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Diversity of Conditions and Forms of Learning Interaction as a Factor of Academic Performance

Sergey G. Kosaretsky

Higher School of Economics, Moscow, Russia

ORCID: <https://orcid.org/0000-0002-8905-8983>, e-mail: skosaretski@hse.ru

In light of the increasing diversity within schools and classrooms, the issue of risks and opportunities for the success of every child is becoming increasingly significant. This article offers an overview of the current research on the relationship between the diversity of school and classroom compositions and the academic achievement of students. It also explores approaches to organizing cooperative learning and peer tutoring in heterogeneous classes. The possibilities and limitations of existing research in educational policy and pedagogical practice are examined. The potential of cultural-historical psychology, particularly the socio-genetic psychology of educational interactions, is substantiated for further research.

Keywords: cultural-historical psychology, diversity, heterogeneous schools (classes), learning interaction, cooperation, academic achievements, zone of proximal development.

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Вариативность условий и форм учебного взаимодействия как фактор академической успешности

С.Г. Косарецкий

Национальный исследовательский университет «Высшая школа экономики»

(ФГАОУ ВО «НИУ ВШЭ»), г. Москва, Российская Федерация

ORCID: <https://orcid.org/0000-0002-8905-8983>, e-mail: skosaretski@hse.ru

В статье представлен обзор актуального состояния исследований связи вариативности составов школ (классов) по социальным, академическим, этническим характеристикам, особым образовательным потребностям учащихся с образовательными результатами, а также подходов к организации развивающего учебного взаимодействия сверстников в гетерогенных классах. Раскрываются возможности и ограничения существующих исследований для образовательной политики и педагогической практики. Обосновывается потенциал культурно-исторической психологии в целом и социально-генетической психологии учебных взаимодействий — в частности, для дальнейших исследований вопроса.

Ключевые слова: культурно-историческая психология, разнообразие, гетерогенность состава школ (классов), учебное взаимодействие, совместное обучение, академические достижения, зона ближайшего развития.

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Introduction

Russian schools are becoming increasingly diverse in terms of student composition. Differences concern native language, ethnicity, academic achievements, physical abilities, and the socio-economic status of families. In this regard, the questions of how these changes affect the opportunities for developing abilities and obtaining a quality education for students from different groups, and how to manage and teach in the general education for the success of each child are relevant.

The relationship between the diversity of school and class compositions and students' educational achievements is actively studied in education science [12; 14; 26; 38; 39; 40]. The number of studies on the effects of organizing learning interactions in heterogeneous peer communities aimed at strengthening relationships and improving academic results is growing [13; 27; 29; 46].

In Russian science we find limited interest in these topics so far [2; 3; 5], despite the fact that it is precisely in the tradition of cultural-historical psychology that the initial focus is on differences in the development of intelligence and speech of children, conditioned by the social circumstances of their lives [1; 6], the idea of the child's zone of proximal development (ZPD) as the distance between the level of his actual development, determined with the help of tasks solved independently, and "the level of the child's possible development, determined with the help of tasks solved by the child under the guidance of adults and in cooperation with his smarter comrades ..." [1, p. 42], fundamental ideas about the mechanisms of developing learning interactions [7]. Meanwhile, the variable composition of schools (classes) by abilities, social and cultural experience, on the one hand, and the differences in the forms of learning interaction and guidance from the teacher, form a unique combination of ZPD, which will require adequate methods of diagnosis and design of developing learning communities.

In this article, we provide an overview of the current state of research on the relationship between the diversity of school (class) compositions and students' educational outcomes, approaches to organizing cooperation and learning interaction with peers representing different groups.

Academic staff of the school (class)

Schools and classes may differ in the academic characteristics of the composition (ability or achievement)

of students. Most studies of the effect of achievement variance (standard deviation of achievement in a class) on individual student achievement find predominantly positive effects [5; 18; 42], but there are studies that have found a negative effect [23] or no effect at all [30; 40].

Studies of the influence of class or school achievement levels on individual achievement evidence that students achieve better in communities with high average academic achievement [30]. This effect is most pronounced for high-achieving students [5]. Results for low-achieving students receive mixed results [42].

Research on ability grouping shows little or no overall effect on student achievement [34; 45], with advantages for high-achieving students in homogeneous ability classes [34] and for low-achieving students in heterogeneous classes [5].

To explain the influence of homogeneity/heterogeneity of composition on academic performance, theories of social learning (A. Bandura) and comparison (L. Festinger) are proposed. It should be noted that studies of this type do not actually take into account differences in the organization of learning interaction in classes.

In turn, studies of the features of interaction and joint learning of peers with different levels of abilities, including allowing students with low levels of abilities to develop, are still few in number. It is characteristic that in the most recent review of the history of research on collaborative and cooperative learning, this aspect was not thoroughly considered [50]. At the same time, it is possible to highlight a study demonstrating that in mixed small groups, students with high abilities formed teacher-student relationships that were effective in supporting students with low levels of abilities [49]. In another study, class heterogeneity was specifically considered as an opportunity for academic progress and cognitive development for all students due to the restructuring of the learning situation: students with low levels of results, when completing a task that they could not complete independently, received advantages due to interaction with a partner with a high level [15].

Socio-economic composition of the school (class)

The impact of the socioeconomic composition of a school (class) on student performance is a well-studied issue. Students in a school with a more advantaged so-

cioeconomic composition (SEC) on average demonstrate higher educational outcomes than students in a school with students from a less advantaged group [41]. The effect persists after accounting for individual SEC and is more significant for student performance than it is alone [2].

