

The cover features a central image of a person standing on a dark rock in a snowy, mountainous landscape. The sky is dark with a vibrant green aurora borealis. The background is overlaid with several diagonal bands in shades of teal and brown. The title 'REVISTA INCLUSIONES' is printed in large, white, bold, sans-serif capital letters across the center.

REVISTA INCLUSIONES

HOMENAJE A JAQUELINE VASSALLO

Revista de Humanidades y Ciencias Sociales

Volumen 7 . Número Especial

Julio / Septiembre

2020

ISSN 0719-4706

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PSYCHOLOGICAL COMPATIBILITY OF STUDENTS IN DYADIC AND GROUP SPACES

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Fecha de Recepción: 08 de enero de 2020 – **Fecha Revisión:** 07 de marzo de 2020
Fecha de Aceptación: 02 de junio de 2020 – **Fecha de Publicación:** 01 de julio de 2020

Abstract

The article discusses the psychological compatibility of school students as a condition for the effectiveness of pedagogical and student interaction and personal development. The characteristic is given to pedagogical and student interaction from the position of establishing psychological contact between students, a teacher and students in a dyadic and group space. Studies on the psychological compatibility of students have been analyzed, and therefore, the following are considered: mechanisms of psychological contact in the classroom; "educational collaboration"; the effectiveness of academic work; individual psychological characteristics of partners; compatibility criteria in the learning process. The theoretical model of psychological compatibility in student activity at the level of the educational task, at the level of role interaction, at the level of motives and personal values is offered. The factors of psychological compatibility of students are identified: typical and stylistic features of student activity, role interaction, creative activity. The results of an empirical study of the psychological compatibility of primary school students in a number of secondary schools in Moscow are presented. Identification of psychological compatibility of learners, learners and the teacher in the group and dyad space was determined using the "quantitative assessment of compatibility", developed on the basis of modification of the methodology of studying psychological compatibility by

R. L. Krichevsky, I. B. Antonova. In this case, the compatibility of the students was determined on the basis of mutual choices and the total scores received by each student. Mutual choices made it possible to determine compatibility options. The study of the relationship of students to the teacher was carried out on the basis of questions of this methodology, which relate to their interaction in the classroom and communication after class. The study of the teacher's attitude toward students was carried out on the basis of the method of a modified color test of the relationships of A. M. Etkind. Verbal and logical thinking of the first grade students was studied on the basis of the "Fourth odd" method. The study of "school motivation" was carried out using the methodology "Motivational readiness for school" by T.I. Yurefieva. In order to determine the contribution of each of the considered factors, represented individually by psychological characteristics in psychological compatibility, a correlation analysis was carried out. It was found that the most significant influence on the psychological compatibility of a school student with a group is exerted by: "teacher's attitude toward students," "student's attitude toward teachers," "motivation", and "verbal-logical" thinking do not play a large role in the psychological compatibility of students. The analysis of the " dyad "compatibility of respondents allowed us to empirically identify five "compatible" groups in each of the studied classes.

Keywords

Psychological compatibility – Cooperation – Coworking – Dyadic and group psychological space

Para Citar este Artículo:

Kondratiev, Sergey Vladimirovich; Kalita, Vataly Vladimirovich; Yulina, Galina; Baranova, Ekaterina Aleksandrovna y Reva, Tatyana Nikolaevna. Psychological compatibility of students in dyadic and group spaces. Revista Inclusiones Vol: 7 num Especial (2020): 260-277.

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Introduction

The need to improve the quality of education as well as the search for new determinants of the effectiveness of training requires study of specific features of the psychology of a small group in the education system, including considering various group phenomena, one of which is the compatibility of participants in pedagogical and school student interaction. Taking into account that the educational process is a multifaceted and polymorphic interaction, there is a need for cooperation between the teacher and the school students, as well as the school students themselves in the dyadic (teacher - student, student - student) and group space (teacher - student group, student - student group). Thus it is necessary to consider each of the parties as subjects of joint activity and their psychological characteristics defining cumulative result of such activity. In general, psychological compatibility in the educational process can be seen through pedagogical and student interaction.

Pedagogical interaction is a joint activity of a teacher and students aimed at the transfer and assimilation of general cultural experience. At the same time, one of the main characteristics of the interacting parties is their activity. In pedagogical interaction, this can be intellectual activity (reception, processing and evaluation of incoming information, etc.); motor activity (for example, when building an image of a phenomenon affecting a person); behavioral activity (verbal, non-verbal, etc.).

