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COGNITIVE AND REGULATORY FOUNDATIONS OF
TOLERANCE IN SCHOOLCHILDREN IN INCLUSIVE
EDUCATION

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Abstract

This article presents the results of an empirical study of tolerance as a systemic socio-psychological quality of personality. The aim of the work was to study the cognitive and regulatory foundations for the formation of schoolchildren's tolerance in the context of inclusive education. Tolerance was considered by us as a systemic formation of components. The cognitive component was studied on the basis of a cognitive-style approach. The regulatory component was identified through the establishment of types of mental self-regulation of an individual. The communicative component was studied in the course of carrying out the corrective program developed by us. In the course of theoretical analysis and empirical research, the concept of the phenomenon of tolerance as put up has been expanded and deepened. The influence of psychic regulation and cognitive styles of "field dependence" - "field independence", "flexibility" - "rigidity" on the ability to form tolerance in students has been established. For the first time, understanding of tolerance in the context of disclosing the correlation of cognitive, regulatory and communicative components is justified. There is a formation of the ability to psychological non-aggressive resistance to unacceptable norms and values. Creative interaction is expressed in the form of consent and acceptance. Empirically tested the effectiveness of the correctional program for the formation of tolerance in schoolchildren and the construction of an inclusive culture of the educational organization. The results can be used in psychological and pedagogical activity as a means of creating tolerance for people with disabilities.

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1. Introduction

This work is devoted to a problem that occupies a special, sometimes even exclusive place in modern psychology of inclusive education – the problem of tolerance. More and more researchers are turning to studying the problems associated with the formation of tolerant consciousness, tolerant behavior and tolerant personality. According to Article 5 of the Federal Education Law conditions for getting quality education without discrimination by people with disabilities are being created in order to realize the right of every person to education. Thus, the legal framework necessary for the successful functioning of inclusive education is legislated. There are psychological and pedagogical problems in schools associated with the creation of conditions for a comfortable stay and education for children with disabilities. To address these problems, the state program «Accessible Environment» for 2011-2025 was approved by the Decree of the Government No. 1297 on December 1, 2015. The main objective of the «Accessible Environment» program is the creation of equal opportunities for disabled persons with other citizens in the implementation of civil rights.

According to UNESCO, inclusion is understood as a reform that supports and welcomes differences among all students. In accordance with this definition of inclusion, actions must be taken to eliminate discrimination, increase tolerance and ensure equal opportunities for all learners, whether they have normal development or not. The assertion that "inclusive education is a dynamic, evolving process» is important for understanding the nature of inclusiveness (UNESCO, 2009).

2. Problem Statement

The relevance of studying the phenomenon of tolerance is determined by the need of society in the understanding of tolerance as the basis for creating an inclusive culture in the educational organization; the construction of educational technologies aimed at the formation of tolerance. The solution of this problem, in our opinion, turns out to be productive provided that tolerance is considered in the framework of the system approach of B.F. Lomov (1975), V.D. Shadrikov. According to A.V. Karpov, the system approach, like any other approach, is not a "static" methodological imperative, but a developing, evolving principle of cognition.

The application of the system approach as a means of analyzing the cognitive foundations of schoolchildren's tolerance is inextricably linked with the understanding of the role of pedagogical thinking as a teacher's competence in shaping a schoolchild's personality in the context of inclusive education. And the implementation of the metacognitive approach makes it possible to reveal the acmeological and psychological mechanisms of the teacher's creative thinking and his conflicting competence. In this connection, the metacognitive justification is important for situational / over situational thinking as a criterion for assessing the solution of problem situations in the teacher's communications with very complicated student population. Creativity as a key competence of the teacher creating a balanced educational environment is claimed in communicating with this category of students. Both healthy students and students with disabilities feel comfortable in such an environment. Constructive balance can be considered as a resource mobilization of the available opportunities to achieve the set goal (Veraksa, 2016). The resourceful thinking of the subject is manifested in the ability to obtain efficient and at the same time economical solutions by realizing the available reserves (Kashapov & Volchenkova, 2015).

