

# Local Educational Cluster As A Means Of Development Of Students' Training Independence

## Clúster educativo local como medio de desarrollo de la independencia del entrenamiento de los estudiantes

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#### ABSTRACT:

Educational independence, as the quality necessary for a successful person in the modern world, requires new approaches to its development. More developed this question is for the school education' level. The development of the university students' independence, as the foundation for independence in continuing education, is still not sufficiently technologically developed. Cluster interaction has a significant potential for the development of student learning independence. The implementation of the cluster interaction mechanism traditionally assumes the functioning of an educational cluster characterized by the long-term, systemic nature of its subjects joint activities. We believe that one of the solutions to the problem may be the development of a local educational cluster in the university educational process. The advantage of this technology is the students' direct active inclusion in joint activities with professionals in the production of a specific socially significant product that characterizes the level of development of students' academic independence. The article gives examples of measuring indicators of this quality formation in joint activities.

#### RESUMEN:

La independencia educativa, como la calidad necesaria para una persona exitosa en el mundo moderno, requiere nuevos enfoques para su desarrollo. Más desarrollada esta pregunta es para el nivel de educación escolar. El desarrollo de la independencia de los estudiantes universitarios, como fundamento para la independencia en la educación continua, todavía no está suficientemente desarrollado tecnológicamente. La interacción entre clusters tiene un potencial significativo para el desarrollo de la independencia de aprendizaje del estudiante. La implementación del mecanismo de interacción de clusters tradicionalmente asume el funcionamiento de un cluster educativo caracterizado por el carácter sistémico a largo plazo de sus sujetos actividades conjuntas. Creemos que una de las soluciones al problema puede ser el desarrollo de un cluster educativo local en el proceso educativo universitario. La ventaja de esta tecnología es la inclusión activa directa de los estudiantes en actividades conjuntas con profesionales en la producción de un producto socialmente significativo que caracteriza el nivel de desarrollo de la independencia académica de

**Keywords:** educational independence; competence approach; cluster interaction; educational cluster; local educational cluster.

los estudiantes. El artículo da ejemplos de medición de indicadores de esta formación de calidad en actividades conjuntas.

**Palabras clave:** Independencia educativa; Enfoque de competencia; Interacción de clusters; Cluster educativo; Cluster educativo local.

## 1. Introduction

The competence approach methodology, which is currently determinative in the development of the educational process theory and practice, is not only in Russia, but also in the world pedagogical community, leads scientists to a qualitatively different interpretation of the educational independence concept. It is considered that the related concepts "independence", "independent activity", "independent work", "independent cognitive activity", "educational and cognitive activity", "learning activity", "learning ability" have been studied sufficiently. However, as the researchers Dealing with the history of this issue note, the most revealing are only some aspects of the forming the ability to learn problem, namely, the features and conditions for the formation of cognitive independence (Ivoshina & Shvareva, 2011).

Traditionally, in pedagogical science and practice, both past and modern education, the problem of educational autonomy is considered in relation to pupils and the school educational process. The development of schoolchildren independence was considered in Russian and Soviet educators and psychologists writings, whose works become classics of psychological and pedagogical science (Vygotsky, 1996; Galperin, 1965). In theoretical studies for modern education science and practice is particularly significant the independence problem with considering in the context of the human activity essence as a necessary condition for mastering the cultural and historical social experience (Vygotsky, 1996).

Many researchers note the importance for the development of children's independence of such key aspects as the conditions creation for the manifestation of student activity, his self, personality. A special role among these conditions is given to the children joint activities. However, the mechanisms of these processes are not spelled out enough. As a rule, various ways of independent work of pupils are offered in ways of independence development. E.Y. Golant says that fulfillment of numerous homework assignments is by no means always an effective method of developing the students' independence. Spreading the notion of independence as a personal quality, and independent work as a means of developing students' independence, the author emphasizes the inner side of independent work, which is expressed in the independence of thought, independence of judgments and conclusions (Golant, 1957). But how the conditions for the realization of these ideas are created, remains to the end not an elaborate moment.

