

REPUBLIC OF AZERBAIJAN

On the rights of the manuscript

ABSTRACT

Of the dissertation for the degree of Doctor of Philosophy

**MANIFESTATION OF GENERALIZATION EVENT IN THE
COURSE OF TRAINING ACTIVITY OF MINOR STUDENTS
AND PSYCHOLOGICAL SPECIFICATION OF ITS
ELIMINATION**

Speciality: 6104.01 – Pedagogical psychology

Field of science: Psychology

Applicant: Gulnur Oqtay Abbasova

B A K U-2022

The dissertation work was carried out in the department of inclusive education of the Azerbaijan University of Languages

Scientific supervisor: Doctor of Psychological Sciences,
professor
Ramiz Ibrahim Aliyev

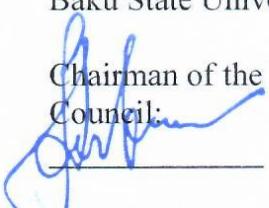
Official opponents: Doctor of Psychological Sciences ,
professor
Gulnara Kazim Gurbanova

Doctor of Philosophy in Psychology
Reyhan Iskender Ahmadova

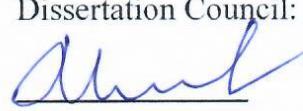
Doctor of Philosophy in Psychology
Chapay Qadir Guliyev

Dissertation council FD 2.43 of Supreme Attestation Commission
under the President of the Republic of Azerbaijan operating at the
Baku State University

Chairman of the Dissertation

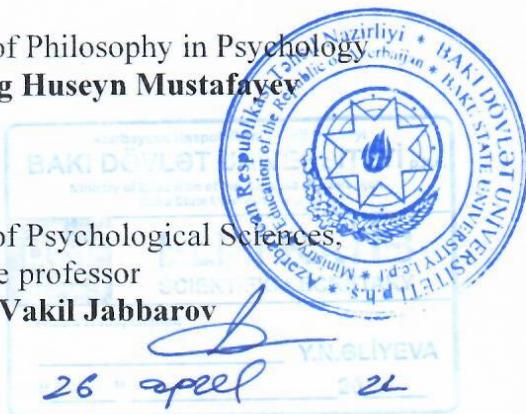
Council: 
Doctor of Psychological Sciences, professor
Kamila Ramiz Aliyeva

Scientific Secretary of the

Dissertation Council: 
Doctor of Philosophy in Psychology
Mushvig Huseyn Mustafayev

Chair of the Scientific
Seminar:


Doctor of Psychological Sciences,
associate professor
Rashid Vakil Jabbarov



GENERAL CONTECT OF THE WORK

Relevance and development of the topic. Science and technology are developing rapidly. Development sets the increase of the efficiency of the learning process, consideration of all the factors affecting students through the use of the achievements of modern psychology and learning technologies as important requirements. The state policy in the field of education and the reforms carried out in the education system clearly show that the training of personnel capable to form the intellectual economy in Azerbaijan is the most important task of modern times. It is not possible to perform this important task properly and to organize the learning process effectively without taking into account the psychological factors in training. The training can be made more result-oriented when the phenomena of thinking, their features are studied scientifically and the results are involved in the pedagogical process. It is known that the development of generalization skills directs students to learn more effectively in an ever-increasing flow of information, allows them to master a lot of objects and events, their similarities and differences. Generalization is a complex process. The generalization event occurring in this process makes learning difficult and exerts a negative impact on learning results.

The learning process includes such components as acquiring knowledge, skills and habits, educating students and the formation of thinking skills. First of all, training is a systematic, expedient, planned activity. The works carried out to master this activity is a strategy aimed at achieving the goal. Generalization helps to take into account the phenomenon of generalization, proper organization of the environment, favorable social relations and conditions allow to increase the efficiency of activities. In this regard, it is very important to eliminate the generalization phenomenon and start work on generalization at a lower stage of training. Future generalization work shall be based on the results of research on the problem. A place shall be given to teaching scientific information about the phenomenon of generalization, its essence, causes and ways to eliminate it. The work on these issues shall both have theoretical character and inform future

teachers about the features of the generalization process, as well as teach them to use this information in pedagogical activities. This issue has been taken into account in the thesis work and the issues needed to be taught in the training of teachers have been substantiated. The obtained results are summarized in the author's article "Work on teaching the act of generalization in teacher training".¹

We have creatively benefited from the works of our prominent scientists who have been successfully used in the formation of the science of psychology, its results in the education system of Azerbaijan, the effective organization of training and education such as F.A. Ibrahimbeyov, Sh.S. Agayev, A.S.Bayramov, M.A.Hamzayev, A.A.Alizade, B.H.Aliyev, A.A.Gadirov, R.I.Aliyev, A.T.Bakhshaliyev, G.E.Azimov, K.R.Aliyeva, R.B.Jabbarov, from our pedagogical scientists academician M.M.Mehdizade, M.A.Muradkhanov, N.M.Kazimov, Z.I.Garalov, A.A Aghayev and others in our research process.