When considering the phenomenon of tolerance as a resource system, we took into account the following: a person from the position of differential psychology is a triad: the individual-personality-individuality. According to V. Merlin, individuality is an individual, a person and the connections existing between them. Individual level means biological foundation - gender, temperament, talents, abilities. At the second level (personality), the subject-substantial qualities (features, types of personality, abilities, style characteristics of behavior) are manifested. The third level includes the spiritual-worldview characteristics (personality direction, values, beliefs, attitudes) (Merlin, 1986).

According to the described levels, the phenomenon of tolerance refers to the third level of spiritual-worldview characteristics. Its basis, in our opinion, consists of the following components: cognitive, realizing the function of cognition; regulative, ensuring the regulation of activities and behavior; communicative, forming and implementing during the communication of a person with other people. The leveling is carried out according to the approach of B.F. Lomov. Each of the above mentioned subsystems can have further differentiation (Lomov, 1975).

The cognitive component was studied on the basis of a cognitive-style approach. Following V. Kolga we consider the cognitive style as an integrator of a certain sphere of individuality, which characterizes the way of cognitive activity. In fact, style features can be interpreted as an individually peculiar system of preferences in relation to the qualitative operational composition of cognitive acts (Kolga, 1976).

In our understanding, cognitive styles as subjectively stable characteristics of cognitive activity can not but affect the quality uniqueness and effectiveness of intellectual processes that are the basis of the subject's activity. Cognitive styles define the quality uniqueness of the operating and regulating aspects of cognitive abilities. G. Witkin considers cognitive style as a kind of embodiment in the cognitive processes of personal attitudes. M. Kholodnaya (2004) states that the formation of cognitive styles characterizes the existence of individually peculiar ways of perceiving, evaluating and interpreting reality.

For a more effective forming of tolerance it is important to consider its relationship with the processes of mental regulation of the individual, because it is a kind of "vertical", structuring the different qualities of any person. Fully sharing G. Prygin's point of view of (Prygin, 2009), we believe that independence is an important integrative quality of the individual, which reflects the high degree of formation of the conscious regulation system. That is why the regulatory component was studied through the types of mental regulation of the individual.

The study of tolerant behavior characterized by a constructive effect on the frustrating situation made it possible to establish the differences between groups of subjects with normal development and subjects with impaired in mental development in terms of the type of behavior in conflict - a "solution" ($U = 188$, $p = 0.000$). The group of adolescents with normal development demonstrates an advantage on the "solution" criterion as a type of behavior in a conflict over the group of adolescents with impaired mental function. It was revealed that the skills of constructive conflict resolution in adolescents with normal mental function are more developed. The results of the Mann-Whitney U test procedure for independent samples showed that there were differences between groups of subjects with normal development and subjects with impaired mental development in terms of creativity ($U = 613.5$, $p = 0.000$). Tolerance contributes to the successful formation of the ability to build constructive relationships. Analysis of the obtained empirical

data indicates that conflict resistance is an integral part of the communicative component of tolerance (Kashapov & Volchenkova, 2015).

The communicative component was studied by us in the process of carrying out the corrective program "The formation of tolerance in children with normal development to people with disabilities". We developed this program according to the approach of G. Soldatova and L. Shaigerova (Soldatova, 2004), T. Gushchina (Gushchina, 2008). The corrective program is aimed at creating tolerance in children with normal development to people with disabilities (Kashapov & Volchenkova, 2015). One of the main tasks of this program is to make the notion of "tolerance" close and understandable for each participant in the curriculum. The task is solved through the organization of contact between schoolchildren, not only with the well-known formulations and theoretical definitions, but also with many nuances of this multidimensional phenomenon. The problem of tolerance is important to be considered in complex. To obtain this purpose we used practical exercises in addition to theoretical studies.

