

opción

Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía,
Lingüística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Año 34, agosto 2018 N°

85-2

Revista de Ciencias Humanas y Sociales

ISSN 1012-1537/ ISSNe: 2477-9385

Depósito Legal pp 198402ZU45



Universidad del Zulia
Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
Maracaibo - Venezuela

The efficiency of the education system in Kazakhstan: Programme for International Student Assessment (PISA)

*G.S. Mailybaeva¹, S.A. Nurgaliyeva², Zh.R. Zhexembayeva¹,
R.M. Zholumbayeva³, D.E Utegulov⁴*

¹Zhetysu State University after I. Zhansugurov, Taldykorgan, Kazakhstan

²S.Amanzholov East Kazakhstan State University, Ust-Kamenogorsk, Kazakhstan,

³Atyrau State University named after Khalel Dosmukhamedov, Atyrau, Kazakhstan

⁴Nazarbayev Intellectual School, Taldykorgan, Kazakhstan

Abstract

The goal of the article is to identify the real situation of the school students' readiness in Kazakhstan for international examinations and appropriate recommendations on the professional use of the obtained results. This will provide a critical understanding of traditional ideas and for new designs and further development. During the study, methods of comparative analysis, system and logical analysis, a method of generalizing information were used. As a result, the authors proposed recommendations for improving the quality of educational process in educational organizations of the Republic of Kazakhstan, taking into account the requirements of international comparative studies.

Key words: functional literacy; secondary education; Kazakhstan; development benchmark; participation.

La eficiencia del sistema educativo en Kazajstán: Programa de Evaluación Internacional de Alumnos (PISA)

Resumen

El objetivo del artículo es identificar la situación real de la preparación de los estudiantes en Kazajstán para los exámenes internacionales y recomendaciones apropiadas sobre el uso profesional de los resultados obtenidos. Esto proporcionará una comprensión crítica de las ideas tradicionales y de nuevos diseños y mayor desarrollo. Durante el estudio, se utilizaron métodos de análisis comparativo, sistema y análisis lógico, un método de generalización de la información. Como resultado, los autores propusieron recomendaciones para mejorar la calidad del proceso educativo en las organizaciones educativas de la República de Kazajstán, teniendo en cuenta los requisitos de los estudios comparativos internacionales.

Palabras clave: alfabetización funcional; educación Secundaria; Kazajstán; punto de referencia de desarrollo; participación.

1. INTRODUCTION

Participation of Kazakhstan in international studies is conditioned by the necessity, objective requirements of the modern world. Deciding on Kazakhstan's participation in Programme for International Student Assessment (PISA) in the field of functional literacy of 15-year-old students, the Government and representatives of the Ministry of Education and Science of the Republic of Kazakhstan

were guided by the following objectives: understanding of the study importance to determine the guidelines for the development of schools in Kazakhstan; awareness of the importance of the problem of students' functional literacy, suggesting their readiness to use the knowledge received in school and skills in real life practice. Kazakhstani participants in the international study understood that they could obtain low results due to the peculiarities of the educational process in the local schools, and due to the established practice of assessment of students' educational achievements competence.

Despite a wide range of governmental documents (State Program for the Development of Education of the Republic of Kazakhstan for 2011-2020, 2010; Governmental Decree of the Republic of Kazakhstan, 2012) and other relevant works on the topic of this study (Kultumanova et al., 2013; Monitoring the quality of educational process in general schools, taking into account the requirements of international comparative studies of GCI, PISA, TIMSS, 2014; The results of the international study of educational achievements of 4th and 8th grades in general education schools in Kazakhstan, 2013; Paul, 2012; PISA as a tool of measuring functional literacy. 2007; Kultumanova et al., 2017), many questions concerning the theoretical justification of the functional literacy development taking into account foreign experience have not yet become the subject of an in-depth study in the country (Tahavieva and Nigmatullina, 2017).