Nevertheless, the issues of the educational independence development within the framework of school education, one way or another, are reflected in the work of educators and psychologists (Ivoshina, & Shvareva, 2011; Tsukerman, 2010). It could not be said about the development of university students' educational independence. It should be noted the presence of a large number of dissertations on the organization of students' independent work in the academic disciplines and in the university educational process (Gheorghe, 2015; Solostin, 2015; Naing, 2015). Also, some researchers dealing with the problems of higher school, consider related concepts: cognitive independence (Malysheva, 2017), educational independence (Gordianova, 2016), self-educational competence (Alkova, 2015). However, the concept of "educational independence" that is of interest to us is practically not covered by the students. We would like it to be explained by the good level of this quality development at the school level and by the lack of the need to address this problem when teaching students. However, the experience of many teachers shows that this is far from the case. Graduates of schools entering the university experience great difficulties with the independence of thought, judgments and conclusions. If we do not pay attention to this when organizing interaction with students, the problem will increase with the transition to the next stages of training and, in general, including in the

continuous education system, as required by the current situation from each professional and, in fact, from any person of our time .

As many modern authors point out, the analysis of the universities indicates practical activity shows there is insufficient attention to the question of the formation of independence as the quality of the individual trainees and the basis for acquiring professional competence. Hence the actual problem of research, which consists in the search for ways to develop students' learning independence.

We would like to note that independence is considered by psychologists and educators as the core property of a person, most closely associated with such qualities as activity and responsibility. A person has a tendency to know himself in activity. Hence, independence is not only a lack of teacher's help, external supports, but also originality, ability in its own way, it is interesting to solve this or that task. Such independence develops where there is freedom of action, choice, the right to express one's thoughts, independent judgments, to perform moral actions. Cooperation of students with a teacher and with friends is a necessary condition for mastering skills and it is the most important component of independence. The availability of knowledge and skills determines the students' willingness to independent action. Independence is characterized by a certain motivational attitude, which sets in motion knowledge and skill, encourages learners to act without outside help.

On this basis, we understand by the educational independence the quality of a person that manifests itself in the ability and willingness of a learner to solve the tasks posed by the teacher or himself, using rational ways of working, the steady motivation of students to participate in educational and professional activities carried out in and outside of the class.

When creating conditions for the development of this quality it is not just an increase in the number of hours for independent work. Strengthening the role of independent work of students means a fundamental revision of the organization of the educational process in the university, which must be built in such a way as to develop the ability to learn, to form the student's ability to develop himself, the creative application of the knowledge acquired, and the ways of adapting to professional activities in the modern world.

An important motivational factor in this is intensive pedagogy. It involves the introduction of active and interactive methods into the learning process. In addition, it is important to immerse students in a situation of quasi-professional activity for the analysis of not just learning but real social or professionally significant problems, which must be solved in cooperation with various actors of joint activities.

Organization of the process that meets the declared characteristics seems to us possible by including students in cluster interaction organized in the framework of the educational process of the university and possessing, in our opinion, a significant educational potential for the development of the students' academic independence.

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## **2. Methods**

In preparing this work, we used a diverse arsenal of theoretical and empirical methods. From the first group can be identified: the study and analysis of psychological-pedagogical, methodological and philosophical literature on the research problem; analysis of dissertation research, comparative analysis. Among the empirical methods were actively used: observation, questioning, analysis of written works and oral answers of students, pedagogical experiment, as well as methods of mathematical statistics.

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## **3. Data, Analysis, and Results**

Studying the possibilities and peculiarities of implementing the cluster approach to higher education, we considered it appropriate to turn to the analysis of the modern economic theory of cluster development, the main provisions of which formed the basis for the clusterization of

the educational process at different levels.

In the course of the theoretical study, we found that the idea of clusters as a means of ensuring the competitiveness of the region's economic and social development has been widely developed practically in all countries of the world for quite some time. Thus, the theoretical foundations of clusters were laid in the late nineteenth century in the works of A. Marshall (1890), and the term cluster was introduced by Harvard University professor M. Porter (2008) in the 1980s.

