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Scales SACERS: Results of the Study of the Educational Environment of Moscow Schools

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Abstract

The relevance of the study is determined by a need to identify areas for assessment in the quality of education, plus options for evaluating these educational qualities through an assessment of their educational environment. The of the study is to examine options for the application of international SACERS scales. This is in order to assess the educational environment of Russian schools in general, and also to identify the educational environment of schools in the Moscow region. Methods of research: The leading method for the study of this issue is through observation via the use of SACERS scales. Results of the study: The authors of the study have proved - as well as experimentally demonstrated - the potential for using the SACERS scales as a tool for assessing the educational environment of Moscow schools. The features of this specific educational environment were also revealed. Practical significance: The data obtained using the SACERS scales reveal the content characteristics of an educational environment, set the criteria for its development and can become the basis for designing the educational environment of other specific educational organisations. Assessment of the educational environment, using the SACERS scales and its data, can be used in the method of assessment and management of the quality of education.

Keywords: quality of education, educational environment, assessment of the educational environment, SACERS scales.

1. Introduction

The priority and ultimate aim of Russia's state policy in the sphere of education is the provision of, and access to, quality education for all citizens regardless of their place of residence or social status.

In this regard, the question arises: What do we mean by the term 'quality of education'?

The quality of education is evaluated by assessing a complex series of characteristics which involve the educational activity and training of the trainee, plus measurement of the degree of

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compliance with federal state educational standards, educational standards, federal state requirements and (or) the needs of the individual, or legal entity, in whose interests educational activities are carried out. Also included is the degree of achievement of the planned results educational program (**Federal Law...**).

Counting the quality of education as an integral characteristic, we are talking, foremost, about the quality of the result, the quality of the conditions, the quality of the process, and the quality of the management of education.

The concept of 'quality of education' involves varied content, depending upon whether drawn from the position of the state, the educational organization, or students. At the state level, education is qualitative if it allows implementation of the chosen strategy for the development of the economy and society. At educational organisation level it involves the correspondence of the results of training to the requirements of FGOS. Then at the level of the consumers of educational services (trainees, parents) it is primarily about the conformity of the results of training to the requirements of employers and the labour market. For employers the quality of education, initially, is related to the level of professional competence shown by the graduates.

Diversity in the methods of interpretation when dealing with issues involving the quality of education make it difficult to achieve a high level of accuracy. Therefore, to best enable the development of a successful education strategy, a coordinated assessment of the quality of education is necessary. This should take into account the interests of all stakeholders (trainees, parents, educational organisations) in order to reveal any shortcomings that may exist in educational activity and implementation.

The results of studies of the policies of educational institutions are of great interest in, and importance to, the understanding of the quality of educational services, particularly to the leaders of educational organisations and in their implementation of managerial strategies (**The Policy of Educational...**). Furthermore, survey data collected from school principals shows that receiving the approval of the school populace is more influenced by popularity / prominence among the city's general population ($k = 0.86$, with the maximum $k - 1$), a high percentage of graduates who go on to enrol at university ($k = 0.82$), high ratings among trainees and their parents ($k = 0.82$), the appointment of renowned managers and educators ($k = 0.80$), the number of graduates with a high score of USE ($k = 0.80$), the quality of facilities and equipment essential to the needs of a modern educational institution ($k = 0.79$), high achievements of students in Olympiads and other competitions ($k = 0.77$), diversity in profile training programs ($k = 0.74$), the variety of additional training programs ($k = 0.73$), and school transport accessibility ($k = 0.70$).

The data contained in the survey of heads of educational organisations suggests full agreement with the criteria and indicators that refer to the contribution made by educational organisations to the quality education of Moscow schoolchildren. These concern the pass results attained by students of different levels of diagnostics; development of the talents of students; the effectiveness of pre-school groups; prevention of transgressions and misdemeanours; work carried out with students who require special educational needs; the effectiveness of the city's socio-cultural resources in training; professional skills and the further development of professional skills; the development of large scale participation in amateur sports (Development and Methodology ...).

The listed criteria for the quality of education should be considered in the following context and conditions: first, dynamics, and secondly, with regard to the quality of the resources provided and with which the educational results were achieved.

These contexts are consistent with the results of research carried out by G.A. Yastrebova, A.R. Bessudnova, M.A. Pinskaya and S.G. Kosaretsky. In their works it was shown that the academic achievements of students - which are taken into account when drawing up the ratings of schools - consistently differ in educational establishments due to different personnel, different material support and a differing social composition of schoolchildren (Yastrebov et al., 2013).

In a number of foreign works (Bourdieu, Passeron, 1970; Coleman, 1966) and also domestic studies (Agranovich, 2008; Konstantinovskiy, Voznesenskaya, 2011; Pinskaya et al., 2011; Bochenkov, Valdman, 2013; Bolotov, Valdman, 2013; Yastrebov et al., 2014; Derbishinir, Pinskaya, 2016), researchers have examined the quality of education in connection with the problems of socioeconomic inequality. These studies point to the illegitimacy of determining the effectiveness of an individual organisation, or an entire educational system, outside of their social and economic context (Yastrebov et al., 2014). The inclusion of contextual data in the quality management system

of education allows us to develop an effective and balanced policy that allows emerging problems to be responded to and adequately addressed (Yastrebov et al., 2014).

In many countries (Australia, United Kingdom, USA, Chile), the overall performance of an individual school is assessed by taking into account contextual information (data on the age, ethnicity and socio-economic composition of students). This strategy was used by Russian scientists in the study of the educational infrastructure index of Russian regions (Index of educational...). The quality of the modern educational infrastructure is seen as "a complex of interconnected systems, facilities, activities, resources and means that make up and / or provide the basis for the functioning of the entire education system and each educational organisation" (Index of educational...).

