European Proceedings of
Social and Behavioural Sciences
EpSBS

www.europeanproceedings.com
e-ISSN: 2357-1330

DOI: 10.15405/epsbs.2020.11.31

HPEPA 2019
Humanistic Practice in Education in a Postmodern Age 2019

PROFESSIONAL SELF-EFFECTIVENESS FORMING FOR A SPECIALIST IN A PERSONIFIED INFORMATIONAL EDUCATIONAL ENVIRONMENT

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Abstract

The article reveals the phenomenon of a personified informational and educational environment as a tool for the formation of such basic qualities as competitiveness, mobility, and self-learning ability that determine the professional self-efficiency of a specialist. Three levels of personality development in this environment, as well as organizational and pedagogical conditions, as necessary factors for the successful formation of additional professional competencies, are considered. In this study the design of a personified informational and educational environment is being implemented, which implies clarifying the understanding of the development of the subject, the process of specific, visual and theoretical knowledge in educational activities. Thus, visual perception, visual cognition became for us a priority factor, which positions a worthy place in modern pedagogical technologies. We have chosen system-multidimensional, instrumental-active and subject-environmental approaches; as well as leading principles: the invariance of didactic basis, macro-micronavigation based on logically-semantic modeling, in other words binary. The adopted methodological approach requires for linking the three processes into a single fundamental hierarchical triad - personisation, personification, personalization - assignment of qualitative and quantitative relations between them. Three levels of personality development in a personalized environment are defined - personisation, personification, personalization - where the system sets certain patterns of appearance, model and stereotypes of behavior, as a result of comparison and reflection, the student comprehends himself, his abilities, opportunities and makes his life choice on his own.

Keywords: Levels of professional self-efficacy, personified informational and educational environment, professional self-efficacy of a specialist.

https://doi.org/10.15405/epsbs.2020.11.31
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Selection and peer-review under responsibility of the Organizing Committee of the conference
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1. Introduction

The requirements for the quality of training of competitive specialists are dictated by innovative processes of real production. As a result, the personnel policy of an effective enterprise and the needs of a particular employer determine the fact that it is not enough for a specialist to be just a professional, that is, a person who has deep knowledge in some business (Blinov & Sergeev, 2018). Together with his colleagues, he needs to solve problems arising in the workplace, orient himself in several professional fields and be able to interconnect between them, and for this he needs to be familiar with related and adjacent professions and be able to train under conditions of uncertainty (Vakhidova, 2014). Certainly, the formation of a great specialist is a problem of professional and personal development, but not every student is ready to fulfill complex types of work of high-tech and dynamic production. Our research showed that it is necessary to take into account their individual characteristics, as well as create such organizational and pedagogical conditions that would provide the optimal formation of professional competencies.

The external factors affecting the formation of professional competencies and assignment of pedagogical conditions are the requirements of employers and the Federal State Educational Standard, the internal factors undergoing changes are the content of education, educational technology and the student's personal and professional development. Training of specialists in an educational institution is carried out in accordance with the requirements of professional and educational standards. The content of professional education combines theoretical and production training. Theoretical training is aimed at students mastering the knowledge system through a set of educational modules and disciplines necessary for the conscious and effective fulfillment of learning tasks provided by the educational program in the direction of training or specialty.

Production training based on theoretical knowledge forms labor skills and competencies necessary to solve professional problems in human. In the training system of a modern specialist, one of the mechanisms that allows a person to overcome the gap between the requirements of real life and the isolation of the training system is the widespread use of the most effective pedagogical technologies in the educational process. At the same time, the student's personal and professional development is focused on high professional achievements.

Currently, a modern specialist does not have enough knowledge of his specialty; there is a need to go beyond the scope of related and adjacent fields. The last thing requires appropriate professional qualities and abilities, otherwise additional professional competencies that will allow to fulfill multifunctional professional activities. The solution to these problems is connected not only with the modernization of the learning process, but, first of all, with the innovative transformations taking place at the moment.

