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as a manuscript

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Resilient Schools in Russia: Distinguishing Methods and Work Strategies

Summary of the thesis for the purpose to obtaining academic degree Doctor
of Philosophy in Education.

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PhD in Psychology

Moscow – 2022

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Theme	Resilient schools in Russia: Distinguishing Methods and Work Strategies
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List of author publications	<ol style="list-style-type: none"> 1. Pinskaya, M., Khavenson, T., Kosaretsky, S., Zvyagintsev, R., Mikhaylova, A., & Chirkina, T. (2018). Above Barriers: A Survey of Resilient Schools. <i>Educational Studies Moscow</i>, 2, 198–227. https://doi.org/10.17323/1814-9545-2018-2-198-227 2. Pinskaya, M., Kosaretsky, S., Zvyagintsev, R., & Derbishire, N. (2019). Building resilient schools in Russia: effective policy strategies. <i>School Leadership & Management</i>, 39(2), 127–144. https://doi.org/10.1080/13632434.2018.1470501 3. Zvyagintsev, R. (2021). Personality Traits of Students in Resilient and Struggling Schools: Different Children or Different Schools. <i>Educational Studies Moscow</i>, 3, 33–61. https://vo.hse.ru/en/2021--3/508086378.html 4. Chirkina, T., Khavenson, T., Pinskaya, M., & Zvyagintsev, R. (2020). Factors of student resilience obtained from TIMSS and PISA

	<p>longitudinal studies. <i>Issues in Educational Research</i>, 30(4), 1245–1263. http://www.iier.org.au/iier30/chirkina.pdf</p> <p>Other publications related to the dissertation topic:</p> <ol style="list-style-type: none"> 5. Mikhaylova, A., Zvyagintsev, R., Pinskaya, M., & Anderson, L. (2021). Differences in School Effectiveness Between Resilient and Struggling Russian Schools. <i>SSRN Electronic Journal</i>. https://doi.org/10.2139/SSRN.3873871 6. Zvyagintsev, R., Pinskaya, M., Konstantinovskiy, D., & Kosaretsky, S. (2020). The contradictions of education in Russia. <i>Rural Youth at the Crossroads: Transitional Societies in Central Europe and Beyond</i>, 115-137. https://doi.org/10.4324/9781003051077 7. Kosaretsky S.G., Pinskaya M.A., Zakharov A.B., Zvyagintsev R.S., Mikhailova A.M., Shmis T., Parandekar S., Kunimoto Sh., Chugunov D., Zavalina P., Horvai A., Novak D., Aedo K. Equality of educational opportunities in the Russian Federation. World Bank, 2018.
<p>List of scientific conferences at which the results of the dissertation research were presented</p>	<ol style="list-style-type: none"> 1. CIES-2021. Social Responsibility within Changing Contexts (online) 2. XXI April International Scientific Conference on Economic and Social Development 2021 (online) 3. XVIII International Scientific and Practical Conference "Trends in Education Development"

	<p>The quality of educational results and educational reforms contributing to its growth 2021 (online)</p> <ol style="list-style-type: none"> 4. ECER-2019 'Education in an Era of Risk — the Role of Educational Research for the Future' (Hamburg, Germany). 5. XX April international scientific conference on the problems of economic and social development (Moscow, Russia). 6. QRM-2019 (Gothenburg, Sweden). 7. XIX April international scientific conference on the problems of economic and social development (Moscow, Russia). 8. XV International Scientific and Practical Conference "Trends in Education Development" The quality of educational results and educational reforms contributing to its growth 2018 (Moscow, Russia) 9. WERA 2018 World Congress (Cape Town, Republic of South Africa). 10. ECER 2018 "Inclusion and Exclusion, Resources for Educational Research?" (Bolzano, Italy).
<p>List of presentations at practice-oriented events (master classes, webinars)</p>	<ol style="list-style-type: none"> 1. FIEEQ seminar "Schools with low educational outcomes" 2021 2. Lecture "School Resilience: How Schools Cope with Adverse Working Conditions". Krona online-seminar of the RUSNANO School League program, MODERN SCHOOL: FROM QUALITY OF LIFE TO QUALITY OF RESULT, 2020

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List of abbreviations

PISA — Programme for International Student Assessment
TIMSS — Trends in International Mathematics and Science Study
OECD — Organisation for Economic Co-operation and Development
FIEEQ — Federal Institute for Evaluation of Education Quality
ICS — International comparative studies
SES — Socio-economic status
MEMO — Monitoring of education markets and organizations
RCAQE — Regional centre for assessing the quality of education
USE — Unified State Exam
NPO — Non-profit organization

Table of contents

Table of contents	6
Introduction	7
Relevance	7
Literature review	10
Resilience theory	10
Academic Resilience	12
Related research areas	14
Research problem and research questions	20
Research goals and objectives	22
Research methodology	23
Database	23
Analysis	26
Key results	27
Resilient Schools Based on Russian Data	27
Strategies that distinguish resilient schools from other low SES schools	30
Comparison of personal characteristics of students in resilient and non-resilient schools	35
Statements for Defense	37
Discussion and conclusion	38
The discussion of the results	38
General discussion around the phenomenon of academic resilience	41
Research limitations	43
Recommendations for educational policy	46
Bibliography	49
Appendix 1	64
Appendix 2	65

Introduction

Relevance¹

The study of factors related to academic achievement in general education has been the focus of educational research for many years. A separate significant area in such research is the study of academic resilience, the phenomenon in which schools or students, despite their low socio-economic status, achieve high academic results (Erberber et al., 2015; Hargreaves & Harris, 2011). My² dissertation is devoted to studying the practices and strategies of academically resilient schools based on data from Russian samples.

In the last decade, the phenomenon of resilience has entered the agenda of large-scale comparative international studies conducted by the OECD. The term “academically resilient” has been used in the international comparative study of the quality of education PISA since 2009 to determine students from families with low economic, educational and cultural resources, achieving the highest results on tests (OECD, 2010, 2016). In the latest waves of research, in addition to academic resilience, the subject of analysis was other evidence of children's ability to overcome the negative impact of social disadvantage, primarily socio-emotional resilience, i.e. subjectively high quality of life, motivation to study and attitudes towards success (Longobardi et al., 2018; OECD, 2018). The share of resilient students began to be considered one of the indicators of the education system's effectiveness, which, along with quality, ensures its availability and equality of chances for students from different social strata (Erberber et al., 2015; Longobardi et al., 2018).

Factors that can increase students' chances of general and academic resilience have been in the focus of attention of foreign scientists for a long time (Henderson & Milstein, 2003; Ross et al., 2001). Resilience is commonly viewed as a

¹ Some parts of the text of the summary are taken from the report on the project of the Central Research University Higher School of Economics Reg. R&D No. AAAA-A20-120070290123-3. The work uses only those segments of the text that were written personally by the author of the work.

² Further in the text, either impersonal formulations or plural formulations in the first person are most often used due to the fact that the prevailing part of the research within the dissertation was prepared in co-authorship with my excellent colleagues. Nevertheless, in some exceptional places, I allow myself to write in the first person.

multidimensional concept, a process that occurs in an individual's interaction and social environment (Brooks, 1994; Luthar, 2006; Southwick et al., 2014; Ungar, 2012). Therefore, attention is traditionally attracted by individual factors of resilience or personality characteristics associated with resistance to harmful environmental influences, such as self-efficacy and autonomy (Masten et al., 2008; Werner, 1997), social and communication skills (Luthar, 2003), cognitive abilities (Masten & Coatsworth, 1995; Rutter, 1987).

Other researchers have examined external factors that contribute to academic resilience, highlighting school factors such as teacher expectations and teaching methods, school governance, school values, and climate (Siraj & Taggart, 2014). Cicchetti examined the factors underlying the intersection of school and family influences, partnerships between home and school, and the impact of local communities (Cicchetti, 2013). It should be noted that the field of study of resilience in education has expanded in recent years to include the issue of resilience of teachers and principals (Day & Gu, 2013; Patterson et al., 2004; Steward, 2014).

