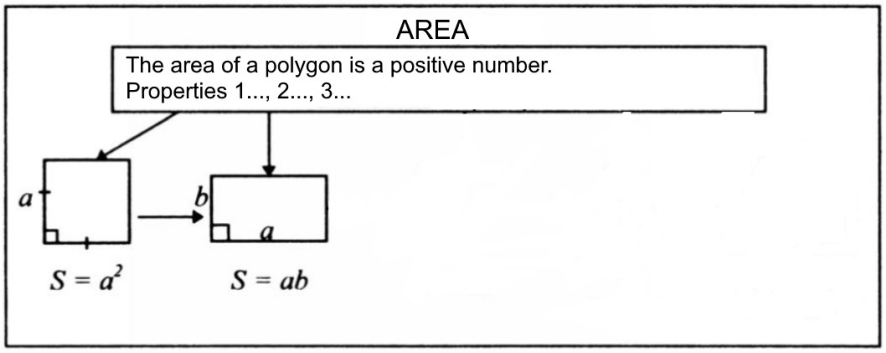


Fig. 2

Teacher: “What other shapes do we know how to find the area of?”

Students: “A parallelogram”

Teacher: “And how did we derive this formula?”

Students: “Using the same method – by completing it to a known shape, a rectangle, and dividing it into a rectangle and triangles.”

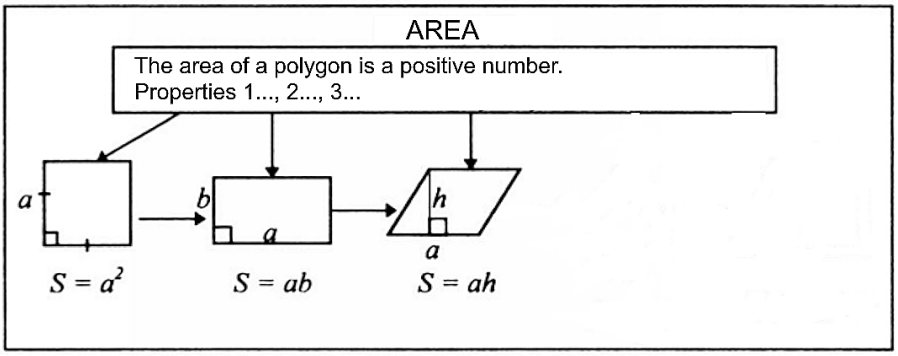


Fig. 3

Teacher: “What other shapes do we know how to find the area of?”

Students: “The area of a triangle.”

Teacher: “And how did we figure that out?”

Students: “By completing it into a parallelogram and dividing it into triangles.”

II. Perception

This is the stage in which you discover a theorem, formulate it, and seek and present the proof.

Teacher: "What conclusion can you draw from this writing on the board?"

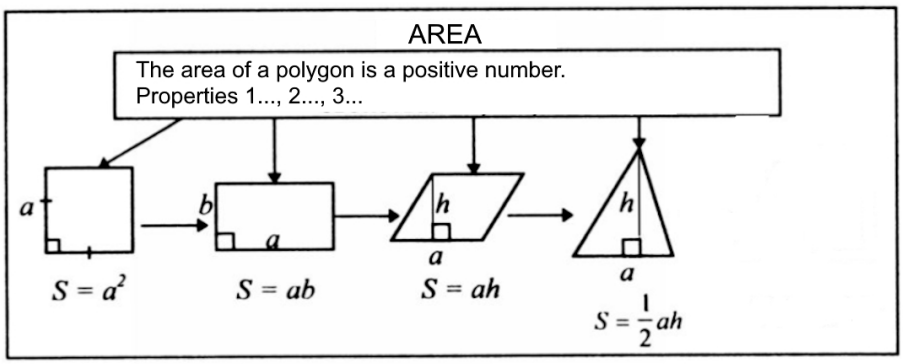


Fig. 4.

Students: "The areas of all the figures are determined by completing them to a shape whose area we already know, and they all refer to one side and the height drawn on that side."

Teacher: "Which geometric figure did we cover in the last lesson?"

Students: "A trapezoid"

Teacher: "Can you guess which elements are used to express the area of a trapezoid?"

Students: "Maybe it's a side and a height?"

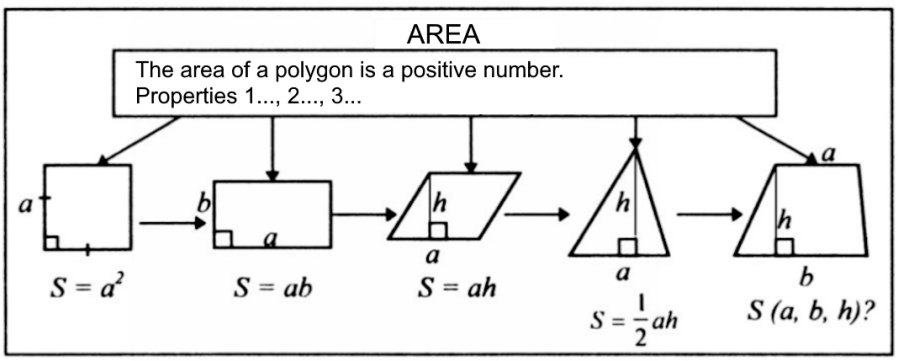


Fig. 5

Teacher: "Now, we must find this connection and derive the formula accordingly. How can we do that?"

Students: "Maybe we can use completion and partitioning again?"

Teacher: "Please let us know your suggestions."

Students: (offer different options; see Fig. 6)

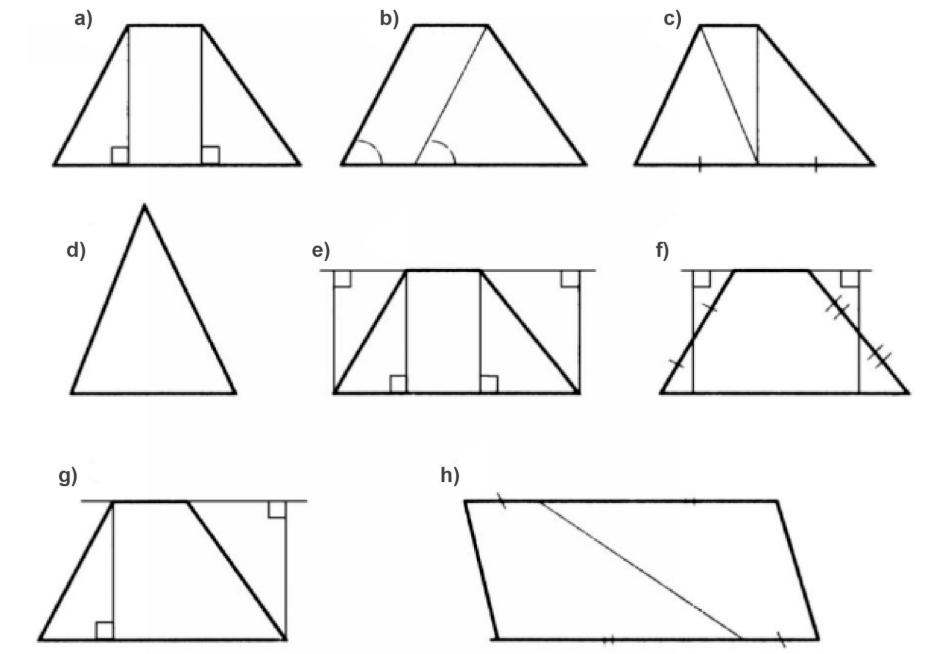


Fig. 6

The teacher can divide the class into groups and assign each group a different version of the diagram and a task: Find the area of the trapezoid using a, b, and h. In this way, several different proofs of the theorem can be achieved. The remaining unsolved methods can be assigned as homework and additional exercises to help students apply the theorem in practice.

III. Comprehension and reflection

In this stage, the teacher encourages the students to think about the process. He helps them understand the theorem's logical structure, the techniques for discovering new facts and checking their validity, and the methods and steps involved in developing proofs.

Here, it is important to design a system of questions to deepen understanding. For example, the following tasks can be formulated:

- "State the theorem we have proved."
- "Identify the condition and the conclusion."
- "Is the statement correct?" (the teacher changes the wording of the theorem slightly, which may or may not change the meaning)
- "Create a new diagram with different labels and prove the theorem."
- "Formulate the inverse statement (inverse theorem)."

- "What is the main idea of the proof?"
- "Which techniques were used in the proof?"
- "Which other theorems can be proved using this technique?"
- "Name the main steps of the proof."
- "What prior knowledge was used in the proof?"
- "Are there other ways to prove this theorem?"
- "Solve problems using this theorem."
- "What kinds of problems can be solved with this theorem?"
- "Create problems that can be solved using this theorem."
- "Reconstruct the logical process of formulating and proving the theorem."

IV. Consolidation

You must apply the theorem to solve problems and/or prove related theorems at this stage.

V. Evaluation (Summarizing results)

At this stage, conclusions are drawn about the students' understanding if they can:

- Create a diagram and symbolic notation related to the theorem and state the conclusion correctly;
- Carry out the proof using alternative terms;
- Recognize the main idea of the proof;
- Recognize other theorems that have been proven with similar techniques
- Outline the main steps of the proof;
- Distinguish the prerequisites for the proof
- Know practical applications of the theorem;
- Understand the logical process used to discover connections and develop the proof.

However, not all stages are fully applied in learning each theorem.

It is important to note that for middle school students learning a new subject – geometry – it is not only the theoretical knowledge that is new. They are also confronted with methodological knowledge for the first time, e.g., the concept of a theorem and the nature of a proof. It is, therefore, essential to introduce seventh graders to the concept of a theorem in the first lesson using a simple example.

It, therefore, makes sense for a teacher to integrate intuitive and logical components into their teaching practice. Despite possible biases against intuition in a mathematical context, this approach promotes a learner-centered method and helps students better understand the material.

As an example of integrating logical and intuitive student experiences in the final stage – the assessment phase – of learning, we present a task system on ‘Sequences and Progressions’ for 9th-grade students. This system consists of three sections that are designed not only to assess but also to motivate, educate, and enrich students. It allows them to effectively demonstrate their skills in one or more areas while developing their metacognition and intellectual intuition.

The first part of the proposed assessment on ‘Sequences and Progressions’ is motivational and informative. Students are encouraged to share their own experiences with the topic: their ideas about sequences, finite and infinite sequences, progressions, and the summation of sequences (Tasks 1, 3, 5, 6). They are also asked to share the knowledge they have already acquired, e.g., methods for defining sequences, characteristics and distinguishing features of sequences and progressions, and types of tasks related to progressions (Tasks 2, 4, 7). They are also asked to formulate hypotheses (Tasks 4, 7), outline directions for the study of progressions, and organize their knowledge according to the coefficients of progression (Task 7).

The first section brings to the surface the students’ existing knowledge, concepts, and facts on the topic of ‘sequences and progressions’ and thus activates their semantic field on this topic. At the same time, it provides the teacher with valuable feedback: based on the student’s performance in Part I, the teacher can gauge personal commitment to the topic, the depth of their acquired knowledge and methods, and the variety of approaches they use in their learning process.

