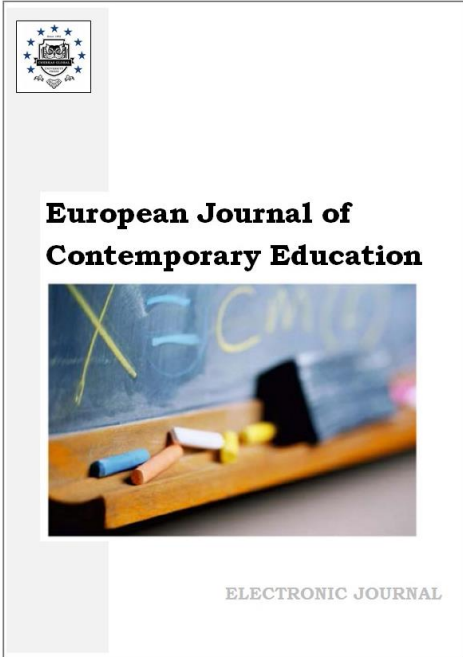




Copyright © 2022 by Cherkas Global University  
All rights reserved.  
Published in the USA

European Journal of Contemporary Education  
E-ISSN 2305-6746  
2022. 11(1): 161-170  
DOI: 10.13187/ejced.2022.1.161  
<https://ejce.cherkasgu.press>

**IMPORTANT NOTICE!** Any copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of this work in violation of the author(s) rights will be prosecuted in accordance with international law. The use of hyperlinks to the work will not be considered copyright infringement.



## Scientific Basis of Improving the Quality of Secondary Education: on the Example of Kazakhstan

Marzhan N. Atem <sup>a</sup>, Askarbek K. Kussainov <sup>a</sup>, Fauziya T. Sametova <sup>a,\*</sup>, Nursulu S. Algozhaeva <sup>b</sup>

<sup>a</sup> Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan

<sup>b</sup> Kainar Academy, Almaty, Republic of Kazakhstan

### Abstract

This article discusses the issue of improving the quality of secondary education on a scientific basis. Improving the quality of secondary education is an urgent problem. In this regard, the unsatisfactory results of international studies, such as PISA, PIRLS, which determine the quality of secondary education, have led to the need for research on this problem. Before the study, the quality of education in developed countries was analyzed and the scientific literature was studied. A concept and formula for improving the quality of secondary education on a scientific basis was developed, and a study was organized according to this formula.

The experiment was carried out on the basis of a four-sided memorandum signed by the Academy of Pedagogical Sciences, the Turkestan Regional Department of Education, the Nazarbayev Intellectual School and the South Kazakhstan State University named after M. Auezov.

In the 2019–2020 academic year 39 schools, 2733 students and 353 teachers from Ordabasy, Tolebi and Otyrar districts of Turkestan region took part in the experiment.

The article provides information on the course and results of the experiment. In the course of the experiment, a comparative analysis of quarterly grades was carried out to determine the quality of students' knowledge after work on improving the quality of secondary education.

**Keywords:** pedagogy, education, the quality of education, quality of secondary education, study, scientific base, concept.

### 1. Introduction

The education system is a complex system. This process which goes hand in hand with the development of society is constantly undergoing changes and transformations. The development of

---

\* Corresponding author

E-mail addresses: [rusbek\\_1492@mail.ru](mailto:rusbek_1492@mail.ru) (F.T. Sametova), [atem.marzhan@mail.ru](mailto:atem.marzhan@mail.ru) (M.N. Atem)

innovative technologies and growing number of information technologies. In turn, it has affected the attitude and worldwide view of man. The formation of a person's personality is necessarily the main subject of the process of education and upbringing. The education system which promotes the role of the pupils, students and the applicants is now associated with the paradigm of continuing education.

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts (propositional knowledge), skills (procedural knowledge), or objects (acquaintance knowledge). By all accounts, knowledge can be acquired in many different ways and from many sources, but not limited to perception, reason, memory, testimony, scientific inquiry, education, and practice. The philosophical study of knowledge is called epistemology.

The term "knowledge" can refer to a theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject); formal or informal; systematic or particular (Sametova, 2011). The philosopher Plato famously pointed out the need for a distinction between knowledge and true belief in the Theaetetus, leading many to attribute to him a definition of knowledge as "justified true belief". The difficulties with this definition raised by the Gettier problem have been the subject of extensive debate in epistemology for more than half a century (The Analysis of Knowledge, 2001).