This was confirmed by the past conference, in which the Global Education Futures reports "Education for a complex society" presents a list of future competencies, which is consistent with the context of our study on the need to train specialists for multifunctional professional activities, namely:

1. Various professional competencies and knowledge associated with changes in technology and organization of work.

2. Over-professional competencies and universal knowledge that can be applied in all professions, social and personal situations, such as:

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- competencies and knowledge that help to cope with the fundamental variability, uncertainty, complexity and ambiguity of the future;

- competencies and knowledge that help to cope with the growing complexity of civilization - including systemic intellection, the ability to solve problems and find new opportunities, etc .;

- knowledge and competencies that help to live in the world of information and communication technologies - including basic skills of programming, information search, processing and analysis skills;

- knowledge and competencies that are related to what “machines cannot do” - including empathy / emotional or interpersonal intelligence;

- knowledge and skills associated with focused multidisciplinarity, the desire to achieve mastership in various fields of work and life (Miloslavskaya, 2015).

A modern specialist can be distinguished by such qualities as competitiveness (success), professional mobility, and self-learning ability, which determine such leading values of human life as professional success and self-realization. In accordance with the global trend of Life-long learning (“education through life”), the development of the competencies necessary for the implementation of professional activities, and the desire for a successful life, determine the leading quality that provides these characteristics - the specialist’s self-efficacy. In this regard, the urgent problem of the study is the formation of professional self-efficacy of a future specialist in a personalized information and educational environment. In our case, a personalized information and educational environment is a key element of the environmental approach and can be implemented in the organization of the activities of professional competence centers.

The analysis of existing training technologies showed that they do not fully satisfy the needs of customers, in particular students, and employers in terms of developing professional and personal qualities of a specialist. It should be noted that today there is no theory, no methodology, no technology to cope with this problem. This gives us the opportunity to talk about the expediency of including the concept of a personalized educational environment in the activities of centers of professional competence. Creating an appropriate environment where training of specialists will be carried out taking into account the requirements of the labor market for human resources. (Vakhidova, Gabitova, & Ivanov, 2018).

2. Problem Statement

In order to determine pedagogical conditions that allow to link the requirements of production enterprises with the capabilities of educational institutions in the process of forming additional professional competencies, as well as conductive for the correct solution of the problems of professional and pedagogical education.

3. Research Questions

In connection with the information indicated above, it is necessary to form a different educational logic for training a specialist that meets the requirements of the emerging knowledge economy, where the social order is a set of requirements, including the employer, authorities, the student himself. Therefore, the key element will be the formation of traditions, pedagogical and organizational conditions in the logic of a

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personified environment, which provides the transformation of the subject with the help of means that allow the student to further go from personization, that is, searching for himself in the environment, through personification, to personalization, which includes a reflection function when fulfilling actions in the actions of other subjects.

4. Purpose of the Study

The purpose of the article is to determine the pedagogical conditions for the implementation of a special personified informational and educational environment (PIEE), in which the mechanism of the formation of professional and personal competencies is initiated, as well as revealing of environmental components that impact the development of professional self-efficacy of a future specialist.

5. Research Methods

The requirements for the quality of training of competitive specialists are dictated by innovative processes of real production. As a result, the personnel policy of an effective enterprise and the needs of a particular employer determine the fact that it is not enough for a specialist to be just a professional, that is, a person with deep knowledge of some business. Together with his colleagues, he needs to cope with the problems arising in production, navigate in several professional areas and be able to interconnect between them, and for this he needs to be familiar with adjacent and related professions and be able to learn in the case of uncertainty. Of course, the formation of an excellent professional is a problem of professional and personal development, but at the same time, not every student is ready to perform complex types of work of high-tech and dynamic production. Our study showed that it is necessary to take into account their individual characteristics, as well as create such organizational and pedagogical conditions that would ensure the optimal formation of professional competencies (Lavrentev, 2002).