Studying the M. Porter's works (2003; 2008) led us to the realization that the scientist not only introduced the notion of cluster as the main stimulus for the development of the regional economy, but also presented a comprehensive historical analysis of the connection of clusters and the competitiveness of countries and regions. A further theoretical study showed that M. Porter's theory of competitiveness continues his development in numerous studies of economists related to the issues of enhancing competitive advantages and cluster initiatives.

Analysis of special literature showed that, as a rule, authors identify the following key elements inherent in clusters: geographical concentration; specialization; set of actors; competition and cooperation; critical mass; the cluster life cycle; innovativeness etc.

For example, D.V. Smirnov indicates the existence of the following socio-economic principles, which are the basis of clusters and determine their advantages: innovative orientation, social partnership, pooling of resources and potentials, defining common interests and development strategies, hierarchically aligned set of institutions, sustainability and development of its participants (Smirnov, 2012).

In the context of this research, a particularly significant advantage of interaction in a cluster is the possibility of achieving a synergistic effect through the cooperation of a multitude of actors, through which an "aggregate innovative product" is created as a special form of innovation.

Studying the economic aspects of the issue (Zagora, 2016; Frolova, 2015; Hove, 1998) gives grounds to assert that clusters represent a highly productive and competitive form of cooperation, due to which the use of the cluster approach to the organization of activities is possible not only in the economic sphere, but also in education. The problem of clusters in education is presented in modern studies in a variety of contexts from the point of view of analyzing the essence of the concept of clusters, the process of their formation, stages of development, and the effective use of cluster initiatives in the educational process.

For example, E.A. Afonina considers the educational cluster as a set of educational institutions of all education levels within a given geographical area, enterprises - suppliers of resources and employers, elements of the innovation system, as well as coordinating bodies and authorities whose activities are interrelated with nearby production and the development of the innovation system. At the same time, an educational cluster is effective, which has high productivity due to increased innovative activity, the finished product of which is competitiveness in the internal and external markets of knowledge and technology (Afonina, 2008).

In turn, K.S. Sokolova defines the educational cluster as a group of educational institutions localized in the same territory, forming an educational service as the final product, competing and interacting with each other and having around the suppliers the necessary factors of production, equipment, specialized services, infrastructure, research institutes, while strengthening Competitive advantages of each other (Sokolova, 2010).

M.Y. Baryshnikova focuses attention on the leading role of universities in cluster interaction, noting that the university today becomes a key participant (core) of clusters. The author believes that "in conditions when universities become full-fledged subjects of economic activity and begin to compete not only in the traditional markets for educational services and research, but also in the labor market and commercial development," their integration into the formation and development of territorial production Clusters is inevitable (Baryshnikova, 2012).

According to I. Ignatova, an educational cluster is a set of coordinated actors in order to

achieve a common strategic goal: "in the cluster, all actors support each other. Closeness to each other, internal communications, the presence of permanent personal contacts and common interaction facilitate communication and information transfer within clusters " (Ignatova, 2009).

T.G. Davydenko (2008) defines educational clusters as a set of actors coordinated on the basis of a common goal, while the goals can be global or local. The global goal assumes the formation of professional competencies among university graduates, while the local one implies the implementation of joint projects within the educational processes of various specialties and areas of training.

Studying the peculiarities of the development of the cluster approach in education in foreign countries we turned to the opinion Joseph Renzouli (the USA) (2006), the author of the enriching learning concept, who authored the possibility of including students in productive activities through a cluster approach. Having studied the concept of D. Renzulli's cluster interaction, we came to the conclusion that its content in many positions correlates with the author's understanding of the essence of this type of interaction. As a result of the analysis, we decided on the possibility of using certain elements of the technology described by D. Renzouli with the aim of developing the educational independence of future teachers.