Another characteristic of the interaction is its systemic nature. In the process of pedagogical interaction between the teacher and students, a variety of connections are established between students: activity, emotional, behavioral, relational, etc. All these connections are projected in a more or less explicit form on the educational process directly in the student group (class). This is expressed in student attitudes towards education and learning, teachers, school. Interaction in the educational system is also characterized by a certain structure that determines its effectiveness. It should also be noted that the essential characteristics of the interaction are awareness and purposefulness¹. These characteristics determine the forms of interaction and communication in school (for example, cooperation or conflict).

Speaking of student interaction, one should point out some complexity associated with the fact that the teacher works with a group whose members also interact with each other, i.e. a group or class acts as an aggregate subject, whose efforts should also be aimed at achieving a common goal. A multi-tiered scheme of interaction between the teacher and the students arises, which depends on the establishment of psychological contact between all participants in the interaction. In this regard, the need for the acquisition of psychologically compatible educational groups arises, since compatibility and its factors will determine the presence of psychological contact in the classroom.

Touching upon the issue of psychological contact in the student group (class), attention should be paid to the research of I.A. Zimney. So, for example, revealing the internal mechanisms of psychological contact in the class (emotional satisfaction and intellectual assistance), she identifies two sides of compatibility as the reasons for this contact: psychological compatibility (from the emotional aspect of activity) and harmony (from the instrumental aspect)².

¹ I. A. Winter, Educational Psychology: textbook for universities (Moscow: Logos, 2001), 307.

² I. A. Winter, Educational Psychology... 384.

Methods

We conducted an analysis of scientific, psychological, pedagogical, and philosophical literature and Internet sources, as well as generalization and systematization of theoretically and empirically obtained data. The following methods were used as diagnostic tools: a modified methodology for studying psychological compatibility by R.L. Krichevsky and I.B. Antonova; a modified color test of relations by A.M. Etkind; the methodology "Fourth Odd". We carried out a mathematical modeling of the psychological compatibility of students, as well as teachers and students, with subsequent psychological interpretation, based on correlation and regression analysis.

Results and Discussion

We would also like to note that the concept of "educational cooperation" has been actively developed in Russian psychology, as the most capacious, activity-oriented and general concept in relation to other terms, denoting multilateral interaction within the educational group and the interaction of the teacher with the group. Educational cooperation in the educational process is an extensive network of interactions along the following four lines: 1) teacher - student (students), 2) student - student, 3) group-wide interaction of students in the entire teaching staff, 4) teacher – teaching staff. At the same time, the main research of cooperation is aimed at exploring its influence on the personal development of the student or students, or on the effectiveness of their group activities. The researchers note that "student-student" educational cooperation as an organizational form of training provides significant reserves not only to increase the effectiveness of teaching a specific subject, but also for the development and formation of the student's personality³.

The role of compatibility in student interaction of the "cooperation" type is emphasized by different authors, although from the standpoint of the activity approach, the variable component of compatibility (self-organization skills, business communication skills, and the degree to which participants are prepared for activities) plays a more significant role than the personal characteristics of interaction partners (A.A. Verbitsky, S.V. Kondratyev, G.S. Kostyuk, V. Yantos, etc.). Some authors, however, note that the individual psychological characteristics of partners for interaction also affect the success of joint problem solving⁴. As a form of interaction in the educational process, communication is considered. The significance of pedagogical communication in educational psychology is emphasized in the following definition: it is "... such a teacher's communication with students in the learning process that provides the best conditions for the development of student motivation and the creative nature of learning activities for the proper formation of the student's personality, fosters a favorable emotional learning environment (in particular prevents the emergence of a "psychological barrier"), provides management of socio-psychological processes in the children's group and allows to use to its maximum personal features of the teacher in the learning process"⁵. In the styles of pedagogical communication, which should stimulate the student's mental activity and correspond to progressive learning trends, as a rule, personal qualities of the teacher that he should possess are necessarily present as indicators of the style. Analysis of the conformity of the style to the characteristics of personality, age, skill levels of activity, etc. affects nothing more than factors of compatibility of the subjects of the educational process.

³ I.A. Winter, Educational Psychology... 313.

⁴ I.A. Winter, Educational Psychology... 319.

⁵ A. A. Leontiev, Pedagogical communication (Moscow: Nalchik, 1996), 20.

Depending on the progressive and non-progressive forms of interaction, different learning difficulties or communication “barriers” may arise. In the Russian psychology of education, the difficulties between the teacher and the students are studied from the perspective of the factors that cause them (N.V. Kuzmina, A.A. Leontiev, A.K. Markova, V.A. Kan-Kalik, etc.). It is emphasized that difficulties arise due to the partner’s rejection of the communication, his actions, misunderstanding of the body of the message, misunderstanding of the partner, etc. Difficulties are the result of the teacher-student or student-student incompatibility, when they lead to dissatisfaction with relationships and destruction, disintegration of activities, the desire to leave school or the profession. Difficulties can be correlated with the nature of the activity, with the personal characteristics of the interacting parties, with their status positions, age limits, as well as with sociocultural settings, etc.^{6,7,8,9}.