The external factors that impact on the formation of professional competencies and the assignment of pedagogical conditions are the requirements of employers and the Federal State Educational Standard (FSES), the internal factors undergoing changes are the content of education, educational technology and the student's personal and professional development. Training of specialists in an educational institution is carried out in accordance with the requirements of professional and educational standards. The content of professional education combines theoretical and production training. Theoretical training is aimed at students mastering the knowledge system through a set of educational modules and disciplines necessary for the conscious and effective fulfillment of learning tasks provided for by the educational program in the direction of training or specialty. Production training based on theoretical knowledge forms a person's labor skills and competencies necessary to solve professional problems. In the training system of a modern specialist, one of the mechanisms to overcome the gap between the requirements of real life and the isolation of the training system is the widespread use of the most effective pedagogical technologies during the educational process. At the same time, the student's personal and professional development is focused on high professional achievements (Schedrovitskiy, 2007).

Taking into account the information above, a group of organizational and pedagogical conditions, which are considered as necessary factors for the successful formation of additional professional competencies, is singled out,. These competencies include:

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- development of an organizational model of contextual-environmental support in a professional educational institution,

- the formation of basic competencies among students and its further actualization in the system of training specialists

- competencies of teaching personnel connected with new educational technologies (projects, cases, gamification, on-line training).

- the existence of scientific and methodological support of the educational process, which is conductive for the formation of additional professional competencies.

Let us dwell on each of the pedagogical conditions. The first condition implies the creation of a contextual learning environment in an educational institution. In contextual education, the subject and social content of professional work are modeled, thereby providing the conditions for the transformation of student learning activities into professional activities of a specialist (Ilinskiy, 2012, p. 3).

The mechanisms of a personified information and educational environment are logical and sense-bearing models; cognitive visualization of knowledge; activation of three reflection mechanisms - sensually-picturesque, verbally-logical, and modeling. The implementation of the contextual-environmental support model is being carried out during the process of applying active learning methods, such as discussion, analysis of specific situations, “task designer”, role-playing games, projects.

The next pedagogical condition is the formation of basic competencies among students and their further actualization in the system of training specialists, imposes requirements on enterants getting into training in a professional educational institution. In the absence of formed basic competencies among students, it is impossible to form other types of competencies. Students of professional educational organizations are teenagers, as a rule, with secondary school knowledge, not all of them have basic competencies, that is, the ability to independently acquire knowledge, the ability to independently search, analyze and select, then organize, transform, save and transmit the necessary information, create various texts (essays, messages), for a productive communication (Shadrikov, 2009). In order to implement this pedagogical condition it is important to introduce the model of successive education (school – college or school – university). This is a system with innovative methods that allows a future student to enter the cultural space of a professional educational institution, his professional orientation and inclusion in the work in the creative teams of an educational institution, which also contributes to the formation of key competencies.

The process of forming additional to basic professional competencies among students will not be effective if teachers do not have competencies associated with innovative technologies of practical and project-oriented training. To implement this condition, a professional educational institution needs to conduct refresher courses, internships for teachers of professional disciplines at enterprises, to prepare the best graduates for future teaching activities in college.

One of the pedagogical conditions that we identified as part of the study is the availability of scientific and methodological support for the educational process, which contributes to the formation of additional professional competencies. The development of scientific and methodological support in the disciplines and professional modules of the training program involves the use of production-oriented materials. This in turn implies the need for regular interaction between a professional educational institution

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and the enterprises where graduates will work. The formation of relevant programs of general professional disciplines, professional modules, academic and practical training programs can be carried out only with the cooperative work of teachers and production managers from enterprises. Modernization of professional education, aimed at improving the quality of training of specialists of all levels, is impossible without creating a unified educational space (Yasvin, 2000), without important changes in the relations between producers and consumers of educational services, without social partnership in this area.

Thus, the pedagogical conditions marked in the study make it possible to connect the requirements of production enterprises with the capabilities of educational institutions in the process of forming additional professional competencies and contribute to the correct solution of the problems of professional and pedagogical education.

The concept of coordinating professionalism and self-efficacy (Figure 01) is based on a combination of three invariant levels of professional self-efficacy (K7: literacy - competence - culture) and linking these levels with three invariant levels of self-effective professionalism (K1: “teacher-trainee” - “teacher-craftsman” "-" teacher-master "). Moreover, a contextual informational and environmental attribute is associated with each level of self-effective professionalism (K1):

- personization - training a specialist with minimal requirements, including the conditions of training, forms and contents of education, standard educational conditions (human resources, material and technical support of the learning process, etc.); a combination of traditional and active teaching methods and forms, modern information and communication technologies are used;

- personification - an elevated level of specialist training, characterized by an emphasis on the subject of the educational process (the maximum consideration of needs, interests and opportunities); organizational and technological characteristics of the educational process are shifting towards non-traditional forms of training and conditions of implementation;

- personalization - a high level of specialist training, in which the active role of the subjects of the educational process changes; alternative teaching technologies that modify, respectively, organizational forms of training are applied.

