

## PHILOSOPHICAL ANTHROPOLOGY, PHILOSOPHY OF CULTURE



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Original Theoretical Research



### Resistance to Information Uncertainty as a Factor of Students' Professional Development in Higher Education

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#### Abstract

**Introduction.** The dynamic state of the external environment determines the significance of the individual's ability to overcome information uncertainty. In the field of education, adaptive properties and analytical skills play a key role in building a system of students' professional development, in connection with which the purpose of the study is to study the mechanisms of forming resistance to situations of uncertainty among students of higher education as a basis for personal identification and career growth of future specialists.

**Materials and Methods.** The study is based on meta-analysis, systematization and structuring of relevant empirical research, the comparison and synthesis of which allows us to identify the correlation between the level of tolerance to uncertainty and the possibilities of professional realization of the personality.

**Results.** Within the framework of the study, key psychological, competence and organizational educational factors affecting the formation of students' resistance to information uncertainty were identified, as well as mechanisms for overcoming unforeseen situations within the framework of the educational activities of higher education were studied. A significant step in building these skills is the definition of effective pedagogical methods of interaction between teachers and students, as well as the implementation of innovative didactic principles and tools.

**Discussion and Conclusion.** The data obtained make it possible to understand the psychological aspects of the student's personality formation in conditions of uncertainty, make it possible to analyze the organizational features of building a pedagogical environment and relevant didactic means in order to modernize the higher education system.

**Keywords:** resistance to information uncertainty, didactic principles, pedagogy, higher education system, adaptability, critical thinking

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Оригинальное теоретическое исследование

### Устойчивость к информационной неопределенности как фактор профессионального развития студентов в высшем образовании

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#### Аннотация

**Введение.** Динамическое состояние внешней среды определяет значимость способности личности к преодолению информационной неопределенности. В сфере образования адаптивные свойства и аналитические навыки играют ключевую роль в выстраивании системы профессионального развития обучающихся, в связи с чем целью исследова-

ния является изучение механизмов формирования устойчивости к ситуациям неопределенности у студентов высшего образования в качестве фундамента для личностной идентификации и карьерного роста будущих специалистов.

**Материалы и методы.** Исследование строится на базе мета-анализа, систематизации и структуризации релевантных эмпирических изыскания, сравнение и синтез которых позволяют выявить корреляцию между уровнем толерантности к неопределенности и возможностями профессиональной реализации личности.

**Результаты исследования.** В рамках исследования определены ключевые психологические, компетентностные и организационные образовательные факторы, воздействующие на формирование устойчивости студентов к информационной неопределенности, а также изучены механизмы преодоления непредвиденных ситуаций в рамках учебной деятельности высшего образования. Значительным этапом в выстраивании обозначенных навыков является определение эффективных педагогических методик взаимодействия преподавателей и студентов, а также реализация инновационных дидактических принципов и инструментов.

**Обсуждение и заключение.** Полученные данные позволяют понять психологические аспекты формирования личности студента в условиях неопределенности, дают возможность проанализировать организационные особенности выстраивания педагогической среды и актуальных дидактических средств с целью модернизации системы высшего образования.

**Ключевые слова:** Устойчивость к информационной неопределенности, дидактические принципы, педагогика, система высшего образования, адаптивность, критическое мышление

**Для цитирования.** Матвеева О.А. Устойчивость к информационной неопределенности как фактор профессионального развития студентов в высшем образовании. *Научный альманах стран Причерноморья*. 2026;12(1):21–25. <https://doi.org/10.23947/2414-1143-2026-12-1-21-25>

**Introduction.** In modern realities, uncertainty is becoming a ubiquitous attribute of human life requiring the development of adaptation skills to new technological and information conditions.

Uncertainty implies situations corresponding to the theory of unforeseen circumstances [1, p. 266], for example, lack of data or blurred information, social changes, economic crises, political transformations, etc., which cannot be foreseen in the framework of work, education or private life. When faced with such events, the individual tries to manage them, or at least reduce their adverse consequences, proactively using the situation for their own purposes, in the implementation of which flexibility and adaptive abilities play a key role for personal growth, professional development and career advancement.

According to I. Rozina, N. Malanyuk, N. Tsumareva and others, flexible professional skills such as: creativity, innovativeness, self-organization, communicative skills and the ability to work in uncertain conditions, are becoming more and more important due to the constant evolution of labor market requirements [2].