The results obtained from the analysis of the materials collected by the authors of the study contribute not only to the national science, but also are of great interest to foreign researchers because:

- 1) The necessity of determining the directions of modernization in the Kazakhstani School required objective information about the state of the content of Kazakhstani education in comparison with other countries of the world. This data was obtained based on tools that reflect the world priorities in the field of education. PISA is an example of a scientific and pedagogical study whose main objective is to analyze the real results of functional literacy development among the school students, obtained in the framework of objective measurements and scientifically grounded creative conclusions for the educational policy (KHASHEVA et al., 2017).
- 2) The results of the research implement a new stage of foreign development in the internal monitoring system for assessing the quality of education in accordance with modern requirements for the quality of education. In this connection, the management aspect of the received international assessment is strategically important.
- 3) These results can be used abroad to adjust the direction of the on going reforms, forecast the condition of education, expand the theory and practice of pedagogical measurements in Kazakhstan to a higher level.

2. MATERIALS AND METHODS

Kazakhstan participation in international comparative studies of the quality of education is of strategic importance for the development of education in the country. The results of the international rating largely determine the nature of pedagogical innovations, so the participation of Kazakhstan in the studies is very important. It is equally important to study and analyze the results of comparative studies, and the process of preparing for such studies. The preparation process can be purposeful, i.e. a "point, relevant, fragmentary" and a system for a long time. In this sense, our study is aimed at identifying the real situation of students' readiness for international examinations and on this basis gives appropriate recommendations on the professional use of the results obtained in the previous stages.

Today Kazakhstan has developed its own internal system for monitoring the assessment of the education quality such as Intermediate State Control (ISC), which assesses the educational achievements of the 9th-grade students according to educational programs. This monitoring is carried out in order to verify the knowledge obtained from the educational programs of the appropriate level, but not the ability to apply the knowledge gained in life. The international PISA study differs from ISC in the study of attitudes, interests, motivations and learning strategies, and assessment of the students' functional literacy of this age.

During the research, methods of comparative analysis, system and logical analysis, a method of generalizing information were used. The authors obtained data for the study from the documents of Kazakhstani researchers (articles from journals, conference materials and government documents in Kazakh, Russian and English). As a result of the study, the authors proposed recommendations for improving the quality of the educational process in educational organizations of the Republic of Kazakhstan, taking into account the requirements of international comparative studies.

3. REVIEW OF LITERATURE

PISA is carried out by the Organization for Economic Cooperation and Development (OECD, 2014). The goal of the study, as reflected in the project documents, is to assess whether students who have received a general compulsory education have the knowledge and skills necessary for full-fledged functioning in society. Along with the assessment of educational achievements, the study considered the impact on these achievements of various factors associated with students and their families, school and educational opportunities that exist outside the school.

In the PISA study, the educational achievements of students are assessed in the following three main areas: "Literacy of reading," "mathematical literacy," "natural-science literacy," and also in additional areas of "financial literacy" and "problem solving," in which special attention is paid to assessing the mastery of students in general

and intellectual skills. Teenagers complete the stage of basic education and preparing for adulthood at the age of 15. In this regard, the study aims to identify the knowledge, skills and abilities of 15-year-old students who need them during the independent life. The choice of these students is explained by the fact that in many countries the compulsory education in school is over at this age and the training programs in different countries have much in common. It is important at this stage of education to determine the state of knowledge and skills that can be useful to students in the future, and to assess the students' ability to independently acquire the knowledge necessary for successful adaptation in the modern world.

PISA study is conducted by three-year cycles. In each cycle, the focus (two-thirds of the testing time) is given to one of the three directions mentioned above. On the other two, a generalized characterization of students' literacy in this field is obtained. In 2009, the main focus of the study was "literacy of reading," in 2012 - "mathematical literacy", in 2015 - "natural science literacy". The next cycle - 2018, the main direction - "readers' literacy".

Characteristics of the Instrumentarium.

Tests of educational achievements: 13 variants, part of the tasks was repeated in several variants to ensure comparability of the results of students who performed different variants:

2009:

29 groups of reading tasks (101 questions in total);

24 groups of tasks in mathematics (35 questions in total);

18 groups of tasks in natural sciences (53 questions in total).

