

**ICHEU 2021**  
**International Conference «Humanity in the Era of Uncertainty»**

**PEDAGOGY OF COOPERATION AS A MEANS TO OVERCOME  
THE FACTOR OF UNCERTAINTY**

Alsu Kamaleyeva (a), Victor Slepushkin (b)\*  
\*Corresponding author

- (a) Federal State Budgetary Scientific Institution "Institute of Pedagogy, Psychology and Social Problems", 420039, Isayeva str., 12, Kazan, Russia, kamaleyeva\_kazan@mail.ru  
(b) Laboratory of Innovative Didactic Technologies (LIDT), V. F. Shatalov school-studio, 119049, Leninsky ave. 1/2, bldg. 1, Moscow, Russia, vvslepushkin@icloud.com

**Abstract**

The paper considers the problem of uncertainty and outlines some means to overcome it. It demonstrates that both nature and man possess the dialectical property of uncertainty. The authors set out main reasons why in the XXI century uncertainty manifests itself in all spheres of society, including education. They also highlight the most vulnerable position of high school students who as yet lack life experience in a situation of uncertainty and pay attention to the complexity of the tasks facing their teachers. The main emphasis is placed on the main ideas of the "Pedagogy of Cooperation" developed by V.F. Shatalov, Sh.A. Amonashvili and S.N. Lysenkova. These ideas are aimed to help students overcome a situation of uncertainty. The paper emphasises that the pedagogy of cooperation allows teaching all children equally effectively, regardless of their natural abilities, since it is based on the laws of psychology and didactics of I.P. Pavlov, J. Miller, G. Ebbinghaus et al. The researchers point out that the quality of school-book texts becomes especially important in the process of transition to the use of electronic forms of a printed textbook. They explain why sorting students in classes by grades, dividing them into "physicists" and "lyricists" can be harmful, especially in modern conditions. The authors conclude that teachers' professionalism, various competencies, experience, and constant self-education are a way and a guarantee of overcoming uncertainty in the conditions of modernisation of education and the introduction of digital technologies.

2357-1330 © 2021 Published by European Publisher.

*Keywords:* Uncertainty, pedagogy of cooperation, didactic laws, self-education



This is an Open Access article distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## 1. Introduction

Nature, society, and man possess the property of uncertainty in themselves. This fact has been known to mankind since antiquity. Even ancient Roman historian Gaius Plinius Secundus (Pliny the Elder) once noted: "In this life, it is only determined that there is nothing definite" (Gaius Pliny Secundus..., 2018).

In this research, the authors adopt the meaning of the term "uncertainty" given by Stoicheva (2000). She defines "uncertainty" as a situation where one has to deal with insufficiently clear information or act in conditions of complete absence of information, where one's tested or learned ways of thinking and acting do not help solve the problem.

The essence of uncertainty is of a dialectical character. On the one hand, it puts a person into an unexpected situation when possible solutions known to him do not give the desired result. On the other hand, it makes him look for new knowledge, think independently, choose the most effective solution from several options, act rationally, be prepared for the fact that the result may not meet his forecasts and expectations. Uncertainty has always existed and will always exist in everything, only its degree, scale and nature change.

In the XXI century, uncertainty manifests itself most acutely in all spheres of human and social life. The fourth industrial revolution, as well as all all-previous revolutions, is rapidly changing the usual picture of the world, leading to radical changes in the sphere of production, consumption, services and the world labour market. The achievements of fundamental science are significantly ahead of scientific and humanitarian support and education, creating contradictions and predetermining crisis phenomena. That is why social uncertainty will only increase. As a result of the widespread use of artificial intelligence and robotics, a whole number of professions are going to disappear in the nearest future, but new professions are already appearing.

According to the IMF forecast, up to 120 million jobs in the world will be replaced by artificial intelligence by 2030 (Auzan, 2019). At the same time, the number of IT specialists and the number of people engaged in the production and processing of the most important strategic resource – information – will exponentially increase.

In order to master new technologies, a modern man in the conditions of the information society constantly needs new competencies as those obtained at a college or institute are not enough. It becomes vital for him to permanently improve his qualifications, receive additional education, master new specialties. As Kapitsa (2021) once noted: "Education is an industry aimed at the future" (p. 28).