For domestic research, academic resilience is relatively new. It is associated primarily with the Centre for General and Extracurricular Education studies of the Institute of Education, National Research University Higher School of Economics (Kosaretsky et al., 2014; Yastrebov et al., 2014). At the same time, it should be noted that in recent years, resilient schools have become an increasingly popular topic for research in the Russian educational agenda. For example, FIEEQ is engaged in them³, and separate recommendations are prepared for schools with low SES and results⁴.

3

https://fioco.ru/Media/Default/Documents/%D0%A8%D0%9D%D0%9E%D0%A0/%D0%90%D0%BD%D0%B0%D0%BB%D0%B8%D0%B7%20%D1%80%D0%B5%D0%B7%D0%B8%D0%BB%D1%8C%D0%B5%D0%BD%D1%82%D0%BD%D0%BE%D1%81%D1%82%D0%B8%20%D1%80%D0%BE%D1%81%D1%81%D0%B8%D0%B9%D1%81%D0%BA%D0%B8%D1%85%20%D1%88%D0%BA%D0%BE%D0%BB_.pdf

4

<https://fioco.ru/Media/Default/Documents/%D0%A8%D0%9D%D0%9E%D0%A0/%D0%9C%D0%B5%D1%82%D0%BE%D0%B4%D1%80%D0%B5%D0%BA%D0%BE%D0%BC%D0%B5%D0%BD%D0%B4%D0%B0%D1%86%D0%B8%D0%B8%20%D0%BF%D0%BE%20%D0%A8%D0%9D%D0%9E%D0%A0.pdf>

This dissertation research is a logical continuation of the abovementioned research, but at the same time, significantly deepens the research focus. A fundamentally new step is that the analysis is wholly focused on the school level — all factors are operationalized as the practices and strategies of schools. At the same time, the research focus on the existing contradiction of academic resilience — the "dropping out" of individuals or, in this case, schools from the general pattern of educational inequality (the relationship between academic results and SES). Most of the research results are reflected in the scientific articles mentioned above and in practical recommendations, analytical notes, all-Russian seminars⁵, various federal⁶ and regional projects, and publicistic articles⁷.

The research results are significant in the context of scientific support of the goals of the national project in the field of education: ensuring the competitiveness of Russian education and Russia's entry into the top 10 countries in terms of the quality of general education. In modern comparative studies of the quality of education, various indicators of "resilience" are promising criteria for comparing national general education systems (Agasisti et al., 2018; OECD, 2010). Moreover, the leading scientific problem of the research being solved is precisely the attempt to resolve the paradox of resilient schools — the search for an answer to the question of what internal and external processes at the school level allow the school to show high academic results in difficult social conditions, given that the global patterns of educational inequality are opposite to this phenomenon (Sirin, 2005). The answer to this question can be used not only and not so much in the context of fundamental scientific research, but precisely in purely practical tasks both at the level of an individual school and at the level of educational policy in a municipality, region, country.

⁵ <https://ioe.hse.ru/news/327498601.html>

⁶ <https://edu.gov.ru/press/2691/ministerstvo-prosvescheniya-zapuskaet-proekt-500-pod-lozungom-vazhen-kazhdyy-uchenik/>

⁷ <https://vogazeta.ru/articles/Neravenstvo>

Literature review

Resilience theory

In a broad sense, the theory of resilience first appears in developmental psychology as a description of the characteristics of individuals that distinguish them by how successfully they adapt and develop. Resilience studies emerge at almost the same time in different contexts and from different authors (Cicchetti et al., 1993; Cicchetti & Garmezy, 1993; Cicchetti & Toth, 2006; Masten, 1989, 2007). This research emerges as part of the search for opportunities to prevent or correct developmental problems. Researchers are beginning to note that adverse external conditions can play an essential role in the emergence and development of such issues. At the same time, cases and situations are considered and noted in which individuals who are in similar unfavourable external conditions show different degrees of adaptation success. Various influential scientists have suggested that understanding the mechanisms behind successful adaptation in such situations is essential for understanding the causes and ways to prevent and correct various personal development problems and adaptation problems. Researchers know that it is critical to understand why, under the same poor conditions, some children cope successfully and others, on the contrary, cannot manage (leading to trauma and developmental problems in the future) (J. Anthony & Cohler, 1987; Rutter 1985, 1987; Werner 1997).

Developmental resilience research has significantly influenced the concepts and models of developmental psychology and psychopathology, opening new avenues for researching developmental problem prevention and correction practices (Cicchetti, 2010, 2013; Masten, 2011, 2014; Panter-Brick & Leckman, 2013; Prince-Embury & Saklofske, 2013; Rutter, 2013). Recently, research on resilience has changed significantly (both due to the general development of science and in connection with specific breakthroughs in related fields and development theory) (Cicchetti, 2013; Luthar, 2006; Masten, 2014). Changes affected technology and research methodology. Scientists gradually switched to other methods besides observation (for example, trying to provoke the successful adaptation of an

individual in poor conditions) (Cicchetti, 2010; Luthar, 2006). Along with this, the definitions of the term resilience have changed (and are still changing); they are becoming multidimensional and more dynamic. Resilience theory is gradually becoming multidisciplinary: research is beginning to touch on neurosciences, biological processes, genetics, etc. There is increasing interest in more complex models, including, among other things, multicultural contexts and borrowing the methodology of the theory of developing systems (Southwick et al., 2014; Ungar, 2012; Ungar et al., 2013).

If we give any general definition of this concept, it is worth noting that researchers of resilience have put forward very different options from each other at different times. A good definition should pursue several goals at once: to take into account all (or maximum of) existing changes in the theory and practice of studying resilience, to be unchanged for different conditional levels of analysis, and to consider interdisciplinary use. With all this in mind, Masten and Cicchetti give the following definition of resilience:

“Resilience can be broadly defined as the capacity of a system to adapt successfully to challenges that threaten the function, survival, or future development of the system” (Masten & Cicchetti, 2016). It should be noted that many systems are involved in processes leading to the successful adaptation of an individual, family or community. In addition, systems that are interconnected at different levels will influence each other. In other words, the resilience of an individual, which manifests itself and is observed at the level of behaviour, depends on the functioning and interaction of many different systems, both within the individual (immune system, response to stress, etc.) and outside the individual (family, social group or larger social systems). A similar definition is suitable for any larger (or, conversely, smaller) system (Masten & Cicchetti, 2016).

Academic Resilience

The term "resilient" has been used in the international comparative study of the quality of education PISA⁸ since 2009 and refers to schoolchildren from families with low economic, educational and cultural resources, achieving the highest results in tests (Agasisti et al., 2018; OECD, 2010). It should be noted that the field of study of resilience in the context of education has expanded so much that researchers are interested in the resilience of teachers and principals (Day & Gu, 2013; Henderson & Milstein, 2003; Patterson et al., 2004; Steward, 2014). In this study, the term "resilient" is used in a broader sense since, based on several studies, we transfer it from the individual level to the level of the school as a whole (Masten et al., 2008; Richardson, 2002).

Factors that can increase students' chances of academic resilience have been studied over the past decades (Henderson & Milstein, 2003; Luthar, 2003; Ross et al., 2001). Several researchers have identified school resilience factors, such as the effect of teacher and pedagogical methods (Rockoff, 2004; Siraj & Taggart, 2014), partnerships between home and school (Masten et al., 2008).

These characteristics include, for example, the impact on the student of a safe and orderly school environment; positive expectations; involvement in academic activities and the life of the school as a whole (Rivkin et al., 2005; Rockoff, 2004). The connection of these school factors with the high achievements of socially disadvantaged schools is also verified in this study.

Another characteristic of the school can be seen as evidence of its ability to improve students' life chances from disadvantaged families. For example, 'School Promoting Power' is a metric commonly used to assess school performance in the United States. The model used in this case compares the proportion of students enrolled in high school versus those in high school (Borman et al., 2003).

The school climate is also important and positively associated with academic resilience (Longobardi & Agasisti, 2014), a key concept in the school performance

⁸ <http://www.oecd.org/pisa/>

model (Macneil et al., 2009). It is important to consider such components of the school climate as the nature of the relationship between teachers, students, parents, administration; expectations regarding the achievements of schoolchildren on the part of the school, parents and students themselves; features of the assessment system (Brooks, 1994; Chapman et al., 2012; Wang et al., 2016).