2012:

As an additional part, the study included computer testing of students using a new type of interactive tasks in mathematical and readers' literacy, as well as solving complex problems. A new direction was the study of the financial literacy of 15-year-old students. The test notebook (variant) consisted of 4 test blocks. Each block included assignments in mathematical literacy, reading literacy or natural science literacy. There were 52-60 tasks in each variant of the test, the tasks consisted of from 1 to 4 questions.

2015:

Transferring to the computer format:

- Changing the format of tasks from previous cycles;
- Selection of tasks with stable characteristics;
- Development of new tasks (interactive tasks with simulations and tasks for team solving);
- Definition of the scale transfer model.

In the PISA study, the timing of the study is divided into two parts: two-hour testing on subjects and a half-hour questioning of students. The time of the survey is different in different countries, but in general, it takes about 30 minutes. During testing and before the questionnaire students have breaks.

The program is implemented by a consortium of the leading international scientific organizations, with the participation of national centers and OECD. The consortium is supervised by The Australian

Council for Educational Research (ACER). The consortium includes the following organizations: The Netherlands National Institute for Educational Measurement (CITO); Educational Testing Service (ETS), National Institute for Educational Research (NIER) in Japan, the US Government Agency for Various Surveys (WESTAT). It should be noted that the main areas of studies, conceptual approaches to the development of Instrumentarium, methods of processing and presenting the results are discussed at scientific forums with the participation of the world's leading experts. After a broad discussion, these experts are approved by the representatives of the project countries (usually representatives of the ministries of education), taking into account their practical importance for these countries.

In Kazakhstan, the National Center for the Assessment of the Quality of Education of the Ministry of Education and Science of the Republic of Kazakhstan coordinates the work on the PISA study, in conjunction with the Management and educational organizations. Below are the results of Kazakhstan participation in the PISA study for 2009, 2012 and 2015.

4. RESULTS AND DISCUSSION

About 470,000 15-year-old students from 65 member countries took part in the PISA-2009 study. The selection of 15-year-old students from each country was formed based on the probability-proportional method. The national selection of 15-year-old students in

Kazakhstan included 5,590 students from 200 educational organizations in 14 oblasts and cities. Astana and Almaty included students from organizations of secondary, technical and vocational education.

Thus, to participate in the PISA-2009 study, the following was selected:

- General education schools - 184;
- Vocational school and college - 16;
- Students with the Kazakh language of education - 3194;
- Students with the Russian language of education - 2396.

The number of students enrolled in the basic general education program (7-9 grades) made 81.41% from the selection (74.3% of 9th grade students of the sample); secondary school students in general secondary education programs - 11.6% (while the number of students in 10th grade only amounted to 11.5% of the sample); students of primary vocational schools, lyceums and colleges - 6.9% of the sample.

In the PISA-2009 study, 16 oblast coordinators, 200 coordinators of educational organizations and 68 conducting testing were appointed in the regions and cities of the country.

In the PISA-2009 study cycle, a significant portion of the total test time - 210 minutes (54%) - was questioned about reading. The rest of the test fell on "mathematical literacy" - 90 min (23%) and "natural science literacy" - 90 min (23%). Thus, for the fulfillment of all the

tasks on the test, a student would have to spend 390 minutes, which cannot be done in real practice. Therefore, all the tasks of the test were divided into 13 booklets, 120 minutes assigned to complete the tasks. Each student was to answer 50-60 questions on reading, mathematics and natural science in 2 hours. The test assessed students' ability to understand the problem based on the results, which is connected with the situation in the text, and its solution, using the knowledge obtained from various sources.

The results of our country participation in PISA-2009 were disappointing, out of 65 countries on reading literacy, students from Kazakhstan took 59 places, on natural science literacy - 58 places, on mathematical literacy - 53 places.

Out of 7338 organizations of general secondary education in Kazakhstan, 200 schools from 16 regions of the country participated in the PISA-2012 study. 18 organizations of technical and vocational education also participated in this project. Among them, 288 people with Kazakh language of education, and 139 people with Russian language of education. On average, 40% of Kazakhstan students pass the PISA-2012 international test on natural science. This indicator is 1% lower than the results on mathematics. The percentage of PISA-2012 test assignments was 38%.