The concept of generalization was first introduced to science by I.P.Pavlov in connection with physiological research and later began to be processed as a phenomenon of thinking in psychology. Various issues related to this concept have been explored in a more general context in the literature on psychology. Involvement of this concept in training is connected with the names of Russian scientists D.N. Bogoyavlensky, P.A. Shevarev, V.V. Davidov, S.F.Juykov, B.V.Zeyqarnik, F.N.Qonobolin and others. More detailed and scientifically substantiated researches on the act of generalization were conducted by the Azerbaijani scientist M.A.Hamzayev. M.A. Hamzayev studied the act of generalization in the process of teaching spelling and put forward important scientific provisions. The scientist's conclusions and generalizations based on the facts obtained from school experience increase the practical significance of his research, as well as direct further research.

¹ Abbasova GA, Work on learning the phenomenon of generalization in teacher training. / Materials of the International scientific-practical conference "Modern problems of teacher training". Baku: 2011, p. 162-165

A.R. Afandizadeh commented on the issue in the linguodidactic direction and N.M. Kazimov in the pedagogical aspect. However, in these studies, the act of generalization occurring in the process of learning with junior schoolchildren, its essence, causes, features and ways of elimination were not the subject of research based on the content of modern education. In none of the researches, the generalization was conducted in the direction of the interaction of subject teaching. Moreover, as we know, “Learning the World” is now taught as an integrative subject in the primary classes. The main purpose of teaching this subject is to develop the skills of generalization in the context of interdisciplinary communication and to teach the relationship between objects and events, their interaction. The problem processing level also proves the importance of studying the generalization process in the context of mastering the learning activities by junior students.

The object and the subject of research. The psychological characteristics of mastering of learning materials by junior students. Manifestation of the act of generalization in the acquisition of learning materials by junior students, the psychological features of its impact on learning.

The purpose and objectives of the research. The main of study the manifestations of the phenomenon of generalization in the learning activities of junior schoolchildren, the causes and psychological features of its elimination, to generalize scientifically, to provide methodological assistance to teachers and to make recommendations on future research on the problem,

The following tasks are intended to solve the research problem:

- To reveal the state of research of the problem by studying and analyzing the current bibliography;
- To study the characteristics of the act of generalization manifesting itself while mastering training content by junior students, to provide a psychological analysis of their causes;
- To determine the effective ways of elimination of the phenomenon of generalization, the impact of individual

characteristics of students, the information to be taught on the acquisition of training materials;

Methods of research. The methodological basis of the research is the theoretical basis of student-oriented and developmental learning activities, scientific-psychological and pedagogical ideas related to the act of generalization in terms of the cognitive process, the provisions of prominent psychologists and pedagogical scientists. Special methods such as theoretical analysis, observation, interview, questionnaire, studying activity products and school documents, use of general methods and problem-related symbols such as experiment, mathematical calculation, naming of given words, basic features of objects used to solve research tasks, writing the words in separate lines according to the given word, identifying the excess objects and specifying them with symbols.

The hypothesis of the study. If the process of learning in primary school takes into account the phenomenon of generalization in the work with older students, its causes and features of its elimination, it will have a positive impact on the level of mastery of students, improve the quality of learning

Provisions submitted for defense.

- The study of problem-related issues allows primary school teachers to take into account the act of generalization slowing down the ability to correctly generalize during training.

- Awareness of the characteristics of occurrence of generalization in the learning activities of junior children helps the teacher to eliminate wrong practice by using innovative methods during the lesson.

- Awareness of the psychological features of the generalization phenomenon in the learning process, the age and individual differences of students allows the teacher to prevent the generalization of children's mistakes at the generalization stage and to develop in them such skills as analysis and composition.

- Considering the act of generalization in the learning process develops students' thinking skills, helps to master the learning

activity effectively, optimizes the mastery of learning materials related to generalization skills.

- The generalization skills created in students by eliminating the act of generalization help students to use time properly in the learning process and to master more effectively.

