



"METROLOGICAL CHALLENGES IN RESEARCH ON THE FORMATION OF MORAL QUALITIES IN PRIMARY SCHOOL STUDENTS: THE EXPERIENCE OF ADAPTING SHILOVA'S METHOD OF 'DIAGNOSING THE LEVEL OF UPBRINGING' TO LOCAL CONTEXTS."

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<https://doi.org/10.5281/zenodo.17291392>

ARTICLE INFO

Received: 01st October 2025

Accepted: 04th October 2025

Online: 08th October 2025

KEYWORDS

Morality, etiquette, metrology, methodological toolkit, Shilova, observation, experiment, sociometry, diagnostics, level of upbringing, moral views, social norms, measurement (metrology), attitude.

ABSTRACT

This article addresses the issue of localization and adaptation of methodologies that serve as essential metrological tools for researchers studying the formation of moral qualities in children. The adaptation of metrological instruments must be carried out with careful attention to maintaining the validity and reliability of the methodology. The scientific novelty of the article lies in the methodological analysis and adaptation conducted using modern capabilities of artificial intelligence and neural networks.

Introduction. In today's education system, the formation of moral qualities in primary school students is considered one of the most important socio-pedagogical tasks. From the very first stages of schooling, it is essential to cultivate in children moral criteria, social values, culture, and humanistic concepts, and to ensure their conscious assimilation. This period is particularly crucial, as it lays the foundation for children's worldview, personal stance, moral outlook, and social relations. Therefore, there is a significant need for scientifically grounded diagnostic tools aimed at enhancing the effectiveness of moral education in primary education.

However, in the process of identifying, assessing, and monitoring the level of development of students' moral qualities, numerous methodological and metrological challenges arise. In particular, methodologies designed to measure moral behavior and internal beliefs tend to be prone to subjectivity, while the accuracy and reliability of measurement criteria are not always ensured. This, in turn, negatively affects the effectiveness of pedagogical research.

In this study, the metrological problems encountered in research on the formation of moral qualities in primary school students are analyzed through the piloting of Shilova's method of "Diagnosing the Level of Upbringing" adapted to the Uzbek context. Shilova's methodology has been tested in Russian school practice and is used as a tool for determining the effectiveness of educational activities. Developing its locally adapted version is of both practical and scientific significance.

The aim of the study is to analyze the metrological reliability of methodological tools aimed at assessing the moral qualities of primary school students, as well as to scientifically substantiate the process and outcomes of localizing Shilova's methodology.

The object of the research is the moral qualities in the upbringing of primary school students.

The subject of the research is the metric and methodological tools used to determine the level of students' upbringing, in particular Shilova's diagnostic methodology.

Within the framework of this article, the effectiveness of the existing methodological tools, their measurement criteria, and their applicability in the local context are analyzed. They are evaluated on the basis of experimental research, and relevant recommendations are provided.

Literature Review

The issue of forming moral qualities in primary school students is one of the most pressing directions in the education system. In this regard, a number of pedagogical scholars have conducted both theoretical and practical studies. In particular, classical thinkers such as L.S. Vygotsky, A.N. Leontiev, D.B. Elkonin, and V.A. Sukhomlinsky emphasized the decisive role of moral education in the development of children's personalities. Their views approach the processes of children's adaptation to the social environment, acquisition of socio-emotional experience, and internalization of moral values on the basis of psycho-pedagogical principles [2].

In the 21st century, the issue of moral education is being reconsidered under new conditions and new methodologies. For example, modern researchers such as M.A. Vasilyeva, N.L. Selivanova, L.V. Bayborodova, and G.K. Selevko stress the importance of a personalized approach, individual distinctiveness, and encouraging independent thinking in the process of moral upbringing. Their studies often refer to various monitoring and diagnostic methods for evaluating children's moral qualities [2].