In general, educational cooperation and communication in the educational process is a multi-level interaction of the teacher and student or teacher and student group and it involves the consideration of each of these parties as subjects of the educational process. The occurrence of this complex interaction depends on the characteristics of both. As such characteristics, I.A. Zimnaya identifies, firstly, the purposefulness, activity and motivation of the activity, emphasizing that the goals and motives of each of them are different. The second characteristic is the role positions of both subjects of cooperation and communication: one position determines the role of a teacher, mentor; the second is the role of the student. The third characteristic of both subjects is the conditionality of educational and pedagogical activity, on the one hand, their individual psychological characteristics, and on the other hand, the relationships that each of them enters into in the school team¹⁰.

In accordance with the above, in the educational process compatible on the principle of either complementarity or symmetry there should be: 1) the motives and goals of the interacting parties; 2) their functional and role positions; 3) their individual psychological characteristics.

Often, the choice of the individual psychological characteristics of interacting individuals (based on the principles of conformity or complementarity) by different authors is carried out quite arbitrarily, since compatibility studies may not fully take into account the real situation in which compatibility takes place: conditions for the performance of activities, forms of interaction, type of tasks to be solved, person’s age, etc. So, for example, in the studies we conducted earlier, we considered only one of the aspects of the teacher-student compatibility – the one that relates to the main activity and corresponds to operational-role compatibility. In this case, the following criteria have been selected:

1) the characteristics of the psychological space of perception of educational material; in particular, the cognitive complexity of this space, reflecting the number of factors by which the perceived object is evaluated; the specificity of the factors underlying the assessment of perceived material reflecting the type of perception - synthetic, analytical, as well as possible errors that the teacher should pay attention to;

⁶ N.V. Kuzmina, Abilities, talent, teacher’s talent (Leningrad: Knowledge, 1985), 32.

⁷ V.A. Cann-Kalik, For teacher about pedagogical communication (Moscow: Education, 1987), 190.

⁸ A. A. Leontiev, Psychology of communication... 365.

⁹ A. K. Markova, Psychology of teacher work. (Moscow, 1993).

¹⁰ I. A. Winter, Educational Psychology... 344.

2) style characteristics of the activities of the subjects of pedagogical process; in particular, the goals of the participants in interaction; styles of pedagogical communication and their compliance with the age of students¹¹.

O.V. Allahverdova empirically revealed the following criteria for compatibility in the learning process: 1) value-oriented aims of group members; 2) the focus of the group members on the real distribution of roles, taking into account the expectations and claims of each of the participants; 3) the focus of group members on a particular style of behavior in a particular situation. Depending on the learning situation, one criterion or another may play a dominant role in group work. Since O.V. Allahverdova considered the situation of intensive learning, the greatest emphasis is placed on the role compatibility of participants in the group learning process. In general terms, according to O.V. Allahverdova, the definition of harmony is the following: compatibility consists of three levels of assessment: actions at the level of a specific task, role-based interaction and value-orientation unity¹².

In the study by A.V. Afonina, a rather extensive diagnosis was proposed, covering a whole system of various psychological indicators of the teacher and students, which casts doubt on the very possibility of completing compatible classes: it is difficult to select the subjects “matching” each other, including the teacher, and it is difficult to see where should we put the learners who do not meet the selected criteria. In particular, the indicators determining the teacher-student compatibility were individual psychological characteristics, socio-psychological and socio-personal characteristics. To individual psychological, the author took extraversion; to socio-psychological - emotional stability, expressiveness, self-esteem, conservatism, self-control; to socio-personal - the orientation of the personality and the level of motivation. The coincidence between the teacher and the student group of these indicators leads to increased motivation for educational activities and personal growth among students and professional development for the teacher¹³.

In the study by E. Ya. Mikhitaryants, the criteria were the types of interpersonal relationships in dyads and the temperamental characteristics of respondents¹⁴. In the school system, such a diagnosis is not particularly difficult, however, there is some criticism. Firstly, the interaction of an individual and a group (student – group, teacher – group) is not taken into account, the compatibility of which will be determined by the coincidence of other psychological entities; secondly, the speech-cognitive activity of the subjects is used as the resulting indicator, i.e. the dynamics of their interaction is determined, but not the qualitative indicators of the educational process. If we turn to two aspects of joint activity – emotional (relationship, communication) and instrumental (actually activity) – then in this case the resulting indicator affects the area of communication in dyads; indicators of the dynamics of the educational activity of the subjects fall out of the analysis.