In the process of research, we came to the conclusion that the effectiveness of the educational process organization aimed at developing student self-reliance increases with the implementation of the principles of cluster interaction identified by D. Renzulli, such as:

- Emphasis on the practical application of the material being studied and the skills developed.
- Independent selection by students and teachers of clusters in which they would like to participate.
- Integration of students from different groups and courses into groups with similar interests.
- Lack of a clearly structured plan or schedule.
- Management of the cluster using reliable methodology and information and advanced level materials by analogy with creative professionals and researchers.
- Providing opportunities for the development of numerous talents within the cluster through the division of labor.
- The allocation of special temporary blocks for the implementation of clusters.
- Exclusion of the traditional educational institutions' principles (Renzulli, 2006).

The above stated the possibility of substantiating one's own position, according to which interaction of students and specialists of external institutions, organized within the framework of a local educational cluster (LEC), which is a productive form of cooperation between university students and specialists of external institutions (one of the variants of solving the problem of educational independence development) potential employers, carrying out joint activities aimed at obtaining socially significant product based on the requirements of potential users and the resource potential communicating parties.

As the significant advantages of interaction organized within the framework of the local educational cluster, we have identified the following:

- direct inclusion of students in joint activity with professionals in the production of socially significant products,
- minimization of resource costs in the process of product creation by multiplying the potentials of the subjects of joint activities;
- the possibility of a short-term solution of actual training tasks that arise situationally in accordance with the needs of the subjects of the cluster and consumers;
- strengthening the practical orientation of interaction, sufficient for the emergence of its positive social effects.

In our opinion, among the positive social effects of cluster interaction are the following:

- improving the image of external institutions as partners and employers (the possibility of hiring the best specialists, reducing the costs of finding and training new employees);
- formation of a single information space;

- realization and development of individual characteristics of subjects of interaction (students and specialists of external institutions);
- increase of competitiveness and mobility of participants in interaction;
- production of a specific, socially significant product.

We are in agreement with the opinion of D. Renzulli, who notes that in clusters teachers should deliberately avoid any prescription in the content or processes developed and allow students to follow the research methodology of practicing professionals from the real world. Facilitators should only determine (by discussing with students) which product or service they will create and for which audience and then take the steps necessary to acquire resources, the necessary information for product production or service development.

Consequently, cluster members interact in the situation of freedom in choice of conditions, activity methods, and also of cluster interaction partners, which in turn leads to an increase in the individual responsibility of each for the result of joint activities, which can only be obtained if it is self-organized, and, students' educational independence as consequence.

## 4. Discussion

To evaluate the results of the study, let us turn to its experimental part. It should be noted that as an important component of the student's educational independence, we have been given the ability to generate and freely express new (non-ordinary) ideas was singled out. Criteria for this ability were the individual social creativity and the dialogic nature of interpersonal relationships.

Indicators of the individual's social creativity are the ability of a person to find fundamentally new, non-ordinary approaches to problem solving, as well as the success of embodying his own creative ideas and projects in the process of interpersonal interaction. In order to diagnose the level of social creativity, we used the method of determining the social creativity of the person (Fetiskin, Kozlov & Manuylov, 2009), which allows using self-assessment in non-standard situations of life activity to determine the level of a person's creative potential realized in the process of interaction with others.

After analyzing the data obtained in the process of diagnosing the social creativity of 197 students of the second year of bachelor's degree directions "Pedagogical education", we found that 6.9% of students in the control and experimental groups demonstrated a low level of creativity; The average level was registered in 79.3% of the control students and 82.7% of the students of the experimental groups, a high level was shown by 13.8% of the control group and 10.4% of the respondents in the experimental group (table 1).

**Table 1**

Distribution of students of the control (CG) and experimental (EG) groups at the staging stage in accordance with the level of individual's social creativity

group	level of individual's social creativity		
	Low	Medium	High
CG	6,9 %	79,3 %	13,8 %
EG	6,9 %	82,7 %	10,4 %

Analysis of tabular data indicates a significant predominance of the average level of social creativity of future teachers. We believe that the revealed indicators are evidence of sufficient creative potential of students, necessary for generating non-standard ideas, on the basis of which a qualitatively new value can be created as a result of cooperation.