Each of the levels of professional self-efficacy (K7) and each of the levels of self-effective professionalism (K1) are associated with the corresponding amount of subjective-activity achievements in the process of project activity and professional-personal development (K2-K6) (Figure 01).

A typical visual didactic regulator (Shteynberg, 2015), reflecting one or another type of professional self-efficacy, includes the following enlarged elements (or semantic groups): K1: qualification levels of self-efficacy in connection with the contextual-environmental approach; K2: the technology of the creation of the project; K3: project support components; K4: technology of the project implementation; K5: subjective characteristics of professional self-efficacy; K6: activity characteristics of professional self-efficacy; K7: final professional self-efficacy of a specialist; inter-coordinate professional self-efficacy evaluation matrix.

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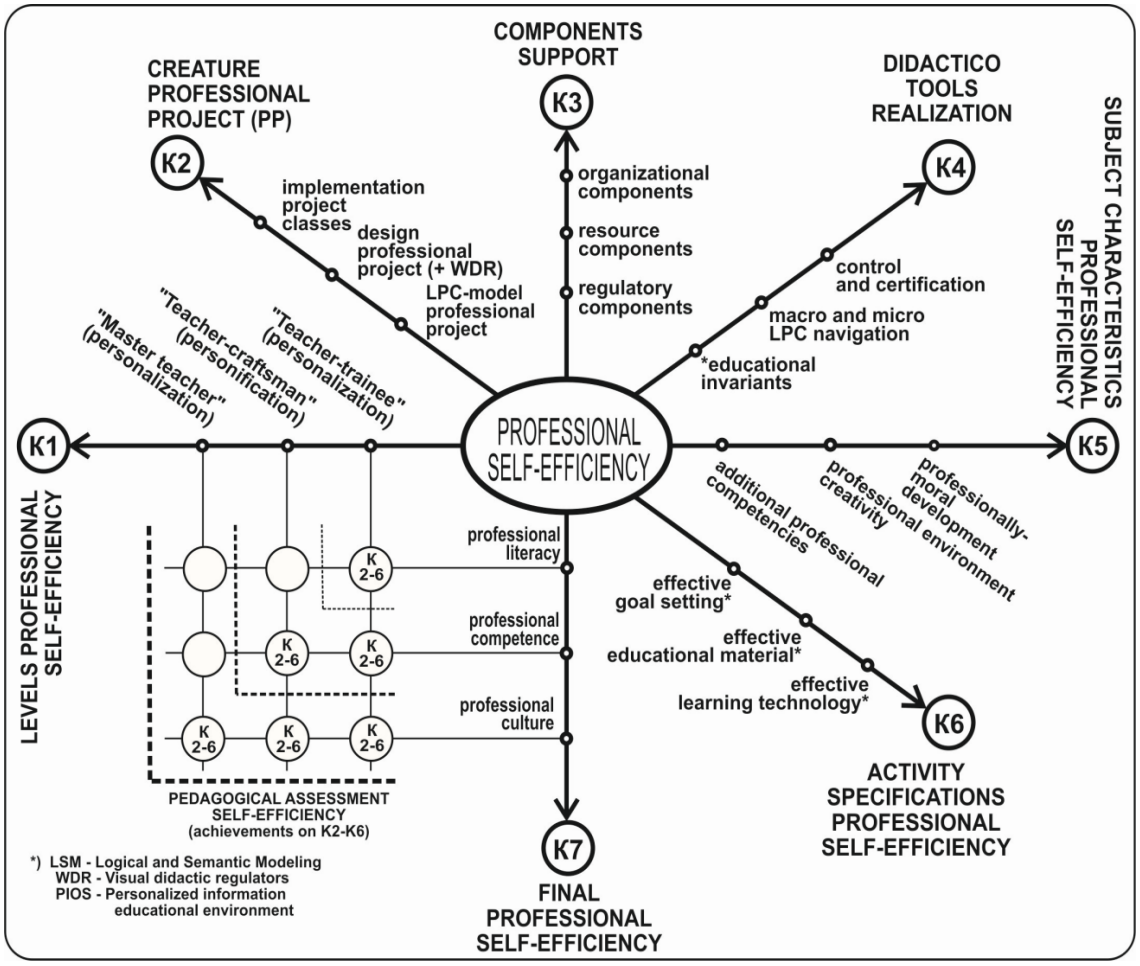