Based on the above studies, explicitly or implicitly affecting compatibility issues in the educational process, it can be concluded that:

¹¹ S. V. Kondratiev, “Psychological types of teachers and students”, Psychological science and education num 3 (2003): 52-57.

¹² O. V. Allahverdova, The role of responsiveness and compatibility in joint activities in extreme conditions. Mental tension in labor activity (Moscow, 1989), 289-300.

¹³ A. F. Anufriev y S. Kostromina, How to overcome difficulties in teaching children (Moscow: “Axis 89”, 1997), 224.

¹⁴ E. Ya. Mikhitaryants, The influence of multilevel foundations of integral individuality on the productivity of joint speech-thinking activity (for example, students of a pedagogical university): Diss Cand. psychol. sciences (Pyatigorsk, 1993), 172.

1) compatibility is considered in educational psychology as one of the conditions for the success of educational and professional pedagogical activities;

2) when considering joint activities in the educational process, the authors relate to either activity (educational cooperation, etc.) or communication (speech-cognitive activity, interaction, etc.) and, at the same time, various determinants of compatibility (goals, motives, actions, individual psychological characteristics, etc.);

3) since communication and joint activity are two projections of the general human activity (D.B. Elkonin) that define a single line of human development and are inextricably linked in the educational process, the strategy for studying compatibility should include measuring compatibility in the field of educational activity (activity) and in the field of intra-group communication (interaction).

In connection with the above, the scheme of studying interpersonal compatibility in a small group developed by R. L. Krichevsky and I. B. Antonova is worth considering¹⁵. In the sphere of interpersonal communication two aspects of compatibility are highlighted:

compatibility in autonomous independent manifestations of communication, in “free” communication;

compatibility in those forms of communication that accompany the unfolding instrumental activity, as if serving it¹⁶.

The above analysis logic allows us to propose a theoretical model of compatibility in educational activities (see Fig. 1).

In it, compatibility is considered depending on the nature of the activity: monotonous activity and simple tasks by an algorithm or creative activity, where a given algorithm is absent. An elementary school is characterized by a situation of “simple tasks” and compatibility is considered in the field of methods of action and cognitive activity of subjects of the educational process, as well as functional and role compatibility. Compatibility at the task level in this case can be diagnosed by methods that measure the characteristics of cognitive activity of subjects: styles of mental activity, especially the perception and processing of educational information, etc.

Compatibility at the level of role interaction can be represented by the correspondence of the styles of pedagogical communication to the psychological characteristics of students: age-specific, cognitive; correspondence of sociometric statuses of students (on the principle of complementarity or symmetry). In this case, she will be diagnosed with mutual satisfaction with the interaction process.

Finally, compatibility at the level of creative activity and non-standard situations presupposes a correlation of values and meanings of joint activity, personality orientation, stable personality traits of partners.

¹⁵ R. L. Krichevsky y I. B. Antonova, Interpersonal compatibility in small groups. Psychological and pedagogical problems of communication (Leningrad: Znanie, 1980), 284.

¹⁶ R. L. Krichevsky y E. M. Dubovskaya, Small Group Social Psychology: a textbook for High Schools (Moscow: Aspect Press, 2001), 318.