The fourth meeting of the National Public Trust Council was held on 22th October 2020. In this meeting President Kassym-Zhomart Tokayev paid special attention to the content of school education. The results of a reputable international study show that the skills of our students in reading literacy are not sufficiently developed. Therefore, the introduction of culture of reading, the development of reading literacy should become a priority in secondary education in the country. The child's interest in learning, knowledge of the environment through books should be formed within the school, – said the President (Tokaev, 2020).

Issues related to the education system in the country are considered on the basis of the Law on Education.

All countries concerns about the quality of secondary education. For example, America's 13-year-olds continue to languish in the middle of the pack internationally in math and science achievement. This question is always relevant in many articles by American scientists (Barshay, 2018).

Scientific systematization of the quality of secondary education, which is the basis of the scientific article, is a modern requirement. Kazakhstani schoolchildren participate in international projects aimed at comparative study of student achievement, such as TIMSS, PISA. The results of this study are unsatisfactory. In this case, our country's secondary education system still needs additions and scientific justification.

It is obvious that the education system consists of several stages: pre-school education, secondary education, higher education, postgraduate education. In particular, if the foundation of the secondary education system is not reliable, it will undoubtedly have a significant impact on the quality of subsequent ones because it all starts from the foundation. Covering each stages, differs in content, quality and it consists of several system components. There are 8 components of the secondary education system.

In order to scientifically substantiate the secondary education system, the following formula was developed. This formula is used as the formula of academician A.Kusainov:

$$Q_{\text{edu}} = Q_{\text{std}} + Q_{\text{lit}} + Q_{\text{pqt}} + Q_{\text{mon}} + Q_{\text{upb}} + Q_{\text{rw}} + Q_{\text{ms}} + Q_{\text{mtb}}$$

$Q_{\text{edu}}$  – quality of education;

$Q_{\text{std}}$  – quality of educational standards and curricula;

$Q_{\text{lit}}$  – quality of educational literature;

$Q_{\text{pqt}}$  – quality professional qualification of teachers;

$Q_{\text{mon}}$  – quality monitoring of education;

$Q_{\text{upb}}$  – the quality of spiritual, moral and patriotic upbringing;

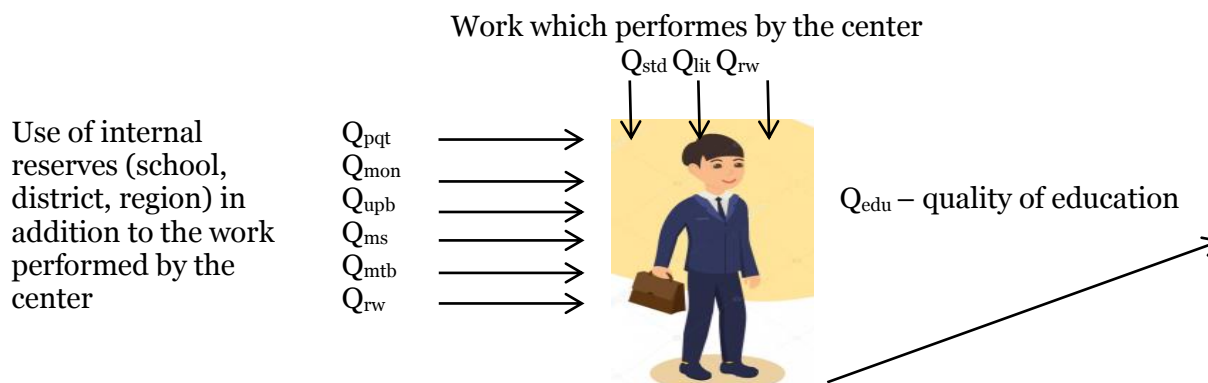
$Q_{\text{rw}}$  – the quality of research work;

$Q_{\text{ms}}$  – quality of management system;

$Q_{\text{mtb}}$  – quality of material and technical base.

It is known that the education system is a complex system. The novelty of this study is the mobilization of internal reserves on a scientific basis, formulating the system components of the secondary education system. In order to improve the quality of education, it is necessary to improve the quality of these components on a scientific basis, on a regular basis for each child, each class.

The [Figure 1](#) below shows the idea of improving the quality of student knowledge in accordance with the formula.



**Fig. 1.** The idea of improving the quality of student knowledge in accordance with the formula

Improving the quality of  $Q_{std}$ ,  $Q_{lit}$ ,  $Q_{rw}$  is carried out in a centralized manner and the improvement of  $Q_{pqt}$ ,  $Q_{mon}$ ,  $Q_{upb}$ ,  $Q_{ms}$ ,  $Q_{mtb}$  and  $Q_{rw}$  (in relation to the experiment) provides for the widespread use of additional internal reserves in addition to the centralized work.