In general, the comparative data of PISA-2009 and PISA-2012 are reflected in the materials of Table 1 and Figure 1.

Table 1. Information on the rating of Kazakhstan in PISA

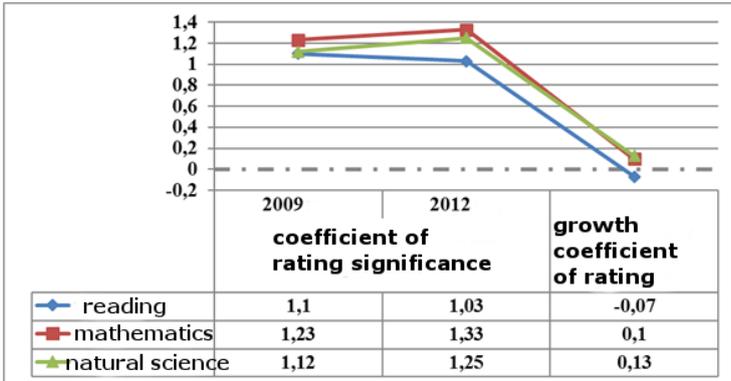
Subjects	Rating		coefficient of rating significance		coefficient of rating growth
	2009	2012	2009	2012	
reading	59 out of 65	63 out of 65	1.1	1.03	-0.07
mathematics	53 out of 65	49 out of 65	1.23	1.33	+0.1
natural sciences	58 out of 65	52 out of 65	1.12	1.25	+0.13

Source: (Monitoring the quality of educational process in general schools, taking into account the requirements of international comparative studies of GCI, PISA, TIMSS, 2014).

The coefficient of positions significance was revealed, where the reader's literacy is observed to have a negative value (-0.07) in the growth ratios of the indicators. With regard to mathematical and natural science literacy, school students in Kazakhstan increased their ratings by 0.1 and by 0.13 respectively.

Since the number of participating countries in 2009 and 2012 remained unchanged (65 countries), the identification of the dynamics of Kazakhstan indicators can be reflected in direct values (Figure 1).

Figure 1. Dynamics of Kazakhstan results in PISA



Source: (Monitoring the quality of educational process in general schools, taking into account the requirements of international comparative studies of GCI, PISA, TIMSS, 2014)

An analysis of statistical information base of the study showed that the percentage of the test assignments on math in average in Kazakhstan was 41%. The average percentage of the PISA-2012 international test completion for Kazakhstan students on natural science was 40%. This indicator is 1% lower than the results on mathematics.

Readers' competence means comprehension of written texts in order to use their content for the development of knowledge and

opportunities for active participation in the life of society. The percentage of completed tasks PISA-2012 was 38%.

For Kazakhstan PISA-2015 is the first research cycle in which natural-science literacy is defined as the main direction. In the PISA-2015 study, Kazakhstan provided 5,780 15-year-olds (out of 211,407 students), 189 schools (out of 7563 units) and 27 colleges (out of 820 units) from 14 oblasts, Astana and Almaty cities. The students with a Kazakh language education made up a significant proportion of participants in the PISA-2015 study (62% or 3,562 people). In comparison with PISA-2012, the number of college students (288 people) who got into the PISA-2015 selection (917 people) increased by three times (OECD, 2012).

Kazakhstan participants, who study in Russian, showed a more successful performance during the PISA test in comparison with their Kazakh peers. The difference in terms of language of education made 50 points. According to the revised OECD methodology, the difference of 30 points in the international PISA scale is equal to one year of study. Thus, the gap in the functional competencies of participants in education organizations with Kazakh and Russian languages is more than one and a half years of training. There is a significant differentiation in the results of urban (3,026 people) and rural (2,754 people) education organizations. The difference in the results of 19 points depending on where the education organization is indicates that rural students lag behind urban peers for more than half a year.

OECD figures of the participants who did not complete the assignments above the 2nd level of complexity, were interpreted as results of functionally illiterate. Based on the results of PISA-2015 in OECD countries, the number of such 15-year-olds was 21% on average. For Kazakhstan, this figure is 28% (OECD, 2015).