The choice of such a interpersonal relations characteristic as dialogical as a criterion of educational independence is conditioned by the need for a free expression, exchange of opinions, thoughts and ideas between subjects of relations, based on their mutual acceptance and understanding. In the event that interpersonal interaction is characterized by a dialogic nature, it seeks to see and take into account the uniqueness of its partner, while the process of interaction itself acquires the status of valuable and significant.

Dialogic of interpersonal relations was measured by us with the help of the technique of S.V. Dukhnovsky "Dialogue scale of interpersonal relations" (Dukhnovsky, 2009). Parameters of dialogical are the self-worth and constructiveness of interpersonal relations, and self-worth is emotional, and constructiveness is the cognitive aspect of dialogisms. The data obtained as a result of the diagnostic of the dialogic of interpersonal relations are presented in table 2.

**Table 2**  
Distribution of students in the control (CG) and experimental (EG) groups  
in accordance with the level of interpersonal relations' dialogic

Indicators	Level of interpersonal relations' dialogic					
	Low		Middle		High	
	CG	EG	CG	EG	CG	EG
Dialogic relations (DO)	24,1%	24,1%	69 %	69 %	6,9 %	6, 9 %

From the data presented in the spreadsheet, it can be seen that high estimates of the index of dialogic of interpersonal relations, characterized by high self-worth and constructiveness, are characteristic only of a small number of respondents. The interpersonal relations of these students are open, natural in nature, in them the desire for cooperation prevails, the willingness to help and empathize with other people.

The middle level of dialogue between interpersonal relations was recorded in 69% of the respondents in the control and experimental groups. Interpersonal relations are characterized as fairly harmonious, but in comparison with high values, they are less flexible. Interpersonal relations, characterized by a low level of dialogue, recorded in 24.1% of the interviewed control and experimental groups, are of an unstable disharmonious nature. They are dominated by competition, the desire to take a dominant position, regardless of the situation of interpersonal interaction and the desire of a partner. Thus, after analyzing the obtained data, we came to the conclusion that the criterion of dialogical of interpersonal relations is not sufficiently expressed.

According to our understanding, the cycle of interaction must be completed by the creation and presentation of a qualitatively new value, i.e. socially significant product that meets the requirements of utility and novelty (originality). At the same time, the usefulness of the product of activity is determined by the presence of the target audience for its use, while the novelty (originality) characterizes the product as innovative, which, in turn, increases the degree of its demand and significance.

We can add that the creation of a socially significant value is the main constituent element of interaction, which ultimately determines the level of development of the students' academic independence. These indicators studying become possible in the process of including students in joint activities for the production and presentation of student products.

To this purpose the students were given the opportunity to choose the topic that they would like to explore in more detail in the cluster. In accordance with the topic chosen for the study, the students teamed up in cluster groups on the basis of common interests.

As the observations showed, the beginning of the cluster's work was characterized by the uncertainty and lack of specificity of the objectives of the interaction: the students represented the goal as the final result of the activity in the most general form, realizing that the result of the activity should be an original and socially significant product, but not projecting its content. To organize a group discussion, we used the method of collective generation of ideas, as one of the most popular methods of stimulating the creative activity of students. This method is also known as "brainstorming", "conference of ideas", "opinions' exchange method".

Students actively argued, offered non-ordinary versions of the embodiment of creative ideas, accepting, not criticizing each other's points of view.

Observing the students' activity at this stage of cluster interaction, we are firmly established in the belief that this activity contributes to the development of students' learning independence, namely, the ability to generate and freely express new (non-ordinary) ideas, which, in turn, actualizes the processes of creation a qualitatively new collective product of activity. In their turn, to present the products, students independently prepared multimedia presentations, the content of which indicated a serious and creative attitude to the production process of the product. Thus, participants in clusters demonstrated the use of "advanced level" materials, as well as specific information, the source of which was not only information resources, but also conversations with professionals and amateurs in this or that field of research.

