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## The Efficiency of Training a Teacher at Higher Education Institutions of Different Profiles

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**Abstract:** The article reveals the problem of empirical research of training higher education institutions teachers in the context of the master's degree programme. This study specifies and adapts the methods of diagnostics, criteria for conducting teacher training which are reasonable, psychologically and pedagogically approved and could be implemented in the institutions of higher education of different profiles. It was found out that the training of a teacher within the boundaries of the master's degree programme of institutions of higher education is an actual task of three-level training of a specialist in Ukraine and requires a differentiated approach for institutions of higher education of various profiles. The components of the programme, based on their comparative characteristics, the status of teacher training in higher education institutions of different profiles with the application of certain criteria, indicators and levels were determined. Comparative analysis of the results of determining the levels of activity empathy and pedagogical reflection formation at the final stage of the study showed objective differences in teacher training in the context of the master's degree programme of institutions of higher education of different profiles. The perspective directions of the problem under consideration are the study of the didactic conditions of effective teacher training for the master's degree in higher education and the development of the Concept of master's training in higher education institutions on this basis, the analysis of the influence of the main factors on the formation of a teacher of a higher educational institution in the context of a master's degree programme, in the profile professional training.

**Keywords:** *Master's degree programme, higher education institution, higher education institution of pedagogical, non-pedagogical profile, pedagogical reflection, reflexive technology of a teacher's training.*

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### Introduction

The problem of assessing the professional competence of the faculty staff is of great importance for all higher educational institutions of the world education system. There are special research centers in the USA and the EU countries that develop methodological recommendations with a wide range of indicators which contribute to the objective assessment of the teacher's scientific, innovative and pedagogical potential. Leading research universities form their scientific and pedagogical contingent at the national and local level involving talented teachers from all over the world (Aslan & Bakir, 2017; Isaeva, 2003; Kert, 2019).

In the system of higher vocational education, there are several methods for assessing the professional qualities of the teaching staff at different levels to analyzes not only the qualifications and level of teaching competence, but also pedagogical skills, their ability to form students' competencies (Berk, 2005; Calaguas, 2012; Isaeva, 2013; Kim & Lisienko, 2012; Miroshnikova, 2015; Zimniaia, 2004). Considering the type of the university in the system of the national higher education, the aforementioned approach to the formation of requirements for a teacher as a

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professional becomes of particular urgency, moreover some aspects of professional evaluation, adapted to Ukrainian realities and educational policy are of a professional interest to the problem of training a teacher according to the master's degree programme.

The general qualification requirements for the teacher of a foreign higher education institution presuppose that the applicant for this post has two master's degrees: in the vocational sector and in the field of education. The growth of a teaching career as a result of research activity is inherent in research universities, while in pedagogical universities priorities are shifted towards other factors (Farrell, 2009; Sarac, 2018; Spooren, Mortelmans & Denekens, 2007). The level of the subject preparation of the teacher of the pedagogical university is evidenced to be important to have experience in teaching disciplines in compliance with Bachelor's or master's degree programme, and for a lecturer at a research university it's necessary to have a practice in teaching postgraduate and doctoral students and be active in scientific work. Moreover, the teacher has to know in detail the content of the main textbooks, concepts, approaches in certain field, keep track of publications in scientific journals, be a member of several professional societies, create textbooks, curricula, web sites, prepare presentations for teaching conferences. Along with this, foreign higher education institutions (in particular, in the USA) sponsor their teachers to study specialized disciplines with the aim of obtaining additional qualifications, especially in the field of higher education pedagogy and new educational technologies. Teachers' mastery assumes that he must acquire basic knowledge of higher education pedagogy in a foreign university. Among the main directions of training teachers in compliance with the master's degree programme include:

- psychology, sociology and philosophy of education;
- methodology and methods of studying education as a sphere of activity;
- technology of educational activity and ways of its evaluation;
- social, ethnic and cross-cultural factors in higher education;
- pedagogical methods and their comparative effectiveness (University of Ottawa, 2014; Weinberg, Belton & Masanori, 2009).