The Minister of Education and Science A. Aimagambetov on behalf of the President developed a new state program for the development of education and science in 2020–2025, based on a number of strategic and program documents on 19<sup>th</sup> December, 2019. The program raises the issue of improving the quality of secondary education in rural areas, and one of the most important tasks is to reduce the gap in the quality of education between urban and rural schools. To this end, it is planned to provide small schools with qualified teaching staffs, change the system of remuneration, provide rural schools with teaching materials, computer equipment and digital devices ([The state program..., 2019](#)).

In order to improve the quality of secondary education on a scientific basis, the experiment was conducted in the districts of Turkestan region.

**The purpose of the experiment:** to improve the quality of secondary education on a scientific basis.

**Research hypothesis:** if the work on improving the quality of education components is carried out systematically, with the extensive use of internal reserves, aimed at improving the quality of education of one child, one class, then the quality of education of students in that class will increase.

To organize this experiment, the concept of improving the quality of secondary education was developed on a scientific basis. The purpose of the concept is to improve the quality of education of pupils in the experimental schools of Turkestan region.

**Tasks of the concept:**

- professional development of school teachers;
- improving the quality of educational assessment;
- improving the quality of spiritual, moral and patriotic upbringing of the individual;
- conducting research related to the experiment;
- improving the quality of the management system;
- improving the material and technical base of schools, experimental classes.

**Expected results of the research work:** theoretically: the development of a methodological framework for improving the quality of secondary education, the achievement of accurate predictions. From a practical point of view: improving the quality of secondary education on a scientific basis. Introduction of the conception in scientific circulation.

**Literature review**

The experimental method is an empirical scientific method. The series of activities proposed during the experiment is based on a number of scientific papers, the experience of countries with

developed education systems. Before the experiment, a comparative analysis of a number of works on this topic was made.

Modern pedagogical science has a well-known fund of humanities education for the analysis and solution of problems of improving the quality of school education. E.B. Sorokina's "Pedagogical conditions for improving the quality of teaching students in new types of schools" (Sorokina, 2007); M.A. Nikiforova's "Improving the quality of learning outcomes of primary school students in rural areas through pedagogical diagnostics" (Nikiforova, 2011); V.F. Pokasov's research "Concepts of quality of education" (Pokasov, 2012) covers certain parts of the quality of school education. There are also a number of studies by other authors on this issue. Among them are A.G. Sergeeva (Sergeeva, 2009), N.V. Shekhireva (Yagubova, 2017), M.A. Kanabekova (Kanabekova, 2011), S.S. Andreeva (Andreev, 2002), G. Becker (Becker, 1997), A.M. Zharkenova (Zharkenova, 2020), N.V. Timofeeva (Timofeeva et al., 2010) and others.

In Kazakhstan, there are departmental organizations that study local issues of the education system. National reports on the education system of the Republic of Kazakhstan are published annually, in which the facts are presented without a comprehensive analysis with subsequent recommendations.

We can highlight the works of AK Kusainov in domestic pedagogy. "Quality of education in the world and in Kazakhstan" (Kusainov, 2013), "Crisis in secondary education: ways out" (Kusainov, 2016) and others were the basis for the development and implementation of this idea.

One of the most important components of the quality of secondary education is the quality of textbooks. In this context, A.K. Kusainov, A.T. Duysebek, F. Sametova, R.K. Mikhalev, Zh.B. Konyrova is a co-author of the book "Scientific and pedagogical assessment of the quality of textbooks" (Kusainov et al., 2020), were published guidelines for improving the quality of educational literature (Kusainov et al., 2019).

Were taken into account scientific works on assessing the quality of the textbook, criteria for the didactic tasks of the textbook by B.S. Karimova, A.K. Kusainov, F.T. Sametova, A.T. Duysebek, R. Mikhaleva, A. D. Ryskulbekova (Karimova et al., 2019), F.T. Sametova (Sametova, 2020) and G.A. Orynkhanova (Sametova, Orynkhanova, 2019).

## 2. Materials and methods

The experiment was conducted under the direction of A.K. Kusainov, Chairman of the Board of the Academy of Pedagogical Sciences, Doctor of Pedagogical Sciences, Professor.

Studying the best international and domestic practices for improving the quality of education, The Academy of Pedagogical Sciences (APS), proposed to carry out experiment for this purpose on a scientific basis to improve the quality of education in the region. The proposal was approved by the regional Department of Education.