33.8% of participants from Kazakhstan were able to perform a simple experiment for a limited range of tasks, and to distinguish between scientific and unscientific questions. The performance of such tasks is demonstrated by Singaporean (75.3%), Japanese (72.2%) and Estonian (71%) 15-year-old participants in the international test.

An ability to formulate assumptions on new scientific phenomena, events and processes was demonstrated only by 0.1% of Kazakhstan participants. While the tasks of the most difficult 6th level were completed by 5.6% of Singaporean students.

The indicator of success on the natural science in the international PISA-2015 test by 15-year-olds from Kazakhstan made 456 points. The high competency indicators of this direction were demonstrated by the participants of Singapore (556), Japan (538) and Estonia (534) (Ibid).

Thus, the results of the main direction of PISA-2015 indicate a low level of competencies formed by 15-year-old students from Kazakhstan. School students and university students find it difficult to demonstrate scientific knowledge, conduct experiments and justify

their choice, interpret complex natural phenomena and processes (Ibid).

School students and university students from Kazakhstan did not demonstrate high results in reading literacy and an ability to extract from the text the necessary information to provide a detailed response. The results of performing tasks of more complex levels are included in the final percentage of participants who have reached this or that level. For example, the percent of Kazakhstani participants who completed the tasks of the average 3rd level of complexity - 25.2% - also includes the shares of students who reached levels 4 and 5. In international comparison, Kazakhstan participants are significantly inferior to their peers from other countries (Hong Kong - 72.6%, Singapore - 71.9%, Canada - 70.3%).

Despite the fact that the share of Kazakhstan participants who did not complete the tasks even of the 2nd levels in comparison with PISA-2012 (57%) decreased, this index is still high (over 41%). In the overall rankings, the average score of Kazakhstan in the direction of the readers' literacy was 427 points. Participants in such countries as Singapore (535 points), Hong Kong (527 points) and Canada (527 points) demonstrate the highest readers' competencies.

Only 0.8% of Kazakhstani school students and university students were able to perform the tasks on mathematical thinking and reasoning. 10.2% of Kazakhstan participants could not solve the basic tasks using known facts and perform consistent procedures in accordance with direct instructions. Only 2% of Singaporean and Hong

Kong participants did not solve the tasks of the 1st level. Students who did not complete the tasks of the 2nd level and above are considered functionally illiterate. Despite the fact that the total share of such students in Kazakhstan has decreased compared to PISA-2012 (45.2%), this indicator is still high (over 32%). The final average score of Kazakhstan in mathematical literacy was 460 points. In this direction, PISA-2015 shows high results for such countries as Singapore (564 points), Hong Kong (548 points) and Macao (544 points). The difference in the results in terms of the languages of instruction in mathematics is smaller than in other areas of PISA-2015. However, this indicator is still significant (36 points). This indicates a significant (one year) gap in the level of mathematical competencies of students in schools and colleges with Kazakh and Russian languages of education. As in the other two areas of the international assessment, the difference in the results of students in urban and rural schools and colleges is recorded. The difference of 25 points indicates that rural school students and university students are almost a year behind the urban peers.

As a result of the study, the authors concluded that in 2009 an international study of this direction, nature and breadth was conducted in our country for the first time. At the same time, 15-years-old school students from Kazakhstan were not acquainted with test tasks, suggesting the correct answer from the proposed ones, which requires strictness of thinking, the accuracy of thought. Taking into account that our students are overloaded with school tasks the very performance of the work, which included 50-60 questions in 2 hours required

considerable effort, and our school students were not motivated for the tests.