Figure 01. Visual didactic regulation "Professional self-efficacy"

As we see from the content of visual didactic regulations, the development of professional self-efficacy consists in advancing along a three-stage invariant trajectory of professional growth from the "trainee" to the "master" (K1) by creating and implementing projects (K2, K3, K4), thanks to which special subjective and activity characteristics of a specialist (K5, K6), allowing him to move from professional literacy to professional culture (K7-K8 inter-coordinate matrix) are formed.

The translation of self-efficacy into the professional sphere was carried out by the notional extension of the phenomenon of "self-efficacy" by synthesizing aspects of the professional and self-effective using the appropriate technology of professional self-improvement of the future and current specialist. The concept and technology of professional self-efficacy of a specialist, as determinants of professional and moral development, initiate his self-organization and self-education.

6. Findings

At present, pedagogical science is considering the development of personal and professional competencies and finding the resources necessary for this, which allow being a specialist in the labor market and an active subject of professional activity. Modern society requires highly efficient people who are able to correctly assess their own capabilities and their results. The subjective attitude to the activity is realized in the person's appeal to his internal reserves, development potentials, the possibilities of choosing the

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means of action and the construction of certain behavioral and professional-activity strategies, which, in our opinion, are determined by the student's professional self-efficiency.

The concept of self-efficacy was introduced by Albert Bandura in the 70s not only for explanation as for purposeful work on personality change (Bandura, 2000).

Using this concept, Bandura (2000) assessed the ability of people to realize their abilities and to use them the best way. Bandura (2000) noted that even with modest abilities, their skillful use allows a person to achieve high results. At the same time, the presence of high potential does not automatically guarantee high results.

So, if a person does not believe in the possibility to use this potential in practice.

In order to study the level of professional self-efficacy of future teachers of professional training, we carried out the methodology of M. Scheer and J. Madduks. This technique allows you to reveal the level of self-efficacy of the individual, provides the opportunity to obtain information about the self-esteem of the individual, the degree of self-realization.

The study involved 87 students of III - IV courses of the specialty "Professional training". An analysis of the results showed that students have an average level of self-efficacy both in activity (71%) and in communication (59%) (Figure 02).

This suggests that students, in general, are aware of the presence of the necessary professional competencies and personal qualities necessary for the implementation of professional activities. At the same time, students are still not completely assured that they use these qualities correctly when performing the functions of a teacher (diagnostics were carried out immediately after teaching practice).

The fact that the average level of self-efficiency prevails among respondents is regular, since the main condition for its development is the ongoing successful professional activity. And students in the process of university education are only preparing for its implementation.

A high level of self-efficacy in the field of activity was shown by 22% of students and in the field of communication - 15% of students. Such students are characterized by an awareness of their professional qualities and their ability to actualize them in their activities.

And a low level of self-efficacy in the field of activity was shown by 7% of students in the field of communication was shown by 26% of testee. These results indicate that respondents are poorly aware of their personal and professional qualities and are not sure that they will be able to use them as a functional tool in their future professional activities (Table 01).