The second part is structured as a test with two variants, which, in addition to the traditional assessment test on ‘sequences and progressions,’ also fulfills informative and systematizing functions. Students learn about different types of problems related to progressions, such as formulating the general concept of a progression, determining the position of a concept based on its value, and formulating relationships between concepts in mathematical language. They also practice applying the properties of progressions, calculating the sum of a finite number of terms, and solving word problems with progressions.

In working on these topics, students relate the information to the different areas of knowledge and make a connection to the work on Task 7 in Part I.

The third part of the proposed assessment represents a stage of reflection and self-assessment (Tasks 1, 4), creation of new knowledge

(Task 2), and encouragement to further expand and enrich the semantic field on the topic of "sequences and progressions" (Tasks 2, 3) and the manifestation of students' creative abilities (Tasks 2, 3). In this stage, the teacher has the opportunity not only to assess the subject-related learning outcomes on the topic of "sequences and progressions" but also to draw conclusions about the creativity and self-regulation of the individual students.

Here is the content of this final assessment's first and third parts.

SEQUENCES AND PROGRESSIONS

Part I

1. From the following list, choose at most three suitable associative words that you think have to do with the concept 'order' and write them down:

- after
- in succession
- last
- follow one after another
- infinite
- investigation
- consequence
- suspects
- investigate
- intermediaries
- queue
- numbered
- unlimited

Try to find your own association with the word 'sequence.'

2. Order the following sequences: a) - c) according to how they are set. To do this, fill in the table by indicating the letter of the corresponding sequence:

Analytical Method	*Recursive Method*	*Verbal Method*

a) The Fibonacci sequence, the first two terms of which are equal to 1, and each subsequent term, starting from the third, is the sum of the two previous terms;

b) The factorial sequence, where the n-th term is equal to the product of natural numbers from 1 to n, that is, $1 \cdot 2 \cdot 3 \cdot ... \cdot (n–1) \cdot$ n, denoted by $n!$;

c) The sequence of prime numbers contained in the natural range from 1 to 50.

3. Rephrase the following statements:

"The smallest of all natural numbers is equal to one."

"Among the numbers that are the opposite of the natural numbers, there is no number 0."

4. Determine whether each statement is true or false. Try to give a suitable example or counterexample.

a) A functional dependency defined on the set of natural numbers is an infinite numerical sequence.

b) The graph of a numerical sequence is a set of isolated points in the plane.

c) Every sequence is a progression.

d) An infinite numerical sequence is a numerical function defined on the set of all natural numbers.

e) Every recurrence relation defines a progression.

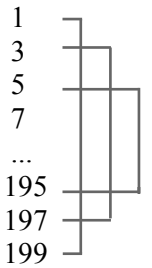
f) Every progression is a monotone sequence.

g) Every constant sequence is a geometric progression.

Try to create a diagram that establishes the relationships between the concepts of 'function,' 'numerical sequence,' 'sequence,' 'progression,' 'monotonic sequence,' 'arithmetic progression,' 'geometric progression,' and 'stationary sequence.'

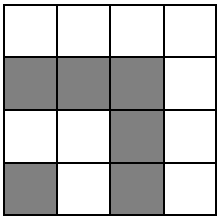
5. Think of as many situations as possible (everyday, unusual, traditional) where progressions occur.

6. Analyze the following forms of representing the sum 1 + 3 + 5 + … + 197 + 199..



$200 \cdot \mathit{50} = 10000 = 100^2$,

1.	**1** □	+	9□□□□□□□□□	=	**10**
2.	**3** □□□	+	7 □□□□□□□	=	**10** (**10** · *5*) **:** 2 = **25** = **5²**,
3.	**5** □□□□□	+	5 □□□□□	=	**10** ***hence***
4.	**7** □□□□□□□	+	3 □□□	=	**10** (**200** · *100*) **:** 2 = **10000** = **100²**
5.	**9** □□□□□□□□□	+	1 □	=	**10**



Here, three squares identical to the square at the bottom left are added next to it, followed by five more squares, then seven, nine, and so on, until finally 199 squares are added.

a) Calculate the area of the square described.

b) Try to form and calculate a similar sum to the one described in this task.

7. Put together three problems on arithmetic (or geometric) progressions. The tasks should be different and designed as a test, or formulate all kinds of tasks that can be included in a test on 'progressions.'

Part II (test tasks in 2 variants)

Part III

Try to identify the specific aspects of the following Tasks 1−3 and propose a method for assessing their completion results. We suggest that you select and complete one of the following tasks:

1. Create a series of questions about a given sequence $\{a_n\}$, $n = 1, 2, \ldots$, in such a way that by answering these questions, you obtain complete information about the sequence (its form, terms, properties, historical facts related to this sequence). How many questions are needed?

2. For an upcoming TV commercial in a math series, try to create a presentation script for a specific sequence. First, think about what sequence you could successfully present to a non-math audience and what features of this sequence could be emphasized.

3. Try to devise a metaphor for the word 'progression' and illustrate it in color.

An analysis of the integration of logical and intuitive experience in the process of learning mathematics leads to the following conclusions:

1. The dominance of one type of experience over the other hinders the understanding of mathematical material.

2. The balance between logical and intuitive experience should be carefully considered when planning a lesson.

3. The integration of the students' logical and intuitive experiences improves the quality of their knowledge.

The relationship between logic and intuition has been studied by Y. Ponomarev [2]. He developed a detailed model of mathematical activity, which, in its most complete version, is used only in major scientific discoveries.

In this model, the following phases are distinguished:

1. Collecting certain facts and patterns through observation, calculation, and measurement.
2. Forming hypotheses based on this information (intuitive).
3. Proving or disproving these hypotheses through logical thinking.
4. Systematizing the proven facts and creating a theory.
5. Practical application.

Moving through these stages by integrating students' logical and intuitive experiences will improve their understanding of the mathematical material.

According to the concept of Y. Ponomarev, there are two types of creative tasks:

- Tasks that are solved with the help of conscious techniques (this process can be controlled);
- Tasks that are solved using unconscious techniques (this process cannot be algorithmized but can be partially controlled by creating conditions that promote intuitive insights).

To ensure understanding of the mathematical material, it is important that both types of tasks occur in class and that the teacher creates conditions that encourage students' intuition (e.g., involving them in forming hypotheses and justifying or refuting them). However, it is important to remember that accurate intuition can only develop on a solid foundation of students' knowledge (definitions, theorems, and the basic concepts of their proofs).

Integrating a student's logical and intuitive experiences contributes to the following:

- Understanding of the subject matter: the student becomes a full subject of the teaching activity, and knowledge is experienced, appropriated, and personalized.
- Student motivation: the intuitively proposed hypothesis stimulates students to search for its justification, i.e., a logical proof. Students master the informational component of mathematical knowledge (knowledge, skills, abilities) and the awareness of their application and use. At the same time, they acquire methods of general scientific knowledge (heuristic and logical), which should also be the subject of conscious discussion.

Creative activity, including mathematical activity, involves a process of the search for new results:

1. Intuitive processes are crucial to generating and developing new ideas. These processes are based on 'plausible' conclusions drawn from concrete cases through comparison, induction, analogy, and generalization. Among these processes, intuition stands out as it emerges from the repetition of the brain's logical thinking and eventually becomes part of cognitive skills. These related skills are interconnected; they reinforce each other and merge into intuition. Mastery of cognitive skills in conjunction with 'plausible thinking' and both general and specific methods of scientific inquiry creates an optimal environment for developing intuition in education.

2. Logical processes are based on deductive reasoning, and arguments are based on logical laws and forms.

Therefore, creative mathematical activities should be based on integrating students' logical and intuitive experiences in their dialectical unity.

How can we teach students to conclude? How can we incorporate their logical and intuitive experiences? D. Pólya recommends structuring this process as follows: students first observe how the teacher argues and learn to argue 'plausibly' by imitating the teacher.

Here, you will find a system for understanding the teaching material that is based on the integration of students' logical and intuitive experiences:

1. Choose a simple topic: choose a topic that is simple enough to avoid overly complex explanations.

2. Students should know how to research both with a teacher and independently.

3. Be aware that the chain of reasoning leading to a hypothesis can be lengthy and may not fit into the time frame of a lesson. However, it should be clear and understandable to the students.

4. The goal of the lesson should not only be to learn new material but also to teach methods of learning and scientific inquiry (both heuristic and deductive). This will help students develop the ability to ask questions and formulate hypotheses.

5. Prioritize logical reasoning: the logical component should play the primary role in this process, as understanding the logical structure of definitions, theorem statements, and the nature of mathematical proofs guides heuristic exploration. Hypotheses established intuitively through 'plausible' reasoning should be proven or disproven deductively.

6. Clarify the basis of reasoning: students need to clearly understand the basis for their conclusions, whether they are arrived at by plausible reasoning based on induction or by correct reasoning based on deduction.

7. Students should be trained to present complete arguments and avoid claims that are ‘almost’ proven.

The teacher must guide students through the process of proving theorems, as this promotes a conscious understanding of the different methods of scientific inquiry (both general and specific). This can be done both during the proof process and afterward, when the teacher draws the students’ attention to the proof method, its characteristics, and its nature.

Based on the research conducted and the analysis of the psychological, educational, scientific-methodological, and pedagogical literature on this subject, we conclude that integrating students’ logical and intuitive experiences facilitates understanding complex learning content. This integration helps students to make connections between formal concepts, their meanings, and content, which allows them to develop a holistic view, internalize new knowledge, and make it personal.

Overcoming difficulties in mastering complex or difficult educational material occurs at the intersection of understanding, where students link formal definitions of concepts to their logical, physical, geometric, and other meanings, as well as to their deep content – from underlying ideas and historical context to their place within mathematical theory and students’ personal associations. This integration of logical and intuitive experiences is crucial. In addition, the variability of information representation (using different forms and types) can help to expand and enrich internal representations of the new knowledge. It is also important to develop a holistic understanding of the subject matter that results from making formal-logical structural and functional connections.

Overcoming difficulties in learning complex educational material occurs when students combine logical and intuitive experiences. This helps them to grasp not only formal definitions but also the logical, physical, and geometric meanings of concepts and develop a deeper understanding – from the history of the idea to its role in theory to their personal associations with the material. In addition, using different forms of presenting information (including different types and formats) can expand and enrich the inner picture of new knowledge. It is also important to develop a holistic view of the

material, which is built by making formal, logical, structural, and functional connections [13, 14].

At present, it's important to re-evaluate both the current experience of developing rational thinking in math education and the process of building intuition in mathematics and to create conditions for their integration.