Texts of business style were new for Kazakh school students: instructions, announcements, advertising, flight schedules, and application forms for employment, etc. Textbooks on Russian language, giving an idea of the business style of speech, do not offer exercises with such texts. Many of these texts, given the low level of the socioeconomic status of a large number of Kazakhstani families, were not relevant and interesting to many students. Some of the texts were impossible to adapt to Kazakhstan's reality, although this task was put before the participants of the study. Differences in the social life of the participating countries and our country are large enough that they can be taken into account when adapting texts. Some realities of life, such as job interviews, are only getting into the social life in Kazakhstan. Great importance in the education of the school students from Kazakhstan is given to the comprehension of artistic and literary texts, both in literature lessons and in Russian language lessons, as well as in history and social studies classes. However, the percentage of texts of this nature included in the international study was very small. Moreover, their artistic specificity was not highlighted by the questions and tasks. An ability to acquire basic skills needed for adulthood should not depend on the socioeconomic status of the students. The manifestation of social equality is ensuring that the results of school education reflect the abilities and efforts of students, and not their well-being. Without an equal education system, social and economic inequalities are perpetuated. Equality and results must be seen in a complementary, but not in a competing way. This

approach is important for understanding ways to improve equity in the education system (Santiago et al., 2016). For many years, the results of PISA show that the highest indicators reach the education system with a high level of equality in education. Ensuring that all students acquire basic skills and their social or economic status has virtually no influence on their learning opportunities is indicated by the key priority of educational policy in the lead countries of the study. Many socially and economically vulnerable students manage to achieve high indicators both in national education systems and in international comparison. These tendencies are determined by the international experts of PISA using the "Strength of the Socio-economic Gradient" measurement (SSEG). SSEG index is considered to be weak if the result of a student is not consistent with the expected result. SSEG is strong when the socio-economic status becomes a reliable predictor of results. Thus, the weaker SSEG, the higher the equality in the education system. One of the weakest social and economic gradients among all PISA-2015 member countries is recorded in such countries as Canada (8.8%), Estonia (7.8%), Hong Kong (China) (4.6%), and Kazakhstan (4.5%).

Another indicator of equality in education is the average impact of socioeconomic status on the results of students. PISA defines it as "Slope of the socio-economic gradient". The slope reflects the average difference in the results of students whose socioeconomic statuses differ by one point in the SSEG index. On average for OECD countries, an increase in the SSEG index by one point leads to an increase in results by 38 points in natural science. For Kazakhstan, this

indicator was 23 points. This indicates on more flat SSEG than the average gradient of OECD countries. The gradient of Kazakhstan is below the countries like Canada (34 points), Estonia (32 points) and Germany (42 points), but above the average value of Hong Kong (China) (19 points). An additional measure of the socioeconomic status impact on the results of students is the difference in the rates of two opposite students of the social and economic index. On average for the OECD countries, those in the upper quarter of the SES index distribution score 88 points higher in the natural sciences than socially and economically vulnerable students (the lower quarter of the index distribution). In Kazakhstan, the difference in the results of the two groups of students was 41 points, which was half the average of the OECD countries. According to this parameter, the level of equality in Kazakhstan (41 points) is higher than in Canada (71 points), Estonia (69 points) and Germany (103 points) and almost identical with the level of equality in Hong Kong (China) (45 points). In PISA-2015, high probability of low results is fixed among socially and economically vulnerable students of all countries participating in the study. In Kazakhstan, socially and economically vulnerable students have more probability in 1.6 times that they will show poor results. This probability is higher in countries such as Canada (2.55), Estonia (2.07), Hong Kong (China) (2.01) and Germany (3.19).

Thus, students with low socioeconomic status who achieve higher results than expected in the PISA study are defined as "persistent". Compared to PISA-2012, the share of the "persistent" students from Kazakhstan in PISA-2015 increased from 2% to 16%.

However, the results of Kazakhstan students are still low. Many students do not correspond to the basic level of functional natural science literacy. About 28% of students from Kazakhstan are below the second level (the skills of effective and productive participation in adult life have not been formed). Thus, according to this indicator, the level of education system equality in Kazakhstan lags far behind other PISA member countries. The results of Hong Kong in PISA-2015 indicate that it is possible to provide quality education for all students. Hong Kong, when compared to Kazakhstan, has three times bigger share of socially-economically vulnerable students, and at the same time has almost three times fewer participants with low results.

In PISA-2015, the difference in the success rates of the international natural science test by Kazakhstan participants from socially and economically successful and disadvantaged schools was 65 points (two years of study). This gap is lower than the average for OECD countries (104 points), but higher or equivalent to the difference observed in Estonia (64 points) and Canada (69 points).