Academic novelty of the research. Researches on generalization have been studied and generalized, the content of modern training for grades 1-4 has been studied in terms of eliminating the phenomenon of generalization, the essence of the concept of generalization has been clarified, features of manifestations of erroneous generalizations occurring during learning activities at primary school, ways to eliminate them, the psychological mechanism of generalization in the process of mastering learning materials was clarified for the first time, the influence of individual differences of junior schoolchildren, features of the information on the curriculum and its completeness, use of different symbols on generalization was revealed.

Scientific and theoretical, practical significance of the research. The results of the research are important in terms of determining the nature, causes, characteristics, types and elimination of the generalization phenomenon in the learning context, the creation of basic scientific knowledge for new research in this area. The use of research results is designed to develop students' ability to generalize correctly in the learning process, to eliminate the phenomenon of generalization, and thus to improve learning outcomes. The results can also be used in the training of teachers of primary school and in research on the phenomenon of generalization.

Approbation of the obtained results. The results of the research are reflected in the author's articles and theses published in local and international scientific press. She has given lectures and seminars at Baku Girls' University and Azerbaijan University of Languages.

Name of the organization where the dissertation work is carried out. Azerbaijan University of Languages.

The total volume of the dissertation with a sign, indicating the volume of the structural units of the dissertation separately.

The dissertation consists of an introduction (11884 characters), Chapter I (105935 characters), Chapter II (86271 characters), Chapter III (61331 characters) result (7040 characters), list of used bibliography (21678 characters), a total of 296033 characters.

MAIN CONTENT OF THE DISSERTATION

The introduction of the thesis also reflects the object, subject, research methods used, the main provisions submitted for defense, hypothesis, scientific and practical significance, purpose, tasks of the research.

The first chapter of the dissertation consisting of three sub-chapters is called **"Problem statement in the literature and general theoretical issues."** First of all, the problem statement in the psychological and pedagogical literature is studied in this chapter. It is clear that the concept of generalization has been introduced to the literature in research related to the science of physiology.

It is shown in the thesis that various aspects of the generalization process have been studied in the former USSR. Generalization has been considered both as a specific research object and in the researches on other topics. D.N. Bogoyavlensky explains the main features of the act of generalization occurring in the process of teaching spelling materials in his work "Psychology of mastering spelling"². M.A.Hamzayev³, V.V. Davidov⁴, Grace

¹ Pavlov I.P. Selected works. Moscow, State Publishing House of Political Literature, 1951, p.490

² Bogoyavlensky D.N. Psychology of mastering spelling. 2nd edition, revised and enlarged. M. Enlightenment, 1966

³ 1) Hamzayev MA, The role of intellectual work techniques in acquiring correct writing skills. // Azerbaijan school, 1966 № 2, p.45-54; 2) Pedagogical psychology. Baku: Enlightenment, 1991; 3) Features of the association of spelling and punctuation. // Teaching Azerbaijani language and literature. 1970 № 4 / 20-31; 4) The phenomenon of generalization in the process of mastering training materials. // Azerbaijan school 1968 №12, p.57-63; 5) Basics of age and pedagogical psychology. Baku: "TS" company-2000

Craig⁵, J.F.Zhuykov⁶ and others have studied the act of generalization in various aspects. As a result, it led to the study of more specific aspects of the generalization phenomenon. Thus, issues such as emotion and generalization⁷, mass generalization⁸ and cartographic generalization⁹ were studied. The results of research conducted in the psychological context have been used in other fields of science, including methodological works¹⁰. The author's provisions on mass generalization are commented on in his article entitled "The impact of mass generalization on intercultural dialogue."

The second subchapter of the first chapter of the thesis is devoted to the formation of the notion of generalization as a concept. It is shown in the thesis that the formation of notions as concepts is one of the main tasks of science. It is known that the reveal of the essence of any concept with reference to the main features affects the development of science. This aspect is taken into account in the thesis work. The analysis of research on the act of generalization shows that the notion of generalization has not been formed as a concept. In particular, the main features of the generalization phenomenon in the learning process are not generalized. Its main reason is the lack of a comprehensive study of the phenomenon of generalization, the lack of research on its specific, basic features. Therefore, the act of generalization is

⁴ Davydov V.V., Psychological problems of the process of teaching younger students (in the book. Reader on developmental psychology) M: International Pedagogical Academy, 1994

⁵ Grace Craig, Developmental Psychology (seventh international edition). St. Petersburg, Moscow, Kharkov, Minsk, 2002

⁶ Zhuiikov S.F., Psychology of mastering grammar in elementary grades. M: Enlightenment., 1964