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ИНТЕГРАЦИЯ ЛОГИЧЕСКОГО И ИНТУИТИВНОГО ОПЫТА УЧЕНИКА КАК УСЛОВИЕ ПОНИМАНИЯ МАТЕМАТИКИ

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Аннотация. В современных психолого-педагогических работах исследуется дуальность человеческого мышления, когда две противоположные системы – эвристическая и аналитическая – взаимодействуют в диалектическом единстве. Отсюда и два соответствующих способа познания мира: логический и интуитивный. Акцент на формирование только логического опыта ученика, в конечном итоге, сводится к формированию умения решать определенный, достаточно узкий класс типовых задач, а также не способствует гармоничному всестороннему развитию личности. Поэтому в настоящее время большое внимание уделяется вопросу «понимающего» освоения учебных дисциплин и преодолению формализма в процессе обучения посредством активизации учебно-познавательной деятельности и применения методических способов интеграции логического и интуитивного опыта ученика, способствующих достижению более глубокого уровня понимания учебного материала. Данное исследование посвящено анализу особенностей интеграции логического и интуитивного познавательных стилей мышления и их использования в процессе обучения математике.

Ключевые слова: *интеллект, познавательные стили мышления, интенциональный опыт, понимающее обучение математике*

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CONCEPTS OF RURALITY IN MODERN EDUCATION: THE FORMULATION OF A RESEARCH PROBLEM

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Abstract. As the modern village evolves, with shifts in lifestyle, identity, daily practices, and a growing diversification of the rural economy, it becomes necessary to broaden the traditional range of career options for rural students.

An analysis of rural school development programs shows that, in most cases, the strategic educational objectives are hardly linked to the economic and sociocultural characteristics of the areas in which they are located. A task allocation that correlates with rural identity and the local sociocultural code is extremely rare.

If we look at the strategies for the vocational self-determination of rural students, generally oriented towards the agricultural sector, and the mechanisms for their implementation, we see that they are stereotypical and have a certain formalism. Perhaps for this very reason, the potential of a rural school is not really considered by those responsible as a factor and resource for the socio-economic development of the territory.

In this context, the goal setting of rural schools concerning the self-determined life of students, which is important for rural identity and the specificities of the territories in which they are located, is becoming increasingly important. In this case, the rural school can be considered a key element of the infrastructure that allows the diffusion and rooting of the rural code in the life and professional paths of rural youth.

The study aims to pose a research problem on the necessity of a modern concept of rurality within the framework of rural school pedagogy as an independent branch of pedagogical science. Our scientific research will refer to our previously formed understanding of rural school as "a complexly organized educational system capable of self-organization and self-regulation under the conditions of a hybrid (real/virtual) ontology... Its basic characteristics are multifunctionality, openness, continuity, adaptability to the local culture of a given rural society, and convergence."

The existing concepts of rurality, which are based on a sociological approach, are interdisciplinary. The basic ideas about the network society are reflected in the scientific approaches used for the theoretical identification of the

village and the conceptualization of rurality in the post-industrial era. In our view, the most important approaches are the sociocultural, spatial, and systemic approaches.

The sociocultural approach makes it possible to expand the boundaries of research by considering a rural school in a system of cultural coordinates (meanings, values, value orientations, principles) that ensures social connections and at the center of which is the active human being (*homo activus*), a multidimensional bio-socio-cultural being. Spatial and systemic approaches are needed in research as complementary approaches. The spatial approach aims to explain the village's situation in the context of globalization and urbanization of the modern world and the implementation of Russian state programs for the economic development of territories. From a theoretical point of view, one can rely on understanding the village as a totality of changing physical and social spaces. A systematic approach helps to maintain the integrity and structure of the study.

The peculiarities of the new rurality and its characteristics can be considered in developing rural-oriented strategies for the self-determined lives of students in rural schools. Education that incorporates the sociocultural code by strengthening rurality should aim to develop creativity, critical thinking, communication skills, and the ability to work together. This is fundamental for future professionals who can reshape the rural economy by considering market demands.

Keywords: *concept, rural-oriented strategies, self-determined life, students, rural schools*

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The approach to conceptualizing a rural school that emerged in Russian pedagogical science defines it as a key infrastructure element that ensures the growing local population's socialization, education, and sociocultural development. The theoretical aspects of these processes are discussed in the works of A. Andreiko, L. Bayborodova, M. Guryanova, V. Gusenko, T. Kreslavskaya, P. Pivnenko, N. Shobonov, A. Tsirulnikova and T. Shergina. Modern trends in the development of rural schools are identified and described in the works of M. Alexandrova, L. Bayborodova, L. Vokhminova, L. Kobrina, E. Kosinova, and R. Sheraizina. Most studies consider the development paths of rural schools in the context of the modernization of the state education system and the socio-economic and cultural changes in public life that influence it. Empirically, they are expressed in the school's mission, objectives, and educational content, which are recorded in the educational organization's documents.

One of the strategic documents is the Development Program for Rural Schools, which sets out the teaching staff's mission, vision, goals, and objectives for the coming years. In setting these goals, the developers are guided by the federal and regional framework, the state national project

"Education," and its sub-projects, which aim to provide students with opportunities for self-realization and talent development. In essence, it is about fulfilling the mission of the state – the formation and development of human capital necessary for the economic development of the country in the conditions of technological change, urbanization, diversification of the rural economy, labor shortages, population mobility, and internal migration.

However, an analysis of school development programs for rural areas shows that, in most cases, the strategic educational objectives are insufficiently linked to the economic and sociocultural characteristics of the regions in which they are located. Examination of the empirical experiences of innovative rural school development presented in the self-audit reports on official websites also suggests that student goal-setting is more consistent with global/federal trends than with local trends. In fact, each rural school development program includes the following goals: Creation of conditions for children's physical, intellectual, moral, and spiritual development, taking into account their interests; personal development based on moral values and Russia's historical experience, to develop an active attitude to life and civic self-awareness and foster a love for school and homeland; development of tolerance and self-education skills among students; diverse development of creative abilities.

At the same time, however, no goals or tasks arise from the sociocultural and economic uniqueness of the region where the educational institution is located. Let us clarify this thesis.

First. When considering the sociocultural uniqueness of the territory and the local community, it is extremely rare to find a breakdown of the tasks related to rural identity and the local sociocultural code. As for the terms' identity' and 'sociocultural code' (sociocode, cultural code), we note that they are widely discussed in interdisciplinary academic discourse, while the concept of 'rural identity' is only considered in the context of rural studies. Native researcher N. Plotichkina, for example, believes that 'rural identity,' which is essentially an identity with a place, can be defined as a set of emotions, feelings, and meanings associated with a place that is significant for an individual's self-determination; it is connected with a sense of rootedness, attachment to the land as a place of residence or origin, the so-called 'spatial belonging' [1].

We have not encountered any pedagogical studies that deal with the description of the phenomenon of rural identity. For the sake of fairness,

we point out that there are many scientific works dealing with issues of patriotic education and that the problem of forming a love for the homeland, its history, and culture is recorded in almost all documents of rural schools.

Second. It is obvious that a rural school, when setting its goals, is guided in one way or another by the economic uniqueness of the territory in which it operates: its specialization, historically developed work traditions, skills, and connections. However, if we look at the strategies for the professional self-determination of students in rural areas, generally oriented towards the agricultural sector, and the mechanisms for their implementation, it becomes clear that they are stereotypical and have a certain formalism. Perhaps for this very reason, the potential of a rural school is not really considered by those responsible as a factor and resource for the socio-economic development of the territory. A. Tsirulnikov writes about this with bitterness: "...in the program for the comprehensive development of rural areas, the education sector is represented only by quantitative indicators for capital repairs and the construction of new rural kindergartens and schools. Education as a factor for the development of the areas does not appear in the discussion of government programs either..." [2].

We see the consideration of the economic uniqueness of the territory and the local community in the context of changes caused by both global trends and domestic trends, as set out in the documents: "Strategy for the Sustainable Development of Rural Areas of the Russian Federation for the Period up to 2030" [3], "Integrated Development of Rural Areas" [4], "Digital Agriculture" [5], "Federal Scientific and Technical Program for the Development of Agriculture for 2017–2030" [6].

The transformation of the modern village, including the population's lifestyle, identity, everyday practices, and the trend towards diversification of the rural economy, requires expanding the existing traditional list of career choices for rural school students.

In this context, the question of the purpose of rural schools in relation to the self-determination of students' lives, which is relevant to rural identity and the specificities of the areas in which they live, is becoming increasingly important. In this case, the rural school can be considered a key element of the infrastructure that allows not only the diffusion but also the rooting of the code of rurality in the life and professional paths of rural youth.

The system transformations that have taken place in Russia over the last decade have significantly changed the appearance of rural

settlements, their social structure, and the way of life of villagers, contributing to a change in the quantitative and qualitative characteristics of social processes in rural areas. In this regard, it is difficult to disagree with the position of Russian scientists R. Sheraizina, M. Aleksandrova, and Z. Eflova, who believe that "in a situation of uncertainty and instability, the mission of a rural school increasingly goes beyond the boundaries of its educational activities" [7]. In fact, a rural school, as a key element of infrastructure, cannot take into account this change, which determines a graduate's image, competencies and qualities, values, and life orientations. However, the study of the main documents of rural schools allows us to say that the goals formulated within the framework of the personality-oriented paradigm are standardized and of the same nature – it is about the development of the student's talents and abilities, his self-development and self-realization as a harmoniously developed personality.

On the one hand, this uniformity is due to the legal framework, the prevailing pedagogical paradigm, and a single educational space; on the other hand, it does not reflect the specificities of rural areas, about which much has been written in the scientific literature and the documents of educational institutions. Rural schools, which declare their uniqueness in strategic documents based on territorial and sociocultural specificities, traditionally focus on universal pedagogical objectives when defining their pedagogical goals without referring to the rural area. Unfortunately, they do not consider the data on rural areas from related sciences: sociology, social philosophy, cultural studies, demography, and economics.

The latter is confirmed by a review of the current state of research on rural schools by A. Gorbushov, who examined a large amount of scientific literature on rural schools, which can be found in the scientific electronic library 'eLIBRARY.RU.' He believes "the sciences that deal with rural schools allow us to expand our understanding of rural schools and their sociocultural space." However, as his analysis of the sources shows, although rural school issues fall within the field of interest of pedagogy, history, sociology, and economics, "the main literature on rural school is "pedagogical research, and for the understanding of rural school as a sociocultural factor of the village and as a culture-forming institution of rural area, the research of other sciences is necessary to understand the phenomenon of rural school better..." [8].

There is a contradictory situation: a rural school builds human capital, which is important as a carrier of knowledge, competencies, and values

for rural areas and the economy, but does not take into account the self-realization of students and their self-determined lives in the context of the sociocultural code of rurality/rural areas, nor in the broad context of the economic, social and political changes in which it develops.

Overcoming the identified contradiction is possible by solving the problem of the lack of rural-oriented strategies for the self-determined life of students in rural schools, the design of which can act as a factor for the development of the diversification of the economy of rural settlements. In addition, the modernized equipment of rural education systems (quantoriums and laboratories), the opportunity to learn about scientific research and technologies that do not only concern the agricultural sector and the vocationally oriented dialog with economic actors/industry partners open up broad perspectives for the design of strategies for vocational self-determination of rural school students in line with the current agenda for sustainable rural development and diversification of the rural economy.