In accordance with these directions, and in addition to their subject area, teachers must: know the modern requirements for graduates in the field of their specialization concerning knowledge and skills; be able to conduct research on the effectiveness of a particular educational technology; see the difference in teaching adult and young students and to provide this in organizing the educational process; know the specific features of organizing the educational process for students suffering from chronic diseases; be able to organize an educational process for foreign students; use active teaching methods, including discussions, teamwork, business and other games (American Association of State Colleges and Universities, 2006; Isaeva, 2013; University of Ottawa, 2014; Yurevich, 2013).

As the National Doctrine of Education Development of Ukraine in the 21st Century and the Draft Concept of Pedagogical Education Development (Ministry of Education and Science of Ukraine, 2018) highlighted the priorities of the state policy in national education, among which the need for integration of Ukrainian education into the European and world educational space is specified, thus the requirements for the lecturer of the research and teaching universities to have foreign experience in training a teacher of higher education at the level of the master's degree programme are of particular importance. Instead, the formation of a new type of a teacher in the absence of the Concept of Masters of Higher Educational Institutions in Ukraine is carried out on an established basis without a radical rethinking of its functions in the new conditions, without taking into account the specifics of professional activities in higher education institutions of different profiles.

The active formation of a research university as a leading type of higher education institution in Ukraine causes the creation of a new generation of teacher training system and the need to develop an appropriate innovative concept for a new Ukrainian model of a higher education institution.

#### *Aim and tasks*

The research reveals the study of effectiveness and problems of the sufficient preparation of a future teacher of higher education in compliance with the master's degree in institutions of higher education of various profiles.

#### *Objectives of the study*

1. To analyze the efficiency of teacher training in compliance with the master's degree programme in institutions of higher education of different profiles;
2. To distinguish and adapt well-known psychological and pedagogical methods of diagnostics, criteria for monitoring teacher training on the master's degree programme in institutions of higher education of different profiles;
3. To outline the strategic directions of teacher training to obtain master's degree in higher education institutions of pedagogical and non-pedagogical profiles.

## Research Method

This research is built upon empirical and statistical methods to be used for conducting this experimental study which is aimed at analyzing the efficiency of teacher vocational master's degree training programme. This study used quantitative data collection approach. The research was split up into three basic stages like prior-to-the-experimental, while-experimental and after-experimental ones each using *empirical methods* (analysis of philosophical, psychological and pedagogical, sociological literature and regulatory documents on the topic of research, the synthesis of empirical material (surveys) on the problem of training a teacher for a master's degree); *experimental methods* (observation, questioning, ranking, testing, expert evaluation, recording of learning outcomes); and *analytic methods* (descriptive statistics, mathematical-statistical analysis: correlation analysis  $r$  - Spearman,  $t$ -criterion of Student);

The research was twice conducted among students during the four academic years (2013-2017) – for the first time – from 2013 to 2015, for the second – 2016-2017 – among the master's degree students in Khmelnytsky humanitarian and pedagogical academy (specialty “Pedagogy of a high school” - experimental group E1 – 30 people), Mykolaiv National University named after V. O. Sukhomlynskyi (specialty “Teacher of Distance Education Teacher” (011 “Educational, Pedagogical Sciences”) and “Management of Educational Establishment. Teacher” (073 “Management”) – experimental group E3 – 46 persons), Admiral Makarov National University of Shipbuilding (Mykolaiv) (specialty “Mechanical Engineering. Teacher” – E4 experimental group – 26 people). Overall, the study involved 132 Master programme students and 12 faculty members of the above-mentioned higher education institutions (see the timeline of the study, Figure 1).