The identified connections serve as the basis for promoting a policy of equity and desegregation through regulation of the composition of schools and classes (abandonment of tracking and selection, introduction of vouchers and lotteries for low-income groups, opening access to private schools, etc.). On the other hand, there is a search for pedagogical approaches that take into account differences in class composition, for example, differentiated learning [38]. Successful examples of solving the problem of inequality of opportunity that arises in socially segregated school communities through the organization of social interaction are the experiments of R. Perret-Clermont [8].

Schools (classes) with immigrant students

Research on co-education of students from immigrant and native families has focused on assessing the effects on academic outcomes of both groups. Findings are mixed across national samples, with some finding no convincing evidence of a negative or positive effect associated with the proportion of immigrant students in classes. [31]. Others have found evidence of small [16] or significant negative effects on local residents [35; 36]; on immigrant [44], negative effects on both groups [36], positive effects [33].

With regard to ethnic diversity in classrooms, the available evidence is also mixed: it hinders the academic performance of immigrant children but has no significant effect on the academic performance of indigenous students [22]; it has a positive effect on the academic performance of students [26], including minorities [17; 39]; and it has both a negative and positive effect depending on the academic composition and generation of minorities [30].

The prevailing view in the current debate is that the negative relationship between the representation of immigrant students in schools and the achievement of their classmates is mainly due to the fact that migrants are grouped in the same schools as disadvantaged students from the local population, and that socio-economic characteristics are the primary factor [12].

Moving from composition effects to interaction effects, we find studies showing that intergroup contacts contribute to improved relationships, intercultural understanding, and increased educational outcomes for children from migrant and local families [25; 29].

Research into the practices of organizing learning interactions in culturally diverse classrooms reveals the

mediating role of peers and teachers in the acquisition of cultural tools by minority students [21], and the effects of constructing dialogue forms of peer interaction based on mutual assistance in language acquisition that do not place minority children in a subordinate position [25].

Inclusive school communities

Some studies demonstrate predominantly positive effects on cognitive and psychoemotional development, academic results, socialization, educational trajectory and employment in children with SEN who studied in general education classes compared to those who studied in special education classes [19; 23; 32]. The results of meta-analyses show both the presence and absence of pronounced effects [20; 37]. Differences in the effects are associated with the parameters of inclusive education [24], the socio-economic composition of classes in which students with SEN are included [43].

Today, it can be considered a generally accepted idea that the inclusion of students with special needs requires more than simply placing children with special needs in regular classes together with their peers without special needs, but, above all, organizing social interaction between children.

To study the relationships of children with and without special educational needs in inclusive classes, the concept of “social participation” is most often used, and the study of interaction is conducted using the categories of “cooperative learning” or “cooperative oriented learning”, “peer tutoring”, “peer-mediated interventions”.

The focus is on the effects of students’ acceptance or non-acceptance of each other [10; 11; 28]; development of social skills and improvement of social interaction in children with special educational needs [13; 47]. Peer teaching (including when a student with special educational needs acts as a mentor) has a positive effect on the social development and academic results of students with special educational needs, but not in all cases [46]. Less attention is paid to studying the features of organizing joint work in inclusive groups (positions of participants, functions of interaction, etc.), the role of the teacher in its coordination, and the corresponding effects. It was shown that in most cases, students’ interaction in groups was carried out in a free form, in which tasks or functions of interaction are not distributed between students by the researcher [4].

In turn, an experimental study of the development of higher mental functions of children with special educational needs in the context of specially organized educational interactions with adults and peers without special educational needs, conducted by A.V. Konokotin, demonstrated a variety of developmental effects: changes in the methods of interaction, relationships, and thinking [3].

Conclusion

We conducted an analysis of the current field of research on the correlation between the diversity of school (class) compositions and educational achievements, approaches to organizing social and learning interactions between peers from different groups.

In the first case, we found a significant body of research, the results of which are ambiguous, but in general allow us to identify the risks and benefits for student performance with a particular configuration of school (class) composition and propose solutions on this basis, primarily for educational policy.

The issues of pedagogical aspects of organizing interaction in various learning communities remain insufficiently studied. Methodologically limited experimental solutions are used, focused more on strengthening relationships in the community than on developing students' abilities and achieving academic progress.

It is critically important for Russian education today to stimulate research to substantiate management and teaching methods that respond to the diversity of the school community and the characteristics of individual groups of students to achieve success for everyone [9].

In this regard, cultural-historical psychology has significant potential and methodological advantages, and, above all, social-genetic psychology of learning interactions, offering theoretical positions and experimental practice for changing the methods of learning cooperation between children and adults using signs means that expand the ZPD and transform the processes of thinking, understanding, and communication [3; 7].

Research in this area will be useful for developing an original Russian educational model that responds to the challenges of diversity and inequality in relation to foreign approaches to multicultural and inclusive education.

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Information about the author

Sergey G. Kosaretsky, PhD in Psychology, Director, Center of General and Extracurricular Education, Institute of Education, Higher School of Economics, Moscow, Russia, ORCID: <https://orcid.org/0000-0002-8905-8983>, e-mail: ivanov@yandex.ru

Информация об авторе

Косарецкий Сергей Геннадьевич, кандидат психологических наук, директор центра общего и дополнительного образования имени А.А. Пинского Института образования, Национальный исследовательский университет «Высшая школа экономики» (ФГАОУ ВО «НИУ ВШЭ»), г. Москва, Российская Федерация ORCID: <https://orcid.org/0000-0002-8905-8983>, e-mail: skosaretski@hse.ru

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