In order to support the experiment, a quadripartite Memorandum was signed between the Department of Education of Turkestan region, the Academy of Pedagogical Sciences, M. Auezov South Kazakhstan State University and Nazarbayev Intellectual Schools.

The experiment was conducted in 2018–2019 academic year and in 2019–2020 academic year. In 2019–2020 academic year, the experiment involved 39 schools, 2733 students and 353 teachers in Ordabasy, Tolebi, Otyrar districts of Turkestan region. More information about the participants is given in the Table 1.

**Table 1.** Information about the participants of the experiment in 2019–2020 academic year

No	Districts	Schools	Class	Students	Teachers
1	Ordabasy	4	2	183	10
			3	177	10
			6	188	30
			7	184	50
	Total	4		732	100
2	Tolebi	30	2	597	30
			3	218	10

			6	613	110
			7	214	61
	Total	30		1642	211
3	Otyrar	5	2	185	9
			6	174	33
	Total	5		359	42
	General	39	2;3;6;7	2733	353

A lot of work is being done in the country to improve the quality of all components of the system, for this purpose the Academy of Education, institutes and centers have been established. International experience shows that the quality of education can be improved only in countries where this work is carried out on a scientific basis.

The main goal of the experiment is to have a systematic work on a scientific basis with the aim of improving the quality of the components of the education system using the internal resources of schools, districts, regions, in addition to the work carried out by the Ministry of Education and Science.

If we look closely at the components of this system, the quality of educational standards and curricula, the quality of textbooks, the quality of research work carried out for the development of the education system is managed at the national level. The quality of professional qualifications of teachers; quality of education monitoring; quality of spiritual, moral and patriotic upbringing; quality of management work; the quality of the material and technical base of experimental classes, schools, as well as the quality of research work related to the experiment can be improved with the extensive use of internal reserves. It is a best practice of the world (Kubeev et al., 2017).

Prior to the start of the experiment, the administration should identify the people responsible for the experiment, the participating districts and schools, explain the purpose of the experiment and instruct them to carry out other organizational work. In order to systematically plan and manage the activities of the participants of the experiment, the Program of the experiment was developed in Turkestan region in order to improve the quality of education on a scientific basis.

The content of the program indicates the actions to be performed in order to improve the quality of each system component and when these actions should be performed and by whom. Also provided additional information on each event. For example, members of center for teaching excellence, Nazarbayev Intellectual School, M. Auezov South Kazakhstan State University, which intends to participate in the experiment and assist in its quality, can present themselves in this section.

Implementation of the program:

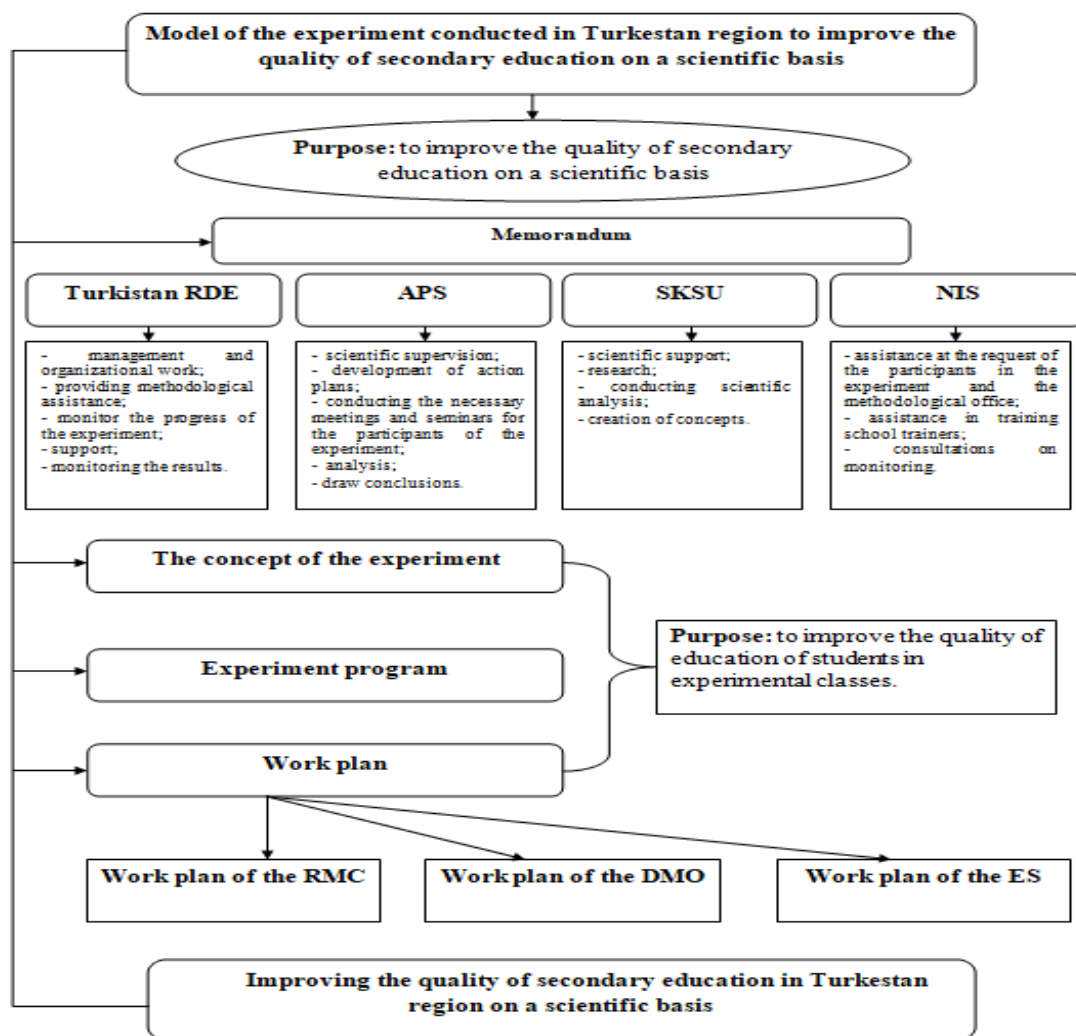
- professional development of teachers;
- to create a system of realistic assessment of the quality of education;
- to improve the spiritual, moral and patriotic upbringing of the individual;
- create an effective management system to improve the quality of education;
- to carry out the necessary research work for the effective conduct of the experiment;
- provide experimental schools and classrooms with the necessary equipment;
- improving the quality of education in experimental subjects in experimental classrooms with extensive use of internal reserves in the region.