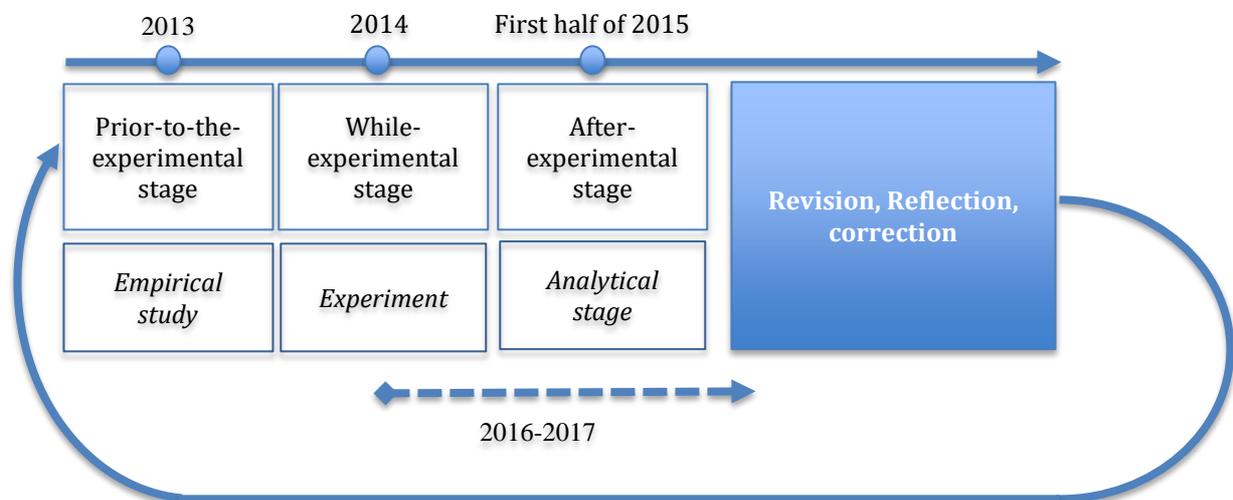


Figure 1. The timeline of the study

Throughout the period of 2013 and 2015, 1190 teacher-students were trained to obtain the master's degree, lecturers and teachers were surveyed at higher institutions situated in Khmelnytsky (the Khmelnytsky humanitarian and pedagogical academy), Mykolaiv (Admiral Makarov National University of Shipbuilding and Mykolaiv National University named after V. O. Sukhomlynskyi), Kyiv (National Pedagogical Dragomanov University) and Cherkasy (Bohdan Khmelnytskyi National University of Cherkasy) to explore the situation with teacher vocational training on the master's degree programme.

To ensure representativeness of the sample size the exclusion criteria were applied. They were as follows: student age, major, lecture/teacher/tutor willingness to participate in this study, location of the institution. Following the above, the population size decreased to 144 people. Then, due to online Sample Size Calculator, it was established that the required sample size was 65 people considering that  $N$  (population size) = 144, prevalence (as a decimal number, for example: 1% = 0.01), confidence interval = 7.31, and  $e=0.05$  at 95% confidence level. Therefore, the obtained figure was used to form the groups for this study. Therefore, the experimental group E1 (the Khmelnytsky humanitarian and pedagogical academy (specialty “High school Pedagogy”) involved 30 people (18 females and 12 males), E2 (Mykolaiv National University named after V. O. Sukhomlynskyi (specialty “Distance Education Teacher” (011 “Educational, Pedagogical Sciences”) – 30 people (21 females and 9 males), E3 (“Management of Educational Establishment. Teacher” (073 “Management”) – 46 persons (34 females and 12 males) and E4 (Admiral Makarov National University of Shipbuilding (Mykolaiv) (specialty “Mechanical Engineering. Teacher”) – 26 people (17 females and 9 males).

The tests were administered before and after the experiment. Those were the methods of “Balance Emotional Empathy Scale” (BEES) by Mehrabian and Epstein (Tutushkina, 1996), “Diagnosis of the empathic abilities level” by Boyko (Psychology of a happy life, n./d.) and diagnosis of the empathy level by Yusupov (Psychology, n./d.), the Varban's (1998) method “My symbol of life's success”, methods of “Diagnosis of communicative characteristic features of personality” (VseTesti, n./d.) in the form of self-esteem.

*Data Collection Techniques*

Several quantitative research techniques were used to collect the data, including: the tests above ("Balance Emotional Empathy Scale" (BEES), "Diagnosis of the empathic abilities level", "My symbol of life's success" and "Diagnosis of communicative characteristic features of personality"), observation results, questionnaires, tests, expert evaluations, records of students' learning outcomes.

*Data Analysis*

Descriptive analysis was used to process the data obtained through the surveys and tests followed by correlation analysis with  $r$  - Spearman,  $t$ -criterion of Student.

**Results and Discussion**

*The purpose* of training teachers studying for the master's degree in higher education is determined by two levels of its provision: internal and external. At the internal level, this is a study of professional self-consciousness, reflected in the formation and development of a positive professional I-concept of a teacher; the study of the system of professional qualities, embodied in the development of individual psychological properties of the person and mechanisms for their conscious actualization and generalization (Gura, 2006).