Mastering these competencies is fundamental to ensure the assimilation of young professionals into various fields of professional activity [2]. In the education system, in particular in higher education, resilience to information uncertainty means stability of cognitive processes, flexible formation of personal and professional identity, and the ability to rationally make decisions and act in situations of ambivalence, variability and inconsistency. In scientific discourse, the concept under consideration has many interpretations and is widely known by the term “tolerance to uncertainty”. According to I.N. Leonov, “tolerance to uncertainty can be considered as a personal character trait, a situational-specific attitude” [3, p. 44], an acquired skill and a “metacognitive process” [3, p. 44].

Modern studies show that the phenomenon of uncertainty can be predicted and overcome by building certain models and organizational structures. According to M. Smithson, there are some principles and methods that need to be followed in this process in order to manage uncertainty: you should start with studying the circumstances (uncertainty should be identified, assessed and analyzed), then a decrease or smoothing the negative impact is carried out, then the adoption of an inevitable situation leads to the need to control or use it for your own purposes [4, p. 20].

Based on the existing recommendations, we can say that they are quite generalized and are not always comparable with the problems arising in the field of education. In this regard, the purpose of the study is to study the mechanisms of building resistance to information uncertainty among higher education students as the basis for the professional development of future specialists.

**Materials and Methods.** A systematic review and meta-analysis of relevant studies (S. Varlık, I. Rozina, N. Malaniuk, A. Kalyniuk, L. Potapiuk, N. Tsumarieva, M.N. Yurtaeva and others) allow us to assess the effectiveness of existing models and principles for overcoming information uncertainty within a paradigm approach, which asserts the indisputability of external factors and objectively considers reality and evaluates key facts [5].

Comparison and synthesis of relevant approaches allow us to identify the correlation between existing concepts of building tolerance to uncertainty, as well as determine how such skills affect various aspects of life, training and

professional growth of students. Assessing the resilience of individuals in relation to the circumstances of information uncertainty implies determining the level of stress and anxiety in unforeseen situations, which necessitates the study of a number of psychological factors that trigger homeostasis of internal regulatory systems of the individual.

In the field of pedagogy, the study of the formation of resistance to uncertainty is associated with the organization of didactic tools that contribute to the training of students of higher education in adaptive skills and competencies.

**Results.** Promoting tolerance to situations of information uncertainty in higher education is an extremely important stage in the development of the personal and professional potential of students. Such skills allow you to better adapt to new conditions and risks, contribute to the rationalization of the decision-making process, and also limit the factors of the unfavorable emotional impact of external phenomena on the individual's psyche and cognitive abilities.

Empirical studies show that the indicator of tolerance to uncertainty present in the individual directly correlates with "flexibility of cognitive control and responsiveness" [6, p. 74], which confirms the fact that "people tolerant to uncertainty are more successful in conditions of subjective uncertainty and in a situation of cognitive conflict requiring the adoption of a new mode of action" [6, pp. 74–75].

As part of the study of reflexivity and psychological features of personal perception of unforeseen circumstances, the empirically confirmed generalization, according to the methods of assessing tolerance to uncertainty of D. McLane and S. Badner, is the correlation of the cognitive style of the individual with their adaptive potential: individuals with pronounced impulsiveness, extreme analyticity and rigidity show cognitive biases towards an erroneous assessment of external factors as uncontrollable, dangerous and critical, which defines their behavior model as avoiding or intolerant to uncertainty [6, pp. 76–77].

In other words, people who cannot accept uncertainty will experience extreme anxiety and fear in such conditions, will not be able to effectively manage the situation in unforeseen circumstances and make informed decisions [7, p. 940]. In this regard, the coverage of the psychological characteristics of the personal perception of students in the preparation of organizational approaches and the selection of motivational tools, is especially significant for the field of education.

Maintaining a beneficial psychological atmosphere in the framework of educational activities is possible due to the formation of a trusting relationship between the teacher and students. "Building through empathy, pedagogical authority, student favor, interpersonal personalized trust plays a key role in overcoming didactic uncertainty" [8, p. 102].

"Speaking of interpersonal personalized trust, it can be argued that its level directly depends on the professional competence of the teacher, including communicative, intellectual-pedagogical, informational and regulatory components" [9, p. 280]. Intellectual and information components are formed on the basis of cognitive experience and knowledge of teachers, the constant updating and development of which make it possible to predict potential risks and changes in the education system, to respond in a timely and rational manner to crisis situations by mastering new didactic methods and innovative opportunities.