There is an ongoing debate as to what results might indicate a positive impact of the school on the student. In addition to cognitive skills, non-cognitive skills, motivation, and student expectations may be associated with high achievement (Lenkeit, 2013; Van Landeghem et al., 2002). International comparative studies, which have significantly deepened the understanding of the reasons for academic resilience, also show that self-confidence and motivation are positively associated with the ability to achieve high educational results, despite the family's status (OECD, 2011b).

Related research areas

Relationship with studies of territorial inequality

When discussing resilient schools, one cannot ignore the talk about territorial inequality because, in most cases (as with resilient students), rural schools are resilient schools. The educational environment for urban and rural schoolchildren differs qualitatively (Piontak & Schulman, 2016; Rees et al., 2017). For Russian schools, this is also a recognized fact, confirmed by the data of educational statistics, national monitoring and individual studies conducted over the past decade and a half (Konstantinovsky et al., 2006; Kosaretsky et al., 2014; Kosaretsky, Froumin, et al., 2019; Roshchina, 2012). The reasons for the current situation are associated with the characteristics of settlement and the socio-economic status in rural areas. The low population (small size of villages) does not allow a full-fledged team of subject teachers to offer a variety of specialised training programs and additional education. The limited budget of municipal districts creates difficulties in maintaining the school building, carrying out repairs, and purchasing modern equipment (Froumin & Kasprzhak, 2012). Poor transport accessibility and harsh natural and climatic conditions exacerbate the problem in many regions.

Since the beginning of the 21st century, the problem of inequality of educational opportunities for the younger generation in access to modern infrastructure and high-quality educational programs has been recognized at the state level as one of the critical problems in the development of education (Froumin & Kasprzhak, 2012; Kuzminov & Froumin, 2018). The objectives of expanding the opportunities for obtaining quality education in rural areas were included in all national programs and projects to develop education in the 21st century. Various measures have been proposed and implemented over the years. They included the closure and reorganization of small schools, the creation of a system of basic schools with the delivery of students, the modernization of school infrastructure, the supply of modern equipment, the development of distance learning, the attraction of qualified teaching staff, increased funding for small schools, social benefits and additional payments for teachers of rural schools (Kosaretsky, Froumin, et al., 2019).

These measures made it possible to improve the infrastructure of general education in the countryside. However, differences between rural and urban schools persist in the qualifications of teachers, the involvement of children in specialized education programs, and additional education (Kosaretsky, Goshin, et al., 2019; Surinov, 2018).

The cumulative influence of several contextual factors (socioeconomic status of families and school resources) affects the quality of education. Inequality in educational results of rural and urban schoolchildren is manifested in the data of international comparative studies of academic achievements. Thus, according to the results of our analysis of the data of Russian schoolchildren in the latest PISA study (2018), in reading, students from rural areas lag behind residents of large cities by 72 points, in mathematics — by 64, in natural science — by 63. Compared to 2015, the scores in reading scores of students from rural areas decreased by 23 points. Students from large cities showed an increase in scores in all three subjects, albeit insignificantly (Adamovich et al., 2019).

Rural schools show lower results than urban schools and in all the procedures for assessing the education quality currently used in Russia. Graduates of rural schools are less successful in passing the Unified State Exam (an exam at the end of grade 11, which determines university admission opportunities). The regularity revealed at the initial stage of the introduction of this procedure — the dependence of the average USE score on the size of the settlement appears to this day (Kosaretsky, Froumin, et al., 2019; Sobkin et al., 2010).

Relationship to the theoretical framework of school effectiveness research

Over the past half-century, researchers and practitioners have tried to identify the factors that differentiate schools that are more successful in teaching their students from those that are less successful. In terms of research, the search began at Michigan State University in the mid-1970s under the umbrella of "Effective School Research." The first challenge facing the researchers was to identify an effective school. They put forward three criteria: "(1) 95 per cent (or more) of all students at each level of the study demonstrate minimal academic excellence and are

willing to excel in the next grade anywhere in the United States; (2) there should be no significant difference in the proportion of students showing minimal academic excellence by socioeconomic class; and (3) the above two conditions have been met for at least three consecutive year" (Sudlow, 1985).

The researchers visited several schools that met these criteria and tried to identify similarities between them based on observations and interviews. In 1979, Ron Edmonds, one of the researchers, published a short article in which he summarized the results, called "correlates of effective learning" (Edmonds, 1979). There have initially been five correlates; over time, their number grew to seven.

- 1) High expectations;
- 2) Educational leadership;
- 3) Clear and focused mission;
- 4) Availability of all the necessary conditions for successful training;
- 5) Frequent monitoring of student progress;
- 6) Safe and orderly environment;
- 7) Positive relationships between school and family (Lezotte & Snyder, 2011).

This study subsequently developed into a separate group of studies on educational effectiveness (Educational Effectiveness Research) and school effectiveness (School Effectiveness Research) (Chapman et al., 2012; Mortimore, 1988; Reynolds et al., 2014). These studies are aimed at examining school processes, especially those that characterize schools operating in the most challenging social conditions, with the most disadvantaged groups (Chapman et al., 2012; Hargreaves & Harris, 2011; Harris, 2008; Hopkins & Reynolds, 2001; Mortimore, 1988; Othman & Muijs, 2013).

Although most researchers have focused on the positive elements of correlates or factors, van de Grift and Houtveen suggest that it makes sense to consider harmful elements, especially when focusing on problem schools (van de Grift & Houtveen, 2006). They indicate that struggling schools are often characterized by (a) insufficient teaching material to meet critical objectives, (b) insufficient time for students to achieve minimum curriculum objectives, (c) poor quality of instruction,

(d) insufficient understanding of academic achievement, (e) insufficient measures to improve students with difficulties, and (g) long-term dysfunctional school organization. These troubled schools also experience significant leadership instability and high student and staff mobility. Finally, and very importantly, these deficiencies do not appear in isolation but with other factors (van de Grift & Houtveen, 2007). Research by Mortimore, Sammons, and Hillman (Mortimore et al. 1995) and Stringfield (1998) anticipates van de Grift and Houtwin's analysis. Taken together, the results of these studies show that struggling schools not only lack the positive qualities that are characteristic of effective or resilient schools, but they also have several negative traits or qualities.

Academic Resilience as an Individual Construct and Relationship with Other Similar Constructs

The debate among resilience researchers about whether resilience can be considered a construct — some measurable trait of an individual — is still ongoing. In developing the theory of resilience, there were many examples when scientists attempted to create a reliable and valid instrument for measuring individual resilience. Some examples are Wagnild & Young (1993) Resilience Scale, Connor-Davidson Resilience Scale (Connor & Davidson, 2003), Friborg Resilience Scale (Friborg et al., 2003), Smith's resilience scale (Smith et al., 2008). All of these questionnaire scales examined the characteristics of the subjects that are traditionally associated with resilient behaviour. It refers to both the skills of internal regulation and the skills of social interaction, self-esteem, acceptance of oneself and the world around, orientation towards success, high adaptability, solving complex problems, interaction within the family, a sense of humour, endurance, optimism, dispositions, as well as questions about external support systems (Hoge et al., 2007). Several researchers show that the operationalization and scale structure used is not entirely consistent and correct (Campbell-Sills & Stein, 2007; Green et al., 2014; Lamond et al., 2008). At the same time, researchers and scale creators have no consensus on defining this concept before measuring it. Hoge (2007) believes that the interaction of a large number of external and internal factors is the main characteristic of

resilience, which has been pointed out by other authors (Masten & Cicchetti, 2016). However, Cassidy notes that this does not necessarily apply to academic resilience as a separate part of general resilience theory (Cassidy, 2015).

There have been few studies dealing with the measurement of academic resilience as a psychological construct, as well as its predictors (Martin, 2002; Martin et al., 2010). Cassidy writes that the lack of theoretical work to understand the psychological foundations of individual academic resilience has affected the small number of standardized measuring instruments (Cassidy, 2015).

One of the articles of this thesis uses a Russian version of the ARS-30 academic resilience scale (Cassidy, 2016). This scale operationalizes academic resilience by assessing students' adaptive and non-adaptive cognitive, emotional and behavioural responses to adverse situations associated with their academic life. In general, we can say that in meaning, it is built by analogy with similar scales for assessing resilience in other spheres of life (Hardy et al., 2004).

