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**CREATIVE COMPETENCE AND REFLEXIVE COMPETENCE AS
REQUIRED CHARACTERISTICS OF A MODERN STUDENT**

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Abstract

The article describes development of competitiveness, creative and reflective competence in students as required characteristics in the modern constantly changing society. The authors suggest developing these characteristics through various disciplines, using opportunities for additional and distance education, extracurricular activities, research activities, using reflexive methods and forms. As a part of the comprehensive study, the author presents a model for developing competitiveness, creative and reflective competence in students. The model involves the following components: a purpose determined by the government and the educational system to develop the personality of a modern student; methodological approaches (system-activity, competence, hermeneutic) and principles (openness, continuity, flexibility, understanding, dialogue and reflexivity); a substantial component reflected in various activities (contests, grants, conferences, competitions, etc.); an organizational component which involves development of competitiveness, creative and reflective competencies and use of complex methods, forms and means; a modular component involving implementation of a program consisting of four modules (disciplinary, training, extracurricular and coursework). The article describes the results of diagnostics of competitiveness, creative and reflexive competences of students of the experimental and control groups at different model implementation stages. The experimental and control groups were compared using the Pearson χ^2 test and the Spearman test.

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Keywords: Competitiveness of student personality, creative competence, reflexive competence, scientific co-creation, reflexive methods, meta-subjects.



1. Introduction

Competitiveness, creative competence and reflexive competence as relevant characteristics of the modern student are determined by social, economic and political changes occurring during the last decades in Russia. Today, a person has to be able to analyze and work with a large flow of information, think critically, solve any problem, be open to new things and create new things, develop free creative intelligence, work in a team, and effectively position himself on the labor market. These requirements actualize training of a modern student taking into account humanistic, humanitarian, person-centered, system-activity, competence and other approaches. These approaches are competence-based and system-activity-based involving development of competitiveness, creative and reflexive competence of the student.

Competitiveness is “a set of integrated sustainable qualities, such as rational cognitive activity, dedication, hard work, creativity, criticality, riskiness, resistance to stress, and leadership contributing to successful results in any activities” (Zhdanko & Chuprova, 2013). Creative competence is “a set of creative, communicative, team competencies and personal qualities (motivation to succeed, curiosity, risk appetite, initiative) aimed at accepting and creating a new pedagogical product, generating ideas, solving pedagogical problems, potentially causing further formation of student creative competence” (Shumovskaya, 2013). Reflexive competence is “the ability of an individual to carry out reflexive activity, desire for self-development and self-realization (Usheva, 2017).

The specificity of development of competitiveness, creative and reflexive competences is based on human abilities to development, self-realization and self-actualization of the individual. This is consistent with the "principle of human-education" (Khutorsky, 2012), according to which "it is a human who is the main subject of his education" and "education involves identification and implementation of the inner potential of a human in relation to himself and the outside world".

We propose to form these characteristics by studying the variable part of the Federal State Educational Standards of Higher Education (author's course “Personal Career Management”), using additional and distance education methods (author's courses “Self-management: career planning” and distance course “Personal Career Management or how to become a leader”), involving students in extracurricular activities (the forum “Strategy of professional development”; the conference “Analysis of professional samples”; competition-presentation of projects “My career”; Auction pedagogical ideas; “Lieder's school” for first year students) (Zhdanko, 2012); developing scientific cooperation as a “method for interaction between the subjects of the pedagogical process in research activities: cross-cutting (monitoring and dialogue) and sequential (“meeting”, understanding, thinking, activity) ones (Shumovskaya, 2013), using reflexive methods (dialogue and meta-disciplines) and forms (reflexive seminar, discussions, analytical workshop, round tables, Ballintov groups, etc.) (Verbitsky, 1991; Mkrtychyan, 2010; Shkerina, 2015; Usheva, 2017; Meierdirk, 2017).

2. Problem Statement

The comprehensive research aims to identify ways of forming competitiveness, creative and reflexive competence of students through scientific co-creation and reflexive methods.

3. Research Questions

The comprehensive study was carried out according to a certain model consisting of the following components: the purpose to form a personality of a modern student characterized by competitiveness, creative and reflective competence; methods (system-activity, competence, hermeneutic) and principles (openness, continuity, flexibility, understanding, dialogue and reflexivity); a substantial component involving research activities (contests, grants, conferences, Olympiads, etc.); an organizational component involving development of competitiveness, creative and reflective competencies and use of complex methods, forms and means; a modular component involving implementation of a program consisting of four modules (disciplinary, training, extracurricular and coursework). Reproductive, heuristic, research, and reflexive methods, individual, group and frontal formats (“teacher-student”, “student-student (s)”, “student-teacher”) and forms (Personal Achievement Portfolio, “Creative” Diary) were used.