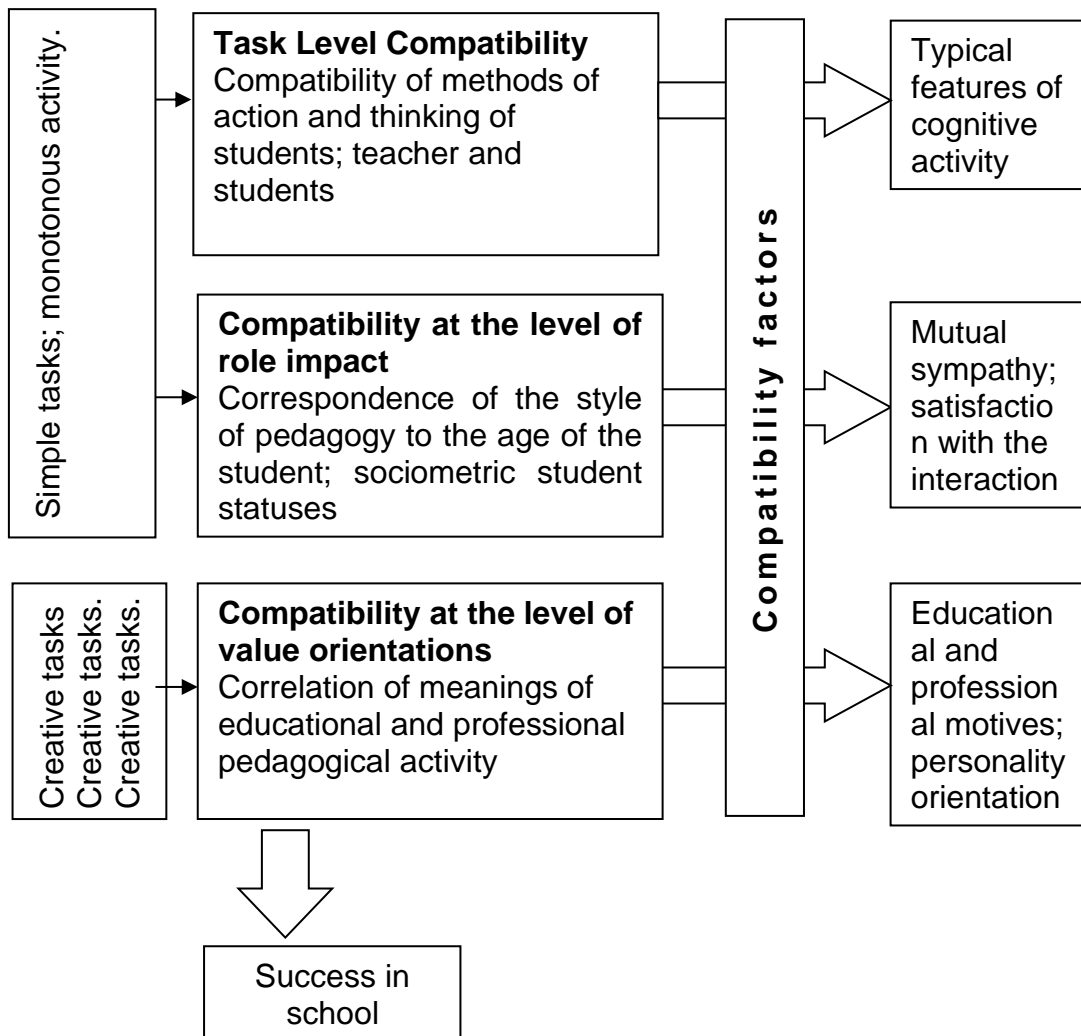


Figure 1
Compatibility in educational activities

Thus, the theoretical model of compatibility in the educational process includes compatibility, provided by the symmetry of indicators of cognitive activity of subjects of interaction at the level of problem solving; compatibility on the principle of complementarity at the level of role interaction; compatibility, represented by symmetry at the level of motives and values of joint activity.

We used the above theoretical model in organizing and conducting an empirical study of the psychological compatibility of students in a dyadic and group space. The study was conducted with students of the 1st grade of secondary schools in Moscow. The study was conducted over three years: 2016-2017 academic year; 2017-2018 academic. year; 2018-2019 academic year. The total number of subjects was 1248 first-graders.

The choice of specific research methods and methodology was based on the following: 1) the three-component structure of students' psychological compatibility, presented in the psychological model of "student compatibility in educational activities"; 2) the existence of a relationship between the components of this model, which determines the

construction of a homogeneous study group of learners, within which there is psychological compatibility between school students; 3) the dependence of the effectiveness of pedagogical interaction on the relationship between the teacher and the learners, the learners themselves.

In order to identify the psychological compatibility of first graders in group and dyadic space, a "quantitative assessment of compatibility" based on a modification of the methodology for studying psychological compatibility according to R. L. Krichevsky, I. B. Antonova was carried out. At the same time, the study of the psychological compatibility of class students was carried out on the basis of the first two issues, i.e. those ones that relate to the interaction of students in the classroom and communication after class.

Diagnosis was carried out in the fourth quarter of the first year of study. This is due to the fact that by this time, as a rule, not only the first-graders' adaptation period to school had ended, but also they got to know each other and their teacher well.

As can be seen from the tables below, there are no children "incompatible" with the class (that is, there are no "outcasts" in the class). Thus the level of compatibility of the child with a class was defined, proceeding from quantitative indicators of total and average point, according to the following criteria (see Table No. 1).

<i>Average score</i>	<i>Student / Group Compatibility Level</i>
1,5 – 1,9	Low
2 – 2,5	Medium
2,6 – 3	High

Table 1

School student and Grade Compatibility Index

The data obtained are given in tables No. 2,3,4. Thus, it is established that about three-quarters of all first-grade students are at the average level of compatibility of the first-grader with the class. At the same time, there are approximately the same number of students at low and high levels (12.5 % - 16.5%).