Discussion of academic resilience as a personality construct is meaningful because a potential explanation for school resilience can always be a random or targeted selection of students with particular personality traits that help them perform well in academic performance regardless of school strategies. In this context, it is worth discussing other constructs associated with individual academic resilience at the theoretical level. Several Russian and foreign scientists have shown that such constructs, theoretically similar to academic resilience, such as the ability to adapt, involvement and self-control, are associated with academic achievement (Collie et al., 2017; Gordeeva et al., 2016). Recent work by Barber and colleagues discusses the importance of multiple constructs simultaneously for the academic success of online learning: resilience, perseverance (grit), and learning motivation (Barber et al., 2019). In 2016, *Educational Psychology* published a whole separate special issue devoted to the relationship between academic motivation, engagement, self-control and other constructs with the academic success of schoolchildren (Moore, 2016). At the same time, it has been shown that self-control and student engagement are associated with academic resilience (Cheung, 2017), and the use of

practices of additional student involvement in the educational process leads to more academically resilient behaviour (Torsney & Symonds, 2019).

Summarizing the above, it is necessary to note that the consideration of the issue of school resilience requires the use of the totality of the described theoretical foundations within the framework of a general model. It is through this synthesis that a holistic conceptualization of the phenomenon is achieved.

Thus, the phenomenon of the resilient school in this study is considered comprehensively:

- 1) the very idea of a resilient school is considered in the framework of educational inequality (territorial and socio-economic);
- 2) the practices of resilient schools are described and interpreted within the framework of school effectiveness;
- 3) to compare the personal characteristics of students from different schools, a psychometric theory is used that describes the unobservable characteristics of individuals behind behavior as latent but measurable constructs.

Research problem and research questions

The main scientific problem of this study is related to the phenomenon of academic resilience, revealed in the situation of an academically resilient school. A school is considered resilient if it is in the group of schools with a low SES (lower quartile of the distribution) and shows high academic results (upper quartile of the distribution) (Pinskaya et al., 2019). The problem lies in the contradiction between the fact of academic resilience and the general pattern of educational inequality, which manifests itself at all levels from individual to country, - a positive correlation between socio-economic conditions and the level of academic results. The dissertation research is aimed at solving this problem by answering the following questions:

1. Does the group of resilient schools stand out in Russian data on school SES and academic results, similar to how resilient students are distinguished in ICS?
2. Is there any quantitative or qualitative evidence that the identified resilient schools are not statistical outliers?
3. What practices are implemented by management teams and teaching staff of resilient schools? Are there differences in implemented practices within the group of resilient schools?
4. Do practices implemented by resilient schools differ from those implemented in schools with the same SES but poor academic results?
5. Do resilient schools find an opportunity to select children with special personality characteristics despite the same difficult social conditions as underperforming deprived schools, or do resilient schools work with the same children and families as all other schools with low SES?

In parallel with the main research questions, the dissertation also carried out related work related to the development of the theoretical framework that underlies research: the framework of academic resilience, the framework of school

effectiveness, and territorial inequality. The results of this work are reflected in more detail in separate publications.

Research goals and objectives

The goal of this study is to substantiate the possibility of identifying academically resilient schools using Russian databases, to identify and describe the specific practices of their work. In the cycle of scientific publications, the following research objectives of the dissertation were reached:

1. The approaches available in the literature to the conceptualization of "academic resilience", the indicators used to determine resilience, and resilience factors are systematized.
2. Resilient schools were identified using separate Russian databases on the socio-economic situation of schools and academic results.
3. The practices implemented in resilient schools are analyzed.
4. A comparative analysis of the practices of resilient schools was carried out with the practices of other schools with low SES, but low results.
5. Comparisons of personal characteristics of students of resilient and non-resilient schools were obtained.

Appendixes 1 and 2 contain tables that systematize and illustrate the tasks that were solved in individual scientific publications, specifying the author's contribution of the applicant.

Research methodology

Database

As described in the introduction, the study uses various databases, collection methods and data analysis. This approach is due to a wide range of research tasks — all of them cannot be solved by any single method on a single database. General characteristics of databases, procedures for their collection and analysis are presented below for each of them. More details on the data used and the analysis procedure can be found in separate articles.

The empirical basis of the research was:

1. The data of the Russian longitudinal panel research "Educational and Career Trajectories". This study began in 2011 with eighth-graders who also participated in the TIMSS 2011 survey (4,893 students, 210 schools). It was the starting point of the national research panel. A year later, the PISA study was conducted with the same students (4399 students, 208 schools). Thus, the base sample for this study is the TIMSS sample, which is representative of the eighth-grade cohort of that year in Russia. TIMSS has a stratified two-stage cluster sample (Stage 1: Schools; Stage 2: Grades). It means that the data characterizes the entire class as well as the individual within the class.

2. The analysis of the level of the socio-economic situation of schools was carried out based on a survey of school principals conducted in 2015-2016 (the analytical sample contains 1271 questionnaires of school principals) within the framework of the MEMO⁹. In most cases, the survey was conducted by the school principal filling out the questionnaire on his own after the interviewer handed it over to him (personally or through a secretary). The interviewer took the completed questionnaire, first checked it for completeness and clarified, if necessary, the answers to complex questions..

⁹ <https://memo.hse.ru/>

The stratification was based on statistical data on the size of the school-age population, potentially enrolled in organizations that implement primary and secondary education programs, according to the following criteria: administrative-territorial, type of settlement and type of educational organization. In interviews, school principals were asked about their management styles and the various characteristics of the schools in which they worked. In 2015, access to information about the school context appeared, allowing us to analyze different schools according to their SES and educational achievements.

3. Databases obtained in the framework of Pinsky Centre projects for the assessment of regional educational systems. Data from several regions is used:

- a. The sample in the quantitative part of the analysis included 248 (or 87% of all secondary schools) schools of the Tomsk region (primary schools, secondary schools and gymnasiums/lyceums) and 292 schools in the Republic of Sakha (Yakutia) (about 60%) — after cleaning the bases and logical control. From these schools, in each region separately, the schools of interest were selected using the contextualization tool (Yastrebov et al., 2014). A qualitative analysis was then carried out in these schools using interviews. In total, three schools in each region were analyzed. The following interviews were conducted at each school:

- Interview with the headmaster of the school;
 - Focus group or individual interviews with teachers;
 - Interview with parents of students (grades 8-11);
 - Interview with students (grades 8-11).
- 54 interviews were conducted in schools in the Tomsk Oblast and 44 in the Republic of Sakha (Yakutia).

b. The study was carried out in the Leningrad region. It was necessary to collect data on students' academic results and personal data so that they were related to each other at the school level. Thus, the average academic results at the school level may be compared with the personal data of students of these schools. In addition to this, data on the SES of the schools were collected. It is necessary to determine the type of school. Through the RCAQE (regional centre for assessing the quality of education), academic results for the last three years were collected at the individual level with reference to schools. All data were depersonalized (ID assigned, databases with full names were stored in the region). Students of the current 10th and 11th grades (that is, those for whom individual academic results of the 9th-grade USE are in the RCAQE databases) were sent electronic questionnaires in which they had to enter their ID. IDs were sent to school coordinators with a link to names to communicate them to the students. After completing the data collection, students' academic performance was compared with information obtained from questionnaires at the school level. IDs are required to correctly assign students to particular schools since, after grade 9, many students move to other schools. Using ID allows us to track such students and assign them to schools they studied before grade 9 (and, therefore, "responsible" for their 9th-grade USE results). The research sample consisted of 7058 students at the stage of collecting personal data. After that, duplicates, questionnaires without IDs (or incorrect IDs), poorly completed questionnaires, and gaps were removed from the sample. The final sample of the study, on which the entire analysis described below was carried out, was 4159 (such a significant decrease was mainly due to absences) of pupils in grades 10 and 11 from 237 schools in the Leningrad Region.

