The European Proceedings of
Social & Behavioural Sciences
EpSBS

ISSN: 2357-1330

DOI: 10.15405/epsbs.2019.11.59

10th ICEEPSY 2019
International Conference on Education and Educational Psychology

ROLE OF SPECIFICITY OF EDUCATION IN THE CONTEXT OF QUALITIES OF THINKING

Ya. I. Sipovskaya (a)*
*Corresponding author

(a) Institute of Psychology of the Russian Academy of Sciences, Moscow State Psychological and Pedagogical University, 129366, st. Yaroslavskaya, 13, Moscow, Russia. E-mail: syai@mail.ru

Abstract

The article examines the ratio of 2 factors: the specificity of the educational environment and a number of qualities of thinking associated with the function of individual's mental control of the intellectual activity, namely: the selectivity of interests, rationality, reflexivity and dialogue, - in older teens. The study involved 111 ninth-graders of older adolescence (average age is 15 years). The methodological base of the study was a questionnaire "Quality of Thinking. The results of the study showed the significance of the influence of the specifics of school education on the degree of formation of a number of qualities of thinking, which can be interpreted in terms of the low degree of differentiation of the structure of a number of qualities of thinking due to their insufficient formation. Nevertheless, the structure of a number of qualities of thinking associated with the control of the intellectual activity, namely, the selectivity of interests and rationality, is characterized by low differentiation. The fact can be explained by the insufficient degree of formation of the construct.

Keywords: Thinking, intellectual activity, educational environment.

https://doi.org/10.15405/epsbs.2019.11.59
Corresponding Author: Ya. I. Sipovskaya
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

The relevance of the empirical research undertaken consists in the weak scientific elaboration of the structure of the construct of intellectual abilities, especially in the context of such manifestations as cognitive-personal characteristics, certain qualities of thinking. Raven (2002) and Kholodnaya (2019) defined it as the competent person's (expert's) distinguishing features.

The choice of the age category of the sample is due to the fundamental criticality of this period of a person's life in a number of areas of his activity, including intellectual (Dudnikova, 2017, Kholodnaya & Gelfman, 2016, Sipovskaya, 2016, Volkova, 2017a, 2017b), spiritual (Sabadosh, 2015, 2017; Ozhiganova, 2015, 2016), and personal (Vekker, 1976; Voronin & Goryunova, 2016).

2. Problem Statement

Thus, the subject of the research is the ratio of a number of qualities of thinking, such as selectivity of interests, rationality, reflexivity and dialogue, - the features of the older teenagers' pedagogical specificity of the educational environment. The object of study - older teens.

3. Research Questions

The theoretical hypothesis of the study: the specificity of the ratio of the degree of formation of a number of qualities of thinking, such as selectivity of interests, rationality, reflexivity and dialogue, are related to the older teenagers' pedagogical specificity of the educational environment.

The research hypothesis of the study: there are significant differences between older adolescents in the severity of the indicator of the degree of development of a number of qualities of thinking depending on the pedagogical specificity of the educational environment.

4. Purpose of the Study

The purpose of the study: to reveal the specificity of the ratio of the degree of formation of a number of qualities of thinking associated with the control of the intellectual activity, namely: the selectivity of interests, rationality, reflexivity and dialogue, - and the older teenagers' pedagogical specificity of the educational environment.

5. Research Methods

Study participants: 111 schoolchildren (74 girls and 37 boys) aged 15 years.

Methodology: the method of expert assessment of the "Quality of Student's Thinking" by Sipovskaya (2015).