## 2. Problem Statement

Therefore, education as a basic social institution should become the basis for the formation and development of the so-called "knowledge society", but education is currently not at the forefront, it is just "catching up". The conservatism of education has always been a deterrent, a stabilising factor, a kind of "automatic protection" of our children and society from high tension of the rapidly changing reality. It is particularly difficult to determine the measure and degree of this protection, which makes it one of the special cases of uncertainty. The authors believe that in education it is essential to constantly keep scientific

and technological progress within the line of sight as the "yellow jersey of the leader" in cycling. In no case should a situation of critical lag be brought about, when it will hopelessly disappear over the horizon.

By uncertainty in pedagogy, the authors understand situations of professional and pedagogical interaction when there is no information about its possible outcomes (completely or partially) (Mitina, 2014).

High school students who do not have sufficient practical life experience are especially vulnerable in a situation of uncertainty. They will have to solve a lot of difficult issues related to personal self-realisation, to choose a profession, to build a life trajectory. Because of this necessity to choose by themselves and to make first independent steps, high school students experience strong emotions and great mental stress.

Teachers also have to face an equally difficult task as they are to teach their students to exist and act in conditions of uncertainty. At the same time, teachers themselves do not accurately see the picture of the world of the future. Their activities are complicated by the psychological characteristics of students of this generation (Generation Z), the modernisation of education, the introduction of innovations and digital technologies, which increase the uncertainty in the educational process. No one knows how a teacher should act in these conditions and circumstances.

### **3. Research Questions**

The authors believe that the state of uncertainty which is natural in itself can be successfully overcome by referring to scientific achievements and accumulated pedagogical experience. One of its directions is the pedagogy of cooperation, which appeared in the 1980s. Its ideas were first formulated by S.L. Soloveitchik, a journalist, and a group of innovative teachers: V.F. Shatalov, Sh.A. Amonashvili, S.N. Lysenkova, and others. "The pedagogy of cooperation should be considered as a special type of "penetrating" technology, which is the embodiment of new pedagogical thinking, a source of progressive ideas which are to some extent included in many pedagogical technologies of today", Selevko (1998) wrote in one of his books.

Pedagogy of Cooperation assumes a transition of teacher-student relations from the predominance of requirements to cooperation, cemented by mutual understanding, joint activity with a common goal that creates joy in learning and communication for children, positive motivation for learning, a sense of satisfaction from the results of their work. This kind of interaction at school is much better suited for staying in the storms of uncertainty.

In such an environment, there are more opportunities to help reveal the abilities of each school graduate, self-actualise, self-determine, choose a type of activity, profession, overcome fear of the future and eliminate the main uncertainty.

The uniqueness of the pedagogy of cooperation lies in the fact that it allows teaching all children equally effectively, regardless of their natural abilities. There is no need to send excellent students to special schools for gifted, due to an individual and differentiated approach, strong students become even stronger, while they manage to help those lagging behind and lead them. Finland, for example, has one of the best European education systems, all public schools are absolutely equal in their status and equipment, both in the capital and in far-off polar villages.

It is not difficult to teach gifted children, "...we are proud of weak students who have become stronger", that is what is said in "The Manifesto of the Pedagogy of Cooperation" (Soloveitchik, 1986, p. 1).

A wide arsenal of effective methods and forms of pedagogy of cooperation makes it possible to achieve such results. Its important element is the principle of open prospects meaning that any student can correct any mark upward at any time before the end of the school year. Shatalov (1989) claimed: "The mark is not the goal. It is a just very subtle and explosive tool that requires clever and skillful handling. Otherwise, it loses its pedagogical meaning, turning into a means of personal oppression" (p. 2014).

Therefore, the excellent mark is placed immediately on the knowledge accounting screen open for viewing, and good marks are first drawn "in pencil". Satisfactory and unsatisfactory marks are not displayed at all, as they can cause negative emotions, can lead to a conflict with the teacher or the student with his parents. V.F. Shatalov tried to exclude any negative situations in his classes. The principle of constant inspection of knowledge assumes that each student will receive 3 marks for each topic: a classroom mark, an independent mark and a home mark, up to 100 marks in one subject per year. So, at first the fear of a bad mark disappears, and then gradually there is a desire to get higher marks, like everyone else does. Today, it is crucially important to return self-confidence to a low-performing student as it also means to remove the fear of the Unified State Exams and to remove a whole chain of his doubts and uncertainties.