Analysis

The quantitative parts of the study used SPSS programs¹⁰, STATA¹¹ and R-Studio¹² (using the lavaan (0.6-5) package (Rosseel, 2012)). The multiple linear regression methods, multilevel linear regression, exploratory and confirmatory factor analysis, various criteria for comparing means and proportions, and descriptive statistics were used. Qualitative parts were analysed with the program Atlas.Ti 7.0¹³. The methodology of thematic content analysis (Braun & Clarke, 2006) and directed content analysis (Hsieh & Shannon, 2005) were used. To increase the reliability of qualitative analysis results, separate guides for different interviewees in schools contained overlapping topics to check for data consistency from different informants (Kvale & Brinkmann, 1996). In some studies, the technique of transforming qualitative data into quantitative ones is used to increase the reliability of the results (Boyatzis, 1998).

¹⁰ <https://www.ibm.com/products/spss-statistics>

¹¹ <https://www.stata.com/>

¹² <https://www.r-studio.com/ru/> (R version 4.0.0 (2020-04-24) "Arbor Day")

¹³ <https://atlasti.com/>

Key results

Presenting the results of several scientific articles in a concise form is a rather tricky task. Therefore this section briefly highlights only the most important results for the thesis defence. More details on the research results can be found in separate articles. The results are reflected according to the logic of the content and the sequence of answers to questions.

Resilient Schools Based on Russian Data

In a sample representative for the Russian Federation, slightly less than 4% of resilient schools stand out according to the methodology detailed in publication 2. The contextual characteristics of these schools correspond to other schools operating in difficult social conditions, and the results are at the level of the best schools (table 1). The selection of schools was carried out according to the quartiles of distributions, as in the previous similar study. Schools in the bottom quartile of SES and the bottom quartile of academic achievement were labeled as struggling; those falling into the lower quartile in terms of SEP and, at the same time, in the highest quartile in terms of academic achievements — as resilient; schools in the highest SEP quartile and the lowest achievement quartile are failing; schools in the top quartile for SEP and the top quartile for achievement are successful. By the same method, resilient schools are distinguished in each of the presented scientific works.

Qualitative studies test the extent to which schools identified in this way differ in their practices. The essence and novelty of this dissertation lies precisely in the fact that the generality of resilient schools and their difference from, first of all, disadvantaged ones in terms of implemented practices are shown. This is done through the description of their profiles.

Table 1 — Academic results and contextual conditions of schools from different groups (data from MEMO 2015-2016)

	Group			
	Struggling schools	Resilient schools	Unsuccessful schools	Successful schools

Average USE score in Russian	61	71	65	76
Average USE score in mathematics	35	65	37	65
The proportion of children from families with parents with higher education	11.4%	11.1%	76.8%	76.1%
The proportion of children from families where both parents are unemployed	20.8%	18.8%	6.3%	3.1%

The same data show that in these schools, the percentage of children oriented towards the academic track is significantly higher when compared with other schools with a low SES, which means that some work is being done in this direction. It should be noted that it is not completely clear whether this evidence is a resilience factor or its result.

Table 2 — Trajectories of students from different groups of schools

	Group			
	Struggling schools	Resilient schools	Unsuccessful schools	Successful schools
After basic school				
Percentage of Children Moving to High School	52.7%	67.9%	65.8%	83.7%
Percentage of children entering vocational education	45.9%	29.7%	33.2%	15.7%
After high school				

Percentage of children planning to enrol in universities	63%	75.6%	82.9%	93%
Percentage of children planning to enroll in vocational education	28.8%	17.5%	12.2%	5.2%

Strategies that distinguish resilient schools from other low SES schools

These conclusions are given in publications that predominantly present a qualitative analysis of the data, and therefore the description of the results is more narrative than in quantitative studies. The main common patterns and themes identified in interviews and focus groups, typical for school teams, are revealed.

In resilient schools, principals and teachers emphasize that the school openly cultivates a culture of mutual tolerance; Bullying and bullying are strictly prohibited. Students with special needs in special education programs participate in classrooms and all educational and extracurricular activities like any other student. This environment encourages students to trust each other and adults and protects against stressors that children from socially disadvantaged families often face. An environment that supports social-emotional well-being builds confidence and self-confidence, encouraging young people to make responsible life choices and promoting social mobility.

The factor “value of education”, consistently promoted by the staff of resilient rural schools, is also crucial for the continued resilience of students. Teachers and directors of such schools all the time draw students' attention to the need to obtain a quality education, the importance of academic and social mobility. Principals find external resources that allow students to “feel” the future life, find their place in it, and be successful in a broad sense. It is achieved by applying specific school strategies that we see in our in-depth analysis of resilient schools.

To create all the conditions necessary for a positive life trajectory after graduation, resilient schools create conditions in which, in addition to the usual educational activities, children have the opportunity to develop their skills and abilities in various additional activities. These schools operate on a “full-time model”. Since working parents spend most of the day away from home and cannot organize and control the children's leisure time, the school takes over the organization of the afternoon. In addition, schools meet the general requirements and try to offer students other exciting and varied activities. It is not easy to do this with limited financial resources; however, the school has sports sections and clubs

that children attend after 16:00; and shortly after class, extracurricular activities are organized for students in grades 1 through 7. All this allows resilient schools to prepare students for their future, academically and professionally.

Resilient school strategies for preparing children for a career path have two components. The first is vocational guidance, which consists of trips to the city with visits to universities and organizations of secondary vocational education. Schools also invite representatives of various professions to the school and arrange meetings with students. Students participate in aptitude tests organized by the Ministry of Education to gain insight into their skills, interests and help them choose different professional and educational paths.

The second and equally important aspect of socialization is preparing children to leave the safe and comfortable school environment. The principal and teachers emphasize that one of the goals of frequent trips to the city is to introduce students to other children and the city's culture. Teachers understand that the school community's warm and almost family-like relationship is unlikely to happen again after graduation. Instead, young people must be willing to stand up for themselves independently and understand the broader world around them. All these also act as different factors of the student's resilient trajectory.

Equally, if not more important, a factor in continued resilience is the quality of schools' parent involvement strategies. It can be assumed that in resilient schools, parents are more likely to play a strategic role in planning children's education, which is consistent with the study results. Such parents consider it their task to "push" their children, to direct them to receive an education of a higher level. The results of this study are indirectly confirmed by another survey of parental engagement conducted in the MEMO framework (Goshin et al., 2021).

What is the difference between students in resilient and struggling schools? It would seem that they are similar in their socio-economic status and have equal chances to realize their life plans. However, the differences are remarkable. In one case, the school will provide them with comprehensive support and provide the knowledge and experience necessary to achieve their goals. Otherwise, they will

have to struggle independently and overcome the obstacles associated with the lack of educational and financial resources in their families, without the support of learning from the school, which does not consider it its duty. However, these schools also struggle with extremely limited resources, as we mentioned above. Still, we believe that this alone cannot explain such apparent differences in the lives of struggling and resilient schools facing harsh conditions with extremely limited resources.

One of the most exciting and important results of our research is the similarity of the profiles of individual schools in the groups of resilient and struggling when compared through the prism of an effective/ineffective school. This discovery implies that resilient and struggling schools have elements in common that are not unique to individual schools within these groups. The identified elements (strategies) for resilient schools are overwhelmingly positive and very similar to the correlations identified by researchers of effective schools half a century ago. Negative elements are practically absent in such schools. Although our research does not prove a causal relationship between positive/negative and academic resilience, it seems that school resilience and school performance go hand in hand.