The data obtained from study of the educational infrastructure of the subjects of the Russian Federation at the pre-school, general school, secondary school, supplementary and professional levels of education show that the most developed elements are: the material and technical equipment available to additional and professional areas of education; the regional educational network of pre-school and additional education, plus staffing of additional education services. The index of general education in the country is one of the lowest rated. At the same time, the research notes an uneven development of the varied elements that make up the educational infrastructure. The widest dispersion of regional values is observed in: staffing of professional and pre-school education; the provision of conditions and facilities with which to deliver quality education for disabled students – particularly at the level of general and additional education; and finally the presence of a regional educational network at vocational education level (Index of educational...).

Based upon the requirements of the FGOS – with regard to conditions for the implementation of educational programs at preschool and general education levels – a qualitatively-built educational infrastructure pre-supposes the provision of personnel for information-methodological and psychological-pedagogical methods, plus the necessary material and technical support of educational organisations. Such resources hugely enhance the possibility of obtaining a quality education.

The problems associated with efforts to improve the quality of education through assessment are reflected in a large number of publications. These include various monitoring and diagnostic studies on the evaluation of school achievements. Tools for testing educational achievements involve; teaching programs for training / further training in assessment, plus assessing the conditions for the implementation of basic educational programs in educational organisations; tools for secondary / in-depth analysis of the results of evaluation of educational achievements; research on the use of data obtained from various assessments for the management of the educational process and educational systems; the self-assessment procedures of the individual school or educational establishment; making use of various options for external evaluation of school activities; portfolios of pupils and teachers, the methodology of the intra-class evaluation, etc. (Data bank...).

According to the Federal Law ‘On Education in the Russian Federation’, the following measures are core criteria by which to assess the quality of the educational activity of an organisation:

Openness, plus access to information about the organisation; the comfort and conditions in which educational activities are carried out; goodwill, politeness, competence of employees; plus satisfaction with the quality of educational activities provided by the organisation (Federal Law ...).

FGOS of the basic general education contains a reference that suggests the control and assessment of the quality of education should be conducted by the following: The heads of the organisations which carry out educational activities; their deputies, who, within their competence, are responsible for the quality of the rudimentary educational program of basic general education; employees of organisations that evaluate the quality of education, including public organisations, associations and professional communities that provide public expertise within organisations that carry out educational activities; heads and specialists at government bodies of the Russian Federation that exercise public administration in the sphere of education, state control (supervision) in these same areas; managers and specialists of state executive bodies that ensure the development of order, control and the measuring materials for the final certification of graduates (Federal state...). Thus, this document establishes a multi-level system for the quality

control of education. This involves not only issues of control not just at state and regional levels, but also by the educational organisation itself, plus the public associations involving teachers and the parents of students.

The draft concept of the all-Russian system for assessing the quality of general education presents a model for an effective system of assessment that takes into account all levels (federal, regional, municipal, school) (**Concept and plan of events...**). At the municipal level, the quality of conditions provided to the educational organisation at all levels of education is assessed through monitoring the accessibility and variability of education in the educational institutions of the municipality. Add to this the monitoring of educational conditions of schools for the implementation of basic educational programs.

2. Relevance

In the analytical work of Russian scientists, great emphasis is placed upon the role of international cooperation in the field of improving the quality of education. References are made to convergence of views on evaluation criteria and study of the processes of analysing education in different countries. V.A. Bolotov and I.A. Waldman have great appreciation for, and experience of, such cooperation and have noted that: "International studies of the quality of education are instigating a revision of the national curriculum, influencing the introduction of new standards, affecting change in teacher training programs. The participation of the Russian Federation in international monitoring of the quality of education has contributed to the formation of a culture of pedagogical measurements, the reform of the content of education and the creation of federal state educational standards for the emerging generation (FGOS), the development of new textbooks, and the updating of teacher development programs" (Bolotov, Valdman, 2014).

In this regard, as an assessment of the quality of education through the assessment of the educational environment, we take into consideration the SACERS (School-Age Care Environment Rating Scale) (**Environment Rating...**).

3. Materials and methods.

The SACERS (scales) were employed as the main method for study of the educational environment for this modification (Ivanova, Vinogradova, 2017).

The SACERS are a diagnostic tool and part of the Environmental Rating Scale program. This includes: ITERS (Infant / Toddler Environment Rating Scale) – scales for the assessment of the environment and care for toddlers (**Environment Rating...**), ECERS (Early Childhood Environment Rating Scale) (Remorenko et al., 2007; Shiyan et al., 2016), plus FCCERS (Family Child Care Environment Rating Scale) – which are scales of environmental assessment in family education (**Environment Rating...**).

The SACERS are a tool for assessment of the educational environment of a school - at primary and basic general education level – during a whole day. The scales were developed in the USA, have subsequently been used in countries such as Canada, Vietnam, South Korea, Chile and Sweden) and further been translated and largely applied in schools in Germany and France (Harms et al., 1996; Tietze et al., 2007). The main objective of the SACERS scales is to create an appropriate educational environment for children of primary and secondary school age, one which **will make a child's time at school a more comfortable and safe experience.**

The SACERS are constructed on the basis of criteria for the quality of education of school-age children, childcare programs (Albrecht, 1991), the evaluation of the quality of programs for school-age children (ASQ) (O'Connor 1991) and the evaluation of early-learning programs (Abbott-Shim, Sibley, 1987). They are further based upon research results (Baillargeon, Betsalel-Presser, Joncas, & Larouche, 1993; Betsalel-Presser, Joncas, 1994; Jacobs, White, Baillargeon, & Betsalel-Presser, 1991; White 1990; Galambos, Garbarino, 1983; Vandell & Corasaniti, 1988; Vandell, Henderson, & Wilson, 1988; Seligson, Allenson, 1993) (**Environment Rating...**).