⁷ Generalization of emotions; [http://vprosvet.ru/biblioteka/generalizaciya-emociy"/7890-234567890-/](http://vprosvet.ru/biblioteka/generalizaciya-emociy) EO

⁸ Abbasova GO, The impact of mass generalization on intercultural dialogue / Materials of the international scientific conference on "Intercultural dialogue: Linguistic, pedagogical and literary aspects" (November 25-27, 2010, AUL) Baku: 2010, p.22-24

⁹ Generalizatio <http://gutta-honey.Livejournal.com/381827.html>

¹⁰ Afandzadeh A. R., Scientific bases of correct writing training. Baku: Enlightenment, 1975

formed as a concept in the second sub-chapter of the first chapter of the thesis work. The research has led to the conclusion that stating the generalization phenomenon as a concept in the following manner reveals its essence more accurately, clearly expresses its main features: Generalization is the wrong generalization which can manifest itself in several forms, related to thinking, able to increase or decrease with the level of arousal and delay occurring objectively and subjectively as a result of associations, life experience, incomplete information, improperly organized training and analysis.

The content of training in terms of generalization is analyzed and possibilities of textbooks in terms of eliminating the generalization are shown and suggestions are given for improving the content in the third sub-chapter of the first chapter entitled “Content of training on primary school”.

Neither students nor parents have necessary information about other documents reflecting the content of education. They define their work on the basis of textbooks without seeing curricula and plan of study. This is one of the factors making it necessary to analyze the textbooks of primary school in terms of eliminating the phenomenon of generalization.

It is stated in the thesis that the creation of integrative subjects such as “Learning the World” shall be considered as a basic principle of textbook design for primary school and it is important to include in these textbooks teaching materials allowing to eliminate the phenomenon of generalization. The ability of textbooks to eliminate the act of generalization has a positive effect on more effective organization of the learning process and the development of mental strength of junior students.

The analysis was conducted with specific textbooks for each class by indicating the number of sections in the textbooks, topics, number of topics related to generalization, topics allowing to eliminate generalization. Topics having the potential to overcome the act of generalization are given in the specific manner.

It is shown in the thesis work that textbooks “Learning the World” compiled on the basis of integrative knowledge make the junior students acquainted with information such as nature, social events, protection of health and safety, the interaction of objects and events in the environment and the impact on each other. The presented materials teach students to build their activities on the basis of real knowledge and introduce them to the rules of behavior in society. The interdependence of objects and events in the existing world and the fact that one is a condition for the other have been taken as the main principle in the textbooks. For example, the subject "Living beings surrounding me" is clarified on the basis of images of plants, trees and animals and the following generalization is given: "All these beings are fed, breathe, develop, multiply and change." Of course, the textbook is the main tool, but it doesn't mean everything. Taking advantage of the text, a good teacher can direct the feeling of amazement created by the expression "breathing and feeding" of plants and trees, unlike other living things and create the necessary generalizations at students. The task of finding deliberate mistakes in the pictures is also a good opportunity in this regard. One of the aspects drawing attention in the textbooks “Learning the world” is the provision of materials on spiritual matters. It allows the teacher to work on the spiritual education of students in the process of teaching the subject, laying the foundation for an issue that is new for the textbooks as a whole. From an early age, students learn on the basis of these materials that a person is a social being, the rules of behavior in society, who can be called a good person, the simple rules of human relations, i.e., generalized knowledge in this area.¹¹ .

The phenomenon of generalization, its types and psychological features are explained in subchapter I of Chapter II entitled **"Peculiarities of manifestation of the act of generalization in the process of mastering learning materials by junior**

¹¹ Garasharli R., The main scope of life lessons, its connection with other sciences. News of Azerbaijan State Pedagogical University. Baku, N 2, 2006, p. 434-438

students". It is shown that the types of generalization are determined on the basis of its occurrence characteristics. It also allows you to study the timing, areas and characteristics of generalization. It is shown in the subchapter that there is a relationship between the peculiarities of manifestation and the types of generalization.

The types of generalization events are specifically interpreted, their nature is clarified and the impact of elimination on the outcome of learning activities is explained in the thesis work. It is shown that intra-concept generalization arises as a result of expanding the scope of the reference rule.

The influence of individual differences and the completeness of learning information on the generalization phenomenon is investigated, tested by experiments and defined teaching tasks in the following half-chapters and reflected in the specific tables.