The social significance of the products of different clusters was confirmed by the presence of real target audiences, which give meaning and direction to joint activities. So, for example, as a target audience, the participants in the cluster "Making and using bin-beggars (unfurnished furniture)" became owners of small apartments, large and large families with low income, tenants of removable, non-furnished apartments, i.e. Students, lovers of comfortable, comfortable and modern furniture.

Thus, it can be assumed that the above shows that the cluster form of organizing students' activities has a number of significant advantages in relation to traditional forms of education at University.

In our opinion the most significant of them are: providing students with freedom of research problem choice (personification), as well as conditions, methods of activity, partners of cluster interaction; emphasis on the practical application of the material being studied and the skills developed; providing opportunities for the development of numerous talents within the cluster through the division of labor; free and rapid exchange of information between the subjects of the cluster; unexpected formation of new combinations of human resources and ideas.

In order to control the level of social creativity of students, we re-used the methodology for determining social creativity of the person (Fetiskin, Kozlov & Manuylov, 2009). After analyzing the data obtained from the diagnostic of the social creativity of students, we found that in the control group there was an insignificant increase (from 79.3% at the staggered stage to 82.7% at the control stage) of the number of students with an average creativity level due to a decrease in the number of respondents With a low level of social creativity.

The experimental group students demonstrated a pronounced positive dynamics of the studied parameter. Thus, the number of respondents with a high level of social creativity increased significantly (by 37.9%). At the same time, the number of students with a middle level of the studied parameter decreased by 31%, while the low level of social creativity was not fixed (table 3).

**Table 3**

Distribution of students in the control (CG) and experimental (EG) groups at the ascertaining and control stages in accordance with the level of individual social creativity

<b>Distribution of students (%) according to the levels of individual social creativity</b>	



group	Low		Middle		Hight	
	Ascertaining stage	Control stage	Ascertaining stage	Control stage	Ascertaining stage	Control stage
CG	6,9	3,4	79,3	82,7	13,8	13,8
EG	6,9	0	82,7	51,7	10,4	48,3

We believe that the revealed positive dynamics in the students' social creativity development are subjects of cluster interaction is the result of the opportunity given to students to maximize their creative potential in the process of joint activity aimed at creating a qualitatively new value as a result of cooperation.

Each participant of the cluster at the stage of generating non-standard ideas was able to demonstrate and realize to the full his educational independence, taking an active part in modeling the future product of cluster interaction. At the final stage of the cluster's work, the joint activity of students was mediated by the need for public presentation of products as a result of the creative embodiment of their own creative ideas.

In the process of experimental work, we were convinced that not all students with sufficient creativity potential are able to freely express, present and defend their own creative ideas. This observation was a confirmation of the correctness of the choice as the next criterion for a culture of cooperation of such a characteristic as dialogic.

We can add that in the case when interpersonal interaction is characterized by dialogic, not only the aspirations of each subject for self-expression are realized, but the ability to observe and consider the uniqueness of their partner is revealed, while the process of interaction itself acquires the status of valuable and significant. Dialogic of interpersonal relations was measured by us with the help of SV Dukhnovsky's method (2009) "Dialogue scale of interpersonal relations" used at the control stage of experimental research. Data obtained as a result of the diagnostic of the dialogic nature of interpersonal relations are presented in table 4.

**Table 4**

Distribution of students in the control (CG) and experimental (EG) groups at the staging and control stages of the experiment in accordance with the dialogic interpersonal relations levels

Indicators	the dialogic interpersonal relations levels											
	Low				Middle				Hight			
	Ascertaining stage		Control stage		Ascertaining stage		Control stage		Ascertaining stage		Control stage	
	CG	EG	CG	EG	CG	EG	CG	EG	CG	EG	CG	EG
Dialogic relations (DR)	24,1	24,1	20,7	6,9	69	69	69	75,9	6,9	6,9	10,3	17,2