3. Research Questions

How to carry out a comparative analysis of the implementation of the principle of tolerance in different types of educational systems? How can we search for ways to create attitudes of tolerant consciousness in the educational environment, to achieve stability and security? What the tolerant perception of the opponent should be like? What the optimal ratio of tolerance / intolerance should be like? What are the main features of a tolerant personality?

4. Purpose of the Study

The aim of the work is to investigate the cognitive and regulatory foundations of the formation of schoolchildren's tolerance in the context of inclusive education.

The hypotheses of the study imply that:

1. The change in the level of tolerance will be affected by: type of mental regulation of personality - in the group of "dependence" subjects, tolerance is significantly higher, in comparison with the group of "autonomy" subjects; cognitive style "field dependence" - "field independence": in the group of "field dependence" subjects, tolerance is significantly higher, in comparison with the group of "field independence" subjects; cognitive style "flexibility" - "rigidity": in the group of "flexibility" subjects, tolerance is significantly higher, in comparison with the group of "rigidity" subjects;

2. The intentional and systematic use of training correctional program creates conditions promoting in subjects tolerance to people with disabilities.

3. We expect that the average values of the tolerance index, measured three months later, will not significantly differ from the results obtained in the previous measurement.

The study was carried out in schools of Yaroslavl and the Yaroslavl region. The correspondence of empirical results to generally accepted scientific criteria was achieved, including by using representative samples of subjects. 292 schoolchildren - students of the seventh, eighth and ninth inclusive classes – aged 13 to 16 (155 girls and 137 boys from 203 students with normal development and 89 students with disabilities) took part in the experiment as subjects.

5. Research Methods

We used the following methods: The express questionnaire "Index of Tolerance" (Soldatova, 2004), questionnaire "autonomy-dependence" for teenagers (13-15 years) (Prygin, 2009), "Rod and Frame Test" (RFT), "Embedded Figures Test" (EFT) (Kholodnaya, 2004).

Study design. We used two-factor scheme planning. As an inter-group factor we took "Test group" belonging of subjects:

a) to the "autonomy" subjects or "dependence" subjects group; b) to the "field dependence" subjects or "field independence" subjects group; c) to the "rigidity" subjects or "flexibility" subjects group.

During three months the training aimed at the forming of tolerance in children to people with special needs and disabilities took place. The subjects survey before and after the training, and delayed control were used as the intra-factor.

Data processing and statistical analysis of the results were carried out in the IBM SPSS 22.0. The Pearson correlation analysis; procedures OLM-repeated measurements were used.

The Procedure. 12 group classes that include elements of psychological training were conducted with all students. During studies, students were offered classroom work, elements of psychological training, business and role-playing games, outdoor games and practical classes.

At the theoretical sessions lectures with video presentations, conversations and discussions aimed at understanding of human diversity by the students were conducted. The classes were designed so that the students understood that people are different, their culture and health possibilities are different. We offered schoolchildren group work of creative and sporting nature. In some classes, we conducted exercises with elements of creative therapy aimed at relieving emotional tension and uniting the team.

As a result of statistical data processing, the following results were obtained:

1. The results of analysis of variance revealed statistically significant influence of the factor "retest" on the change in the index of tolerance ($F(2,0)=24,911$; $p=0,000$) in the group "autonomy" and "dependence" subjects (fig.1); ($F(2,0)=23,624$; $p=0,000$) in the group "field dependence" и "field independence" subjects (fig.2); ($F(2,0)=23,468$; $p=0,000$ in the group "flexibility" и "rigidity" subjects (fig.3). This means that the index of tolerance has increased after retesting and after a delayed control statistically hasn't been fading.

The effect of the combined effect of factors on the change in these groups of tolerance indices was not detected.