We point out that there is a rich layer of psychological and pedagogical research in Russian science on the life, personal, and professional self-determination of students, including the works of K. Abulkhanova-Slavskaya, E. Golovakh, N. Kasatkina, E. Klimov, L. Mitina, N. Pryazhnikova, G. Sillaste, T. Shalavina and S. Chistyakova. Our theoretical analysis shows that no comprehensive research in Russian school pedagogy deals with the identified problem.

The study described in this article aims to pose a research problem on the necessity of a modern concept of rurality within the framework of rural school pedagogy as an independent branch of pedagogical science. Our scientific investigation will focus on our previously formed understanding of a rural school as a "complexly organized educational system capable of self-organization and self-regulation under the conditions of a hybrid (real/virtual) ontology... The basic characteristics can be identified as multifunctionality, openness, continuity, adaptability to the local culture of a given rural society, and convergence" [9].

Let us now look at some aspects of the methodology used to study this topic. Since the problem of the lack of rural-oriented strategies for the self-determined life of students in rural schools, whose design can be a factor in the development of the diversification of the economy of rural settlements, is interdisciplinary in nature, to study it, we must go beyond the traditional pedagogical search. The topic under study can be approached from the perspective of rural studies, as there is already an established methodology "at the intersection of agricultural economics

and history, socio-economic geography, social and cultural anthropology, cultural studies, sociolinguistics, social psychology, sociology, and political science" [10]. Here, we should emphasize the value of the scientific fields of rural sociology (subdivisions: Sociology of Rural Population, Sociology of Local Rural Communities, Sociology of Rural Youth), Peasant Studies, and Agricultural Economics.

In view of this, at the general scientific level, we will use theories and original concepts of socio-humanitarian discourse that serve the theoretical identification of modern society. The development of a rural school must be considered in the context of processes that reflect changes in rural areas and the community living there. Let us highlight the most relevant ones for our research: "Global Village" (M. McLuhan), "The Third Wave" (E. Toffler), "Society as Communication" (N. Luhmann), "Risk Society" (U. Beck), "The Consumer Society" (J. Baudrillard), "Control Society" (S. Garfinkel), "The Network Society" (M. Castells), "The Digital Society" (D. Tapscott).

They can be classified for various reasons. In the context of the topic dealt with here, we can separately emphasize a number of original ideas, the so-called concepts of the information society. The post-industrial information society (E. Toffler) / information society (M. Castells) is the common unifying feature. Given the pronounced trends of digitalization and networking, it would be more accurate to use the terms "digital society" and "network society." In our view, the most important of these can be sociocultural, spatial, and systemic approaches. The sociocultural approach allows to expand the boundaries of research by considering a rural school in a system of cultural coordinates (meanings, values, value orientations, principles) that provide social connections and at the center of which is *homo activus* as a multidimensional bio-socio-cultural being [11]. Of particular interest are the applied ideas of Russian sociologists and cultural scientists about the structure of values, the sociocultural and cultural code of T. Artanomova [12], T. Evdokimova [13], A. Zavyalova [14], V. Savitsky [15] and others.

The ideas of A. Tsirulnikov, one of the authoritative developers of the methodological foundations, content, tools, and mechanisms of the sociocultural approach to developing education in rural areas, are important to us [2].

Spatial and systemic approaches are needed in research as complementary approaches. First, the spatial approach aims to explain the situation of the village in terms of globalization and urbanization in the modern world and the implementation of Russian state programs for

the economic development of territories. From the theoretical point of view, one can rely on understanding the village as a totality of changing physical and social spaces (A. Lefebvre, P. Sorokin, P. Bourdieu). As for the applied aspect, useful ideas about rural areas, the diversification of the rural economy, and the human capital of rural areas can be found in the works of T. Nefedova [16–18], S. Podgorskaya, T. Miroshnichenko and G. Bakhmatova [19]. Secondly, our attention is focused on the educational space formed by the rural school. The operational and analytical possibilities of the concept of educational space are described in detail in the pedagogical literature.

A systematic approach helps to maintain the integrity and structure of the study. From the point of view of post-classical studies, rural schools as social objects "belong to the type of complex, self-developing systems, taking into account their historical development" [20]. They are characterized by closedness due to a binary code, non-linearity, autopoetics / self-organization.

At the specific scientific level, the methodological basis of the study is an extensive corpus of theories on the self-determination of students in their lives, including professional self-determination. It includes sociological, socio-philosophical, psychological, and pedagogical theories and concepts. In the academic literature, various aspects of youth self-determination have been studied, including the decisions that young people make regarding their life path, the relationship between professional self-determination and life perspective, as well as the specifics of its formation (E. Golovakha), life paths and orientations in the process of inclusion in public life (M. Ashmane, A. Matulenis, M. Titma), the relationship between subjective and objective factors of self-determination in life (A. Vishnyak, E. Donchenko, V. Pilipenko). Their works redefine the role of subjective factors in the self-determination process of young people, helping to clarify and specify concepts such as life perspective, value orientations, lifestyle, life purpose, and life plan. A shared characteristic of this approach is the focus on how personal factors influence the process of self-determination in both life and career choices.

The ideas of S. Rubinstein can have a special influence on the development of the concept of rurality: Each stage of a person's life plays an important role in the life path of an individual; by the main concept, he means the vital relations to the world, to other people, to oneself, which determine the dependence of the individual on life and, conversely, the dependence of life on the individual. The views of

K. Abulkhanova-Slavskaya, who identifies the main features of a life strategy; E. Avduevskaya and T. Arakantseva, who explain the process of self-determination as a process of gender and value-semantic self-determination, choice of profession and identity formation, seem interesting. The work of G. Sillaste, who conducted sociological studies on self-determination in the life of rural youth at the beginning of the 21st century, is of great importance to us.

In our view, the ideas presented can serve as a theoretical foundation for developing a pedagogical approach to creating rural-oriented strategies for student self-determination in schools, highlighting various mechanisms as key factors in fostering economic diversification in rural communities.

In connection with the last thesis, it is necessary to refer to works dealing with the technology of educational design itself. In general, we have relied on the interpretation of this concept presented in the dissertation by I. Malkova [21]. At present, methodological foundations of design in education have been developed (Yu. Gromyko, G. Ilyin, G. Petrova, V. Slobodchikov and P. Shchedrovitsky); ways of using project activities to organize the educational process (E. Polat and V. Guzeev), features of the use and organization of project activities in an innovative educational institution and educational practice (A. Zotkin, G. Prozumentova, T. Stetsyuk, and A. Tubelsky).

The following methods are used in our work: general theoretical methods: Analysis of scientific literature; system analysis; generalization, classification, comparison, systematization, design and modeling of pedagogical processes; analysis of primary data/documents; generalization of experiences in the functioning of rural schools; and empirical methods: participatory pedagogical observation; questionnaires, tests; interviews.

Let us now turn to the analysis of modern approaches and concepts of rurality. Developing rural-oriented strategies for students' self-determination in rural schools requires understanding what constitutes a village and a rural way of life under digitalization, urbanization, the convergence of technology and science, and social mobility. Of course, addressing this topic requires immersion in the broader context of social change.

The most popular scientific approach to the study of rural settlements and rural lifestyles is the sociological one. It has a long tradition in Russian socio-humanitarian discourse, for example, in the sociological essays of V. Selivanov, "The Year of the Russian Peasant" (1856–1857) and "The Day of the Landowner" (1858). The famous Russian

sociologist Zh. Toshchenko writes in a short historical excursus that "the first attempts at a sociological analysis of the social problems of the village are reflected in the 'Letters from the Village' by A. Engelhardt (12 letters, 1872–1887)," in which the conservative peasant thinking, the adherence of the peasants to the traditions and customs of their ancestors is described [22]. The author of the 'Letters' is A. Engelhardt, a Russian agrochemist, rural landowner, farmer, and former professor at the St. Petersburg Institute of Agriculture, who was banished to his estate Batishchevo, Dorogobuzh district, Smolensk province, for "political unreliability" [23].

Interest in rural areas during Soviet sociology studies can hardly be described as stable. According to researchers, one of the first works of Soviet sociology of rural areas is the unique work "Village (1917–1927)" by A. Bolshakova (1887–1938). Among the active scientists who developed this scientific direction in the 60s–70s of the 20th century were Yu. Harutyunyan, T. Zaslavskaya, and I. Ryvkina. Thus, one of the most detailed studies of the phenomenon of the rural way of life, including people's value orientations, life attitudes and behavioral stereotypes, living conditions, social control, and partnership, interaction with nature, can be found in the work of I. Ryvkina [24]. Her research approaches in rural sociology were developed by Z. Kalugina, P. Simush, V. Tomilin, O. Fadeeva, and others.

The modern Russian village is heterogeneous, as it has territorial and other characteristics elaborated by various researchers. The understanding of the new rural realities that emerged in connection with the economic and political changes after the collapse of the Soviet Union is reflected in the works of sociologists of the late 20th and early 21st centuries: V. Agafonov and G. Butyrin, S. Barsukova, L. Bondarenko, T. Boyak, I. Valeeva, R. Gataullina, F. Ziyatdinova, A. Ogarkova, O. Nechiporenko, V. Patsiorkovsky, R. Salakhutdinova, G. Shirokalova, A. Khagurov, and others. T. Shanin, his followers, and participants V. Vinogradsky and A. Nikulin occupy a special place in the study of rural life. V. Staroverov, P. Velikiy, and others make original judgments based on empirical research.

Modern concepts of rurality based on a sociological approach are inherently interdisciplinary. Thus, if we extrapolate the concepts of real virtuality and network society of the influential modern sociologist M. Castells, we can say that the village today is immersed in the context of a hybrid ontology and, like the city, has a permanent connection to the global network – the Internet. The village, like the city, lives in a

timeless time and in the space of flows of the network society. (M. Castells). British sociologist N. Couldry analyzes the nature of ongoing technological changes and concludes that the convergence of place, media, digital technology, and communication leads to 'convergent spaces' and new values and enriches the meaning of community activities. This observation also applies to the rural community.

These basic ideas are reflected in the scientific approaches used for the theoretical identification of the village and the conceptualization of rurality in the post-industrial era. E. Melnikova points out that "the village itself has not only ceased to be a closed space of some specific rural practices, institutions, and identities, but its study has also gradually outgrown the boundaries of sub-disciplines labeled in the West with the formula Rural Studies or in Russia with the concept of 'peasant studies.' [25]. She writes that "one of the results of the search for approaches and theoretical frameworks to describe the modern situation has been the emergence of new terms: 'post-rural' (Cloke, Goodwin 1992; Murdoch, Pratt 1993), 'industrialized village' (Oswald, 2013), 'post-peasantry' (Buzalka, 2008), 'post-agrarian village' (Shchepanskaya, 2014), 'ruralization' (Pavlov, 2017; Bon, 2009; others), 'urbanization' (Nefedova, Pallot, 2006) and others. At the same time, the study of rurality itself came into the orbit of the study of other, more general phenomena, such as postmodern forms of nomadism, a dispersed lifestyle, migration due to lifestyle migration), tourism, and the heritage industry, global economies and new forms of sociality (Chio 2017; Vasantkumar 2017)" [25].