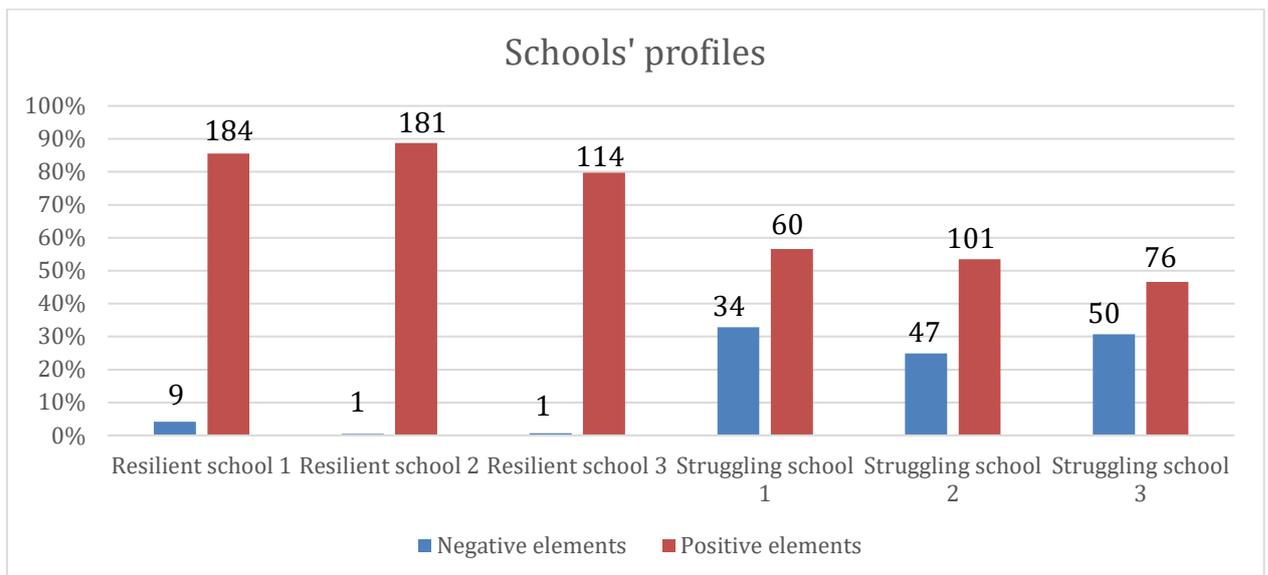


Figure 1 — Profiles of resilient and struggling schools through the prism of applied practices

While there are several positive elements in schools in difficulty, these schools are recognized primarily by the ineffective strategies they implement. Two of these negative elements seem particularly important: low academic expectations and unfocused leadership. The implication is that without high academic expectations and strong, focused leadership, no positive elements can fix schools' problems.

The absence of negative elements in resilient schools and their significant presence in schools experiencing difficulties complements our understanding of the differences between the two groups. Teachers in resilient schools practice not only positive strategies but also avoid negative ones. Conversely, the presence of negative practices in schools experiencing difficulties reduces the effect of their positive practices. It suggests that the transformation of struggling schools must begin with the elimination of negative elements and practices.

Resilient schools also differed from schools experiencing difficulties developing and using social capital (connecting schools with their local communities using external resources). The international education and policy agendas have long recognized that a priority for schools with large numbers of economically disadvantaged students is to establish good working relationships with parents and partners in the surrounding areas, including business and social circles (OECD, 2011a). According to the principals, teachers and parents of resilient schools, they use a wide range of activities to expand and strengthen partnerships with the community and build mutual trust. This strategy is called “building social capital in the school,” which resilient schools “transform” into additional educational resources for their students.

Although we used a very analytical approach, we concluded that interrelationships between the elements enable schools to become resilient. For example, schools differ in how they use and evaluate homework. A recent study (Núñez et al., 2017) found that students have different attitudes towards homework depending on the degree of their parent's involvement. Those who report high parental control and support spend more time on their homework and do it more discreetly. It is consistent with our data, which showed that, in contrast to struggling

schools, both students and parents in resilient schools reported that teachers strictly require homework to be completed and students comply with those requirements. It is likely to impact student performance, as, for example, “the amount of time spent on math homework in Singapore was strongly associated with a higher probability of academic achievement for students from disadvantaged backgrounds” (Sandoval-Hernández & Białowolski, 2016). This finding is also partially supported by publication 6, revealing several factors at the school level.

Comparison of personal characteristics of students in resilient and non-resilient schools

In this study, the sample of schools was entirely from one region — the Leningrad Oblast. The same hard thresholds were applied to distinguish school groups. The final groups of students for comparison in terms of their characteristics are students of 4 different types of schools, of which students in struggling and resilient schools are more interested. Instead of the traditional pairwise comparison of individual groups, the mean values are given with the indication of 95% confidence intervals for all groups on all scales (Table 3). It shows the results more clearly and leads to interpretation.

Table 3 — Comparison of students from different groups of schools

Variable	Struggling			Resilient			Unsuccessful			Successful		
	Wed	95% CI		Wed	95% CI		Wed	95% CI		Wed	95% CI	
Resilience (ARS-30)	-0.02	-0.15	0.11	0.06	-0.20	0.32	0.04	-0.12	0.19	0.02	-0.03	0.06
Grit	-0.08	-0.16	-0.01	0.25	-0.03	0.36	0.08	-0.13	0.12	0.09	0.03	0.09
Learning Motivation	0.00	-0.12	0.04	-0.07	-0.22	0.17	0.11	-0.08	0.20	0.04	0.00	0.06
Self-control	0.05	-0.05	0.06	0.20	-0.03	0.26	0.00	-0.13	0.04	0.03	-0.01	0.03

According to the results of our study of students' characteristics, it can be seen that students in grades 10-11 from different types of schools do not differ in any of the studied constructs associated with resilience. However, the constructs themselves correlate with each other precisely as expected from them from theory. For all scales and subscales, the confidence intervals for each group overlap with each other, which indicates the absence of statistically significant differences. These results are evidence in favour of the fact that statistical and psychological indicators, in this case, are more likely to complement each other rather than overlap. They tell us about different sides of academic resilience.

The results shown above are evidence that the phenomenon of school academic resilience is more structural (primarily determined by the school) than an individual. These data once again show that academic resilience at the school level is defined mainly by something related to general characteristics of the school — educational strategies of the school, school climate, organizational culture, etc., and not the characteristics of individual students.

Statements for Defense

1. There are resilient schools in Russia. They are distinguished on the basis of a triangulation procedure that includes identification using traditionally applied indicators (low socioeconomic position but high academic results) and a subsequent qualitative survey to determine the commonality of their profiles through comparison with other schools in the same conditions, but showing low results. The use of this procedure confirms that these schools are not a statistical outlier.
2. Resilient schools implement specific practices related to the school's educational policy, school climate, work with parents, etc., supposedly allowing them to show high academic results in a disadvantaged context.
3. These practices differ from those of schools operating in the same disadvantaged environment, but showing significantly lower results, both in terms of having more effective practices and less representation of ineffective practices.
4. One of the most important and significant effective practices that distinguish resilient schools from schools operating in disadvantaged conditions, but showing significantly lower results, is the practice of working with students' attitudes and their orientation towards building a further educational and professional trajectory.
5. Students of resilient schools do not differ significantly in their personal characteristics associated in the literature with resilient behavior (perseverance, individual resilience, learning motivation, self-control) from students of other schools.

Discussion and conclusion

The scientific novelty of the research is as follows:

1. Approbation of approaches to the study of academic resilience was carried out on Russian data, including methods for identifying resilient schools.
2. The features of the representation of effective and ineffective practices in resilient and non-resilient schools are determined.
3. Differences between students of resilient schools and students of other schools were revealed in terms of personal characteristics associated with resilient behavior (perseverance, individual resilience, learning motivation, self-control)
4. A comparison of the theoretical framework of school effectiveness and academic resilience was made in the framework of an empirical study;

The discussion of the results

The study pays a lot of attention to assessing the relationship between the socio-economic status of schools, families, students and their results. This characteristic makes it possible to single out individual organizations operating under challenging conditions but showing good results. In these schools, we find the most effective strategies to reduce the "influence of the environment." The number of these schools is small. However, their presence is encouraging, indicating the possibility of overcoming the limitations associated with students' socio-economic backgrounds. However, the fact that these schools have succeeded without government support suggests that such support can strengthen the capacity of schools in challenging environments to respond to the challenges they face and increase the number of resilient schools and indicators—academic resilience in general.

The results of this study lead us to conclusions similar to the position of researchers from Texas and Stanford. There is little point in "increasing" the resilience or tenacity of students presented in the form of constructs. The idea of intervention should instead be in creating such a school environment that is

conducive to finding new strategies, asking for help from others, etc., which will ultimately have a positive effect, among other things, on their learning outcomes (Yeager & Dweck, 2012). A group of researchers from New York formulates similar theses, showing that the increase in academic results in schools with low social status is primarily associated with large intervention programs that cover the entire school at once (school climate, organizational culture) (McCormick et al., 2015). Such large projects (for example, Social Impact Bonds) are becoming more and more popular, including in the Russian Federation¹⁴.