The modular program consisted of four modules (disciplinary, training, extracurricular and coursework (course module)) aiming to individualize and differentiate development of competitiveness, creative and reflexive competences.

The disciplinary module was a set of classes within the disciplines “Methods of research in pedagogy”, “Methods and methodology of scientific research in pedagogics”, “Psychological and pedagogical workshop”, where topics of the classes were associated with curricula of these courses (e.g., Theoretical methods of educational studies", " Empirical methods of pedagogical research ", " Research work in pedagogy ", " Project work ", " Presentation of a research product ", " Decision of pedagogical situations", etc. which enriched disciplines substantially and methodically.

The purpose of the training module was to develop competitiveness, creative and reflective competence of students. It consists of the following components: personal growth training, creativity training, communication and team training, reflexion development training.

The out-of-class module accompanied development of student competitiveness, creative and reflective competencies, being a part of extracurricular activities. It involved participation in student scientific communities, competitions, grants, pedagogical competitions, conferences, publication of research papers.

The course module consisted of the following courses: “How to start a Scientific Career: How to Write and Present Research Papers”, “Self-Management: Career Planning”, “Managing Your Personal Career or How to Be a Leader”, “Professional Interaction Based on the Reflexive Approach”, “Reflexive Interaction in professional activity” and others (Zhdanko, 2012; Shumovskaya, 2013).

There were four implementation options for the modular program. The first option included all the modules. Within the extracurricular module, a competition of research projects “My Career”, a forum “Strategy of professional growth”, conferences "Analysis of professional samples", “Auction of pedagogical ideas” were held (Zhdanko, 2012).

The second option consisted of disciplinary, training and extracurricular modules. In the second version of the disciplinary module, the diary “Creative” was modernized, the Personal Achievement Portfolio was used, organization of classes changed, various tasks (article, report, scientific research project, etc.) were added to the training module (Shumovskaya & Chuprova, 2016).

The interaction was based on dialogue communication which included interaction and interpersonal relationships. Dialogue interaction was both internal and external. The dialogue aims to develop understanding in students. It is an integral form of thinking. "I have an identity of" (a future specialist, student, ideal professional, etc.) is one of the objects of thinking. This internal dialogue causes self-change through self-knowledge which is the basis of reflexive competence.

According to V.I. Slobodchikova et al., the dialogue forms a subjective attitude in the relationship between the teacher and the student: "The teacher's attitude to the student as an object of training and education makes the pedagogical process childless and impersonal. Within such process, it is impossible to understand human subjectivity and develop a human in a man ..." (Shchedrovitsky, 1994; Thorpe, 2000; Slobodchikov, 2013).

Implementation of meta-disciplines allowed us to "exit" from educational activities which made it possible to transfer student's activities from a subject level to a meta-discipline level. Reflexive activities alternated with subject ones (in training, scientific, and educational processes): "meta-disciplinary results, the ability and willingness to independent search for solutions, the ability to evaluate and make decisions" (Usheva, 2017).

In the first two options, we worked with control (C1, C2) and experimental groups (E1, E2) within variable disciplines. The third option of the modular program implementation included only an extra-class module (contests, writing research papers, abstracts, conference reports, grant application, etc.). The fourth option included all the modules in a different sequence: coursework - extracurricular - disciplinary and training.

Organizing all the modular program options, we focused on obligatory (class activities) and additional (research activities, training courses) education forms and levels of competitiveness, creative and reflective competence. The following conclusions were made: the modules can be combined, mastered separately, vary when studying different disciplines; each module must be preceded by diagnostics; within each option, it is necessary to develop individual educational trajectories for each student.

Thus, the modular program for developing competitiveness, creative and reflexive competencies of the student was optimal due to the specific nature of developed characteristics with regard to their instability and dynamism.

4. Purpose of the Study

The research aims to implement a model for developing competitiveness, creative and reflexive competences through scientific co-creation and reflexive methods which are key interaction methods in experimental groups.

5. Research Methods

The following research methods were used:

- theoretical: study and analysis of philosophical, philological, psychological, pedagogical literature, federal state educational standards of higher professional education, pedagogical modeling, generalization, comparison;
- empirical: observation, experiment, analysis, evaluation, testing, questioning, understanding;

- mathematical: data registration, qualitative analysis of quantitative parameters, mathematical and statistical processing of experimental results, etc.