In order to improve the quality of education in Turkestan region on a scientific basis, work plans were developed and approved by the Turkestan Regional Department of Education and the Academy of Pedagogical Sciences. The work plan was developed individually for the regional methodical office, for the district methodical office and for the experimental schools.

A sample work plan was provided by the academy and it is based on a direct experimental program. The work plan fully covers the 6 components of the education system that can be affected by internal reserves. For each components there are tables for activities and responsible persons.

In the work plan, the participants of the experiment presented their action plans.

We can see from the following model that the organization of the experiment on a scientific basis was carried out systematically.



**Fig. 2.** The model of the experiment conducted in Turkestan region to improve the quality of secondary education on a scientific basis

Notes:

- RDE – Regional Department of Education
- APS – Academy of Pedagogical Sciences
- SKSU – South Kazakhstan State University
- NIS – Nazarbayev Intellectual School
- RMC – regional methodical center
- DMO – district methodical office
- ES – experimental school

To prove the effectiveness and reality of the experiment, schools were initially selected in areas remote from large cities, where there are always more educational opportunities.

The concept of "quality of education" has no generally accepted definition. This is quite natural, given that different groups of consumers put their own meaning into it, and researchers interpret it depending on the research task. Nevertheless, there are two main approaches to the concept of quality:

- in the first case, it is considered, in the sense of compliance with the standard, and as the quality of the learning process conditions;
- in the second case, it is interpreted as compliance with the requirements and expectations of external customers and consumers.

For the purposes of quality management of education within the framework of territorial (regional, municipal) educational systems, it seems appropriate to combine these two approaches and consider the quality of education as a level of solving a set of educational tasks, including:

educational results, socialization of graduates, including mastering the skills of orientation and functioning in modern society, the development of civic consciousness.

This definition does not claim to be universal and is formed in relation to the task of managing the quality of general education within territorial educational systems based on a system of indicators and indicators. We proceed from the fact that it is not possible to directly manage the quality of education – its improvement can be provided only indirectly, through a purposeful impact on the system, in a broad sense – on the resources of the territorial education system.

During our experiment, we had an impact on the qualitative change in education, but the indicators of the quality of education remained the same indicators specified in the state educational standard. The level of education of students was assessed on a 10-point scale (10-8 points – very good, 7-6 points – good, 5-4 points – satisfactory)

### 3. Results

The quality of education of students participating in the experiment is comparable in 3 areas: first, among 10 schools in Tolebi district, which have been participating in the experiment since the 2018–2019 academic year, and 20 schools participating in the 2019–2020 academic year; secondly, between 5 schools that participated in the experiment and 5 schools that did not participate in Otyrar district; thirdly, among the 4 schools participating in the experiment in Ordabasy district since the 2018–2019 academic year, it was identified between the classes that participated in the experiment and the classes that did not.