The uneven distribution of educational resources aggravates the inequality in the results of the study. PISA-2015 provides two summary indicators of the availability of educational resources at the school level. This is an index of the need for material resources (textbooks, IT equipment, school laboratories, etc.) and the human resources deficit index (pedagogical staff and support staff). Both indexes combine the responses of school principals to the questionnaire study. Heads of education organizations of socially and

economically disadvantaged schools in Kazakhstan noted the great need for qualified pedagogical personnel. In general, the difference in resources caused by the socio-economic situation of schools in Kazakhstan is higher than the OECD average level and is roughly comparable to the difference observed in Canada.

Thus, the practice of providing assistance to students after their lagging behind the curriculum and financial support for children from socially and economically disadvantaged families require great effort and money. Therefore, it is necessary to focus educational strategies on the earliest identification of underachievers and taking preventive measures to ensure equality in education. This will contribute to the achievement of high results from all students. The education system is successful if high results are achieved through inclusiveness and fairness. In this regard, the experience of other countries in achieving high results and equality in education deserves attention and careful study.

6. CONCLUSION

In general, the analysis of the results of Kazakhstan's participation in PISA-2009, 2012, 2015 revealed the following problems:

1. "Students from Kazakhstan have problems understanding intermittent texts with graphs and tables, and they cannot correctly interpret the formulated task" (World Bank experts in

the framework of Programme for International Student Assessment (PISA).

2. *“The analysis of the results showed that the problem with reading skills of students from Kazakhstan is related to the excellent understanding of solid, classical texts, while problems arise with understanding intermittent texts with graphs and tables. Students are able to remember and describe information very well, but they have trouble with its generalization and with the ability to control strategic readings. This problem can be solved by developing new curriculum and standards”*

3. *“According to the results of PISA-2012, it is clear that the students are able to formulate a problem, but they cannot interpret it correctly. At the same time, nine out of ten OECD countries, on the contrary, have the opposite tendency.”*

4. *“Teachers of the republic's general schools give strong subject knowledge, but do not teach to apply them in real life situations”*

5. *“Kazakhstan along with the countries such as Qatar and Malaysia has improved their results, but they are below the OECD average level”*

In general, the above mentioned opportunities can be expanded when setting and solving the following objectives:

- 1) Strengthen the content of educational programs on natural science in primary and basic schools.
- 2) Start the work on the development of assignments taking into account the real life situations, increase the number of tasks

that model specific practical situations.

3) Implement measures to increase the prestige of teacher education through the further training of teachers, the corresponding training of students in higher pedagogical universities, and an increase in the average salary.

4) Provide a wide variety of training programs that provide students with a wide range of educational orientation.

5) Strengthen the material base of schools, equip classrooms, laboratories.

6) Provide sufficient freedom of action to implement new approaches within the national system, the mandatory use of ICT in the teaching process.

7) Add more tasks of practical content in textbooks, test tasks of various formats, interesting tasks for the application of knowledge in non-standard situations.

8) Conduct training seminars for regional coordinators and persons conducting testing.

9) Widely inform the public, parents, students about the significance and specifics of conducting international comparative studies.

10) Develop and publish guidelines on the use of recommendations of international comparative studies, collection of tasks.

11) Use assignments to check the functional literacy of school students in the framework of the final certification of students in 9 and 11 grades.

The practical significance of this study is that the findings of the study: 1) can serve as recommendations in the work of independent experts and participants in the educational policy of the Republic of Kazakhstan; 2) focus on compliance with the requirements of the State Program for the Development of Education of Kazakhstan (SPDE) for 2011-2020, where the target indicators of school students participation from Kazakhstan in international PISA studies are defined: in 2018.- 40-45 place, in 2020. – 40 - 45 place.

Defining the prospect of the study, it should be noted that the proposed study does not exhaust all aspects of the problem under consideration. Future studies can focus on 1) international experience in assessing the quality of education. Other important studies could explore 2) the development of functional literacy of students as part of an international PISA study.