By studying and taking into account the individual differences of students, it is possible to prevent these shortcomings by choosing different tasks in accordance with the specific curriculum. It is possible to conclude that not all mistakes result in generalization. Sometimes a student makes a mistake, but does the generalization correctly. It is manifested most of all in the performance of spelling tasks on the subject of the Azerbaijani language, in the tasks related to the order of operations in Mathematics, in the generalization on the basis of the cause and effect relationship in the subject "Learning the World".

The third chapter is entitled "**Effective ways to eliminate the phenomenon of generalization.**" In the first half of this chapter, the impact of pre-generalization work on students' subsequent learning activities, the relationship between the elimination of generalization and the effective preparation of children for school is examined on the basis of examples, the results are studied and summarized in school practice. It is noted that although the problem of school readiness is always in the focus of research, certain mistakes are made in practice.

Preparing for school means teaching children letters, memorizing the multiplication table. As a result, although the child

succeeds in the first months of education, as the preparations for school are not properly organized, the lagging will begin very soon. As U.A. Afandiyeva writes, "The concrete content of psychological preparation for school is constantly changing and enriched by adapting to the requirements of the time. The high level of modern science and technology, the development of society requires a change in the content and methods of school education."¹²

B.H. Aliyev and R.V. Jabbarov attract attention to one of the main tasks of a teacher in their article "Psychological issues of teacher's preparation for classes in modern times" and write: "*The teacher shall endeavor to make the students master the teaching materials better and be able to conduct thinking operations on it.*"¹³.

The next subchapter of the thesis called "**Psychological-experimental study of the act of generalization in the learning process in primary school**" is also devoted to the experiments serving to clarify the hypothesis. The results are devoted to the psychological-experimental study of the act of generalization in the learning process in primary school and the results tested with the help of different methods are reflected in the Tables.

3.1. Organization and conduct of research. We used the method called "Express in one word" in order to study the act of generalization in the learning process in primary school. The study involved 52 primary school students (I grade-14 students, II grade-13 students, III grade -13 students, IV grade -12 students) studying at secondary school No. 18 named after M. Mushfig in Baku.

Methodology № 1. In option I: "Express in one word" - children are given words in five lines in order to study the characteristics of the act of generalization in the process of generalization. Students are asked to express the words of each

¹² Efendiyeva U.A., Research issues of the problem of psychological preparation of a child for school // Journal of Psychology, 2005 № 2, p.88-99

¹³ Aliyev B.H., Jabbarov R.V., Psychological issues of teacher preparation for lessons in modern times // Journal of Psychology, 2009 №1, p.28-35

line in one word. This word is supposed to have generalizing character and determines the level of students' simple generalization skills. The purpose is to investigate the mistakes leading to the act of generalization while generalizing when specific cases are known. It is studied whether the task is completely clear to the students. When there is no question about the mechanism of the task, students start working. No restriction is considered in the execution of the order. But the students are not informed about it.

The results of the research were performed by analyzing the answers of students in terms of quantity and quality. It was known that the students present in the experiment made mistakes that resulted in generalization while expressing the words of each line in one word. There were revealed 7 wrong generalization cases in the first grade, 7 in the second grade, 6 in the third grade and 5 wrong generalization cases in the fourth grade.

The nature of the act of generalization occurred during the generalization was investigated through an oral survey. Three out of the generalizations committed by first-grade students were due to misconceptions gained in life, two were due to the lack of understanding of the necessary concepts and two were due to attention. The reasons of the generalization fulfilled by the second-grade students were as follows: 4 mistakes were made because of the reason that the students referred not to the basic properties, but to the transient properties of the objects named in the lines and the mistakes of two students were due to negligence and a person made a mistake because of the misconceptions gained in life.

Example of a questionnaire used in Methodology № 1:

Read and state how to name the items of each line in one word?

1. Magpie, woodpecker, starling, pheasant, partridge -
2. Cock, chicken, duck, chickling, goose -

3. Raspberry, cranberry, blackberry, strawberry, currants -
4. Painter, welder, locksmith, plasterer, carpenter -
5. Thyme, nettle, plantain, sugarcane, mint -
6. Violet, tulip, lily of the valley, forest breeze, chamomile -

Option 2:

Choose the words matching the given word and write them on separate lines. The purpose of organizing the work on this option is to determine what mistakes the students made as a result of the act of generalization while writing the given words on the appropriate line. Unlike the first version of the method, this time the students had to mentally analyze the words matching the given word (concept) and determine to which general word (concept) they belong.