The integration of modern technologies also reflects the flexibility of educational structures and responsiveness to external digital changes, which allows students to assimilate the trends of our time and not be afraid of progressive solutions.

Smoothing information uncertainty is possible by mastering information and communication capabilities in the field of organization, regulation and control of external processes. Mastering the skill of information search (critical analysis, selection and systematization of data), students can assess the reliability of facts, their value and relevance. Therefore, critical thinking, taking into account a broad outlook, contributes to the construction of causal relationships in the events taking place, and, accordingly, eliminates information vagueness and fragmentation.

In the process of organizing educational activities, not only the interaction of teachers and students is important but also regulating and consistency of all educational units. Taking into account the multilevel institutions of higher education, the elimination of uncertainty is possible only through the cooperation of teachers and employees, coordination in activity approaches, clear internal administration and management.

The integrity of the educational system and resilience to unforeseen circumstances is determined by its integrative capabilities and inclusiveness. The didactic openness of curricula to various types of educational activities (formal and non-formal education, digital and information education, etc.), together with the availability of an educational environment that takes into account the variable needs and capabilities of students, contributes to the formation of additional competencies, such as: tolerance, empathy, mobility, responsibility, etc.

Within training sessions, the development of the skill of resistance to information uncertainty is possible through the inclusion of pedagogical principles such as: dichotomous analysis and the environmental method. As V.K. Raev defines, "Dichotomous analysis is a tool for removing information uncertainty by dividing and classifying parts of division objects. This approach makes it possible to: define parts of an object or structural inclusion; identify the hierarchy between parts of an object; evaluate the complexity of the object's structure; discover the system properties of the study object and answer the question «weather this object is a complex system or not»" [10, pp. 10–11].

Such an analytical study of phenomena and events on the principle of “from complex to simple” allows us to effectively process information excluding minor indirect elements and structuring fundamental knowledge.

The environmental approach implies taking into account and using the capabilities of the environment for pedagogical purposes [11, p. 22]. In conditions of information uncertainty, the concept of “environment” can mean a set of external factors and conditions that form the guidelines for people’s life (educational resources, information and communication tools, socio-cultural processes, etc.). In this case, the functional tasks of teachers are: adaptation of experimental methods, use of high-tech tools, arrangement and design of the educational space in accordance with the trends of our time [12, p. 182].

Opportunities to explore ways of building resilience to information uncertainty should be clearly monitored over time. Assessing the progress of students through qualitative methods (observation, interviews, discussions, content analysis) will allow you to structure the personal and collective experience of students, their achievements and unresolved aspects. Such studies reveal skill development curves in response to external changes.

Based on the above-mentioned information, we can generalize that the multiple unforeseen challenges of today’s reality have their own value and significance in the education system. Firstly, they contribute to the didactic modernization of educational structures and the constant development of the teaching staff. Secondly, rational collision with uncertain circumstances contributes to building student adaptability and resilience, which is crucial for future professional implementation. In addition, mastering the mechanisms of overcoming information uncertainty helps to reduce anxiety and contributes to the psychological stability of the personality, which in the future will allow specialists not only to effectively cope with problems, but also to transform and reorient them in the direction of career growth and development.

**Discussion and Conclusion.** The study showed that the current state of society and the labor market, which is characterized by volatility and rapid changes, requires the development of the skill to adapt to uncertainty for the successful career of young professionals [2].

Professional identity and self-realization is possible only if there is a high personal tolerance to uncertainty. The meta-analysis showed that students with a high level of information resilience have clearer ideas about their career goals, show greater confidence in their own knowledge and professional skills, and respond to unforeseen situations flexibly and rationally.

The results of the study seem to be especially significant for the field of education in order to modernize the didactic environment. Understanding the organizational features of building a pedagogical system contributes to improving the ways of coordinating all hierarchical elements in higher educational institutions. The study of the psychological aspects of the formation of students’ professional identity makes it possible to modernize existing curricula, methods and didactic approaches focused on personalized learning, humanization, tolerance, as well as the development of critical thinking, self-organization and responsibility skills.

As a basis for future research, it is appropriate to conduct an empirical component analysis of changes in the process of building the professional identity of students through resistance to information uncertainty at various stages of training and qualification activities.

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