Number of students		
Low	Medium	High
%	%	%
12,5	75	12,5

Table 2

The number of students in 1st grades of the 2016-2017 academic year in terms of the level of psychological compatibility of an individual student and class

Number of students		
Low	Average	High
%	%	%
16	72	12

Table 3

The number of students in 1st grades of the 2017-2018 academic year in terms of the level of psychological compatibility of an individual student and class

Number of students		
Low	Average	High
%	%	%
16,5	71	12,5

Table 4

The number of students in 1st grades of the 2018-2019 academic year in terms of the level of psychological compatibility of an individual student and class

This distribution of first-graders allows us to predict their interaction in the lesson and in extracurricular activities at an average level. That is, it can be assumed that the effectiveness of the interaction of an individual student and class for the most part still does not reach the level of cooperation (it is known that a high level of compatibility between an individual and a group is necessary). However, this distribution of students indicates that the teacher can organize frontal work in the lesson in order to provide a solution to educational and developmental problems. The study of the relationship of students to the teacher was also carried out on the basis of the methods of R.L. Krichevsky, and "quantitative assessment of compatibility by I.B. Antonova." Moreover, the study of such relations was carried out on the basis of the last two issues, i.e. those ones that relate to the interaction of the teacher and students in the classroom and communication after class. Diagnosis was carried out in the fourth quarter of the first year of study.

At the same time, for the convenience of interpreting and comparing the results of this diagnosis with the results of other diagnostics focused on the individual psychological factors of psychological compatibility of students, the average level of the ratio of student to teacher differentiated into three sublevels: below average, average, above average. Thus, there was: a low level, below average, average and above average sublevels, high level. Each level and sublevel was assigned a rating determined by the interval number of points (see Table 5).

Score	Level (sublevel)	Rating
1,5 - 1,9	Low	1
2 - 2,1	Below the average	2
2,2 - 2,3	Average	3
2,4 - 2,5	Above average	4
2,6 - 3	High	5

Table 5

Indicators of student's attitude towards teacher

The results of this method are obtained by summing up the points given by the students of the class to their teacher on a particular issue according to the criteria of activity and communication. The data obtained are given in tables No. 6,7,8.

Number of students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
0	25	33	29	13

Table 6

The level indicator of the attitude of first-graders of the 2016-2017 academic year to a class teacher

Number of students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
0	44	28	12	16

Table 7

The level indicator of the attitude of first-graders of the 2017-2018 academic year to a class teacher

Number of students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
0	25	33	21	21

Table 8

The level indicator of the attitude of first-graders of the 2016-2017 academic year to a class teacher

As can be seen from these tables, there are no teachers "incompatible" with the class. At the same time, a personal analysis of the relations of first-graders to the teacher showed that most students demonstrated an average level quality of relations with the teacher; from 9% to 24% first-graders of certain classes showed a high level quality of relations with the teacher. None of the first-graders showed a low level quality of relations with the teacher. In general, with a certain degree of conditionality, we can talk about the similarity of all classes in terms of level indicators of relations with the teacher. The differences between the individual classes are primarily due to the individual characteristics of the students and the teacher, the attitudes formed by students in the family, the influence of parents on children in terms of attitudes toward teachers, and other natural factors.

The study of the teacher's relations with students was carried out on the basis of the method of a modified color test of the relationships of A. M. Etkind. The teacher was asked to find a color association with each student. Eight color cards were used for this. The teacher had to arrange a row of eight colors in accordance with the concept of "My student ..." for each student in the class. Then the teacher was asked to build a color range of subjective preferences. Each color has its own number. As a result, two series "My student" and "Subjective preferences" of the teacher were obtained, between which Spearman's rank correlation coefficient was calculated¹⁷. In general, the indicator of rank correlation between the indicated series made it possible to evaluate the teacher's attitude to each student. The level of these relations was determined by the value of the correlation coefficient. Moreover, each level of such a coefficient was assigned a rank (see Table 9).

¹⁷ G. F. Lakin, *Biometrics* (Moscow: Higher school, 1990), 238.

Correlation coefficients	Level	Rating
0,4 - 0,51	Low	1
0,52 - 0,63	Below the average	2
0,64 - 0,75	Average	3
0,76 - 0,87	Above average	4
0,88 - 1	High	5

Table 9
Indicators of teacher-student relations

Summary data on the level of teacher-student relations for all parallel first grades are presented in tables No. 10, 11, 12.