1. The results of comparative education of students of Tolebi district are shown in [Table 2](#). 10 schools from Tolebi district participated in the experiment in the 2018-2019 academic year, 20 schools in the 2019–2020 academic year, a total of 30 schools. Therefore, we decided to compare the quality of education of 10 schools participating in the experiment for 2 years in a row and 20 schools participating this year alone. In this comparative analysis, we can see that the quality of education in all subjects increased in the third quarter compared to the first quarter.

For the experiment in the 2nd grade were taken 4 subjects: Kazakh language, reading literature, mathematics, natural sciences. According to the results of 3 quarters on the basis of these disciplines, the quality of education of students of 10 schools involved in the experiment was 8.2 % higher than the quality of education of students of 20 schools.

For 6th grade were taken 4 subjects: Kazakh language, history of Kazakhstan, mathematics, natural sciences. The quality of education of students in 10 schools was 8.1 % higher than the quality of education of students of 20 schools.

For the 3rd grade were taken 4 subjects: Kazakh language, Literature reading, Mathematics, Natural sciences. The quality of education of students in 10 schools was 4.5 % higher than the quality of education of students of 20 schools.

For 7th grade were taken 7 subjects: History of Kazakhstan, Mathematics, Physics, Chemistry, Biology, Kazakh language, Geography. The quality of education of students in 10 schools was 5.1 % higher than the quality of education of students of 20 schools.

**Table 2.** Comparative indicator of the quality of education of students in the Tolebi district of the South Kazakhstan region of the Republic of Kazakhstan

Grade	ES (2018–2019 a.y.)		ES (2019–2020 a.y.)		Comparative results,%
	Number of students	Quality of education,%	Number of students	Quality of education,%	
2	219	66,5	369	58,3	8,2
3	215	67,1	377	62,6	4,5
6	221	62,3	393	54,2	8,1
7	217	62,1	399	57,0	5,1
<b>2; 3; 6; 7</b>	<b>872</b>	<b>64,5</b>	<b>1538</b>	<b>58,0</b>	<b>6,5</b>

As an experimental school (ES), comparative indicators of the quality of education of students from 10 schools participating from the 2018–2019 academic year and 20 schools joining in the 2019–2020 academic year were presented.

2. The quality of education in Otrar and Ordabasy districts was calculated by comparing the quality of education of schoolchildren who participated in the experiment and those who did not participate in the experiment. The total number of students in the two districts who participated in the experiment was 1,091, and the number of students who did not participate in the experiment was 1,141. The results are shown in [Table 3](#).

In Otrar and Ordabasy districts, the quality of education of 2nd grade students who participated in the experiment was 60.9 %, the quality of education of students in schools that did not participate in the experiment was 54.3 %. The quality of education of students in the schools participating in the experiment is 6.6 % higher ([Nurseiit, 2015](#)).

The quality of education of 3rd grade students who participated in the experiment was 61.3 %, the quality of education of students who did not participate in the experiment was 55.1 %. The quality of education of students in the schools participating in the experiment is 6.2 % higher.

The quality of education of 6th grade students who participated in the experiment was 58.9 %, the quality of education of students who did not participate in the experiment was 53.0 %. The quality of education of students in the schools participating in the experiment is 5.9 % higher.

The quality of education of 7th grade students who participated in the experiment was 60.6 %, the quality of education of students in schools that did not participate in the experiment was 51.0 %. The quality of education of students in the schools participating in the experiment is 9.6 % higher.

**Table 3.** Comparative indicator of the quality of education of students of the experimental school (ES) and non-experimental school (NES) in the Otrar and Ordabasy districts of the South Kazakhstan region of the Republic of Kazakhstan.

Grade	ES		NES		Comparative results,%
	Number of students	Quality of education,%	Number of students	Quality of education,%	
2	368	60,9	434	54,3	6,6
3	177	61,3	180	55,1	6,2
6	362	58,9	337	53,0	5,9
7	184	60,6	190	51,0	9,6
<b>2; 3; 6; 7</b>	<b>1091</b>	<b>60,4</b>	<b>1141</b>	<b>53,4</b>	<b>7,0</b>

This is the result of only one academic year. Moreover, rural schools, where initially the quality of education was lower than in urban schools, also in these experimental schools there was a weak material base and there was a shortage of highly qualified teaching staff, so a slight improvement in quality in one year can be considered a good result. Work in this direction has been suspended due to quarantine measures, but will continue.