The SACERS method consists of seven scales:

1. Scale for 'Space and Furnishing'. This scale assumes an assessment of the available inner space and of the location of the premises, space for gross mobile activity, space for privacy, premises for staff, plus physical assets such as furnishing for learning and recreational activities, etc.

2. **Scale for 'Health and Safety'**. This scale assumes an assessment of the educational environment for the following indicators: physical and psychological health and safety during activities, catering, etc.

3. **Scale for 'Activities'**. This scale is represented by indicators that characterise the organisation of extracurricular activities and additional educational services: these features encompass visual arts and technology, design, music and dancing; theatrical activities, science and teaching, research activities, etc.

4. **Scale for 'Interaction'**. This scale reflects the parameters related to interaction and communication in the system between the three parties involved: 'Learner-Teacher', 'Learner-Learner', 'Teacher-Teacher', 'Teacher-Parent'.

5. **Scale for 'Program Structure'**. The indicators of this scale are assessed: the schedule and daily routine, variability of supplementary education programs, etc.

6. **Scale for 'Staff Development'**. This scale contains indicators that assess the activities of teachers and also the opportunities available to aid their professional development.

7. **Scale for 'Special Needs'**. This scale involves indicators that illustrate the creation of conditions for interaction and the education of students with disabilities.

The presented scales enable assessment of the educational environment of the educational organisation. This includes a set of educational conditions (excluding financial ones) that are required for the implementation of both the basic programs of primary, plus basic general, education.

48 indicators are used to build up accurate scale data. Each of these indicators are evaluated on a 7-point scale and these, in turn, reveal the level of development of the educational environment ('unsatisfactory', 'minimal', 'good', 'excellent').

The assessment is based upon observation, clarifying questions with the employees of the educational organisation.

The value of the SACERS scale as a tool for studying the educational environment is determined by the fact that it is:

- an instrument of development, not just an assessment of the educational environment;
- based upon the criteria for the amplification of the development of school-age children, the fulfilment of the needs of their development in the conditions of the school;
- a valid, reliable tool for evaluating the educational environment, as used in many countries (Germany, France, USA, Sweden, etc.);
- comparable with the scores of the quality of education in pre-school educational organisations ECERS-R (Early Children Education Rating Scale), tested in Russian kindergartens / playschools (Remorenko et al., 2007; Shiyan et al., 2016).
- a system that enables international comparative studies (Ivanova, Vinogradova, 2017).

During the processing of the study data of the educational environment - using the SACERS scale – it is determined:

- the index of the quality of the educational environment of the educational organisation – which is the total value for all indicators of the scale, divided by the number of these indicators). The quality index makes it possible to rate the level of development of the educational environment **from 'unsatisfactory' (1 point) to 'excellent' (7 points);**

- quality index for individual components of the educational environment (space and furnishing, health and safety, activities, interaction, learning process, staff development, special needs);

- the quality profile of the educational environment within the educational organisation – **which represents the average values for 48 indicators and enables the identification of 'well-being zones' and the deficiencies in the development** of the educational conditions of each particular educational organisation.

Design study of the educational environment using the SACERS scales.

Translation and preliminary adaptation of SACERS scales, correlation with SanPiN, FGOS NOO and OOO, OOP, NOO and OOO. Pilot study into the structural divisions of educational organisations in Moscow, plus the Moscow Region (N = 26) (2015-2016) (Ivanova, Vinogradova, 2017).

Indicators of the reliability and validity of the SACERS scales are:

1) Consistency of expert assessments. An analysis of the divergence of expert estimates showed that 78 % of the discrepancies are below 0.20, whilst the remaining 22 % of discrepancies range from 0.20 to 0.41. The data may indicate sufficient consistency amongst experts in their **'reading' (interpretation) of the scores and results obtained via SACERS.**

2) Differential ability of indicators: interior space and furnishings – 96 %; health and safety – 72 %; active activities / pastime – 95 %; interaction – 95 %; educational process – 94 %; staff development – 99 %; special needs – 99 %. The total discrimination ability of the scales was 93 %.

2. Training of experts: teachers, psychologists, directors and deputy directors of educational organisations, teachers from the higher education institutions of Moscow within the framework of **advanced training courses, 'Expert evaluation of the educational environment of the school'.**

3. Study of the educational environment using SACERS (modified version) (N = 33) (2016-2017). This sample has been developed from the educational organisations of the city of Moscow, implementing programs of primary and basic general education.

In processing the data obtained, the following descriptive statistical methods were used: mean, variance, standard deviation, median, plus confidence interval. For comparison of independent groups, the Student's T-criterion for independent samples was employed.

4. Discussion

Let's turn to the results of the study of the educational environment of Moscow schools, using SACERS (scales). In the course of the study, the quality index of the educational environment was calculated, and was 4.42 points. This value matches the average level of development of the educational environment and indicates a satisfactory potential of the educational organisation – in terms of creating educational conditions.

The quality index of the educational environment in the study group ranges from 2.2 to 6.8. These estimates vary quite significantly, something with might indicate considerable differences between the studied schools. This can be caused by unequal opportunities offered in the educational environment of the particular schools of the sample.

The values of the quality of the components of the educational environment (Space and Furnishings, Health and Safety, Activities, Interaction, Program Structure, Staff Development, Special Needs) are presented in the [table 1](#).