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
16,5	42	16,5	16,5	8

Table 10
The level indicator of the attitude of the class teacher to first graders in 2016 year of school enrollment

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
20	36	20	12	12

Table 11
The level indicator of the attitude of the class teacher to the first graders of 2017 year of school enrollment

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
16,5	37,5	16,5	21	8,5

Table 12
The level indicator of the attitude of the class teacher to the first graders of 2018 year of school enrollment

The tables show that for the most part, class teachers of the first grades of 2016, 2017, 2018 years of school enrollment demonstrate an average level of quality of relations with school students (below the average, average, above the average sublevel). From 4 to 16 percent of teachers showed a high level of quality of relations with school in individual classes. A low level of quality of attitudes towards students was demonstrated in individual classes from 16 to 28 percent of teachers. The differences between the individual classes are largely due to the personal self-esteem of the teacher, the adequacy of his professional style of work, the totality of social attitudes and value orientations of teachers and parents

whose children came to school, satisfaction with professional activities and other social factors.

In order to determine the influence of intellectual determinants on the psychological compatibility of first-graders, verbal and logical thinking of students was studied on the basis of the "Fourth Odd" method¹⁸. Diagnosis was carried out at the beginning of the second half of the year. Diagnosis was carried out at the beginning of the second half of the year. The study procedures fully comply with the instructions for this method.

Summary data on the level of development of verbal-logical thinking of students of the first classes are presented in tables No. 13, 14, 15.

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
0	25	33	17	25

Table 13

Distribution of school students of the first classes of 2016-2017 academic year by levels of development of verbal and logical thinking

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
4	17	33	21	25

Table 14

Distribution of school students of the first classes of 2017-2018 academic year by levels of development of verbal and logical thinking

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
0	20	36	20	24

Table 15

Distribution of school students of the first classes of 2018-2019 academic year by levels of development of verbal and logical thinking

From the tables it can be seen that the largest number of students in the first grades on the level of development of verbal and logical thinking is in the middle level. So in the 2016-2017 academic year, there were 75% of such students in classes; in the 2017-2018 academic year there were 71%; in the 2018-2019 academic year, 76%. All this testifies to the necessary and sufficient level of psychological readiness of first graders for educational activities.

¹⁸ R. L. Krichevsky y I. B. Antonova, Interpersonal compatibility in small groups. Psychological and pedagogical problems of communication (Leningrad: Znanie, 1980), 66-67.

The study of "school motivation" was carried out with the help of the technique "Motivational readiness for school" by T. I. Yurefyeva¹⁹. This technique was also carried out at the beginning of the second half of the year. The study procedures fully comply with the instructions for this technique. As a result of the relevant calculations, the coefficient of "school motivation" of each student of the studied classes was obtained. At the same time, he was ranked according to the level of school motivation (see table 16).

The coefficients of school motivation (CShM)	Level	Rating
22%, 33%	Low	1
44%	Below the average	2
55%, 66%	Average	3
77%	Above average	4
88%, 100%	High	5

Table 16
Indicators of school motivation of students

Summary data on the level of development of "school motivation" of students of all first grades are presented in tables No. 17, 18, 19.

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
17	25	42	8	8

Table 17

The distribution of students in the first grades of the 2016-2017 academic year by the levels of development of "school motivation"

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
12	24	44	12	8

Table 18

The distribution of students in the first grades of the 2017-2018 academic year by the levels of development of "school motivation"

Number of school students				
Low	Below the average	Average	Above average	High
%	%	%	%	%
12	25	42	12	9

Table 19

The distribution of students in the first grades of the 2018-2019 academic year by the levels of development of "school motivation"

¹⁹ I. V. Dubrovina y M. K. Akimova, Workbook of school psychologist (Moscow: Prosveshenie, 1991).
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From the tables it can be seen that the largest number of first-grade students in terms of the development of "school motivation" is at levels below average, average and above average. So, for example, there were 75% of such students in the 2016-2017 academic year; in the 2017-2018 academic year, there were 80% in classes; in the 2018-2019 academic year - 79%. All this testifies to the still insufficient formation of motives for educational activity. These motives in this period of training are in the stage of formation. A significant percentage of students demonstrate "preschool" motivation and treat learning as a game. The external regulation of the educational process often causes protests from schoolchildren; all this causes the occurrence of "difficulties" in learning.

To determine the contribution of each of the considered factors individually psychological characteristics ("students' attitude to teacher" "the ratio of teachers to learners", "visual-figurative thinking of students", "verbal-logical thinking of students", "school motivation") are presented, there was conducted correlation analysis in the psychological work²⁰.

The correlation equation allows us to establish the presence or absence of a dependence of the phenomenon under study (psychological compatibility) on a number of signs (individual psychological characteristics), alternately put in its basis. The value of the correlation coefficient determined the significance of the influence of the factor on psychological compatibility. The results of the study of the influence of individual individual psychological characteristics on the psychological compatibility of the student and group are given in table No. 20.