Example from option 2 of Methodology № 1:

1. Family-
2. Domestic animals -
3. Master -
4. Medicinal plants -
5. Berries -
6. Wild birds -

14 students from the first grade, 13 students from the second grade, 13 students of the third grade and 12 students from the fourth grade of Aghbash village secondary school (totally 52 students), Shabran region participated in the survey. First, the teacher was provided with methodological assistance for completing the task. The teacher informed the students about it. The obtained results are given in the following table:

Write the words in separate lines according to the given word
Table 1

№	Clas s	Nu mb er of stu den ts	Family mem ber s		Master		Domest ic animals		Wild birds		Medicin al plants		Berry	
			Ri gh t	Wr on g	Ri gh t	Wr on g	Ri gh t	Wr on g	Ri gh t	Wr on g	Ri gh t	Wr on g	Ri gh t	Wr on g
1 .	I	14	8	6	10	4	12	2	9	5	5	9	6	8
2 .	II	13	6	7	9	4	11	2	10	3	7	6	7	6
3 .	III	13	9	9	11	2	12	1	9	4	9	4	10	2
4 .	I V	12	7	5	11	1	10	2	10	2	9	3	10	2
5 .	T ot al	52	30	22	41	11	45	7	38	14	30	22	34	18

Methodology № 2. The method “Replace with symbol” was used. The expression of the learned rules in symbols is directly

proportional to the level of study of the concepts. This method is the most appropriate tool to determine the level of use of symbols to determine whether the student has reached a general conclusion. The methodology was to determine the extent to which the concepts related to the teaching materials in mathematics have been mastered, to study the possibility of using symbols.

Development of the research

The method was used in the third and fourth grade, with 12 students in each class. First of all, the level of mastering the rule "The sum does not change when the place of the summands changes" from mathematics was controlled. In both classes, examples of the application of the rule on numbers were given in the initial version. (third grade: $47 + 68$; $68 + 47$; $54 + 43$; $43 + 54$; fourth grade: $124 + 218$; $128 + 218$; $309 + 134$; $134 + 309$). As the students solved the examples, determination of the amount of time allotted for the work was on the focus of attention. As intended in the application of the methodology, students initially had to spend more time, if they had mastered the rule of relocation of summands and then (after the relocation of summands) significantly less time. It happened as expected:

Table on the effect of work on changing the characters to the generalization event

Table 2

Class	Number of students	Learned notion	Replace with symbols			Total	
			Displace the summands in the given problem	Replace with literal characters	Replace with pictorial characters	Right	Wrong

			Ri gh t	Wr on g	Ri gh t	Wr on g	Ri gh t	Wr on g		
co nt 3	17	Displa cemen t of summ ands	9 53 %	8 47 %	8 47 %	9 53 %	5 30 %	12 70 %	22 43 %	29 57 %
4	16		10 62 %	6 38 %	8 48 %	8 48 %	6 36 %	10 64 %	27 57 %	21 43 %
Ex per . 3	16		13 81 %	3 19 %	12 91 %	4 9%	9 68 %	7 32 %	34 71 %	14 29 %
4	18		14 77 %	4 23 %	12 72 %	6 36 %	11 70 %	7 44 %	37 69 %	17 31 %

In order to check the reliability of the result, the method **"Express with other symbols"** was used. The essence of the method is as follows: students express the order of the given actions with the symbols they have "discovered". Students used literal symbols most of all while applying the method. This is understandable. As in the primary school, only literal symbols are used in the teaching process, albeit with a different content. The use of literal symbols and the failure to refer to other symbols cause the students to conclude as following: "What symbols can be used other than literal symbols?" After the explanation of the question, the level of students' use of pictures and symbols (apple shape + pear shape = pomegranate shape) was studied and had to be used as soon as possible to use the image expression of the generalized rule of

relocation). In contrast to the previous variants, it became clear that the generalization event was reduced by 10-15%. It was taken as an indicator of the reliability of the applied methodology. The study was conducted in four groups each consisting of two persons. In the first two groups, the work of displacement of summands organized in the usual way without using symbols and in the other two groups by using symbols (both literal and figurative symbols). Studying the level of mastering the concept allowed to come the conclusion that the concept was mastered more effectively in groups working on the displacement of summands by use of symbols. As expected, mastering level was low in the other group (groups not working on symbols). We give the results on the following table:

Table on the effect of work on other symbols on the generalization event

Table 3

Cl as s	Nu mb er of stud ents	Learne d notion	Replace with symbols						Total	
			Displac e the summa nds in the given problem		Replace with literal characte rs		Replace with pictorial characte rs		Ri gh t	Wr on g
			Ri gh t	Wr on g	Ri gh t	Wr on g	Ri gh t	Wr on g		