An interesting and productive approach to the conceptualization of rurality was undertaken by a scientific team of Russian anthropologists who focused on "the search and analysis of various hybrid forms of non-urban and non-rural life and the points of emergence of these social hybrids" [26]. The research results were presented at the regular "New Ruralism" seminar at the Museum of Anthropology and Ethnography. Peter the Great (Kunstkamera) RAS.

The "new ruralism" refers "not only to the ideology of rural romanticism and closeness to nature, which has become a well-sold brand, but also to a new model of rural life and a new rural identity" [25]. It accumulates values that sometimes contradict each other: Autonomy and sociality, naturalness and technology, national patriotism and multiculturalism, love of antiquity, and passion for the latest developments.

The transformation processes' uncertainty, uncontrollability, and incompleteness can explain the pluralism of these values. The researchers conclude that in the context of the 'new rurality,' the concept of 'work' loses its link with the idea of collective production and becomes synonymous with personal effort and that the rural population (locals and visitors) is willing to go beyond the limited space and participate in a more global agenda by declaring themselves and their uniqueness. And not in agriculture but in rural/ethnographic/agrarian tourism, museum practices [27], and folk crafts.

The new rurality can be viewed from the perspective of post-productivism, which European sociologists developed in the 1990s. It is about the transition from productivism to post-productivism, in which the production of rural goods, e.g., agricultural products, gives way to cultural consumption and leisure. According to the observations of Finnish sociologists, "the mobile use of natural resources and the growing importance of leisure activities in rural areas have brought new types of activities and new people to these areas" [28]. Thus, the natural and cultural heritage of the village in contemporary Russia functions as a resource for sociocultural shaping, with the impression economy and tourism seen as the result of diversification.

I would particularly like to emphasize the following thoughts by O. Brednikova on the new rurality: "In connection with the reshaping of the life scenarios of rural dwellers, the boundaries of their living space are expanding and going beyond the boundaries of the locality and the "small rural societies." And perhaps the most significant change is the destruction of the mechanism of continuity and social reproduction in the village" [29]. This concerns the prevailing stereotypical ideas about the agricultural orientation of rural settlements and the predetermined work activities of children learning in rural schools.

The 'new rurality' is thus reflected in all social institutions operating in rural areas. Researchers note an increasing individualism, which could be due to the development of the network society of the information age (M Castells). It manifests itself in the transition from collective production to individual entrepreneurship in economic relations. At the same time, the village ceases to be a place where only agricultural products are produced, and a decline in the role of agriculture can be observed – the "post-productive turn of the rural economy." In a sense, the village is becoming multi-profiled/multi-structured (a new paradigm of rural development based on the doctrine of the multi-structural economy is emerging).

The new rurality is accompanied by the digitalization of agriculture, in which technologies are significantly changing the organizational and digital processes of economic relations between economic entities in the field of intersectoral interaction and economic value creation. According to the Decree of the President of the Russian Federation of July 21, 2020, No 474, digital transformation is one of the national development goals of the Russian Federation. Thus, the national project 'Digital Economy' includes the implementation of the following initiatives: "Regulation of the digital environment," "Information infrastructure," "Personnel for the digital economy," "Information security," "Digital technologies," "Digital public administration," "Artificial intelligence."

The departmental project "Digital Agriculture" of the Russian Ministry of Agriculture aims to create a unified national digital platform in the agro-industrial complex, leading to the full digitalization of agriculture. It includes four main activities: the creation and implementation of a national platform for the digital public administration of agriculture "Digital Agriculture"; the "Agrosolutions" module of the national platform for the digital public administration of agriculture; the training and retraining of personnel for the digital economy "Land of Knowledge"; the implementation of digital technologies: digital platforms, technologies for collecting, processing and analyzing big data, artificial intelligence technology, cloud services, the Internet of Things, radio frequency identification technology (RFID), Digital Twin, industrial robots / automated lines, additive technologies.

In the context of the new rurality, the sphere of cultural production and emotional consumption emerges in the village alongside agriculture, in which physical labor is supplemented by artificial intelligence: Tourism, creative industries, and local history. Researcher M. Mukhanova writes that "the trends observed in rural settlements are expanding the institutional capabilities of villagers, which indicates a transition to the next stage of the market economy based on the intellectualization of labor, as well as new requirements for the labor practice of workers, which will entail changes in the social and structural processes of the Russian village."

The glocalization of the village, the digitalization, and the internalization of rural life are changing villagers' everyday practices and life strategies. It is obvious that the 'new rurality' should be reflected in the functioning of a rural school: in the educational content, in the principles of organizing the educational process in a rural school, in pedagogical work, in career guidance, in the formation of life

strategies of rural students. Most importantly, human capital development in rural areas is becoming increasingly vital as the country advances technologically. Large-scale projects led by major companies focus on enhancing crop selection, improving livestock genetics, and implementing digital technologies – each critical in ensuring the nation's food security and technological sovereignty.

The particularities of the new rurality and its characteristics can be considered in developing rural-oriented strategies for a self-determined life for students in rural schools. An education that incorporates the sociocultural code underlying 'ruralism' should aim to develop creativity, critical thinking, communication skills, and the ability to work together. This is a fundamental requirement for future professionals who can transform the rural economy in response to market needs. How can an environment conducive to developing and promoting interest in the rural economy be created, and what tools can be used?

Is it a systematic approach/creation of ecosystems, involvement of employers, and communication with partners? What technological innovations can transform the learning process, and how can we ensure access to these technologies for a wide range of learners? What are the effective formats of collaboration between rural schools and representatives of the goods and services market to ensure the relevance of educational programs, their importance to rural identity, and the specificities of the areas in which they are located? What tools can be developed to ensure that the self-determined life of students in rural schools acts as a factor in the development of the diversification of the economy in rural settlements?

From our point of view, the development of the modern concept of rurality in science as a whole and in the context of rural school pedagogy, in particular, will help to concretize not only the modern characteristics of rural schools but also rural-oriented strategies for a self-determined life of students in this group of educational institutions.

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КОНЦЕПЦИИ РУРАЛЬНОСТИ (СЕЛЬСКОСТИ) В СОВРЕМЕННОМ ОБРАЗОВАНИИ: ПОСТАНОВКА ИССЛЕДОВАТЕЛЬСКОЙ ПРОБЛЕМЫ

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Аннотация. Трансформация современного села: образа жизни населения, его идентичности, повседневных практик, а также тенденция диверсификации сельской экономики требуют расширения сложившегося традиционного перечня профессионального выбора сельских школьников.

Анализ программ развития сельских школ показывает, что в большинстве случаев стратегические образовательные цели и задачи слабо увязываются с экономической и социокультурной спецификой территорий, на которых они расположены. Крайне редко встречается декомпозиция задач, коррелирующих с сельской / руральной идентичностью и локальным социокультурным кодом.

Рассмотрение стратегий профессионального самоопределения сельских школьников, в обобщённом виде направленных на сельскохозяйственный сектор, а также механизмы их реализации свидетельствует об их стереотипности и определённом формализме. Возможно, что именно поэтому потенциал сельской школы фактически не рассматривается управленцами как фактор и ресурс развития социально-экономического развития территории.

В связи с этим актуализируется вопрос целеполагания сельских школ относительно жизненного самоопределения обучающихся, релевантного сельской идентичности и специфике территорий присутствия. Именно в этом случае сельская школа может рассматриваться как ключевой элемент инфраструктуры, не просто транслирующий, но и укореняющий код сельскости / руральности в жизненных и профессиональных траекториях сельской молодёжи.

Цель исследования заключается в постановке исследовательской проблемы о необходимости современной концепции руральности (сельскости) в рамках педагогики сельской школы как самостоятельной отрасли педагогической науки. В научном поиске мы будем опираться на ранее сформированное нами понимание сельской школы как «сложноорганизованной образовательной системы, способной к самоорганизации и саморегуляции в условиях «гибридной» (реальной/виртуальной) онтологии… В качестве ее базовых характеристик

можно выделить: полифункциональность, открытость, преемственность и адаптивность к локальной культуре конкретного сельского социума, конвергентность».

Имеющиеся концепции руральности (сельскости), опираясь на социологический подход, имеют междисциплинарный характер. Идеи фундаментального уровня о сетевом обществе отразились на научных подходах, используемых для теоретической идентификации села и концептуализации руральности в условиях постиндустриальной эпохи. В качестве основных с нашей точки зрения, могут выступать социокультурный, пространственный и системный подходы.

Социокультурный подход позволяет расширить исследовательские границы, рассматривая сельскую школу в системе культурных координат (смыслов, ценностей, ценностных ориентаций, принципов), обеспечивающих социальные связи, в центре которых находится человек активный (homo activus) – многомерное био-социо-культурное существо. Пространственный и системный подходы необходимы в исследовании в качестве комплементарных. Пространственный подход направлен на экспликацию положения села в условиях глобализации и урбанизации современного мира, реализации российских государственных программ экономического развития территорий. В теоретическом аспекте можно опираться на понимание села как совокупности трансформирующихся пространств, как физических, так и социальных. Системный подход позволяет удерживать целостность и структурированность исследования.

Специфика новой сельскости, её характеристики могут быть учтены при проектировании рурально-ориентированных стратегий жизненного самоопределения обучающихся сельских школ. Образование, в котором проявляется социокультурный код, укореняя «сельскость», должно быть направлено на развитие креативности, критического мышления, коммуникативных навыков и способности к сотрудничеству. Это принципиально важно для будущих специалистов, способных преобразовывать сельскую экономику с учетом требований рынка.

***Ключевые слова**: концепция, рурально-ориентированные стратегии, жизненное самоопределение, обучающиеся, сельские школы*

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PSYCHOLOGICAL AND PEDAGOGICAL PERIODIZATION OF CHILDHOOD IN THE CONCEPTS OF THE RUSSIAN SCIENTIFIC SCHOOL OF THE XX–XXI CENTURIES

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Abstract. The relevance of studying the phenomenon of childhood, including its periodization, is shown. The study of this topic makes it possible to understand the hidden patterns of the relationship between the systems of "personality" and "society"; it is a contribution to the formation of the theoretical basis of Russian social policy, which includes demography, health care, education, culture, and science.

Historically established (generally accepted) and nominal periodizations of childhood are examined, and the most important criteria for the periodization of childhood are mentioned. The author's concept of periodization of childhood is presented, integrating postembryonic (juvenile) ontogenesis, mental development, social interaction, and the dynamics of the mother-child relationship. The author's periodization of childhood is systemic in nature, takes into account the biopsychosocial nature of a person, develops a systemic theory of personality (STP), and complements the epistemological models of the mother-child relationship.

The systematization of childhood periodization is considered. In order to uphold the prominence of Russian science, the concept developed by the classic Soviet psychologist L Vygotsky is emphasized. The author of this work illustrates the principle of systematizing childhood periodization formulated by L. Vygotsky.

The author's systematization of the nominal periodizations of childhood is presented and supplemented by graphic illustrations. Perspectives for further research are outlined.

Within the framework of the authors' professional interests, childhood and its periodization problem are considered an additional direction in systemic-personological research as a separate element of the structure of human reproductive function, an integral part of the mother-child relationship.