#### 4. Conclusion

There were some difficulties in organizing the experiment. During the experiment, organized on the initiative of the Academy of Pedagogical Sciences, school teachers had to do additional work. Of course, they did not deviate from the state education program. In this regard, in order to improve the skills of teachers, consulting classes were organized as part of the experiment. Open days were also organized. On a quarterly basis, teachers were required to submit final reports on experimental classes to the academy, which is the organizer of the experiment.

The experiment was not funded by the state, it was an initiative unfunded experiment. Therefore, the costs of visiting the experimental center and organizing conferences were minimal. The biggest difficulty in organizing the experiment, of course, was the global COVID-19 pandemic. Due to the pandemic, the experiment had to be stopped, as schools switched to distance learning. However, the relationship between the academy and the school team involved in the experiment is still strong.



As a result of these comparative studies, the following conclusions can be drawn:

- In order to improve the quality of education in Tolebi district, the school staffs, trained for at least a year to work systematically in 6 areas using internal reserves and was able to provide better education to pupils than school staffs who did not have such experiences;

- The Methodical Cabinet of Otyrar district and the staff of schools participating in the experiment achieved better results than schools that did not participate in the experiment, due to the systematic work to improve the quality of education in 6 areas;

- The experience of the Ordabasy region shows that the quality of teaching pupils in schools where their work to improve the quality of education was carried out systematically in 6 areas is higher than in classes where such work was not systematically carried out.

Comparative research has shown that the quality of education of one child, one class has improved if the work was carried out systematically to improve the quality of education of one child, one class with the use of internal reserves.

The results of the experiment were discussed in the annual August conference.

### **Funding**

This study received no specific financial support.

### **Conflict of interest**

The authors declare that they have no competing interests.

### **5. Acknowledgements**

We express our sincere gratitude to A. Turganova and D. Embay, heads of methodological departments of Tolebi and Otyrar districts, many schools' directors and their deputies, teachers who took part in the experiment. Thanks to the selfless work of these people, the experiment was a success.

Trainers of the Center of Excellence and Nazarbayev Intellectual School in Shymkent and teachers of SKSU named after M. Auezov made a great contribution to the success of the experiment based on the Memorandum. We also express our deepest gratitude to them.

### **References**

**Andreev, 2002** – *Andreev, S.S.* (2002). Novaya versiya standartov menedzhmenta kachestva ISO 9000:2000 [New version of quality management standards ISO 9000:2000]. Almaty: TQM. [in Russian]

**Barshay, 2018** – *Barshay, J.* (2018). National test scores reveal a decade of educational stagnation. *The Hechinger Report*. [Electronic resource]. URL: <https://hechingerreport.org/national-test-scores-reveal-a-decade-of-educational-stagnation/>.

**Beccer, 1997** – *Beccer, G.* (1997). Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education. The University of Chicago Press.

**Tokaev, 2020** – *Tokaev, K.-J.* (2020). Took part in the fourth meeting of the National Council of public trust. [Electronic resource]. URL: [https://www.akorda.kz/kz/events/akorda\\_news/meetings\\_and\\_sittings/kasym-zhomart-tokaev-ul'tyik-kogamdyk-senim-kenesinin-tortinshi-otyrysyna-katysty](https://www.akorda.kz/kz/events/akorda_news/meetings_and_sittings/kasym-zhomart-tokaev-ul'tyik-kogamdyk-senim-kenesinin-tortinshi-otyrysyna-katysty).

**Kanabekova, 2011** – *Kanabekova, M.A.* (2011). The quality of education. Education human resource management as the basis of economic growth. *Bulletin of KazNPU*. 2(17): 64-73.

**Kubeev et al., 2017** – *Kubeev, E.K., Shkutina, L.A., Karstina, S.G.* (2017). Razvitie menedzhmenta obrazovaniya v respublike Kazahstan na sovremennom etape [Development of management education in Kazakhstan at the present stage]. *Vestnik Novosibirskogo gosudarstvennogo pedagogicheskogo universiteta*. 4(7): 171-184. [in Russian]

**Kusainov, 2013** – *Kusainov, A.K.* (2013). Kachestvo obrazovaniya v mire i v Kazahstane [The quality of education in the world and in Kazakhstan]. Almaty: Dayk-Press. [in Russian]

**Kusainov, 2016** – *Kusainov, A.K.* (2016). Krizis v sisteme srednego obrazovaniya: puti vyhoda [The crisis in the secondary education system: ways out]. Almaty: Dayk-Press. [in Russian]