2. A negative correlation was found between the indices of tolerance and the cognitive style of "field dependence" - "field independence" ($r = -0.161$; $p = 0.01$); tolerance and type of mental regulation ($r = -0.240$; $p = 0.01$); between the cognitive style of "field dependence" - "field independence" and the type of psychic regulation, a positive relationship ($r = 0.534$, $p = 0.01$). That is, a very low connection with the cognitive style of "field dependence" - "field independence", low connection with "autonomy-dependence", and the average relationship between the cognitive style of "field dependence" is "field independence" and the type of self-regulation have been found.

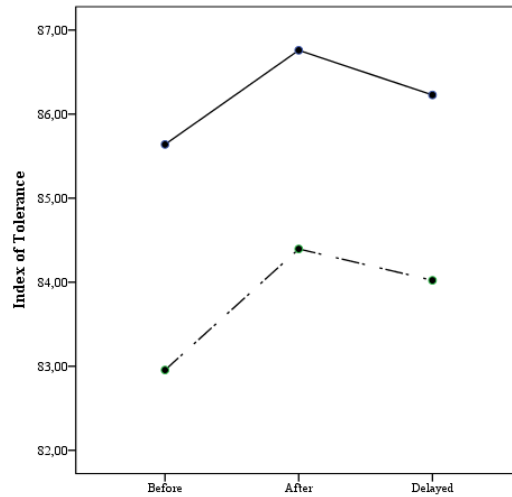


Figure 01. The values of the indices of tolerance in groups of "dependence" subjects (solid line) and "autonomy" subjects (dotted line) in the three further measurements.

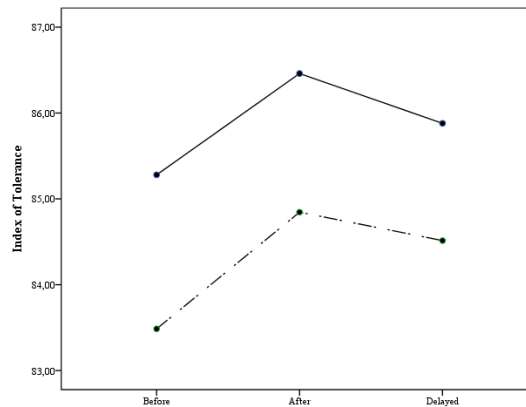


Figure 02. The values of the indices of tolerance in groups of "field dependence" subjects (solid line) and "field independence" subjects (dotted line) in the three further measurements.

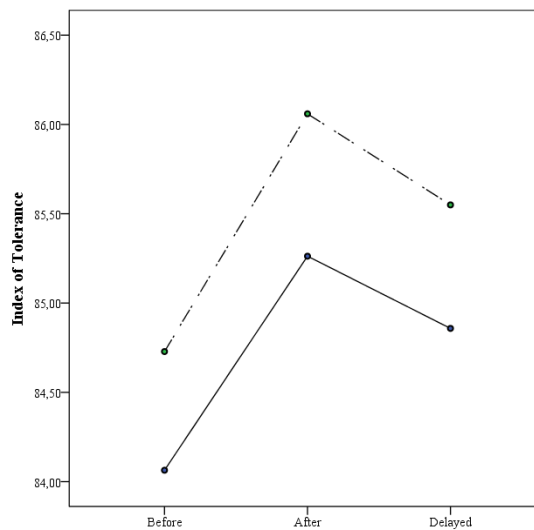


Figure 03. The values of the indices of tolerance in groups of "flexibility" subjects (solid line) and "rigidity" subjects (dotted line) in the three further measurements.

We found that the tolerance index increased after re-testing and after statistically delayed measurement it statistically did not die out. This suggests that studies aimed at increasing and strengthening tolerance among schoolchildren had a positive result. Our data empirically confirmed the assumptions of G. Soldatova and L. Shaigerova on the formation of a tolerant personality once again (Soldatova, 2004). Through the acquisition of useful and vital experience, which the teenager gets in the process of group work, the concept of "tolerance" is filled not with an abstract but with a concrete personal meaning, and only in this way it can become a really acting construct that determines the behavior of a person.