Analysis of the range of mean values of the components of the educational environment ($\langle X \rangle$ min, $\langle X \rangle$ max, $\sigma(X)$) has revealed a tendency for a wide spread of these values. This indicates significant differences in the educational conditions at the schools included in the sample. The greatest variation (standard deviation from 2.03 to 2.38 points) is demonstrated by those **components of the educational environment where there are lower mean scales ('Space and Furnishing', 'Health and safety', 'Activities', 'Special Needs')** ([Table 1](#)).

Table 1. The values of the quality of the components of the educational environment

Scales	$\langle X \rangle$ min	$\langle X \rangle$ max	$\langle X \rangle$	$\sigma(X)$
Space and Furnishing	3,85	4,29	4,07	2,03
Health and Safety	3,89	4,50	4,20	2,38
Activities	3,57	4,15	3,86	2,27
Interaction	4,84	5,34	5,09	1,94
Program Structure	4,47	5,07	4,77	1,85
Staff Development	5,00	5,76	5,38	1,80
Special Needs	3,99	4,90	4,44	2,22

The system for assessing the educational environment – on the basis of the international SACERS (scales) - provides a more discerning view of the level of development of the individual components of this environment, plus a profile of its quality. It is on this basis that zones of well-being and risk are defined.

The profile of the quality of the educational environment is shown in [Figure 1](#).

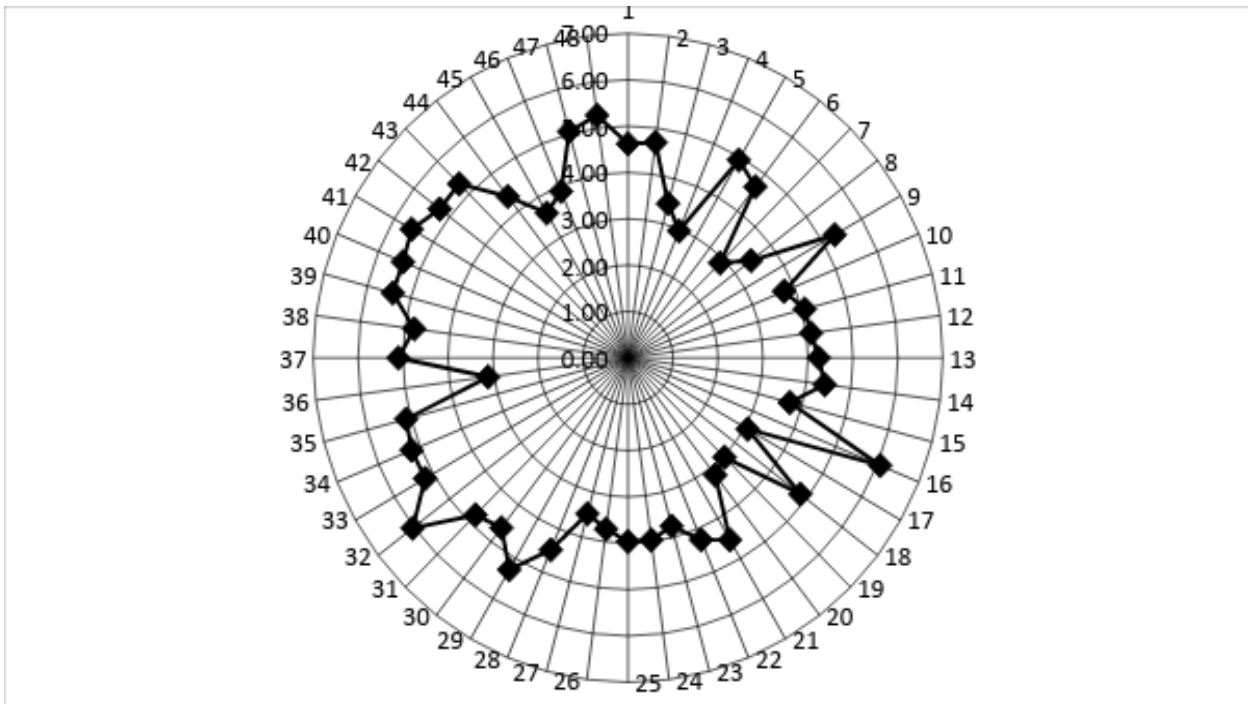


Fig. 1. Quality profile of the educational environment of Moscow schools

The overall picture of the well-being zones, plus the deficiencies of the educational environment presented in [Table 2](#).

Table 2. Zones of wellbeing and deficiencies in the educational environment of Moscow schools

Zones of well-being	Deficiencies
Furnishings for Routine Care	Space for Privacy, Room Arrangement
Access to Host Facilities, Free Choice	Arts and Crafts, Language /Reading Activities, Science /Nature Activities, Cultural Awareness.
Staff-child Interactions, Peer Interaction, Interaction Between Staff and Parents	Departure
Discipline	Personal Hygiene
Use of Community Resources	Furnishings for Relaxation and Comfort
Staff Development	Schedule
Peer Interactions	Individualization

The basis for designing the educational environment of an educational complex can be the predicted values of the components of this educational environment, compiled from the sample as a whole ([Figure 2](#)).