**Kusainov et al., 2020** – *Kusainov, A.K., Duysebek, A.T., Sametova, F.T., Mikhalev, R.K., Konyrova, Zh.B.* (2020). Nauchno-pedagogicheskaya ocenka kachestva uchebnikov [Scientific and pedagogical assessment of the quality of textbooks]. Almaty: Kainar. [in Russian]

[Kusainov et al., 2019](#) – Kusainov, A.K., Karimova B.S., Mikhalev, R.K., Sametova, F.T., Ryskulbekova, A.D. (2019). Metodicheskie rekomendacii po povysheniyu kachestva uchebnoj literatury [Methodical recommendations for improving the quality of educational literature]. Almaty: Dayk-Press. [in Russian]

[Karimova et al., 2019](#) – Karimova, B.S., Kusainov, A.K., Sametova, F.T. (2019). Ocenka kachestva uchebnikov. Uchebnoe posobie [Evaluation of the quality of textbooks. Training manual]. Nur-Sultan: Oqulyk. [in Russian]

[Nikiforova, 2011](#) – Nikiforova, M.A. (2011). Povyshenie kachestva rezul'tatov obucheniya sel'skih uchashchihsya nachal'noj shkoly s pomoshch'yu pedagogicheskoy diagnostiki [Improving the quality of learning outcomes of rural elementary school students by means of pedagogical diagnostics]. Arkhangelsk: Nauchni obzor. [in Russian]

[Nurseit, 2015](#) – Nurseit, N.A. (2015). How to raise the level of higher education and university research to a new level in Kazakhstan? *Modern Research of Social Problems*. 2(46): 259-282.

[Pokasov, 2012](#) – Pokasov, V.F. (2012). Upravlenie kachestvom obrazovaniya v sovremennoj shkole (metodicheskie materialy): Koncepcii kachestva obrazovaniya [Management of the quality of education in a modern school (methodological materials): Concepts of the quality of education]. Stavropol: SKIRO PC and PRO. [in Russian]

[Sametova, 2011](#) – Sametova, F.T. (2011). Obuchenie delovoj i nauchnoj rechi v tekhnicheskom vuze: uchebno-metodicheskoe posobie [Teaching business and scientific speech at a technical university: an educational and methodological guide]. Almaty: KazATK. [in Russian]

[Sametova, 2020](#) – Sametova, F.T. (2020). On the issue of improving the quality of a school textbook. *Questions of pedagogy and psychology*. 2(14): 136-145.

[Sametova, 2019](#) – Sametova, F.T., Orynkhanova, G.A. (2019). Criteria for evaluating the didactic functions of a textbook as a condition for improving its quality: Innovations in education: guidelines and trends, materials of the XII international scientific and methodological conference, Almaty, November 8-9.

[Sorokina, 2007](#) – Sorokina, E.B. (2007). Pedagogicheskie usloviya povysheniya kachestva obucheniya uchashchihsya v shkolah novogo tipa [Pedagogical conditions for improving the quality of teaching students in schools of a new type]. Ryazan: RSU. [in Russian]

[Sergeeva, 2009](#) – Sergeeva, A.G. (2009). Koncepciya obespecheniya kachestva v obrazovanii: metod. analiz [The concept of quality assurance in education: method. analysis]. Vladimir: Vladimir State University. [in Russian]

[The Analysis of Knowledge, 2001](#) – The Analysis of Knowledge. Stanford Encyclopedia of Philosophy, 2001. [Electronic resource]. URL: <https://plato.stanford.edu/entries/knowledge-analysis/>.

[The state program, 2019](#) – The state program of education development and science for 2020–2025 years. (2019). [Electronic resource]. URL: <http://adilet.zan.kz/kaz/docs/P1900000988>

[Timofeeva, 2010](#) – Timofeeva, N.V., Zadumina, N.A., Yaroslavtseva, N.A., Yaroslavtsev A.S. (2010). The problem of the quality of education in modern schools. *International Journal of Applied and Fundamental Research*. 9: 63-65.

[Yagubova, 2017](#) – Yagubova, A.S. (2017). Teaching English as a second foreign language. *Russian Journal of Education and Psychology*. 1(8): 319-326.

[Zharkenova, 2020](#) – Zharkenova, A.M. (2020). Obrazovanie yavlyaetsya vazhnejshim kriteriem i faktorom razvitiya chelovecheskogo kapitala [Education is the most important criterion and factor in the development of human capital]. [Electronic resource]. URL: <https://e-history.kz/ru/contents/view/>