An important task of the corrective program was first of all the formation of a positive attitude towards oneself and then the formation of self-esteem and self-knowledge ability. Being tolerant to oneself also means developing the ability not to betray one's interests. Following G. Soldatova and L. Shaigerova (Soldatova, 2004) we consider this complex of self-relationship of the individual as a necessary condition for positive attitude towards others and a benevolent attitude to the world.

It was found that in the groups of "dependence", "field dependence" and "flexibility" the general tolerance index was higher, and in the groups of "autonomy", "field independence" and "rigidity" it was lower; and after the participation of students in the corrective program, the general tolerance index increased and the dynamics of its growth was identical in the groups under studies.

In the group of "dependence" subjects, tolerance is significantly higher, in comparison with the "autonomy" group. Due to their personal characteristics, "dependence" adjust to external requirements easier. Analyzing the subject regulation of this group it can be said that it is devoid of integrity. This fact expands the possibilities of the influence the corrective program on the subjects. The activity of "autonomy" is based on the dominant accounting of subjective factors. The data empirically confirmed the views of G. Prygin on the continuum of mental regulation of personality (Prygin, 2009).

In the group of "field dependence" subjects, tolerance is significantly higher, in comparison with the group of "field independence" subjects.

The obtained results confirm the views of W. Crozier regarding the social position of the field-dependent subjects. Indeed, these subjects are more suggestive, sensitive to social influences, need more support from others. They better assimilate conflicting information, are more "comfortable" in communication, because they are characterized by warmth and cordiality. The field dependence have also characterized by the fact that the person is oriented to external sources of information, therefore, the exercises conducted within the framework of the corrective program had a positive result in the group under studies (Crozier, 2001).

"Field dependence" is related to the person's orientation to internal resources and sources of information (values, attitudes, knowledge, experience); so the subjects of this group are less influenced by external landmarks, they are more autonomous and do not need the opinion of the society. Such people distinguish the essential, but not more prominent features in the situation. They are inclined to active learning, they like to structure the material and prefer to study general principles absorbing them quite easily. Subjects in this group are actively looking for information and are more knowledgeable.

In the group of "flexibility" subjects, tolerance is significantly higher, in comparison with the "rigidity" group. In this case, we are talking about cognitive control, about the functions responsible for managing purposeful human behavior. The investigated cognitive style explains the degree of subjective

difficulty in changing the ways of processing information in a situation of cognitive conflict. Subjects with flexibility control rebuild easier from verbal functions to sensory-perceptual ones due to the high degree of automation; subjects with rigidity control have difficulties due to their low degree of automation.

6. Findings

Understanding the concept of tolerance in the context of disclosure of the correlation of cognitive, regulatory and communicative components makes it possible to lay stable foundations for the formation of schoolchildren's tolerance in the context of inclusive education. Due to the targeted impact in the context of the developed and implemented program, successful communication of students with different health conditions is carried out. There is the formation of the ability to psychological resistance to unacceptable norms and values without violence against the bearer of these norms and values. Creative interaction is expressed in the form of consent and acceptance.

7. Conclusion

We realized the important stage name by the integrated (systemic) strategy for studying the general problem of tolerance formation. Summing up, we can conclude that the general methodological approach with more is relevant to the psychological nature of tolerance, is based on a systematic approach. Substantiation of the general theoretical hypothesis, according to which tolerance is a special system was obtained. By the way the verification of this hypothesis was not the end in itself, although it was a rather significant component of the general content of this work. So it became possible to give a new interpretation and explanation of a number of traditional issues and difficulties in the psychology of the individual and differential psychology of the on the one hand, and on the other hand we could obtain the sufficiently detailed description of psychological regularities, which have not been described before. This can be considered as an indicator of the legitimacy and constructiveness of the formulated methodological approach. At the same time, though important, but only the initial stage of the overall - integrated research strategy was realized. Due to this fact the analysis of the problem of the formation of tolerance to people with disabilities should be continued.

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