K on t. 3	17	Displa cemen t of summ ands	7 41 %	10 59 %	6 35 %	11 65 %	4 24 %	13 76 %	17 33 %	34 67 %
4	16		7 43 %	9 47 %	5 31 %	12 69 %	3 19 %	13 81 %	15 31 %	34 69 %
Ex p. 3	16		11 69 %	5 31 %	10 63 %	6 32 %	11 68 %	9 23 %	32 62 %	20 38 %
4	18		15 83 %	3 17 %	14 78 %	4 22 %	13 72 %	5 28 %	42 78 %	12 22 %

It is also clear from the analysis of the table that only the traditional training on displacing the summands caused the students not to master the concept properly. The number of mistakes by students both in the third and fourth grades is significantly higher than in the experimental classes. As a result, mistakes made in the experimental groups also caused to less generalization. Psychological analysis showed that the study of the concept by changing the symbols led the students to focus on the problem being studied. Attention has aroused interest, and assimilation has been more effective because the concept is explained in different ways

We conducted a similar study 3 weeks after the experiment without changing the number and composition of these groups in order to study the effect of working with different symbols on the memory duration of the concept. The purpose was to learn how the concept was remembered by students in different groups in that period. We give the result in the following table. We tried to determine the level of forgetting the previously taught knowledge of

the subjects “Azerbaijani language”, “Mathematics” and “Learning the World” in the first, second, third and fourth grades and the impact of forgetting on the generalization event. In the process of applying the methodology, we determined the grades received by the students on the basis of the class journal by questioning the knowledge they had acquired. We involved students in the experiment at 3 levels, taking into account the grades. The first group included students with satisfactory marks, the second group included the students with good marks and the third group included the students with excellent marks. The main purpose of selecting students demonstrating different mastering skills was to find the level of forgetfulness in those groups and to find the relationship between the generalization event.

It is obvious from experiment that the learned concept is better remembered by the students in the experimental groups after some time and they solve the examples corresponding to the concept without mistakes. Sometime later, the number of mistakes increased from 26 to 34 (8 in total) in the third grade and from 23 to 36 (12 in total) in the fourth grade. The results in the experimental groups were as following: the number of mistakes decreased by 3 units in the third grade and by 5 units in the fourth grade. The general result is that each topic shall be reinforced and reinforcement shall be organized in different options while teaching mathematics.

The experiment on the subject “Learning the World” was carried out by comparing natural, social phenomena and objects. The purpose was to determine how the comparison method affects the generalization of life knowledge.

The comparison work was organized at two schools - secondary school No. 18 in Baku and Agbash village secondary school in Shabran region. Certain requirements were met while defining both control and experimental groups (teachers' education level, students' marks and so on). We tried to minimize the difference in the overall level of chosen classes.

Methodology № 3 (A.V.Vishnevsky). This methodology is mainly related with the study of the occurrence level of the act of

generalization in the process of mastering mixed concepts and can be carried out in different classes. The method is called "Excess objects" and is widely used in the psychological research.

Development of the research. Words are given in separate lines. Words are related to the same concepts with the exception of one word. The purpose is to find out if students can identify a word not belonging to the same concept. No time limit is set for the first and second grades. In the third grade, students are given 25 minutes and in the fourth grade 20 minutes to complete the task. The example of a task presented in the first and second grades:

1. Cherry, walnut, cherry-plum, nettle, cornel–
2. Onion, cabbage, grape, pumpkin, radish–
3. Pomegranate, blackberry, mulberry, raspberry, hawthorn–
4. Ax, saw, hammer, fork, plane -
5. Cake, shekerbura, pepper, sweet bread, pakhlava–

19 out of 23 students made mistake in the first task and 4 students did it correctly and 18 students made mistakes in the second task and 5 students completed it correctly, 19 students made mistakes in the third task and 4 students completed it correctly, 20 students made mistakes in the fourth task and 3 students completed it correctly and 10 students made mistakes in the fifth task and 13 students completed it correctly the first grade. Conclusion: Students can distinguish objects that are more familiar to them than other objects. It is clear that the bitterness and sweetness of pepper also help here. The generalizations about the things in which the difference is most pronounced also confirm the result. In the fourth task, an interesting fact emerged from the replacement of the word "çəngəl" with the word "vilka": the number of mistakes fell from 20 to 13. The number of correct answers was 10.

The tasks used in the third and fourth grades were organized according to the concepts learned in the teaching process: Different geometric figures (different triangles, square, rectangles) and different language notions (nouns, verbs, adjectives) were introduced

to the students. They were instructed to write those pictures in the appropriate lines.