To implement the tasks of the comprehensive study, we used the following methods: a questionnaire for determining individual reflexivity suggested by A.V. Karpova, a technique for determining development of skills required to understand oneself and others (an adapted version of the “Q - Sort” method), a technique for studying reflexive analysis (S.D. Neverovich, N.V. Samoukina, E.N. Kuchumova), a method for determining cooperative reflection (T. Usheva, E. Panomoreva, E. Paravian) (Karpov, 2003; Usheva, 2017), a test “What is your level of competitiveness” (Andreev, 2004), a method “Self-assessment and assessment of student personality competence” (Bishov, 2006), a questionnaire “Student personality competitiveness ” (Zhdanko, 2012), a questionnaire of participants of the competition of creative projects "My Career "(Shumovskaya, 2013), a questionnaire of participants of the competition of research projects of ISLU students "Science. Creation. Perspective” (Shumovskaya, 2013).

6. Findings

Based on the data analysis, we determined the level of development of student competitiveness (Zhdanko, 2012). The data are presented in Table 1.

Table 01. Results of student competitiveness development diagnostics at the initial stage of the experiment

Group / Level	High		Medium		Low	
	Number of students	%	Number of students	%	Number of students	%
EG (100 students)	9	9%	41	41%	50	50%
CG (70 students)	8	11,4%	30	42,9%	32	45,7%

($\chi^2=0,434$, $p=0,605$; no difference)

At the initial stage of the experiment, the students of the experimental and control groups have equal levels of competitiveness. It was low.

The results identified the need for development of student competitiveness.

Involvement of students into various activities helped identify the dynamics of student competitiveness development at the beginning and end of the study. The dynamics is presented in Table 2

Table 02. Comparative data on the level of student competitiveness in EG and CG at the beginning and at the end of the experiment

Level / experiment stage	EG – CG
Beginning of the experiment	$\chi^2=1,572$ $p<0,456$
End of the experiment	$\chi^2=76,488$ $p<0,000$

At the beginning of the study, there were no differences between the groups, but at the end of the study the changes were very pronounced (0,1% significance level, italicized).

In the EG, there were no students with a low (insufficient) level of competitiveness, indicators of high and medium levels improved by 20% and 41%, respectively. In the CG, an increase in the indicators was much lower: the indicator at a high level did not change, the indicators at medium and low levels improved by 8,5%.

The diagnostics of creative competence identified the following changes (Shumovskaya & Chuprova, 2016).

Based on the results of the first option of the modular program with experimental (E1) and control (C1) groups, the following conclusions were made: groups (E1, C1) were compared using the Pearson χ^2 test (criterion value = 16,2, $p < 0.001$) which identified differences in the experimental group (E1) and no differences in the control group (C1) (criterion value = 2,20, $p < 0,33$). This fact means that level distribution of students changed in the experimental group (E1), and did not change in the control group (C1) (Table 3).

Table 03. Comparison of the experimental (E1) and control (C1) groups

Levels of creative competence of a student	E1 (%)		K1 (%)	
	Beginning	End	Beginning	End
Low	70%	10%	50%	41%
Medium	30%	70%	50%	50%
High	0	20%	0	9%

The second option of the modular program involved participation of students from experimental (E2) (20 students) and control (C2) (8 students) groups. The test was based on the Pearson χ^2 test (criterion value = 20,66; $p < 0,0001$). It identified significant differences between the students of the experimental group (E2) and did not identify differences between the students of the control group (C2) (criterion value = 2,4, $p < 0,121$). In this case, in the experimental group (E2), level distribution of students changed significantly, and in the control group (C2), it did not change (Table 4).

Table 04. Comparison of the experimental (E2) and control (C2) groups

Levels of creative competence of a student	E2 (%)		C2 (%)	
	Beginning	End	Beginning	End
Low	80%	10%	88%	38%
Medium	20%	65%	12%	62%
High	0	25%	0	0

The results of the third and fourth options of the modular program speak for an increased creative competence development level (Table 5).

Table 05. Results of conditionally experimental groups (E3, E4)

Levels of creative competence of a student	E3 (%)		E4 (%)	
	Beginning	End	Beginning	End
Low	44%	11%	51%	0
Medium	56%	78%	49%	92%
High	0%	11%	0%	8%

Thus, the results for all options of the modular program aiming to develop creative competence in students allowed us to conclude that each option of the modular program is effective for creative competence development.