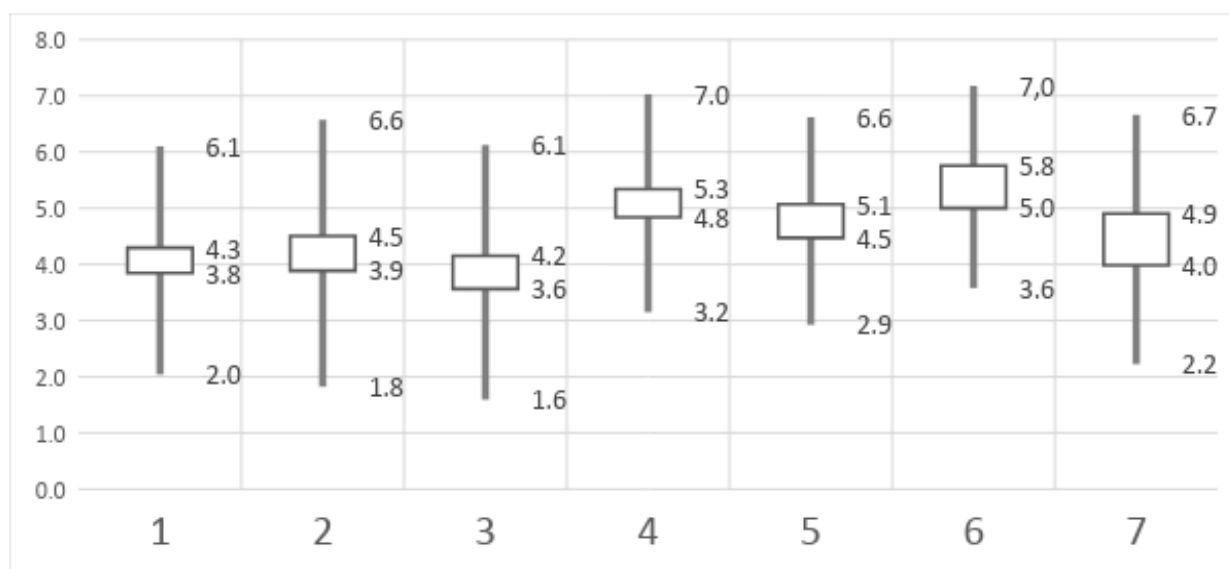


Fig. 2. Prognostic range of quality of the components of the educational environment

Discussion of the results of the study of the educational environment of Moscow schools, using the SACERS (scales) will be carried out with respect to the results obtained in the educational organisations of Germany (Table 3) (Tietze et al., 2007).

Comparison of these results with those obtained from Russian schools is currently not possible due to none yet existing.

Table 3. The values of the quality of the components that form the educational environment of educational organisations in Russia and Germany

Scales	Russia				Germany			
	<X>min	<X>max	<X>	$\sigma(X)$	<X>min	<X>max	<X>	$\sigma(X)$
Space and furnishing	3,85	4,29	4,07	2,03	2,42	6,5	4,72	0,77
Health and safety	3,89	4,5	4,2	2,38	2,00	6,71	4,18	1,10
Activities	3,57	4,15	3,86	2,27	1,88	6,63	4,40	0,93
Interaction	4,84	5,34	5,09	1,94	3,11	6,88	5,66	0,79
Program Structure	4,47	5,07	4,77	1,85	3,25	7,00	5,21	0,87
Staff development	5,00	5,76	5,38	1,8	3,00	7,00	5,40	0,83
Special Needs	3,99	4,90	4,44	2,22	3,83	7,00	6,10	0,88

As can be deduced from Table 3, for six components of the educational environment, the indicators for Moscow schools (with the exception of the 'Health and Safety' scale) are less important than they are to educational organisations in Germany.

Regarding the quality data of the components of the educational environment of Moscow schools in this table (Table 3), the following points can be highlighted:

- **low scores on the 'Space and furnishing' scale** when compared with other scales (4.07 points), are explained, as a rule, by the typical design of school buildings. (Inconvenience related to location of the premises, which makes it difficult to move, restricts the ability to carry out a wide enough variety of activities, plus unable to provide sufficient visibility of premises).

The data obtained indicates that the main problems related to space provision within Moscow schools are: the lack of educational space, an inability to transform space for multiple uses - organisation of various forms of curricular and extracurricular activities. It is important to reconsider the organisation of the school space in order to ensure their multi-functionality and **transformability into small, medium and large areas, on the basis of the 'student-group-class-flow' principle;**

- the value of the indicator on the 'Health and Safety' scale (4.2 points) can be explained by the following: Educational organisations currently have no opportunity to organise meals based upon the individual needs of each child (this is most clearly demonstrated in the organisation of food for allergic children); the organisation of the activities of medical personnel (the presence of a medical worker, as a rule, is limited to two days a week) and the management of all questions relating to the health of the trainees; a limited number of systematic measures to protect health and to promote healthy lifestyles;

- lower rates on the 'Activities' scale (3.86 points) in Moscow schools compared to educational organisations in Germany (4.40 points) (Table 3), due to the lack of specialised facilities, limited resources for the implementation of the proposed programs (a variety of materials, equipment in the premises, etc.), lack of free access to materials outside of those sessions especially organised with the teacher;

- values on the scale of 'Interaction' (5.09 points). Values on this scale correspond to a 'good' level. High scores indicate the good potential of Moscow schools, in terms of interaction between students and teachers, teachers and trainees, plus teachers and parents;

- the data on the 'Program Structure' scale (4.77 points) shows positive trends in ensuring the variability of supplementary education programs and extra-curricular activities, plus the use of the sociocultural space of the city. (This latter, referring to the participation of schools in the projects 'Museums, Parks, Manors', 'History and culture of the churches of the capital', and also ensuring that the connection between generations will not be interrupted, etc.). In this scale deficiency was indicated in the area of 'schedule and schedule of the day'. The values on this scale indicate a lack of flexibility in the schedule, the predominance of class-curricular forms of learning activity, the inadequacy of activities that ensure energetic interaction between students, especially in the open air;

- the highest values were attained on the 'Staff Development' scale (5.38 points), which is largely due to favourable conditions created in the Moscow education system – specifically involving the professional development of teachers;

- data on the scale of 'Special Needs' (4.44 points) indicates a lack of special conditions for students with disabilities. Comparison with German educational institutions (6.1 points) on this scale shows that it is the largest, relative to other scales (Table 3). This may indicate that in the educational institutions of the Moscow region, as a rule, the tasks and characteristics of inclusive education are poorly taken into account.