From the data presented in the table, it can be seen that high estimates of the index of dialogic of interpersonal relations, characterized by expressed self-worth and constructiveness, were characteristic of a small number of respondents (6.9%) at the staging stage of the study. At the control stage of the experiment, the number of students with a high level of dialogic interpersonal relations in the control group increased slightly and amounted to 10.3%, while in the experimental group their number increased from 6.9% to 17.2%. Recall that these students are "open" to communication, in interpersonal interaction, show a desire for cooperation, combined with a willingness to speak and defend their own position. The number of students in the control group, whose interpersonal relations are characterized by a low level of dialogic, decreased by 3, 4%, while in the experimental group there was a significant decrease in the number of such students from 24.1% to 6.9% in the control phase of the experimental activity.

The final cycle of cooperation and the most significant, in our opinion, component of cooperation as a process, is the creation of a qualitatively new value that is a socially significant product that meets the requirements of utility and novelty (originality). Defining these product characteristics as a result of cluster interaction, we proceeded from the fact that the usefulness of the product of activity is determined by the presence of a target audience for its use, while the novelty (originality) characterizes the product as innovative, which in turn increases the degree its relevance and importance. In order to evaluate the products we obtained, we used the specially developed "Student Product Evaluation Form" – SPEF. This form is a valid and reliable way of assessing the quality of products as a result of achievement. SPEF includes two components. The first component is related to the process of creating products and includes eight items. Each of these items consists of three parts: a key concept, its description and examples for a clearer representation of the essence of the concept. The second component refers to the overall quality of products and includes seven items (Sokolova, 2010).

It should be noted that the results of the questionnaire confirmed the existence of a problem that occurs at the initial stages of product development: 48, 2% of students noted that they experienced difficulties due to the uncertainty and lack of specificity of the purpose of the interaction, the lack of a clear understanding of the nature of the product and its content at the initial stage of the cluster. At the same time, during the subsequent discussion of the data obtained, the clusters explained that this problem was successfully and quickly corrected in the process of joint activity, which led to a rather high level of "fulfillment of the goals set in the plan," according to the majority of students (75.8%). Realizing the assessment of the products in general, the students appreciated the originality of the idea: the "5" ("outstanding level") and "4" ("above the average") grades were put out by 82.7% of the students. The factor "thoroughness, attention to detail and general pride on the part of the student" was highly praised: 86.2% rated it as "5" and "4".

Thus, analyzing the results obtained during the forming experiment, we came to conclusions confirming our assumption that the increase in the effectiveness of the process of development of the student's educational independence can be achieved if a cluster interaction is introduced in the educational process of the university, involving the inclusion of students in Joint activity of a self-organizing character, the meaningful core of which is the expressed intention to create value as a socially significant result.

Particularly it should be emphasized that the local educational cluster is a productive form of cooperation between university students and specialists of external institutions.

This circumstance determines the effectiveness of its use in the process of developing the student's educational independence, since it "forces" students to solve their tasks independently, and also contributes to the formation of a sustainable motivation to participate in educational and professional activities.

Note that the reliability and validity of the results obtained is ensured by a set of research methods that are adequate to the goals, objectives, object and subject of the study, the duration and reproducibility of the results of the study; the consistency of the results with the requirements that are imposed on pedagogical research; using statistical methods of data

processing.

Determining the place of the results obtained in the course of the study, it should be noted that the problem of developing educational independence is universal and, at the same time, complex and multifaceted. A decisive role in solving this problem belongs to the system of higher education. We believe that the research carried out to some extent will help resolve the stated problem, and it can also become the basis for its new promising developments.

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## 5. Conclusion

The scientific value of the article is to substantiate the developing idea university students educational independence through cluster interaction implemented within the local educational cluster and involving the cooperation of the subjects of this cluster: students and specialists from external institutions (potential employers) - to participate in joint activities, the meaningful core of which is expressed Intention to obtain a socially significant result product.

Significantly, the author's interpretation of the concepts "educational independence", "local educational cluster" is proposed in the article, and also the results proving the prospects of using cluster interaction realized within the local educational cluster in the process of developing the educational independence of university students are presented.

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