The diagnosis of reflexive competence required a comparison of results of external and internal observations which were carried out separately for the EG and the CG (Usheva, 2017). The comparison was carried out using the Spearman interrelation criterion, r . (Table 6)

Table 06. Comparison of external and internal observation results for EG

Index	1 st observation	2 nd observation	3 rd observation	4 th observation	5 th observation	6 th observation
Self-determination	-0.348	-0.123	0.717	0.690	0.938	0.831
Collective task	-0.059	0.309	0.671	0.581	0.897	0.811
Responsibility	-0.080	0.242	0.653	0.844	0.800	0.820
Step-by-step organization	0.174	0.352	0.786	0.886	0.880	0.698
Comparison of results and the purpose	0.539	0.048	0.867	0.878	0.729	0.799
Total index	-0.178	0.180	0.878	0.910	0.934	0.941

The results showed that at the initial stage there were difficulties in self-determination of students of the EG. For the students of the EG, it was difficult to set goals, formulate and describe results of activities. This is due to the peculiarities of reflection development. The mechanism is “launched” when encountering any difficulties. A meaningful way out allowed them to see the positions of participants, analyze the goals, correlate them with the results, carry out activities, take responsibility for them, and use self-analysis and situation analysis skills.

While developing reflexive competence, students master reflexive skills under specially created pedagogical conditions. They master the skills to make decisions and predict their consequences, acquire the skills required for analysis of their own activities (its progress and intermediate results), positioning and self-determination in a problem situation, as well as they master collective communication techniques. Through reflexive methods, understanding and consciousness are achieved. This is due to mutual penetration of knowledge and practical activities of students.

7. Conclusion

Development of competitiveness, creative and reflective competence of the student is a long and laborious process. It requires teaching cooperation in training and education processes, changes in training management and organization.

Conscious development of competitiveness, creative and reflective competence of the student influences both professional development and “cultivation” of a human. This helps graduates achieve life-long goals, be more sustainable and competitive in life.

In the professional context, students become motivated to work in education, are aware of the social significance of their future profession, and able to bear responsibility for results of their professional activities. Students demonstrate willingness to interact with colleagues, work in a team, develop modern training technologies with regard to the nature of the educational process and personal development. They are able to cooperate with other students. They are independent and creative.

Development of competitiveness, creative and reflexive competencies in students is relevant for improving effectiveness of educational and research activities, development of a modern person who meets all the social demands. Analysis of the scientific literature and research results allowed us to conclude that students need to develop competitiveness, creative and reflexive competence. The important results are transition of students to a new development level. This transition results from student’s awareness and qualitative assessment of the nature of methods implemented in modern society.

References

- Andreev, V.I. (2004) *Competitive Studies. Training course for creative self-development of competitiveness*. Kazan: Center for Innovative Technologies.
- Bishov, A. (2006). *Effective and rational self*. Moscow, Omega-L.
- Karpov, A.V. (2003). Reflexivity as a mental property and a method for its diagnosis. *Psychological Journal*, 24, 5, 45-57.
- Khutorskoy, A.V. (2012). *Meta-subject content in new generation standards*. Retrieved from: https://elibrary.ru/download/elibrary_18027774_17109200.pdf
- Meierdirk, C. (2017). *Reflections of the student teacher*. Charlotte Meierdirk. *Reflective Practice*, 18, 1, 23-41.
- Mkrtchyan, M.A. (2010). *Development of collective learning methods*. Krasnoyarsk: KSPU n.a. V.P. Astafieva.
- Shchedrovitsky, G.P. (1994). Reflection in activity. *Methodology issues*, 3-4, 76-121.
- Shkerina, L.V. (2015). *Methods of identifying and evaluating the level of formation of professional competencies in students - future teachers of mathematics*. Krasnoyarsk: KSPU n.a. V.P. Astafieva.
- Shumovskaya, A.G. (2013). *Formation of creative competence in future teachers through research work*. Irkutsk, ISLU.
- Shumovskaya, A.G., Chuprova, O.F. (2016). *Scientific co-creation as a way to form teacher’s creative competence*. Irkutsk, MSLU EALI.
- Slobodchikov, V.I., Isaev, E.I. (2013). *Human psychology: an introduction to psychology of subjectivity*. Moscow. Publishing house PSTGU.
- Thorpe, M. (2000). *Encouraging students to reflect as part of the assignment process*, *Active Learning in Higher Education*, 1, 1, 79-92.
- Usheva, T.F. (2017). The role of a teacher for reflexive support of students in the educational process. "Bulletin of SUSU" Series "Education. Pedagogical sciences, 9, 1, 42–51.
- Verbitsky, A. A. (1991). *Active higher education: a contextual approach*. Moscow. Higher school.

Zhdanko, T.A., Chuprova, O.F. (2013). Designing of the educational and professional space of the university as a pedagogical condition for developing competitiveness in students. *Scientific and methodical electronic journal "Concept"*, 10 (26), 46-50.

Zhdanko, T.A. (2012). Educational and professional space of the university as a pedagogical condition for developing competitiveness in students. *Magister Dixit: electronic scientific and pedagogical journal of Eastern Siberia*, 2, 259-279. Retrieved from: http://md.islu.ru/sites/md.islu.ru/files/rar/zhdanko_v_razdel_sobytiya.pdf