The pedagogy of cooperation also implies that students have to study at home without parents' help and to answer at every lesson, so the student gets involved in daily hard work. Thus, his strong-willed qualities are formed. A one-man school-desk, like A.S. Pushkin used to have at the Tsarskoye Selo Lyceum, creates a personal space for everyone, makes it possible to concentrate better and not be distracted. This way, hints and cheating entirely disappear from the classroom. This is how independence and personal responsibility, which are vital in conditions of uncertainty, are gradually developed.

This is also facilitated by the following principles of teaching existing in the pedagogy of cooperation: from simple to complex, from the whole to the particular, from the particular to the general, a high level of difficulty, studying in large blocks, etc.

Lysenkova (1988), used familiarity with the most difficult subsequent topics of classes, ahead of the training programme. This approach allows students to make a personal forecast-hypothesis beforehand, create conditions for the maturation of understanding and ensure easy assimilation of educational material.

Firstly, performing proactive develops the skill to look at several steps ahead in learning. Then it will help students not to be afraid and overcome uncertainties in different life situations in the future.

The Pedagogy of cooperation puts forward the idea that any student should be offered the possibility of free choice. Thereby, students are able to choose their own topics of interest, areas of study, applied disciplines necessary for the development of their cognitive activity, independence, and creative abilities. In doing so, students develop the ability to make a choice since their school days which is the quality they will definitely need in adult life in conditions of increasing uncertainty.

Innovative teachers always doubted that students should be divided into "techies", "natural scientists" and "humanitarians" at school. The probability of an error here is extremely high since a child's abilities for a particular science can only be revealed much later (Gilmanshina et al., 2017). Currently, such "segregation" can even be harmful, since any modern humanitarian science always relies on a mathematical

apparatus, and an IT specialist, for example, can later turn to linguistics and psychology. In the 2000s, new knowledge and scientific discoveries are made at the junction of 2-3 different sciences (for example, economics, sociology and mathematics). Quite often, a modern person changes his spheres of activity to diametrically opposite ones. Equally solid knowledge of the basics of sciences and humanities makes education harmonious and versatile, reducing uncertainty in choosing a profession.

The pedagogy of cooperation is based on the principle of a humane approach, it moves along the absence of any conflict, which ensures students' mental health and spiritual comfort. Education and teaching are inextricably linked. Teaching transmits new knowledge; education gives a clue where and how to use this new knowledge in real life. Without kindness, warmth, patience, attentive and respectful attitude to the child's personality at school, there will be no lasting results. The atmosphere of goodwill and mutual respect at school should attract students to school. The manifestations of lies, hypocrisy, injustice or rudeness only repel them.

Shatalov (1989) laid special emphasis on physical health, so he gave a physical education lesson every day, and 64 of his students received the title of Master of Sports of the USSR. Innovative teachers devote up to 90% of their academic work to oral explanation and repetition in the classroom, and only 10% to homework, leaving the second half of the day to children, to their hobbies and interests.

With excessive educational and psychological stress, immunity and the general tonus of the human body decrease with both children and adults. In conditions of uncertainty, a person who is healthy both physically and mentally is able to act most accurately and confidently.

Amonashvili (1983), the author of the humane and personal technology, appealed to teachers back in 1986 saying: "Educators of the 80s should represent the people of the XXI century" (p. 5). During the period of self-isolation due to the Covid-19 pandemic, there was a simultaneous transition to an online format for all schools. Most of the teachers found themselves in a situation of uncertainty since they had never conducted classes remotely. The professionalism of a teacher is a way and a guarantee of overcoming the state of uncertainty, it involves improvement and constant self-education throughout his career, a special sensitivity to everything new and advanced in science and technology. Teachers who had already created their own electronic teaching materials and used them in conducting classes managed to switch over to online teaching most quickly and easily. Face-to-face classes at school remain the main form of education, but every teacher in critical quarantine conditions must be able to conduct classes remotely. The state of uncertainty of teachers associated with the use of digital technologies is removed as they are adopting new technologies. The level of mastering these technologies, various competencies, pedagogical experience and intuition will tell teachers when and how to use them in the classroom rationally and effectively for all participants on the educational process.

#### **4. Purpose of the Study**

The paper aims to show that the ideas, principles and methods of pedagogy of cooperation in the conditions of digitalisation of society and ongoing transformations are necessary for modern schools and will help students and teachers successfully overcome critical situations and growing uncertainty.