Table 01. Assessment of efficiency level

	High	**Middle**	**Low**
Activity	22	71	7
Communication	15	59	26

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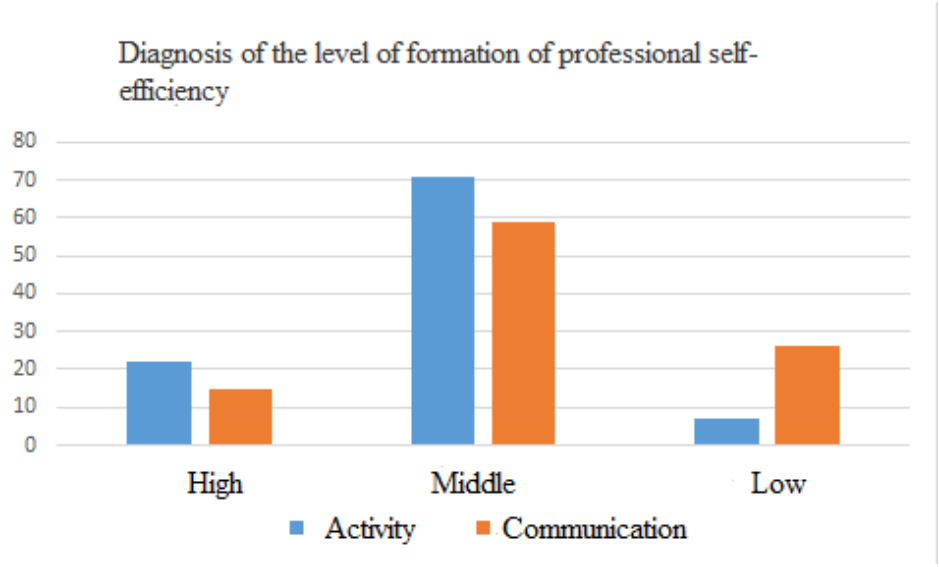

Figure 02. Diagnosis of the level of formation of professional self-efficiency

It should be noted that self-efficacy can and should be developed not only naturally in the course of a person's life and experience gained in successful actions or observing the success of others (Esaulova, 2010), but also through a specially organized pedagogical process with the creation of the conditions mentioned above. In our study in order to increase the level of professional self-efficacy (Alimova & Pavlov, 2011) a completely new personalized educational information environment is being created.

In the process of the study, the problem constituents were identified in three areas - social, educational and technological: the phenomenon of a personified information and educational system at the social level was determined by the order of society for the corresponding specialist, i.e. initially self-effective, which should result in professional self-efficacy. In this regard, at the educational level it is necessary to determine its determinants, and at the technological level it is necessary to answer the question: what means and tools in the educational process will form the components of professional self-efficacy (Muddy, 2002).

The "cell" (in other words model) of the system, which (presumably) will allow to realize the didactic potential of the PEIE, is a triad system: "learning subject" - "conceptually determined technology of educational activity" - "specially organized content".

Research and creation of a personified informational and educational environment that implements new psychological, pedagogical, didactic and technical principles, as well as didactic design elements Tkachenko, Shteynberg, and Manko (2016), is an urgent, socially significant and knowledge-intensive problem, the solution of which represents a significant, in our opinion, contribution to the improvement of various areas of the education system. The personalized information and educational environment is not only the teacher's appeal to the subject the educational process, but also an attempt to identify and exploit new reserves in learning strategies aimed at formation of professional self-efficacy.

7. Conclusion

In the process of the study, the constituent problems were identified in three areas: social, educational and technological: the phenomenon of a personified information and educational system at the social level was determined by the order of the company for an appropriate specialist, i.e. initially self-

effective, which should result in professional self-efficacy; at the educational level, its determinant is to be determined; at the technological level, it remains to answer the question: what methods and means (tools) in the educational process will form the components of professional self-efficacy.

We believe that in the triad: “learning subject” - “conceptually determined technology of educational activity” - “specially organized content” - the developed model of the system will allow us to realize the didactic potential of a personalized educational information environment.

In conclusion, it can be stated that the study and creation of a personified information and educational environment that implements new psychological, pedagogical, didactic and technical principles, as well as elements of didactic design, is an urgent, socially significant and science-intensive problem, the solution of which is significant, in our opinion, contribution to the improvement of various areas of the education system. A personified educational information environment is not only a teacher’s appeal to the subject of the educational process, but also an attempt to identify and use new reserves in learning strategies aimed at creating professional self-efficacy.

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