Our research also touches on the issue of policy and practice to ensure the resilience of individual students and their trajectories. Our research on resilient rural schools raises questions about the role of rural education for rural development and reducing territorial inequality. Our data show that the goal of a resilient rural school is to orient students towards high USE scores for admission to city and capital universities. What, then, will happen to the countryside? Naturally, this issue is by no means unique to Russia (Corbett, 2007; Petrin et al., 2014; Thissen et al., 2010). Rural areas around the world face very similar dilemmas, although the dilemma facing Russia is genuinely ambitious. The general trends in the development of modern Russia are such that there are a large number of villages that are threatened with complete extinction. Rural schools and teachers cannot reverse these trends at the macro level. So they just do what they can for each child. This probably does not make rural life better overall, but it gives some young people the skills and knowledge to act according to their aspirations for their future life.

There was no significant connection with students' academic resilience of the psychological construct of individual academic resilience. New data on [PISA 2018](#)¹⁵ says the same thing, but there is an addition in the form of a description of another mechanism recorded in the study — the cognitive attitudes of the child. Probably,

¹⁴ <https://ioe.hse.ru/sakha/>

¹⁵ <https://www.nfer.ac.uk/pisa-2018-additional-analyses-what-differentiates-disadvantaged-pupils-who-do-well-in-pisa-from-those-who-do-not/>

the strategies implemented by resilient schools work precisely to form “other” mental attitudes.

It is interesting to consider the possibility of a change in the definition of academic resilience based on Russian data in the context of the current changes in the Federal State Educational Standard¹⁶. In theory, this could make the use of state exam data more "approximate" to how some authors determine resilience on ICS data.

The next steps in studying the topic may be replication studies, clarifying the criteria for identifying schools. In terms of the discussion of practices, the most interesting development is a thorough and in-depth assessment of the quality and practices of specific teachers, the search for the relationship of individual teacher practices in the classroom with the resilience of students and schools. At a higher municipal and regional level, the most interesting is the search for indicators that will allow comparing schools in different regions with each other in such a way that the very different context of their work is taken into account.

16

<https://fioco.ru/Media/Default/Documents/%D0%9C%D0%B5%D1%82%D0%BE%D0%B4%D0%BE%D0%BB%D0%BE%D0%B3%D0%B8%D1%8F/7.2.%20%D0%9F%D1%80%D0%B8%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%B8%D0%B5%202.pdf>

General discussion around the phenomenon of academic resilience

It seems important to me to make several notes on the topic of academic resilience. From the text of the literature review and introduction, it can be seen that in many studies and reports, academic resilience begins to appear as something that needs to be achieved — a goal (factors that increase resilience/factors that increase the number of resilience, etc.). However, this is not the case, and resilience is not the goal. In most areas of scientific knowledge, resilience is simply a property of an object (Domingue, 2020). The use of this word in the sciences of education has gradually shifted to a completely different meaning. It instantly turns us from talking about the disadvantages of many to talking about some who managed to change something.

The idea of academic resilience also leads to the fact that the system begins to be viewed through the prism of failure. The very wording “against the odds” (OECD, 2011b) carries with it the idea that we understand that resilient students or schools had to “lose”. We love stories in which the one who was supposed to lose wins, but the educational policy of countries is not a Hollywood movie. Instead of talking about vulnerability, we're talking about "superheroes" (Meriläinen, 2020). And in studies of inequality, this drama has been described more than once. An abstract politician cannot fundamentally overcome inequality, as if only individual successes are possible, to which one must strive. The promotion of resilience can indeed be viewed as an attempt to find in science and present to society some optimistic support, evidence that success is possible. Then the question arises as to how it is perceived and used. Now there are separate cases where the success stories of disadvantaged schools are promoted as a “victory despite” and something that everyone should be equal to. Now imagine any sports drama where, instead of the incredible protagonist’s ability to overcome, they would show the lives of thousands who failed, even though they tried. Would anyone watch it? It is possible

to choose another film, but unfortunately, we cannot select another reality (in fact, we can, of course, but it is necessary to shift the focus significantly).

Well, and the most unpleasant side of this question, probably, is that the use of the word "resilient" in the context of children who have achieved something in poor conditions somewhat, removes responsibility from those who are to blame for the fact that the children were initially in these adverse conditions. Moreover, bad conditions here even acquire some independent value. Otherwise, how would these children "overcome"? By analogy with Chandler's (2013) argument, it can be said that educational policymakers use resilience as an apology for constraints to intervene in the lives of vulnerable and disadvantaged children, schools and communities, ideologically "cementing" responsibility for their well-being on themselves. There is a field here for further discussion: is resilience a construct formed within the framework of liberal/neoliberal discourse, where the responsibility for overcoming restrictions is placed on the subject, and the state is eliminated, the ability of units against the background of the inability of the masses is emphasized. However, in the interpretation of resilience, the emphasis can be shifted to conditions created from the outside (in the education system) to maximize the potential, to "pull out" the limited number that can be pulled out. And it will be a completely different conversation. Likewise about schools — a specific choice of how to develop the idea of academic resilience can, for example, form a complacent mood among the authorities: "they (schools) can get out on their own, so we can not worry." For the sake of fairness, it is worth saying that if this happens, you should not blame specific people for this, you need to look for ways out of the current situation.

Research limitations

There are several limitations in the study that are worth discussing. Of course, it is worth starting with the already traditional discussion that resilient schools are just a statistical outlier, which, amicably, should not be taken into account at all when analyzing educational policy and conducting large-scale research on education. Here I have nothing to add to what has already been said earlier in numerous seminars, conferences and article discussions. Our study finds such schools, finds their differences from other schools and believes that these differences are important and valuable. At the same time, of course, in the context of the absence of classical experimental research, it is impossible to rigorously prove that the selected strategies of schools are the cause of academic resilience.

In our research, we could not fully assess the quality of teaching. It is an important limitation as teaching quality significantly impacts student academic achievement (Konstantinovsky, Pinskaya, & Zviagintsev, 2019). The expectations that teachers convey to students can support the resilience of disadvantaged students (Longobardi et al., 2018). The quality of feedback and support teachers provide to their students is positively associated with student motivation, engagement, student interest, learning effort, and academic achievement (Birch & Ladd, 1997; Cornelius-White, 2007; Hattie, 2009; Samuel & Burger, 2020). Of course, one cannot fail to mention the general limitations of the qualitative methodology associated with the subjectivity of experts.

It is important to emphasize that even considering the almost complete identity of the disadvantaged schools we are considering (both resilient and non-resilient), external circumstances do not depend on the school that can contribute to its failure. In our study, for example, two of the struggling schools, although located in the same municipality as the resilient one (only a short distance from it), were slightly more isolated (about 20-30 km, if we count from the municipal centre). Greater isolation and transport inaccessibility of the school can have negative consequences. These negative consequences can manifest themselves in student families' more disadvantaged economic situation and a lack of school staff, as young

teachers prefer to seek work in less remote and less economically disadvantaged areas. Thus, the practices of the resilient and struggling schools that we focused on in our study cannot fully explain the presence or absence of academic success.

In discussing the differences between students of different schools in their characteristics, it is critical to say about some additional limitations on identifying academic resilience through statistical indicators, all of which concern the choice of students and schools with "extreme" levels of both socio-economic characteristics and academic performance. It is essential since it is always important to remember that systems do not consist of extreme values. Most of the students and schools are somewhere in the middle, where psychological indicators could come in handy. We tried to compensate for these limitations by assessing academic resilience as a construct, but, we have to admit, we cannot say that we have succeeded. The results of our research in this direction indicate instead that this is an oversimplification of the complex phenomenon of resilience. The resulting scale works well, shows high reliability and constructive validity, but does not have criterion validity. And this point is important because studies show the relationship between the described constructs and academic results (Cassidy, 2016; Cheung, 2017), but there are also studies showing no association between such constructs and outcomes (including the present study). It can also be assumed that the questionnaires contain systematic errors in filling out, social desirability, or, in the extreme, that no measurements of latent constructs are at all possible by definition (Trendler, 2009).