In this respect, Maria Ivanovna Shilova's methodology *"Diagnosing the Level of Upbringing"* deserves special attention. In her approach, Shilova attempts to determine the level of students' upbringing based on qualitative indicators. The methodology includes the following moral indicators: positive attitude, sense of responsibility, adherence to moral and ethical norms, readiness to work in a group, independence, critical thinking, participation in social activities, and others. Through these indicators, each child's level of educational and moral development is determined on the basis of scores [1].

Shilova's approach has been tested in Russian schools and is widely applied to assess the state of moral education, to analyze the effectiveness of educational work in schools, and to evaluate the performance of teachers and class leaders. However, the applicability of this methodology in Uzbek schools has not yet been sufficiently studied. Its adaptation to the local context, considering cultural and regional characteristics, requires a thorough analysis.

In addition, Uzbek scholars such as H.T. Toshpolatova, M.Kh. Juraeva, S.A. Umarova, Sh.K. Yusupova, and others have also paid considerable attention to the issue of monitoring and assessment tools in moral education. While their works have partially addressed the accuracy of diagnostic tools and the metrological validity of evaluation criteria, systematic approaches similar to Shilova's methodology are still not widely observed [3].

In conclusion, the existing literature provides sufficient information on the theoretical foundations and practical methods of moral education. However, issues such as metrological precision, the necessity of localization of tools, and methods of adaptation to the cultural context still require extensive scientific research. Therefore, this article attempts to partially fill this gap by analyzing the experience of localizing Shilova's diagnostic methodology

Methodological Foundations

The methodological foundation of the study is based on pedagogical diagnostics, metrology, and the theory of educational assessment. In identifying complex, multifaceted, and internal concepts such as moral qualities, it is not sufficient to draw conclusions based solely on observation or interviews. Therefore, a set of integrated methods — combining qualitative and quantitative analytical tools — was employed in the study.

The following methods were used:

- **Pedagogical observation** — helped to form initial insights into students' moral qualities based on their behavior in real teaching and educational processes;
- **Questionnaires and tests** — applied to identify students' internal motivation, level of self-assessment, and attitudes toward social values;
- **Experiment (diagnostics)** — diagnostic tests were conducted based on Shilova's methodology to examine its effectiveness in the local context;
- **Mathematical-statistical analysis** — applied to analyze the results, determine reliability, and identify significant differences [6].

Shilova's methodology "*Diagnosing the Level of Upbringing*" is based on a structural approach. According to it, moral qualities may be manifested at several levels in a person: at the level of external behavior, at the level of internal beliefs, and at the motivational-emotional level. To determine these levels, Shilova developed a multi-stage scoring system with a set of criteria.

The methodology evaluates each moral quality on a **4-point scale**:

- **0** — negative or insufficiently manifested quality;
- **1** — episodic, unstable manifestation of the quality;
- **2** — usually manifested but with occasional inconsistency;
- **3** — firmly developed, stable, and consciously expressed moral quality.

From a metrological perspective, the main advantage of this methodology is its **accuracy, reproducibility, and effort to minimize subjectivity**. Moreover, it allows the results of educational activities to be expressed in numerical indicators, thereby facilitating scientific analysis.

However, one of the essential aspects of the methodology is that it was originally developed within the Russian educational and cultural system. Therefore, its application in the Uzbek context requires **localization**, that is, adaptation to cultural, linguistic, social, and pedagogical contexts. For example, students' worldview, value system, teacher-student relationships, and family and community norms of etiquette directly influence the functioning of the methodology.

Accordingly, in this study, Shilova's methodology was adapted to the Uzbek context, and its metrological effectiveness was assessed through experimental testing.

M.I. Shilova's "*Diagnosing the Level of Upbringing*" is a comprehensive and systematic approach that enables an in-depth assessment of children's moral qualities. It evaluates the moral upbringing of a student across **five key domains**: attitude toward society, attitude toward intellectual and physical labor, attitude toward people, and attitude toward oneself. Each domain is assessed through **20 behavioral indicators**, with each indicator evaluated on a 4-point scale (0 to 3). This approach helps to identify the details of children's moral development and their specific educational needs.