When considering the reliability of the differences in the group of Moscow schools with those of educational organisations in Germany, we established opinion based upon the Student's T-criterion (Table 4).

Table 4. The average values of the gaming competencies and the difference in their values – according to the Student's T-criterion in the educational organisations of Russia and Germany

Scales	Educational Organizations		Student's T-criterion
	Russia	Germany	
Space and Furnishing	4,07	4,72	- 1, 720
Health and Safety	4,2	4,18	, 043
Activities	3,86	4,40	-1, 280
Interaction	5,09	5,66	- 1, 563
Program Structure	4,77	5,21	- 1, 236
Staff Development	5,38	5,40	-, 057
Special Needs	4,44	6,10	- 3,994***

Here: *** - $p < 0, 001$ при $f = 64$

As can be seen from Table 4, the results obtained from the data of educational organisations in Germany are significantly higher - compared to data obtained in Moscow schools – on the scale of 'Special Needs' ($t = -3.994$ for $p < 0.001$). As a rule, in Moscow, most schools create the minimum educational conditions required for students with disabilities (for example, only school entrance and toilets are adapted for such children). Not all teachers possess the necessary

knowledge to satisfy students with special needs. There is no provision of the specialist equipment necessary in order to train and rehabilitate children with disabilities, therefore such children cannot receive educational services on an equal basis with their peers. Participation in general school activity by the children of this group is very limited.

The results do show that shortcomings caused by objective reasons are compensated for by a high level of professional training of teachers, plus the organisation of interaction between all participants in the educational process.

Let's turn to the analysis of the quality profile of the educational environment (Figure 1).

The highest values (6.0 points) were obtained from the scale indicators of 'Attendance' and 'Discipline'. This reflects the general trend observed, where the main focus of school activity has shifted towards control-disciplinary influences upon students.

High scores were found in the 'Access to Host Facilities' (5.31 points). This is a combination of schools of different orientations in educational complexes that have been allowed to expand the range of programs offered. For example, in some educational organisations, the number of after-class activities and additional educational services reaches 200. However, attention should be paid to the availability of specially equipped premises, as the provision of a sufficient amount of materials and equipment for the implementation of all areas of extracurricular activities and additional educational services is an indicator of the zone risk. Therefore, the values observed in **the indicators for 'Arts and Crafts', 'Language / Reading Activities', 'Science / Nature Activities,' are** in the range from 3.0 to 3.8 points. Risks are determined not only in terms of the availability of the variety of facilities, equipment and materials for these types of activities – which might allow work to take place in a group, individually - but also by the opportunities to enjoy free access to them during the period of time that students are in school attendance.

The lowest values were **obtained from the 'Space and Furnishing' scale, specifically in terms of 'Room Arrangement' (2.97 points) and 'Furnishings for Relaxation and Comfort' (2.90 points).** These data indicate deficits in the provision of well-equipped specialised spaces for a variety of activities, insufficient spaces in general, as well as spaces for self-use by children, more private spaces for homework, or other independent study. Deficiency Zone relates to space and furnishing for relaxation and comfort. In educational organisations we often observe a limited number of **comfortable spaces, there is no 'softness' of space, or accessibility to any for students. So, for example, there is no 'free' or continual access to 'soft' spaces such as of game rooms, spaces for musical entertainment or assembly halls.**

As for the indicator 'Schedule' (3.14 points), the electronic system 'Moscow Electronic School' is widely distributed to Moscow schools. This provides constant access to the schedule and changes therein. Deficiencies are determined in the content and flexibility of the schedule, the representation of various forms of lesson and after class activities (excursions and travel activities - including outdoors in favourable weather conditions, etc.).

During the course of the study it was **revealed that, on the 'Special Needs' scale, the high values of indicators are rarely observed. This is particularly evident in the indicators for: 'Provision for Exceptional Children', 'Individualization', 'Multiple Opportunities for Learning and Practical Skills'.**

The difficulties of creating equal educational conditions for students with HIA are also connected with the organisation of the internal space in large schools. The administration of such schools is faced with the need to re-equip the environment for the needs of children with special educational requirements. In these instances the layout of most buildings, the equipment of classrooms, laboratories and workshops, relaxation zones for students, recreation of the pedagogical staff, and the equipping with technical means of training and rehabilitation of children does not always correspond to the special educational needs of this category of students.

The obtained data reveals the content characteristics of the educational environment, sets the criteria for its development and can become the basis for designing the educational environment, determines the direction of development and pointers towards constructing the trajectory of its changes (Vinogradova, Ivanova, 2018).

5. Conclusion

1. SACERS scales can be considered as an effective tool for assessing the educational environment of Moscow schools because:

- the content of the indicators reflect the basic requirements of the regulatory framework of Russian schools. Moreover, each scale replicates certain aspects of the educational environment, while indicators within the scales help differentiate the actual and desired (required) state of the educational space;

- SACERS have a distinctive and high competence. The total discrimination ability of the scales was 93%;

- they enable a more accurate identification of the quantitative and qualitative characteristics of the educational environment, which are often difficult to measure and to express through the quantitative indicators used in the rating system;

- SACERS facilitate a differentiated view of the existing conditions. This helps to reveal potential for improvement within an educational organisation. On this basis it becomes possible to solve the management task of systematically eliminating deficiencies and determining the vectors for the development of the educational environment - yet excludes the possibility of using this tool as a means of control.