This technique allows an expert assessment of the level of development of the following qualities of thinking of the research participants (the qualities of thinking were based on a preliminary analysis of the literature):

https://doi.org/10.15405/epsbs.2019.11.59
Corresponding Author: Ya. I. Sipovskaya
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. The level of cognitive needs (C. n.) (Curiosity, the desire to learn new, a tendency to research activities).
2. The selectivity of interests (Select.) (The presence of interest in a particular field of knowledge, reading special scientific-popular literature, focus on a specific problem).
3. Rationality (Rat.) (The ability to think clearly and accurately, to substantiate and prove their judgments, to delve deeply into the material).
4. Criticality (Crit.) (The ability to evaluate facts as reliable or unreliable, to identify contradictions and ask questions, a willingness to doubt and verify information).
5. Reflexivity (Ref.) (The ability to think about their own mental actions, plan, evaluate the advantages and disadvantages of their knowledge or decisions).
6. Flexibility (Flex.) (The ability to use different ways of analyzing and solving a problem, changing a point of view under the influence of new information, a variative approach to an educational situation).
7. Creativity (Creat.) (The ability to put forward original ideas, to make non-standard decisions, to be inventive in finding ways to solve new problems).
8. Independence (Ind.) (Propensity to work independently, the presence of their own point of view and the ability to defend it).
9. Dialogue (Dial.) (Propensity for joint discussion of problems, the ability to participate in the discussion and take into account the position of another person).
10. General mental culture (G. C.) (Erudition, breadth horizons, speech culture).

In the presented empirical study, data were analyzed only of those indicators of the qualities of thinking, that were associated with the control of the intellectual activity, namely: selectivity of interests, rationality, reflexivity, and dialogue.

For the expert evaluation of the study participants 3 teachers were chosen for each class, who knew the students well, they taught lessons from the 4th to the 9th grade with the pupils of these ninth grades. The overall plan for the choice of an expert for all four classes:

- one of the experts had to be the deputy principal for educational work (keeps the personal files of all schoolchildren, is well aware of the extracurricular activities of schoolchildren — the Olympiad, awards for sporting achievements, participation in school sections and other events, monitors the progress of classes of different parallels);
- another expert was the class teacher: the person most closely acquainted with the characteristics of each particular student;
- the third expert selected from the teaching staff and that teacher should conduct a particular subject among schoolchildren for at least five years.

Thus, a group of three teachers for each class was formed, who were asked to evaluate each student by ten qualities (disclosing their exact content in order to avoid ambiguity of terms is given on the title page

https://doi.org/10.15405/epsbs.2019.11.59
Corresponding Author: Ya. I. Sipovskaya
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

of the methodology) and put these assessments in a table (horizontally - evaluation criteria), ticking (ᵛ) or a cross (x) their assessment. Criteria for assessing the quality of thinking in each student are as follows:

- actually absent (0 points);
- expressed very weakly (1 point);
- expressed rather weakly (2 points);
- moderate (3 points);
- expressed quite strongly (4 points);
- expressed very strongly (5 points).

The study was conducted in 2 secondary schools in Moscow:

- "linguistic school" with in-depth study of the English language (the number of study participants is 74 people) - index "1";
- "sports school" specializing in physical education (the number of study participants is 37 people) - index "2".

6. Findings

Statistical processing consisted of the method "Multi Trait Multi Method" (MTMM) within the framework of the "R Studio" package, the results of which are presented in Table 1:

Table 01. The ratio of measurements of the qualities of thinking in older adolescents in two different schools is linguistic ("1") and "sports (2)".

Variables	Select 1	Select 2	Rat. 1	Rat. 2	Ref. 1	Ref. 2	Dial. 1	Dial. 2
Select 1	1							
Select 2	0,23	1						
Rat. 1	0,73	0,14	1					
Rat. 2	0,03	0,30	0,12	1				
Ref.1	0,75	0,18	0,94	0,11	1			
Ref. 2	0,03	0,24	0,11	0,82	0,09	1		
Dial. 1	0,70	0,23	0,82	0,13	0,82	0,21	1	
Dial. 2	-0,16	0,36	-0,03	0,56	-0,05	0,54	0,02	1

Validity indicators
Reliability indicators
Indicators features monomethod (linguistic school)
Indicators features monomethod (sports school)
Indicators of different features - different methods (linguistic school)
Indicators of different features - different methods (sports school)

https://doi.org/10.15405/epsbs.2019.11.59
Corresponding Author: Ya. I. Sipovskaya
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

Based on the results presented in Table 1, there is reason to draw a number of conclusions regarding the correlation of the results of measuring the qualities of thinking in older adolescents from different schools:

1) indicators of reliability-consistency of measurements of the quality of thinking in older adolescents from different schools are statistically significant. Accordingly, the quality of thinking can be measured in high school students in both sports schools and linguistic schools;
2) validity indicators demonstrate the fact, that the results of measurements of the qualities of thinking are well comparable across schools only in the case of selectivity of interests and dialogue. Estimates of validity as a fitness for comparing data of other qualities of thinking, namely: rationality and reflexivity, do not reach the level of significance;
3) indicators of features of monomethods (linguistic and sports schools) are large enough to make a conclusion, that the method takes precedence over the construct;
4) indicators of different features - different methods (linguistic school) are small (do not exceed validity indicators), unlike at least small, but still higher than validity indicators of indicators of different features - different methods (sports school). The fact may indirectly indicate less the differentiation of the studied constructs in older adolescents, who study in sports schools.

7. Conclusion

Consequently, I concluded that the influence of the specifics of schooling (features of the educational environment of research participants as an external social factor) on the degree of formation of a number of qualities of thinking, whose function is the control of the intellectual activity of the individual, is significant.

Nevertheless, the structure of a number of qualities of thinking associated with the control of the intellectual activity, namely, the selectivity of interests and rationality, is characterized by low differentiation. The fact can be explained by the insufficient degree of formation of the construct.

Acknowledgments

The study was carried out by a grant from the Russian Science Foundation (project 19-013-00294)

References

Dudnikova, T. A. (2017). Abilities Giftedness Individuality. *Materials of the All-Russian scientific-practical conference XXXII Merlinsky readings.* Perm: PGGPU.

Kholodnaya, M. A. (2016). Development-focused educational texts as a basis for learners' intellectual development in studying mathematics (DET technology). *Psychology in Russia*, *9*(3), 24-37.

Kholodnaya, M. A. (2019). *The psychology of intelligence, the paradoxes of research: a textbook for undergraduate and graduate. 3rd edition, revised and enlarged*. Moscow: Yurayt Publishing House.

Ozhiganova, G. V. (2015). Higher Spiritual and Self-Regulative Capacities in Ancient Knowledge System-Buddhism (Approach Of History Of Psychology). *RUDN Journal of Psychology and Pedagogics*, (4), 7-14.

Ozhiganova, G. V. (2016). Spiritual abilities as a resource for life. Moscow: Publishing House "Institute of Psychology, RAS."

Raven, J. (2002). C*ompetence in modern society: identification, development and implementation* (translated from English). Moscow: Kogito-Center.

Sabadosh, P. A. (2017). A Russian version of the Engagement Scale: The multitrait-multimethod model / Psychology. *Journal of Higher School of Economics, 14*(1), 7–21.

Sabadosh, P. A. (2015). Resource function of aesthetic experiences: analysis and systematization of approaches. *Psychological Journal, 36*(5), 21–31.

Sipovskaya, Y. I. (2016). Conceptual, metacognitive and intentional abilities in the structure of intellectual competence: Diss ... Cand. psychol. sciences. Moscow.

Sipovskaya, Y. I. (2015). Measuring the qualities of thinking in adolescence. *Eurasian Union of Scientists, 10*(19), 142-148.

Vekker, L. M. (1976). *Psychological processes.* St. Petersburg: Leningrad State University Publishing House.

Volkova, N. E. (2017a). Conceptual abilities and productivity of cognitive development in the period of early adulthood / Personality, intelligence, metacognition: research approaches and educational practices. Materials of the II-nd International Scientific and Practical Conference April 20-22, 2017, Kaluga, Russia. Kaluga: Polyphop, publishing house. 623 - 629. Retrieved from https://elibrary.ru/item.asp?id=29721865

Volkova, N. E. (2017b). The role of conceptual abilities as the most important factor responsible for the productivity of intellectual activity in the structure of coping behavior / All-Russian Jubilee Scientific Conference "Fundamental and applied research of modern psychology: results and development prospects", November 16-17, Moscow. https://elibrary.ru/item.asp?id=30670087.

Voronin, A. N., & Goryunova, N. B. (2016). *Cognitive resource: structure, dynamics and development.* Moscow: Publishing house "Institute of Psychology RAS".