Grade	Verbal logical thinking	Motivation	Attitude	
			Teacher to the school student	School student to the teacher
2016	0,19	0,90	0,90	0,83
2017	0,49	0,83	0,92	0,86
2018	0,40	0,87	0,91	0,89

Table 20

Correlation of indicators of individual psychological characteristics with the resulting indicator of psychological compatibility

From table No. 20 it can be seen that the most significant influence on the psychological compatibility of the student with the group is exerted by: "the attitude of the teacher to school students", "the attitude of school students to the teacher", "motivation". Such a psychological characteristic as verbal-logical thinking is not significant for the psychological compatibility of first graders. Based on this, we can say that the leading factors determining psychological compatibility are "mutual sympathies and satisfaction with the interaction" and "value orientation presented in the motives of educational activity". Thus, it can be assumed that the focus on such leading individual psychological characteristics as "the attitude of the teacher to the school students", "school student's attitude to teacher", "motivation" should increase the level of psychological compatibility of students and make pedagogical interaction in the classroom and outside the classroom activity more effective.

After analyzing the level manifestations of significant individual psychological characteristics of school students of all classes from previously defined "compatible" groups,

²⁰ G. F. Lakin, Biometrics (Moscow: Higher school, 1990), 211.

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we can distinguish certain features of the teacher's attitude toward school students, student's attitude toward teachers, motivation. Here we'll briefly describe these features:

1st group. Pupils of this group are distinguished by an average level of motivation and the symmetry of the relationship between the teacher and school students.

2nd group. Children are characterized by high motivation, its values are located in the field of high and above average levels. The relationship on the part of the teacher to the individual school students of the group and on the part of the students to the teacher cannot be called symmetrical, since children perceive teachers more positively than the teacher perceives each of them. However, the acceptance on both sides is quite high (high and above average). One of the features of this group is the focus on each of the children to the class (according to the group indicator).

3rd group. Low level of educational motivation and orientation to "preschool" activities. The relations of the teacher and the relations of children are not distinguished by high positive acceptance. Rather, it can be described as neutral on both sides. However, formally, the level of acceptance by the child in relation to the teacher is more favorable.

4th group. Like the students of the third subgroup, they are diagnosed with an orientation toward "preschool" activities. The relations between teacher and school students can be described as neutral. The difference between this subgroup and the third is the lack of orientation in children to interact with the group (in terms of group compatibility).

5th subgroup. Students are distinguished by the average level of educational motivation, the average level of severity of the teacher's attitude to students, and above the average - the student's attitude to the teacher.

Conclusion

1. Psychological compatibility of school students is a systemic education, represented by: in a dyadic space, by subject-subject relations in mutual satisfaction of partners with each other with insignificant emotional and energy costs; in group space - by the interaction of an individual and a group, which involves the adoption by the group of a separate personality, in which maximum satisfaction is achieved with joint activities and communication. Its architectonics includes compatibility at the levels of: educational tasks; role interaction; motives and personal values. The factors of psychological compatibility of students are: at the level of the task - typical and stylistic features of cognitive activity; at the level of role interaction - satisfaction with the interaction; at the level of creative activity - value orientations of the personality, represented by the motives of educational activity.

2. As a result of an empirical study, it was found that for first-grade students, intellectual development (by the example of verbal-logical thinking, the development of which takes place at this stage of training) to a lesser extent affects the psychological compatibility of first-graders. The most significant are: "the attitude of the teacher to students", "the attitude of students to the teacher", "motivation".

Recommendations

For the formation of psychological compatibility, it is necessary to implement psychological and methodological support specially designed in accordance with the age,

typological and individual characteristics of students and teachers, as well as the period of training. Such support should cover the field of educational activity and the sphere of communication. The work on creating compatibility in educational activities includes the acquisition of compatible study groups, the implementation of a special methodology for organizing intra-group and inter-group interaction in the classroom, and working with teachers to develop skills for effective interaction with the class. Work on creating compatibility in the field of communication may include a psychological workshop - "relationship training", in which teachers and students participate simultaneously, as well as, for example, creating a children's "fairy tale theater".

Compatible study groups within the class must be completed from students with a certain level of expression of indicators of educational motivation, teacher-student relationship and student-teacher relationship.

The technology of working with compatible study groups should be based on creating a situation of interaction between students using exchange methods. In intra-group activities, there may also be such exchange options as: operations, information, roles, functions, positions, mixed exchange. At the same time, the organization of joint actions between groups should be based on two exchange options: the exchange of roles and the exchange of information.

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