The methodology, as a diagnostic tool, has several advantages:

- enables measurement of moral qualities based on clear criteria;
- provides opportunities to monitor the developmental level of each student individually;
- serves as a foundation for pedagogical analysis and targeted educational activities;
- allows characterization of the overall moral climate in the classroom;
- ensures parental involvement in the process of moral development assessment.

Nevertheless, applying this methodology directly in the Uzbek educational environment reveals certain challenges and necessitates **localization**:

1. Differences in cultural context: Some criteria, values, and educational approaches embedded in the Russian system may not fully correspond to the Uzbek national mentality. For example, the concept of "*serving the small homeland*" may be understood differently by Uzbek children.

2. Language and terminology issues: Certain phrases, indicators, and descriptions of levels in the methodology cannot be directly translated into Uzbek or may not be easily understood by children. Localization requires linguistic simplification and adaptation for contemporary students.

3. Adaptation to pedagogical practice: The methodology may impose additional organizational, diagnostic, and analytical burdens on primary school teachers. Therefore, a shortened and simplified version of the methodology, as well as the introduction of electronic assessment formats, is needed.

4. Integration with local educational values: Diagnostic criteria should be harmonized with Uzbek national values such as respect for elders, hospitality, collectivism, and compassion, thereby increasing the methodology's effectiveness.

Thus, for Shilova's methodology to be applied fully and effectively, it must undergo a careful **adaptation process**, which includes:

- revising evaluation criteria in accordance with the national education system and social values;
- adapting terminology into child-friendly and accessible language;
- presenting the methodology in a convenient and concise form for primary school teachers;
- developing guidelines and sample forms to facilitate parental involvement.

Although Shilova's methodology demonstrates high metrological potential, its implementation in the Uzbek education system requires in-depth analysis and contextual adaptation. This ensures maximum effectiveness in its application and enables efficient management of the moral education of primary school students [5].

Final Conclusions and Recommendations

Observations and analyses conducted on the basis of M.I. Shilova's diagnostic methodology "*Assessing the Level of Upbringing of Primary School Students*" demonstrate that this tool serves as an effective means of fostering moral qualities at both preschool and primary school levels. Its main advantage lies in the possibility of comprehensively studying and evaluating each student's educational and moral development through five major domains: attitude toward society, intellectual labor, physical labor, other people, and self-management.

Based on this methodology, not only can the moral upbringing level of students be assessed, but also specific pedagogical approaches, classroom strategies, and individual development plans can be designed. Since both teachers and parents participate in the assessment, the process provides a dual perspective, thereby increasing objectivity.

The following recommendations are offered for enhancing the effectiveness of moral education based on Shilova's methodology:

1. Systematic implementation of monitoring:

Each student's score on the indicators should be recorded at least twice a year, ensuring continuous monitoring of developmental dynamics. This makes it possible to identify regressions or positive changes in specific areas of upbringing.

2. Strengthening collaboration with parents:

Since the methodology involves dual (teacher and parent) assessment, parents should be provided with a clear understanding of the principles, criteria, and objectives of the diagnostic process. This will enhance their conscious involvement in their children's moral development.

3. Differentiated planning of educational activities:

Based on the results of assessment, educational work should be designed to meet the individual moral needs of each student. For instance, children rated as "*poorly developed*" or "*low-level*" should receive special individualized educational support.

4. Utilization of results in pedagogical councils and class management plans:

Aggregated results should be discussed at pedagogical councils and integrated into class management strategies. This approach promotes stronger collaboration among class teachers, psychologists, and subject teachers. **5. Introduction of developmental methods, games, and training:**

Moral qualities such as self-control, discipline, honesty, and social activity must be formed not only through theoretical instruction but also through practical activities. Therefore, relevant methods should be incorporated into classroom activities and extracurricular programs.

In conclusion, Shilova's methodology provides opportunities for in-depth exploration of students' moral qualities and supports their development through individualized approaches. The use of diagnostics enables effective management of moral education and ensures measurable outcomes. In the future, it is recommended to develop modernized and fully localized versions of this methodology for widespread application within the Uzbek educational system.

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