## 5. Research Methods

The researchers point out that the quality of schoolbook texts becomes especially important in the process of transition to the use of electronic forms of a printed textbook (Kamaleeva, 2010).

The Laboratory of Innovative Didactic Technologies (LIDT, V. F. Shatalov school-studio) has designed an experiment which is being conducted at the moment.

The experiment involves the lesson on the history of Russia named "The unification of Russian lands around Moscow. The Battle of Kulikovo". Firstly, students are given a questionnaire and the level of their knowledge on this topic is preliminary determined and is rated on a five-point scale. Then the class is divided into 2 parts. The first group is given a text from the textbook "History of Russia. 6th grade. 2016. N. M. Arsentiev, A. A. Danilov et al." (the time to read the text is 15-20 minutes), the second group has a text created in LIDT (the time to read the text is 10 minutes).

Both texts were compared by using the following methods: Dale-Chall level of readability, Flesch Reading Ease Score, Flesch-Kincaid formula, Automatic Readability Index, Gunning Fog Index, SMOG: Level of readability, Fog Index, Coleman-Liau Index, General naturalness of the text, Academic Nausea, Classical nausea, the quality of the text according to Zipf's law, Estimated reading time, Readability statistics.

The text created in the LIDT (V. F. Shatalov school-studio) has significant advantages according to all indicators.

At the next stage of the experiment, students are given 20 minutes to summarise the text. Then the summaries are checked and rated on a fifty-point scale. Semantic units of the text are ranked from 1 (less important) to 3 points (more important). The students are supposed to write their summaries again in 5-7 days.

## 6. Findings

The first results of the experiment show that the students understand and keep in memory the educational text on history followed by a summary and supported by sustained parameters of natural perception and readability by 20-25% better than the text of a school textbook on the same topic. Moreover, the result is confirmed regardless of these students' current academic performance, their interest in the subject (history), age, gender or region of study. The result is also confirmed when the experiment is repeated after 5-7 days.

## 7. Conclusion

The authors are sure that the ideas of pedagogy of cooperation are still relevant for the Russian education system. Many well-known teachers apply these ideas and develop them in their practice, acting efficiently and successfully in conditions of uncertainty.

More than 30 years ago, the Manifesto of the Pedagogy of Cooperation proclaimed that the most important goal of education is to help a free person build a culture of life self-determination. Then such a person as Karl Jaspers once said, "... enters the world without being afraid of anything".

## References

- Amonashvili, Sh. A. (1983). *Hello, children!* Prosveshchenie.
- Auzan, A. A. (2019). *On the relationship between economics and education. Interview with the Dean of the Faculty of Economics (Moscow State University named after M.V. Lomonosov) Alexander Auzan.* <https://www.fondpotanin.ru/press/news/aleksandr-auzan-o-vzaimosvyazi-ekonomiki-i-obrazovaniya/>
- Gaius Plinius Secundus (Pliny the Elder). (2018). *"Natural History". Book thirty-four.* [http://annales.info/ant\\_lit/plinius/34.html](http://annales.info/ant_lit/plinius/34.html)
- Gilmanshina, S. I., Sagitova, R. N., Gilmanshin, I. R., & Kamaleeva, A. R. (2017). Teaching of students technology early professional orientation of schoolchildren. *IOP Conference Series: Materials Science and Engineering*, 240, 012023.
- Kamaleeva, A. R. (2010). From experience of creation of the electronic education guidance "Modern means of estimation results of training". *Educational Technologies and Society*, 1, 293-303.
- Kapitsa, S. P. (2021). *An essay on the theory of human growth: demographic revolution and information society.* URSS.
- Lysenkova, S. N. (1988). *Method of advanced learning: a book for a teacher.* Enlightenment.
- Mitina, L. M. (2014). *Psychology of personal and professional development of subjects of education.* Nestor-History.
- Selevko, G. K. (1998). *Modern educational technologies.* Public Education.
- Shatalov, V. F. (1989). *The experiment continues.* Pedagogy.
- Soloveitchik, S. L. (1986). *The Manifesto of the Pedagogy of Cooperation.* Teachers' newspaper.
- Stoicheva, K. (2000). Ambiguity Tolerance in Adolescents: Its Relations to Creativity Relevant Traits. *7th Biennial Conference of the European Association for Research on Adolescence.* Jena, Germany.