2. During the study of the educational environment using the SACERS (scales), the following features were revealed:

- the quality index of the educational environment of Moscow schools was 4.42 points. This value is the average level of development of the educational environment and indicates the potential for the educational organisation to improve - in terms of creating better educational conditions;

- the spread of figures relating to the quality index of the educational environment (in the study group ranging from 2.2 to 6.8 points) is quite wide. This indicates a significant difference between the schools studied, a factor that may be due to the unequal opportunities of the educational environment of the schools in the sample;

- **low values of the indicators on the 'Activities' scale (3.86 points), compared to other scales,** are due to the lack of specialised facilities, limited resources for the implementation of the proposed supplementary education programs, plus the lack of free access to materials outside of specially organised sessions with teachers;

- **low values on the 'Space and Furnishing' scale in comparison with other scales (4.07 points)** are explained, as a rule, by the typical design of school buildings;

- **values on the scales for 'Interaction' (5.09 points) and 'Staff Development' (5.38 points)** indicate the positive potential of Moscow schools, in terms of interaction between students and teachers, teachers and students, plus teachers and parents. They also point to favourable conditions created in the system of Moscow education in terms of the professional development of teachers.

3. Analysis of the values of each individual indicator made it possible to identify:

- **that the highest values in the scales were obtained from the 'Attendance' and 'Discipline' indicators.** This reflects the general trend observed in schools, whereby the main focus of activity is shifted towards control-disciplinary influences upon students;

- **that the high scores on the 'Access to Host Facilities' indicators point towards a unification** of Moscow schools of different orientations into educational complexes that are allowed to expand the range of these programs;

- **that the lowest values were obtained in terms of 'Room Arrangement' (2.97 points) and 'Furnishing for Relaxation and Comfort' (2.90 points).** The data for these areas indicate deficiencies in the provision and equipping of specialised spaces for a variety of activities, plus lack of space and furnishings for relaxation and comfort;

- that funds are defined in the content and flexibility of the schedule (based upon the analysis of the values of the **'Schedule' indicators**), as well as the **representation of various forms of the lesson and after-hour activities** (excursions, motor activities, including outdoors in favourable weather conditions, etc.);

- that high value scores are rarely observed in the indicators for the areas covered by **'Provision for Exceptional Children', 'Individualization', 'Multiple Opportunities for Learning and Practical Skills'.**

4. Prospects for the use of SACERS scales:
- creation of a system of external independent audit;
 - design of the educational environment, based upon data obtained using scales;
 - conducting cross-cultural research.

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References

- [Federal Law...](#) – Federal Law "On Education in the Russian Federation" [Electronic resource] // Information and Legal Support "Garant". URL: <http://base.garant.ru/70291362/> (Accessed: 15.05.18).
- [The Policy...](#), 2015 – The Policy of Educational Institutions According to the Results of a Survey of their Leaders. Information Bulletin (2015). Moscow, 7 (89), 60 p.
- [Development and Methodology ...](#) – Development and Methodology of the Rating. Moscow Rating 2018 [Electronic resource]. URL: mos.ru (Accessed: 15.05.18).
- [Yastrebov et al., 2013](#) – *Yastrebov, G.A., Bessudnov, A.R., Pinskaya, M.A., Kosaretsky, S.G.* (2013). Problema kontekstualizatsii obrazovatel'nykh rezul'tatov: shkoly, sotsial'nyi sostav uchashchikhsya i uroven' deprivatsii territorii [The problem of the contextualization of educational results: schools, the social composition of students and the level of deprivation of territories]. *Voprosy obrazovaniya*, 4: 188-246. [in Russian]
- [Bourdieu, Passeron, 1970](#) – *Bourdieu, P., Passeron, J. C.* (1970) *La reproduction éléments pour une théorie du système d'enseignement*. Paris: Editions de Minuit.
- [Coleman, 1966](#) – *Coleman, J. S.* (1966). Equality of Educational Opportunity. *Integrated Education*, 6 (5): 19–28.
- [Agranovich, 2008](#) – *Agranovich, M.L.* (2008). Indikatory v upravlenii obrazovaniem: chto pokazyvayut i kuda vedut? [Indicators in the management of education: what is shown and where are they leading?]. *Voprosy obrazovaniya*, 1: 120-145. [in Russian]
- [Konstantinovskiy, Voznesenskaya, 2011](#) – *Konstantinovskiy, D.L., Voznesenskaya E.D.* (2011) Education and life trajectories of youth: 1998-2008. Moscow. [in Russian]
- [Pinskaya et al., 2011](#) – *Pinskaya, M.A., Kosaretsky, S.G., Frumin I.D.* (2011). Shkoly, effektivno rabotayushchie v slozhnykh sotsial'nykh kontekstakh [Schools that work effectively in complex social contexts]. *Voprosy obrazovaniya*, 4: 148-177. [in Russian]
- [Bochenkov, Valdman, 2013](#) – *Bochenkov, S.A., Waldman, I.A.* (2013). Interpretatsiya i predstavlenie rezul'tatov EGE: problemy i vozmozhnye resheniya [Interpretation and presentation of the results of the USE: problems and possible solutions]. *Voprosy obrazovaniya*, 3: 5-24. [in Russian]
- [Bolotov, Valdman, 2013](#) – *Bolotov, V.A., Valdman I.A.* (2013). Vidy i naznachenie programm otsenki rezul'tatov obucheniya shkol'nikov [Types and purpose of evaluation programs for schoolchildren]. *Pedagogika*, 8:15-26. [in Russian]
- [Yastrebov et al., 2014](#) – *Yastrebov, G.A., Pinskaya, M.A., Kosaretsky, S.G.* (2014). Ispol'zovanie kontekstnykh dannykh v sisteme otsenki kachestva obrazovaniya: opyt razrabotki i aprobatsiya instrumentariya [Use of contextual data in the system of assessing the quality of education: experience in the development and testing of tools]. *Voprosy obrazovaniya*, 4: 58-95. [in Russian]
- [Derbischinir, Pinskaya, 2016](#) – *Derbischinir, N.S., Pinskaya M.A.* (2016). Upravlencheskie strategii direktorov effektivnykh shkol [Managerial Strategies for Directors of Effective Schools]. *Voprosy obrazovaniya*, 3: 110-129. [in Russian]
- [Index of educational ...](#) – Index of educational infrastructure of Russian regions 2016-2017 [Electronic resource]. URL: <http://ioe.hse.ru> (Accessed: 15.05.18).