The material in this article complements the epistemological models used in pedagogy, psychology, and medicine and is intended for use in the educational process of higher education. The periodizations of childhood may be in demand in the study of academic disciplines such as pedagogy, age psychology, anthropology, human morphology, physical education, sport, history, and philosophy.

Keywords: *pedagogy, psychology, history, childhood, periodization of childhood, child, biopsychosocial development, ontogenesis, human being, process of growing up*

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Introduction

The relevance of the study arises from the influence of social factors (problems of globalization, modernization processes in the political, economic, social, and cultural spheres of society, the anthropic crisis, and the collapse of traditional education and upbringing systems), which forced researchers to rethink the phenomenon of childhood. It is necessary to propose modern approaches to its study to analyze the past, explain the present, and predict the future [1, 2].

Of particular importance is the author's periodization of childhood. There is an urgent need to create a new concept that is systemic in nature, takes into account the biopsychosocial nature of man, develops a systemic theory of personality (STP), complements epistemological models of mother-child relationships, and serves as a scientific and methodological basis for the creation of new psychological and pedagogical models of upbringing and education of the younger generation.

The study of the phenomenon of childhood and, in particular, various aspects of its periodization makes it possible to understand the hidden patterns of the relationship between the systems of personality and society; it is a contribution to the formation of the theoretical basis of Russian social policy, which includes the areas of demography, health care, education, culture and science [1].

Aim of the study: To determine whether the periodizations of childhood studied reflect mother-child relationships.

Research objectives:

1) To analyze the Russian scientific approaches to the psychological and pedagogical periodization of childhood in the 20th century;

2) To determine whether Russian scientific approaches to the psychological and pedagogical periodization of childhood in the 20th century take into account mother-child relationships;

3) Proposal of a periodization of childhood by the author that includes the mother-child relationship;

4) systematization of the existing periodizations of childhood, taking into account the work of Russian scholars in this direction.

Research hypothesis: All considered periodizations of childhood reflect the mother-child relationship.

Research methods and techniques: In accordance with the purpose and objectives of the study, a methodological apparatus was used, which includes general scientific research methods:

- scientific method;
- systems analysis;
- hermeneutic method;
- inductive method;
- deductive method;
- method of comparison and analogies;
- generalization method;

Auxiliary methods:

- method of graphical representation of data.

Basic Concepts of Childhood Periodization

If we look at the modern scientific periodizations of childhood (beginning of the 20th century – until today), we notice that they are becoming more complex with the accumulation of new knowledge and scientific and technological progress. Let us introduce the periodizations of childhood proposed by Russian scientists.

Periodization of childhood by L. Vygotsky. The concept of child development proposed by the well-known Soviet psychologist L. Vygotsky (1896–1934) [3-6] considers the transitions from one age stage to the next through a crisis:

- 0–2 months – neonatal crisis. Features: Change of habitat from liquid to air. Result: Development of a psychophysiological superstructure above the neurophysiological level.
- 2 months – 1 year – infancy. The social situation for development: direct, emotionally charged communication with the mother. Leading activity: social-cognitive. Central age-related new formation: Area of motivation and needs.

• Crisis 1 year. Characteristics: the emergence of independence. Consequences: upright posture, the psychological need of the child to communicate with adults, the emergence of autonomous speech, and protest reactions.

• 1–3 years – early childhood. The social situation for development: collapse of the relationship system with a significant adult, adaptation of socially accepted behavior to the subject. Leading activity: object-manipulative. Central age-related new formation: Thinking and associated language.

• Crisis 3 years. Characteristics: isolation of own 'I' from the surrounding world. Devaluation of adults. Result: Revision of the interaction between the following systems: personality development and society.

• 3–7 years – pre-school age. Social situation for development: socialization of the child, integration into the system of relationships with peers. Leading activity: social role play. Central age-related new formation: visual-figurative thinking, voluntary behavior regulation, memory development. · Crisis 7 years. Characteristics: Beginning of school years. The emergence of a new social role. Result: a re-evaluation of values, change in behavioral structure, and emergence of an inner mental life.

• 8–12 years – school age. The social situation for development: education. Leading activity: a learning experience. Central age-related new formation: a sphere of volition, formation of skills for action planning.

• Crisis 13 years. Characteristics: Puberty. Contrast with the adult world. Result: Feeling of already being an adult, occurrence of intrapersonal conflicts.

• 14–17 years – puberty. The social situation for development: communication with peers. Leading activities: communication, education, work. Central age-related new formation: personality development (value-needs sphere, I-concept, norms).

· Crisis 17 years. Characteristics: search for one's own place in society. Result: personal growth and acquisition of an adult identity. Growing up which leads to the emergence of new social roles. Responsibility. Professional self-determination.

• 17–20 – Youth. Social development situation: personal and professional self-determination, gaining independence. Leading

activities: education, work, sport, hobbies. Central age-related new formation: personality (world view, sense of citizenship, social maturity); knowledge, skills, abilities.

An essential feature of the periodization proposed by L. Vygotsky is the identified patterns of change from stable periods of development to unavoidable crises. In addition, the temporal boundaries that determine the beginning and end of a child's developmental crises are blurred, and the severity of persistent crises varies.

The periodization of childhood by D. Elkonin (1904–1984) [7, 8] further developed the concepts of L. Vygotsky within the activity theory framework widely used in Russian psychology. – The periodization of child development developed by him comprises a series of stages:

1) Early childhood is the stage of discovering one's own abilities.

• 0–1 year – infancy. Leading activity: communication with adults. Area of activity: getting to know oneself and the world around oneself, developing communication skills. Area of psyche development: personal.

• 1–3 years – early age. Leading activity: Making objects and tools. Activity area: actions with objects. Developmental area of the psyche: visual-active thinking.

2) Childhood is the phase of understanding one's own abilities.

• 3–7 years – pre-school age. Leading activity: role play. Area of activity: communicative, socially significant. Area of psyche development: personal.

• 7–11/12 years – primary school age. Leading activity: training. Direction of activity: acquiring knowledge about objects and phenomena of the surrounding world, improving social interaction skills. Area of development of the psyche: personal, cognitive.

3) Adolescence is the stage of realization of one's own abilities in activities that meet the needs of the 'I.'

• 11/12–15 years – adolescence. Leading activity: Communication with peers. Area of activity: development of self-esteem, critical thinking skills, independence, interaction with society. Area of psyche development: personal.

• From the age of 15 – early adolescence. Leading activities: Education, work. Direction of activity: formation of a worldview and value system, choice of profession. Area of development of the psyche: personal, cognitive.

The periodization proposed by D. Elkonin comprehensively reflects the development of the human psyche and the formation of new social roles. This periodization is a classic of Russian psychology; it is fundamental in nature and widely used in practice.

Presentation of the Most Important Results of the Study

A comparative analysis of the periodizations of childhood is considered in Table 1.

Table 1

Comparative analysis of the periodization of childhood

No	Investigated concept	Basic criteria for periodization	Reflected aspects (biological, psychological, social)	Consideration of the mother-child relationship	Criterion of universality*
1	Periodization of childhood by L. Vygotsky	Age crisis the social situation for development, leading activity, central age-related neoplasm	Biological, psychological, social	No	Yes
2	Periodization of childhood by D. Elkonina	Leading activity, direction of activity, area of development of the psyche	Psychological, social	No	No

Note: *The criterion of universality here refers to the consideration of all three aspects of the nature of Homo sapiens (biological, psychological, social) in the periodization.

The data given in the table 1 leads us to the following conclusions:

• the concepts of periodization of human ontogenesis are based on different criteria;

• the concepts of periodization of childhood proposed by domestic scientists (L. Vygotsky, D. Elkonin) are based on a number of criteria and are complex epistemological models;

• None of the concepts of periodization of childhood reflects the mother-child relationship.

It should be noted that the concept of periodization of childhood by D. Elkonin is generally accepted in Russia and serves as a tool for solving pressing problems in the natural sciences and humanities.

Thus, the aim of the study was achieved. The research hypothesis was refuted: Not all considered periodizations of childhood reflect mother-child relationships.

In accordance with the objectives of the study, I. Shelekhov's periodization of childhood was proposed, which considers mother-child relationships.

Childhood Periodization by I. Shelekhov. To facilitate the integration of natural-biological (medical) and psychological (humanistic) concepts about the nature of *Homo sapiens*, to study in more detail the processes underlying the formation of the human psyche, to carry out a systemic analysis of the patterns of biopsychosocial development, and to create a methodological basis for the study of motherhood and mother-child relationships, I. Shelekhov (b. 1971) proposed an original periodization of childhood [9, 10].

The theoretical basis for the periodization of childhood:

– General principles of systems theory;

– Systemic approach (B. Lomov);

– Systemic structural level concept of the psyche (M. Rogovin, G. Zalevsky);

– Provisions of the theory of relationship psychology (V. Myasishchev);

– Systemic model of the study of man (B. Ananyev);

– Systemic theory of personality (I. Shelekhov);

– Systemic theory of human reproductive function (I. Shelekhov);

– Gender schema theory and the concept of androgyny (S. Bem);

– Person-centered (client-centered) approach (C. Rogers);

– Transactional analysis (E. Berne);

– Humanistic psychology (A. Maslow, C. Rogers, G. Allport, R. May, V. Frankl).

Criteria for the periodization of childhood:

Formation and development of the structure of the psyche, which comprises four subsystems:

– Biological basis,

– Consciousness,

– Personality,

– Cognitive domain.

– Interaction between the systems "individual" and "society".

– Mother-child relationships.

The proposed periodization of biopsychosocial development (juvenile ontogenesis) identifies four different phases (Fig. 1).

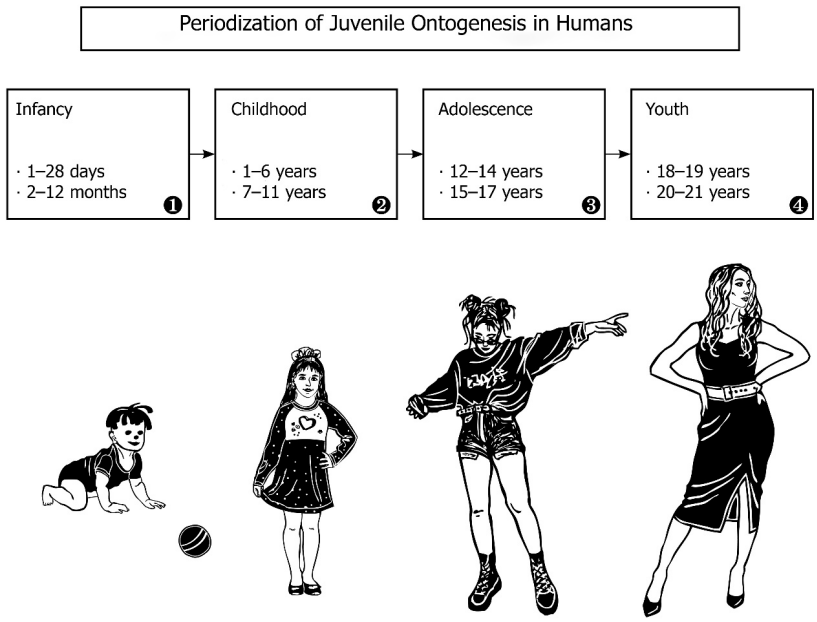

Fig. 1. Periodization of human biopsychosocial development (juvenile ontogenesis) (according to I. Shelekhov)

Let us consider the content of the stages of human maturation in more detail.