A limitation for psychological indicators can also be considered that we still see a strong relationship between external contextual factors and student success in all our studies. Resilience studies — in fact, the ability to resist these factors — provide us with new knowledge about what can help overcome the context, but, unfortunately, nothing opposes the laws themselves. Individual students and schools, becoming resilient, drop out of this general "law", but they do not change the overall picture. Based on the ICS data and the empirical fields conducted by the Center, we can conclude that the number of resilient students and resilient schools is minimal and can hardly move the overall picture of the education system.

As for the different ways of determining students' academic resilience, this question turns out to be completely non-trivial. Our research shows that there is no good universal way. After examining resilience-associated constructs, it can be said that such definitions are relatively ineffective in predicting behaviour. If we talk about statistical methods, they are strong in terms of face validity, but we can never fully determine what kind of mechanisms lie behind this result, although we show some such mechanisms. Our research reveals what school-level mechanisms are behind ensuring student resilience in these schools. It would be right to leave the individual internal mechanisms open and write them down as another limitation.

Another limitation follows from the previous limitation: the opposition of individual resilience and institutional resilience. To put it simply, is the resilience of a school equal to the sum of the resilience of all participants in the educational process of this school? I am afraid that neither the studies carried out within the dissertation framework nor the totality of the literature in the review gives an unambiguous answer to this question. Indirectly, we can only say that according to the results of one of the studies cited above, the scales are still tilted more towards the institutional side.

Recommendations for educational policy

The results obtained in the study allow us to propose a number of solutions regarding the construction of educational policy at different levels.

First of all, it is necessary to conduct regular monitoring studies to control the situation with inequality in the quality of education and educational resources in individual regions and municipalities: to identify both entire territories (municipalities) and schools characterized by the lowest resource potential (personnel, basic infrastructure conditions, opportunities for organizing distance learning, etc.) and low academic results. These studies should collect data on indicators of the socio-economic situation of the territories and the contingent (composition) of schools.

The results of such monitoring studies should be used for constant correction of educational policy, development and implementation of targeted support measures in relation to allocated territories and educational organizations, their inclusion in federal, regional and municipal programs (projects) for the development of education. The most important direction of targeted measures in the selected territories and schools should be the strengthening of human resources through measures to eliminate the shortage of personnel (vacancies), attracting highly qualified teaching staff, including teachers-psychologists, social pedagogues, teachers-defectologists, etc. in the staff of schools. support for schools facing the challenges of adverse social conditions is the allocation of additional regular funding for personnel optimization, organization of additional classes with students in groups and individually, both in basic subjects and in terms of additional education, socialization, vocational guidance, psychological and pedagogical correction.

The dissertation research shows that one of the most important resources for schools operating in challenging environments is their community and their social capital. Support for initiatives related to strengthening the interaction of schools with other schools, organizations (additional education, culture, psychological, medical and social centers), local communities, businesses, NPOs, etc. is the most important priority for education management at the regional and municipal level. Such projects

can indeed ensure both the resilience of schools and the resilience of entire communities (Bryan, 2005). Promising areas are the creation of inter-school partnerships, networks, consortiums that bring together resilient schools and schools with poor results to translate effective practices. Representatives of management teams and teachers of resilient schools are recommended to be involved in the programs of additional professional education implemented in the territories, activities for methodological support. The effective practices of resilient schools should be used by schools with poor educational outcomes to guide the development of programs to improve outcomes.

The measures taken should be aimed not only at the group of educational organizations identified based on the results of monitoring, but also at students / families of students in these territories. The effectiveness of measures, therefore, can be increased due to the synergistic effect of strengthening the overall potential of the territory on which the school is located, and targeted support for individual students and their families. In particular, in the considered context of distance learning, it is necessary to provide families with opportunities for full-fledged distance learning with equipment and high-quality communications.

An important focus of the policy aimed at both educational organizations and families can be to ensure the integration of resources of various departments and services using networking mechanisms. Thus, a common strategy for increasing academic resilience in the most socially disadvantaged, socially and economically disadvantaged territories should be the unification of actions in the field of educational and social regional policy, the creation of horizontal networks that include educational organizations, social organizations and an active local community. The accumulation of efforts and the integration of all support measures increase the chances of reducing the complex manifestations of territorial inequality.

It is important to avoid an approach in which the analysis of the practices of resilient schools serves as a basis for abandoning the systematic work to overcome educational poverty and inequality and shifting responsibility for the “growth of resilience” onto schools operating in adverse conditions, demonstrating low

educational results. The best option seems to be the implementation of the considered recommendations as one of the directions of a comprehensive social policy aimed at overcoming inter-territorial disproportions in development. Under these conditions, resilient schools can function as a true asset to the communities they serve, creating environments, social capital, and even economical opportunities, forming such trajectories for young people that will ensure their well-being and self-realization, including in the territories where they were born and studied.

Most of the proposed practices are formulated in a positive way, but it should also be taken into account that one of the main results of the work is precisely the fact that resilient schools are largely characterized by the absence of negative practices. This means that part of the educational impact should be aimed at "breaking" the established inefficient processes taking place in disadvantaged schools. First of all, the view of managers should be focused on the issues of the school climate and the organizational culture of schools, the practices of socialization of students and work with their claims and attitudes.

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Appendix 1

Objective	Statements for Defense	Publications
The approaches available in the literature to the conceptualization of "academic resilience", the indicators used to determine resilience, and resilience factors are systematized.		3 ¹⁷
Resilient schools were identified using separate Russian databases on the socio-economic situation of schools and academic results	There are resilient schools in Russia. They are distinguished on the basis of a triangulation procedure that includes identification using traditionally applied indicators (low socioeconomic position but high academic results) and a subsequent qualitative survey to determine the commonality of their profiles through comparison with other schools in the same conditions, but showing low results. The use of this procedure confirms that these schools are not a statistical outlier	1, 2 (5)
The practices implemented in resilient schools are analyzed	Resilient schools implement specific practices related to the school's educational policy, school climate, work with parents, etc., supposedly allowing them to show high academic results in a disadvantaged context.	1, 2, 4
	One of the most important and significant effective practices that distinguish resilient schools from schools operating in disadvantaged conditions, but showing significantly lower results, is the practice of working with students' attitudes and their orientation towards building a further educational and professional trajectory.	1, 2, 4 (6)
A comparative analysis of the practices of resilient schools was carried out with the practices of other schools with low SES, but low results	These practices differ from those of schools operating in the same disadvantaged environment, but showing significantly lower results, both in terms of having more effective practices and less representation of ineffective practices.	1, 2 (5)
Comparisons of personal characteristics of students of resilient and non-resilient schools were obtained	Students of resilient schools do not differ significantly in their personal characteristics associated in the literature with resilient behavior (perseverance, individual resilience, learning motivation, self-control) from students of other schools	3

¹⁷ The literature is systematized in all publications, but this is most expressed in publication 4.

Appendix 2

Publication	Contribution
<p>1. Pinskaya, M., Khavenson, T., Kosaretsky, S., Zvyagintsev, R., Mikhaylova, A., & Chirkina, T. (2018). Above Barriers: A Survey of Resilient Schools. <i>Educational Studies Moscow</i>, 2, 198–227. https://doi.org/10.17323/1814-9545-2018-2-198-227.</p>	<p>Conducting qualitative data analysis, writing: Review, methodology, results. interaction with the journal (corresponding author)</p>
<p>2. Pinskaya, M., Kosaretsky, S., Zvyagintsev, R., & Derbishire, N. (2019). Building resilient schools in Russia: effective policy strategies. <i>School Leadership & Management</i>, 39(2), 127–144. https://doi.org/10.1080/13632434.2018.1470501</p>	<p>Conducting quantitative data analysis, writing: methodology, results, discussion. interaction with the journal (corresponding author)</p>
<p>3. Zvyagintsev, R. (2021). Personality Traits of Students in Resilient and Struggling Schools: Different Children or Different Schools. <i>Educational Studies Moscow</i>, 3, 33–61. https://vo.hse.ru/en/2021--3/508086378.html</p>	<p>Individual publication</p>
<p>4. Chirkina, T., Khavenson, T., Pinskaya, M., & Zvyagintsev, R. (2020). Factors of student resilience obtained from TIMSS and PISA longitudinal studies. <i>Issues in Educational Research</i>, 30(4), 1245–1263. http://www.iier.org.au/iier30/chirkina.pdf</p>	<p>writing: results, discussion. interaction with the journal (corresponding author)</p>