Data bank... – Data bank on the work carried out in Russia at the federal and regional levels in the field of evaluation and management of the quality of education [Electronic resource]. URL: <http://www.rtc-edu.ru/resources/databank> (Accessed: 15.05.18).

Federal state ... – Federal state educational standard of basic general education (approved by the order of the Ministry of Education and Science of the Russian Federation of December 17, 2010 No. 1897) [Electronic resource]. URL: ivo.garant.ru/#/document/55170507/paragraph/285:3 (Accessed: 15.05.18).

Concept and plan of events... – Concept and plan of measures of the All-Russian system for assessing the quality of general education (OSOKOO) for 2014 – 2016. URL.: hse.ru/data/2014/03/06...Концепция...05.04.2018.pdf (accessed: 15.05.18).

Bolotov, Valdman, 2014 – *Bolotov, V.A., Valdman, I.A.* (2014). Aktual'nye zadachi po razvitiyu sistemy otsenki kachestva obrazovaniya v strane i regione [Actual tasks for the development of the system for assessing the quality of education in the country and region] [Electronic resource]. URL: <http://www.rtc-edu.ru/resources/publications> (Accessed: 15.05.18). [in Russian]

Environment Rating... – Environment Rating Scales Institute [Electronic resource]. URL.: ersi.info (Accessed: 15.05.18).

Ivanova, Vinogradova, 2017 – *Ivanova, E.V., Vinogradova I.A.* (2017). Otsenivanie uslovii realizatsii osnovnoi obrazovatel'noi programmy nachal'nogo i osnovnogo obshchego obrazovaniya s ispol'zovaniem mezhdunarodnoi shkaly SACERS [Evaluation of the conditions for the implementation of the basic educational program of primary and basic general education using the international scale SACERS]. *Vestnik Moskovskogo gorodskogo pedagogicheskogo universiteta. Seriya: Pedagogika i psikhologiya*, 4 (42): 66-79. [in Russian]

Remorenko et al., 2017 – *Remorenko, I.M., Shiyan, O.A., Shiyan, I.B., Shmis, T.G., Le-van, T.N., Kozmina, Y.Y., Sivak, E.V.* (2017). Klyuchevye problemy realizatsii FGOS doshkol'nogo obrazovaniya po itogam issledovaniya s ispol'zovaniem «Shkal dlya kompleksnoi otsenki kachestva obrazovaniya v doshkol'nykh obrazovatel'nykh organizatsiyakh (ECERS-R)»: «Moskva-36» [Key problems of implementation of FGOS preschool education based on the results of the study using the "School for Comprehensive Assessment of the Quality of Education in pre-school educational organizations (ECERS-R) " : " Moscow-36 "]. *Sovremennoe doshkol'noe obrazovanie. Teoriya i praktika*, 2: 16-31. [in Russian]

Shiyan et al., 2016 – *Shiyan, I.B., Zadadaev, S.A., Le-van, T.N., Shiyan, O.A.* (2016). Aprobatsiya shkal otsenki kachestva doshkol'nogo obrazovaniya ECERS-R v detskikh sadakh goroda Moskvy [Approbation of scales of an estimation of quality of preschool education ECERS-R in kindergartens of a city of Moscow]. *Vestnik Moskovskogo gorodskogo pedagogicheskogo universiteta. Seriya: Pedagogika i psikhologiya*, 2 (36): 77-92. [in Russian]

Harms et al., 1996 – *Harms, T., Jacobs, E., White D.* (1996). School Age Care Environment Rating Scale. New York.

Tietze et al., 2007 – *Tietze, W., H.-G. Roßbach, H. -G., Stendel, M., Wellner, B.* (2007). Hort-und Ganztagsangebote Skala (HUGS). Berlin-Düsseldorf-Mannheim. 66 p.

Ivanova, Vinogradova, 2017 – *Ivanova, E.V., Vinogradova I.A.* (2017). Vozmozhnosti issledovaniya obrazovatel'noi sredy shkoly s ispol'zovaniem shkaly SACERS [Opportunities for studying the educational environment of the school using the SACERS scale]. *God ekologii v Rossii: pedagogika i psikhologiya v interesakh ustoichivogo razvitiya: sbornik statei nauchno-prakticheskoi konferentsii (4-5 dekabrya 2017, Moskva)* Cons: M.O. Mdivani, V.I. Panov, Y.G. Panyukova. Moscow: 236-240. [in Russian]

Vinogradova, Ivanova, 2018 – *Vinogradova, I.A., Ivanova E.V.* (2018). Model' razvitiya uslovii realizatsii osnovnoi obrazovatel'noi programmy nachal'nogo i osnovnogo obshchego obrazovaniya s ispol'zovaniem mezhdunarodnoi shkaly SACERS [Model for the development of conditions for the implementation of the basic educational program for primary and basic general education using the international SACERS scale]. *Nauchno-metodicheskii elektronnyi zhurnal «Kontsept»*, V4: 12-20. [in Russian]