Stage 1. Infancy – the beginning of knowledge of the world around us. The dominance of physiological and mental adaptation processes to the surrounding world. The beginning of personality formation.

Stage 2. Childhood – continuation of knowledge of the world around us (knowledge about it corresponds to about 70.0% of an adult's knowledge). Biological, psychological, and social adaptation to the surrounding world.

Stage 3. Adolescence – the desire to gain individuality. Exacerbation of objectively existing biological and social contradictions, the emergence of intrapersonal conflicts. Dominance of individualization processes.

Stage 4. Youth – the beginning of an independent life. Dominance of integration processes into society. Completion of personality formation and the beginning of its development.

The author's epistemological model systematically characterizes the biopsychosocial development of a person, the formation of subsystems of his psyche (consciousness, personality, cognitive sphere), the interaction of the "personality" – "society" systems, and mother-child relationships [11] (Table 2).

Table 2

Periodization of human biopsychosocial development (juvenile ontogenesis) (according to I. Shelekhov)

No	Criteria		Processes
Stage 1. Infancy			
Period: 1–28 days – Neonatal Period			
1	Human Psyche	Biological Basis	Development of the biological basis of the psyche (nervous, endocrine, and sensory systems). Innate reflexes (about 75) play a significant role in the functioning of the psyche
		Consciousness	The emergence of the first elements of consciousness (wakefulness alternating with sleep)
		Personality	Presence of individuality as a prerequisite for the development of personality structure. Presence of seven basic emotions
		Cognitive Domain	Formation of sensation, perception, thinking, and attention
2	Interaction between Individual and Society Systems		The child primarily interacts with the mother
3	Mother-Child Relationships		Complete dependence on the mother, the need for breastfeeding, meticulous care, and medical attention.
Significant Events of the Period			Birth: physiological adaptation of the body to life in an air environment; initiation of breastfeeding (from the first hour of life)
Period: 2–12 months – Infancy			
1	Human Psyche	Biological Basis:	Intensive development of the biological basis of the psyche. High plasticity of the nervous system. Development of purposeful movements based on conditioned reflexes (4–11 months)
		Consciousness	Wakeful consciousness is manifested through reactions to the surrounding environment
		Personality	Further development of individuality. Predominance of lower (protopathic) emotions (cited by Astvatsaturov, M.I., 1923, 1939, 2017)
		Cognitive Domain	Development of cognitive processes (sensation, perception, thinking, memory, attention, imagination). Development of the first signaling system (pre-speech stage: crying, cooing, babbling, modulated babbling [1–12 months])
2	Interaction between Individual and Society Systems		The child interacts primarily with family members.
3	Mother-Child Relationships		The mother plays an exceptionally important role in ensuring the child's full biopsychosocial well-being and development
Significant Events of the Period			Introduction of complementary feeding (from 4–5 months); learning to walk upright (from 9 months)

Continuation of Table 6

No	Criteria		Processes
Stage 2. Childhood			
Period: 1–6 years – Pre-school Age			
1	Human Psyche	Biological Basis:	Maturation of cerebral cortex functions. Formation of conditioned reflexes. Active mental activity. Completion of brain development (by 6 years)
		Consciousness	Object-based consciousness manifests through complex reactions to the surrounding environment (1 to 3 years). Emergence of individual consciousness and self-awareness ('I') (from 3 years)
		Personality	Completion of the formation of basic character traits (by 5 years). Formation of the first (archaic) version of a life script (1–3 years). Complexification of the emotional sphere, emergence of feelings
		Cognitive Domain	Development of sensations (1–6 years). Formation of object-action thinking (1–2 years), visual-imaginary thinking (3–4 years), and verbal-logical thinking (5–6 years). Development of thinking and the second signaling system – spoken language (imitative words from 1.5 years, two-word phrases from 2 years, vocabulary reaching about 1,000 words by 3 years) and written language (writing skills for printed and cursive letters, numbers [from 4–5 years], and writing words [from 5–6 years])
2	Interaction between Individual and Society Systems		The child interacts with family members and peers in a pre-school environment. The primary activity is play
3	Mother-Child Relationships		Biological separation from the mother. Psychological readiness for brief separations (1–6 hours) from the mother
Significant Events of the Period			Mastery of upright walking (by 1.5 years); natural completion of breastfeeding (2–3 years); attendance of pre-school institutions (from 3 years); beginning of the loss of primary teeth (from 6 years)
Period: 7–11 years – Early School Age			
1	Human Psyche	Biological Basis:	Onset of puberty (from 8–9 years in girls, 10–11 years in boys). Changes in the endocrine system. Imbalance in the functioning of the central nervous system
		Consciousness	Formation of collective consciousness (from 9 years)
		Personality	Increasing complexity in self-concepts, development of the "self-concept." Initial reworking of the archaic life script (palimpsest) (3–11 years). Emergence of higher (epicritic) emotions (cited by M. Astvatsaturov, 1923, 1939, 2017)
		Cognitive Domain	Formation of conceptual (abstract-symbolic) thinking (7–9 years)

Continuation of Table 6

No	Criteria		Processes
2	Interaction between Individual and Society Systems		Attendance of primary school (grades 1–4). The child interacts extensively with family members, classmates, and teachers. The primary activity is academic work. Active acquisition of social experience (academic activities, friendships, romantic interests, interpersonal conflicts)
3	Mother-Child Relationships		The mother remains highly significant for the child's socialization
Significant Events of the Period			Start of formal schooling (at age 7)
Stage 3. Adolescence			
Period: 12–14 years – Early Adolescence			
1	Human Psyche	Biological Basis:	Imbalance in the functioning of the central nervous system
		Consciousness	Development of collective consciousness
		Personality	Secondary reworking of the life script (12–14 years). Development of independence. Emergence of egocentrism. Transition in self-concept from "I am a child" to "I am an adult." Instability in the emotional sphere
		Cognitive Domain	Development of critical thinking
2	Interaction between Individual and Society Systems		Education in middle school (grades 5–9). Priority is given to communication with peers. The main activities are academic and social. Development of skills and knowledge related to social interaction
3	Mother-Child Relationships		Functional separation from the mother – the ability to solve problems independently. Value separation from the mother – formation of independent opinions, views, and positions differing from those of the mother
Significant Events of the Period			Completion of the replacement of primary teeth (by age 12); emergence of secondary sexual characteristics; issuance of a passport in the Russian Federation (at age 14)
Period: 15–17 years – Late Adolescence			
1	Human Psyche	Biological Basis:	Completion of puberty (by age 17 in girls). Changes in the endocrine system
		Consciousness	Formation of reflective and social consciousness (from age 16)
		Personality	Formation of a value system. Continued instability in the emotional sphere
		Cognitive Domain	Development of cognitive flexibility, ability to operate with numerous variables, hypothesize, and predict outcomes. Emergence of self-analysis capabilities
2	Interaction between Individual and Society Systems		Education in high school (grades 10–11). Increased interaction with peers and contrast with the adult world. Preference for collective forms of communication. The primary activities are academic and social

Continuation of Table 6

No	Criteria		Processes
3	Mother-Child Relationships		Conflictual separation from the mother – devaluation of the mother, with the ability to constructively resolve conflicts without experiencing anxiety, shame, or guilt
Significant Events of the Period			Reaching the age of sexual consent (16 years); attainment of fertility (on average, by 16–17 years)
Stage 4. Youth – The Beginning of Independent Life			
Period: 18–19 years – Early Youth			
1	Human Psyche	Biological Basis:	Completion of puberty (by age 19 in males). The organization of the cerebral cortex reaches adult levels. Completion of the biological foundation of the psyche
		Consciousness	Development of reflective and social consciousness
		Personality	Emergence of new social roles. Formation of worldview and civic stance. Finalization of the life script. Completion of the development of higher (epicritic, abstract) emotions (cited by M. Astvatsaturov, 1923, 1939, 2017). Development of voluntary control over the emotional sphere
		Cognitive Domain	Formation of social thinking
2	Significant Events of the Period		Achievement of relative independence in everyday life, material needs, and psychological well-being from the parental family. Reduced significance of collective forms of communication, coupled with an increased emphasis on individual contacts. Expansion of the social and age-related characteristics of the social circle – interactions with family, friends, and academic/professional groups. The primary activity is academic and professional
3	Mother-Child Relationships		Normalization of relationships with the mother, acceptance of her individual and personal characteristics.
Significant Events of the Period			Completion of secondary education; attainment of legal adulthood and full civil rights (at age 18); entry into the workforce; military conscription service (ages 18–19)
Period: 20–21 years – Late Youth			
1	Human Psyche	Biological Basis:	Achievement of biological and structural maturity of the skeleton and maximum brain weight (by age 20). State of physical (somatic) and psychological maturity
		Consciousness	Development of advanced social consciousness and self-awareness
		Personality	Active implementation of the life script. Professional self-determination. Completion of emotional sphere development. Social maturity. Finalization of personality structure and the beginning of its expansion
		Cognitive Domain	Achievement of cognitive maturity – cognitive abilities for understanding the world reach their peak

End of Table 6

No	Criteria	Processes
2	Interaction between Individual and Society Systems	Engagement with society typical of an adult. Achievement of independence in everyday life, finances, and psychological matters. The primary activity is professional work
3	Mother-Child Relationships	Psychological and social separation from the mother.
Significant Events of the Period		Departure from the parental home and living independently, engaging in professional work, and forming one's own family

The author's periodization of childhood outlined in the table enables us to examine in detail the processes of ontogenesis of the juvenile human being.

The author's analysis of the periodization of childhood is shown in Table 3.

Table 3

Analysis of the author's periodization of childhood

No	Concept Researched	Basic criteria for periodization	Reflected aspects	Consideration of the mother-child relationship	Universality criterion*
1	Periodization of childhood by I. Shelekhov	Development of the Human Psyche, Interaction of "Individual" and "Society" Systems, Mother-Child Relationships, Significant Events of the Period	Biological, psychological, social	Yes	Yes

Note: *The criterion of universality here refers to the consideration of all three aspects of the nature of Homo sapiens sapiens (biological, psychological, social) in the periodization.

The data presented in Table 3 allow us to come to the following conclusions:

• the concept of periodization of childhood proposed by I. Shelekhov is based on a number of criteria and is a complex epistemological model;

• the author's periodization of childhood is systemic in nature and takes into account the biopsychosocial nature of man,

• It also takes into account the patterns of mother-child relationships.

The periodization of the author's childhood is of practical importance because, on its basis, it is possible to build modern psychological and pedagogical models of upbringing and education for the younger generation.

Since there are many periodizations of childhood, the question of their classification arises. Let us consider approaches to solving this scientific problem.

Systematization of the periodization of childhood

At a certain point in the development of science, it was necessary to systematize the existing approaches to the periodization of childhood. One type of systematization is the classification of concepts according to certain criteria. L. Vygotsky dealt with the problem of creating such a hierarchical unit.