Thus, this study confirms the importance of the PISA role in the modernization of education in Kazakhstan and requires the active participation of the whole society in the implementation of this reform. If these efforts are not taken, then there is a major risk of a significant decrease in the competitiveness of Kazakhstan's education.

REFERENCES

Governmental Decree of the Republic of Kazakhstan. 2012. On the approval of the National Plan of Action for the Development of Functional Literacy among School Students for 2012-2016. Dated June 25, 2012 No. 832. Available

in:adilet.zan.kz/rus/docs/P1200000832. Kazakhstan.

National Academy of Education named after I. Altynsarin. 2014. Monitoring the quality of educational process in general schools, taking into account the requirements of international comparative studies of GCI, PISA, TIMSS. Analytical statement. p. 90. Astana.Kazakhstan.

PISA as a tool of measuring functional literacy. 2007. Available in: <http://www.privivkam.net/iv/viewtopic.php?f=28&t=4712&start=0>. Russia.

State Program for the Development of Education of the Republic of Kazakhstan for 2011-2020. 2010. Decree of the President of the Republic of Kazakhstan. N^o 1118. Astana: Akorda, 12/7/2010. Available in: www.nkaoko.kz/documents/law_of_education.Kazakhstan.

The results of the international study of educational achievements of 4th and 8th grades in general education schools in Kazakhstan. 2013. National report. National Center for Educational Quality Assessment. p. 237. Astana.Kazakhstan.

KHASHEVA, Z., GOLIK, V., SHULGATY, L., and ERMISHINA E. 2017.**Economic justification of technological diversification for the metal mining and production complex.** Astra Salvensis - review of history and culture, N^o 10: 361-367. Romania.

KULTUMANOVA, A., BERDIBAEVA, G., KARTPAEV, B., IMANBEK, I., SHARBANOVA, K., RAKHIMOVA, M., ZHUMABAEVA, Z., PIRNEPESOVA, Z., OKENOVA, B., &UVALIEVA, A. 2013. **The main results of the international study of educational achievements of 15-year-old students of PISA-2012.** National report. National Center for Educational Quality Assessment. p. 283. Astana. Kazakhstan.

KULTUMANOVA, A., SABYRULI, E. & AMANGAZI, M. 2017. **The main results of the international research PISA-2015.** Astana: JSC. Information Analysis Center. p. 241.Kazakhstan.

OECD, 2012. **Does Money Buy Strong Performance in PISA?** PISA in Focus, N° 13, PISA, OECD Publishing. Available in: <http://dx.doi.org/10.1787/5k9fhmfzc4xx-en>. Paris.

OECD, 2014. **PISA 2012 results: What students know and can do.** (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science, PISA, OECD Publishing. Available in: <http://dx.doi.org/10.1787/9789264208780-en>. Paris.

OECD, 2015. **Students, Computers and Learning: Making the Connection.** OECD Publishing. Available in: <http://dx.doi.org/10.1787/9789264239555-en>. Paris.

PAUL, K. 2012. **The World Bank, quality and equality of education in Kazakhstan.** Analysis of the data from PISA 2009 on the materials of presentation at the training seminar "Leadership in School", held by the British Council on October 13-17, 2014. UK.

SANTIAGO, P., LEVITAS, A., RADO, P., & SHEWBRIDGE, C. 2016. **OECD Reviews of School Resources: Estonia 2016.** 2016. OECD Reviews of School Resources, OECD Publishing. Available in: <http://dx.doi.org/10.1787/9789264251731-en>. Paris.

TAHAVIEVA, F., & NIGMATULLINA, I. **Speech-communicative function in the structure of predictive competence of young schoolchildren with musculoskeletal disorders.** Astra Salvensis, Supplement No. 10, 2017, p. 315-322. Romania.



**UNIVERSIDAD
DEL ZULIA**

opción

Revista de Ciencias Humanas y Sociales

Año 34, N° 85-2, 2018

Esta revista fue editada en formato digital por el personal de la Oficina de Publicaciones Científicas de la Facultad Experimental de Ciencias, Universidad del Zulia.
Maracaibo - Venezuela

www.luz.edu.ve

www.serbi.luz.edu.ve

produccioncientifica.luz.edu.ve