The analysis of the obtained results showed that the selection of materials was better. It is revealed from the results of the experiment that the identification of the causes of generalization in primary school and the use of active learning methods affect the development of generalization skills in students.

The following **conclusions** can be made basing on the analysis of the research and the generalization of the experimental materials:

- The research showed that the study of all processes related to training in modern conditions, the factors influencing these processes in terms of the requirements of the "State Strategy for the Development of Education in the Republic of Azerbaijan", the study of opportunities for effective use of positive effects, development of methods to overcome shortcomings is one of the most important tasks of psychology along with other sciences. The necessity of application of progressive ideas of the world educational practice in the training process, at the same time the need to benefit from the thousand-year-old traditions of education of Azerbaijan is even more relevant.

- The study showed that in modern times, the rapid growth of science and technology, the expansion of the amount of knowledge that needs to be studied, the creation of generalization skills more relevant in the context of changes in the content of training puts forward its approach and research as an important task.

- It is important to take into account the act of generalization that occurs while working to build generalization skills in students in the learning process and to work effectively to eliminate it. The act of generalization occurring more often in the learning activities of primary school students directly affects the effective performance of the most important task of learning and the development of generalization skills.

- The analysis of the references showed that notwithstanding that the essence of generalization, some types have been identified

and some ideas have been put forward on ways to eliminate them in the period after its introduction to science, research on generalization was mostly based on mastering language materials, especially spelling. There have been significant changes in the development of science, as well as in the content of training and set tasks within this period. The teaching of the subject “Learning the World” as an integrative subject in primary school has begun. All this made it necessary to study the act of generalization in a broader aspect.

-Analysis of the subjects taught in primary school led to the conclusion that the current content mainly meets the requirements on the development of generalization skills. The textbooks contain materials that require analysis, guide students to draw independent conclusions, develop their mental abilities, independence of thinking, identify and compare the basic features of objects and event.

The content of the dissertation is reflected in the following published work of the author:

1. The need to use the achievements of our national independence and psychology // Abstracts of reports heard at the conference held by the Student Scientific Society in 2002. - Baku: -2002. - p.210-211
2. Generalization event in the training process // - Baku: Scientific news of AUL, -2004. № 1, - s. -352-354
3. Some features of the phenomenon of generalization in primary school // - Baku: Psychology, -2004, № 3-4, - p.117-120
4. Ways to study the phenomenon of generalization in the teaching of the mother tongue // - Baku: Primary school and preschool education, -2004, № 4, - p.36-38
5. The effect of individual mental characteristics on the phenomenon of generalization // -Baku: Scientific news of AUL, -2005, № 5, - p.247-248.
6. Proper generalization as a means of eliminating generalization // - Baku: Primary school and preschool education, -2006, №3, -p. 62-64
7. Generalization and abstraction // - Baku: Scientific news of AUL, -2008, № 1, - p.393-396
8. The impact of mass generalization on intercultural dialogue // Proceedings of the International Scientific-Practical Conference "Intercultural Dialogue: Linguistic, Pedagogical and Literary Aspects". - Baku: -2010. - p.22-24
9. Work on teaching the phenomenon of generalization in teacher training // Materials of the International scientific-practical conference "Modern problems of teacher training". - Baku: -2008.- p.162-165
10. Bologna educational process and generalization phenomenon // Materials of the Republican scientific-

- practical conference "Experience in the application of the Bologna principles". - Baku: -2011. - p. 24-26
11. Place of generalization in the process of thinking // "Higher School of Kazakhstan": -2012, № 1, -p.134-137
 12. Psychological analysis of the lesson as a means of increasing the effectiveness of learning foreign languages // Materials of the Republican scientific-practical conference "Actual problems of teaching foreign languages". - Baku: -2016. - p.261-263
 13. Accounting for the features of the manifestation of generalization in the learning process // East European Science Journal (Poland): -2018, - p. 28-30

The defence of dissertation (thesis) will be held at Dissertation Council FD 2.43 acting under Baku State University, Supreme Attestation Commission at 11⁰⁰ o'clock on the date of 06 june 2022

Address:AZ1148, Baku city, Z. Khalilov street, 23, The main building.

Dissertation is accessible at the scientific Library of Baku State University.

Electronic versions of dissertation and its abstract are available on the official website of Baku State University.

Abstract was sent to the required addresses on 05 may 2022.

Signed for publication: 21.04.2022

Paper format: 60x84 1/16

Volume: 36321

Edition: 40