Systematization of L. Vygotsky's periodizations of childhood. In his works, the classic of Russian psychology, L. Vygotsky (1896–1934) identified three groups of periodizations that differ in the type and number of significant criteria of child development:

- according to an internal criterion;
- according to an external criterion;
- according to a series of criteria.

The authors have put together an original graphic representation that reflects the principle of systematization of the existing periodizations of childhood proposed by the Soviet psychologist L. Vygotsky (Fig. 2).

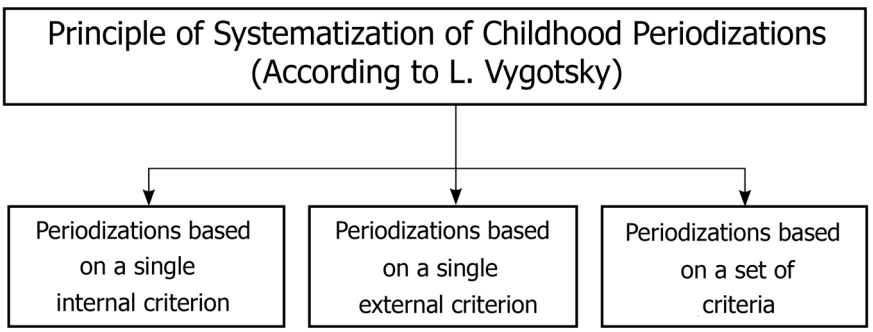

Fig. 2. The principle of systematization of childhood periodizations proposed by L. Vygotsky

Alternative systematizations can be developed by altering the criteria and principles of the organization. The author's systematization of childhood periodizations involved various scientific research methods, including analysis, synthesis, generalization, and comparison. Let us now examine the author's systematization of childhood periodizations.

Systematization of Periodizations of Childhood by I. Shelekhov

The principle of systematization of periodizations of childhood proposed by L. Vygotsky considers the criterion's endo- or exogenous nature. In our opinion, the qualitative characteristics of the criterion are not important. Therefore, the systematization of periodizations of childhood by I. Shelekhov is based on the principle of mono- or poly-criteria (Fig. 3).

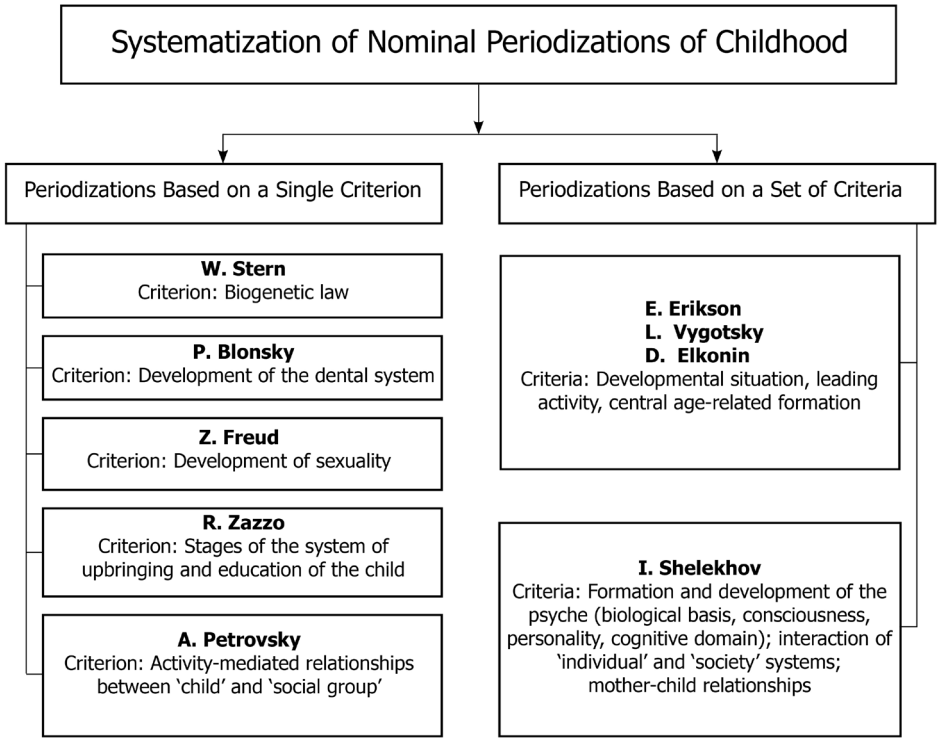

Fig. 3. Systematization of the nominal periodizations of childhood (after I. Shelekhov)

To complement the existing epistemological models, the authors (I. Shelekhov, G Belozerova) have integrated their own periodization of human biopsychosocial development (juvenile ontogenesis) into the author's systematization of periodizations of childhood.

Conclusions. The psychology of childhood is a current and promising topic of scientific research.

A classic of Russian psychology is the periodization of childhood proposed by D. Elkonin. It is of fundamental importance, comprehensively reflects the development of the human psyche and the development of new social roles, and is widely used in practice.

The author's (I. Shelekhov) periodization of childhood is systemic in nature, takes into account the biopsychosocial nature of a person,

develops a systemic theory of personality (STP), and complements the epistemological models of mother-child relationships.

There is a tendency to complicate the problem of the periodization of childhood due to the development of science as a social institution and the introduction of innovative technologies into practice.

The existing periodizations of childhood are a toolbox for solving various scientific and applied problems.

From a scientific point of view, the considered periodizations of childhood are equivalent subsets of criteria. On this basis, a discussion of the advantages and disadvantages of one periodization over another appears to be unpromising. Each of the available periodizations of childhood can be regarded as optimal for the description of ontogenetic processes of a biological, psychological, and social nature.

Prospects for further research. The periodization of childhood is a current topic of scientific research. The promising areas of work in this field of knowledge are arranged in order from general to specific questions: 1. Concepts of domestic and foreign scholars supplement the systematization of nominal periodizations of childhood by the author. 2. Analysis of the works of scientists (biologists, physiologists, physicians, anthropologists, psychologists, pedagogues, sociologists, cultural experts, philosophers) engaged in the study of the biopsychosocial nature of man and his development. 3. The author complements the periodization of human biopsychosocial development (juvenile ontogenesis) with the subsequent stages (maturity, (reproductive and post-reproductive periods), old age, senility, and longevity). 4. Creation of models for the provision of individual psychological help, taking into account age periodization. 5. Development of recommendations for maintaining human biopsychosocial health for each phase of ontogenesis.

Scientific research in the above directions will allow us to gain new knowledge about education and human development [12-14].

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ПСИХОЛОГИЯ

ПСИХОЛОГО-ПЕДАГОГИЧЕСКАЯ ПЕРИОДИЗАЦИЯ ДЕТСТВА В КОНЦЕПЦИЯХ РОССИЙСКОЙ НАУЧНОЙ ШКОЛЫ XX–XXI ВЕКОВ

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Аннотация. Обозначена актуальность исследования феномена детства, в том числе – его периодизации. Исследование в данной тематике дает понимание скрытых закономерностей взаимоотношения систем «личность» – «социум»; является вкладом в формирование теоретического базиса социальной политики государства, охватывающей области демографии, здравоохранения, образования, культуры, науки.

Освещены исторически сложившиеся (общепринятые) и именные периодизации детства. Даны основные критерии периодизации детства. Представлена авторская концепция периодизации детства, интегрировавшая постэмбриональный (ювенильный) онтогенез, психическое развитие, социальное взаимодействие, динамику материнско-детских взаимоотношений. Авторская периодизация детства носит системный характер, учитывает биопсихосоциальную природу человека, развивает системную теорию личности (СТЛ), дополняет гносеологические модели материнско-детских взаимоотношений.

Рассмотрены систематизации периодизаций детства. С целью поддержания приоритета российской науки сделан акцент на концепции классика советской психологии Л. С. Выготского. Принцип систематизации периодизаций детства, разработанный Л. С. Выготским, проиллюстрирован авторским рисунком.

Представлена и дополнена графическим изображением авторская систематизация именных периодизаций детства. Обозначены перспективы дальнейших исследований.

В рамках профессиональных интересов авторов детство и проблема его периодизации рассматривается как дополнительное направление в системных персонологических исследованиях, отдельный элемент структуры репродуктивной функции человека, составная часть материнско-детских взаимоотношений.

Материал статьи дополняет гносеологические модели, используемые в педагогике, психологии, медицине, и рассчитан на применение в образовательном процессе высшей школы. Рассматриваемые периодизации детства могут быть востребованы в изучении таких учебных дисциплин, как

«Педагогика», «Возрастная психология», «Антропология», «Морфология человека», «Физическая культура и спорт», «История», «Философия».

Ключевые слова: *педагогика; психология; история; детство; периодизация детства; ребенок; биопсихосоциальное развитие; онтогенез, человек, взросление*

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The journal is included in the following databases: ULRICHSWEB, Google Scholar, WorldCat, EBSCO, ERIH PLUS, DOAJ, and Russian Science Citation Index (RSCI).

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Tomsk Journal of Linguistics and Anthropology – a peer-reviewed scientific journal founded in 2013 and published four times a year. It is among the leading peer-reviewed scientific journals and publishes the main scientific results of dissertations from Candidates of Sciences and Doctors of Sciences, which have passed the Higher Attestation Commission of the Ministry of Education and Science of the Russian Federation. The top priority for the journal is to organize productive academic exchanges between experienced and young researchers in a wide range of topics in linguistics and anthropology, linked primarily by a common geographical area – Siberia, including genetically related and unrelated cultures of the past and present. In addition, the journal is naturally interested in theoretical, methodological, and technological aspects of linguistic and anthropological research.

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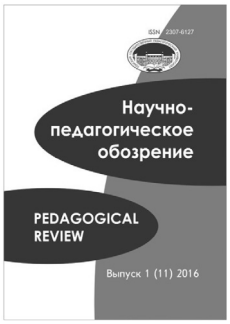

Pedagogical Review – a peer-reviewed scientific journal founded in 2013 and published six times a year. It is included in the list of leading peer-reviewed scientific journals and publishes the main scientific results of dissertations of candidates of sciences and doctors of sciences who have passed the Higher Attestation Commission of the Ministry of Education and Science of the Russian Federation. The aim is to acquaint the general scientific and educational community with current research in pedagogy, psychology, and learning and teaching methods.

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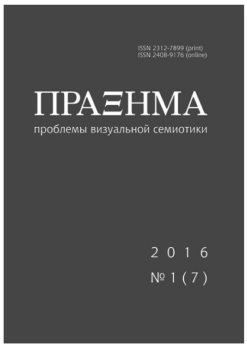

The journal "ΠΡΑΞΗΜΑ. Journal of Visual Semiotics" ("PRAXEMA") is a periodical issue intended for the discussion of theoretical problems of modern visual semiotics, dealing with the study of visual aspects of the organization and functioning of culture as a communicative environment. It was founded in 2014 and is published four times a year. The journal is part of the ULRICHSWEB, SJR databases, the Russian Science Citation Index (RSCI) and is included in Scopus.

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