At the external level, this is the awareness of a graduate student of a higher educational institution: the concepts of professional teacher's activity in a higher educational institution (a typical model of professional activity, specified criteria and indicators of efficiency, components of professional competence); the essence of the teacher's professional development in a higher educational establishment (the peculiarities and regularities of professional formation and development, in particular: stages, negative factors of the professional environment, ways and variations of the development of this process); real "self" image (assessment of own abilities, professional qualities, level of professional knowledge, skills, characteristic peculiarities); models of psychological and pedagogical competence (the essence of this phenomenon, its place and role in the process of professional pedagogical activity, structural components, their significance, processes and mechanisms of actualization, development and generalization); forms and methods of self-organization (self-diagnosis, self-development, self-expression and self-affirmation); components of a positive professional self-concept: the mechanisms and processes of transformation of the "self-real" into a professional environment ("self-effective, professional", "self-normative, professional"); the essence of the cognitive activity, the forms and methods of updating this process (Gura, 2006; Machynska, 2013).

*The effectiveness* of general pedagogical training depends on two interrelated groups of factors, among which are the quantity (the number of study hours devoted to the study of compulsory and selective educational subjects and the content of curricula and disciplines that must ensure the content of pedagogical education of graduate students) and the quality that predict the presence of subjective and objective factors. Subjective factors include the professionally relevant qualities of a teacher and the personal qualities of graduate students that are interconnected. The objective factors comprise the professional skills of scientific and pedagogical lawyers, the number of masters, material and technical support of the educational process.

*The expediency* of the future teacher training system in the conditions of the master's degree programme leads to the formation of psychological and pedagogical competence of a teacher of a higher educational institution as a complex of personal and professional qualities, manifested in the following indicators of forming psychological and pedagogical competence of a teacher of higher education: the success of the results of professional psychological and pedagogical training; level of proficiency in basic professional skills; level of awareness of the essence of psychological and pedagogical competence of the teacher; the level of development of reflexivity as the unity of intellectual-reflexive and personality-reflexive forms; the dynamics of professional self-consciousness, which manifests itself, on the one hand, in the positive, mature I-concept, on the other - in the internal positive motivation of professional activity, the awareness of oneself as a teacher of a higher educational establishment; the development of the thinking activity of a teacher of a higher educational institution aimed at his professional self-organization, which results in updating the processes of self-knowledge, self-training, self-expression and self-affirmation in a professional environment (Gura, 2008).

On the basis of the results of the theoretical analysis of scientific and pedagogical sources, it has been determined that the essential components of the formation of general pedagogical competence of future teachers in compliance with the master's degree programme are: content, organizational, motivational, and diagnostic.

*The organizational component of the research*

The analysis of the results of survey held at the prior-to-the-experimental stage of the study showed that there are significant differences in the organization of psychological and pedagogical teacher training of the master's degree students in higher education institutions of different fields (Table 1).

Table 1. A set of indicators seen as the organizational components of teachers' training in compliance with the master's degree programme to compare

#	Experimental Groups	Group E1 & Group E2	Group E3 & Group E4
1	Presence of general pedagogical preparation at the 1st general educational qualification level «Bachelor»	prerequisite	not required
2	Status of subjects of general pedagogical direction in the curriculum	required	to be elected
3	Signs of the system in teacher training	system approach	lack of signs of the system
4	The percentage of hours of general-pedagogical preparation for the total number of hours in the compulsory component of the curriculum.	20-25% (required)	11.25% (optional for Group E3) 10 - 12% (optional for Group E4)
5	Value of pedagogy and psychology in teacher training	expedient	the domination of social psychology on the theme of master's course paper (6 cr. from 90 cr.) (for Group E3)
6	The nature of the practice	pedagogical pedagogical	on the topic of master's course paper (for Group E4)
7	Teaching practice	educational and production	not prerequisite
8	Teachers' Awareness of Innovative Learning Technologies	prerequisite	partly familiar
9	The nature of the use of innovative learning technologies in the HEI	is a component of vocational training	depending on the teacher's desire

Differences in the direction, structure and content of the organizational component of teacher training in compliance with the master's degree programme in institutions of higher education of various profiles suggest that there is an objective need to develop variation approaches for institutions of higher education of different profiles, taking into account common methodological approaches to the preparation for a master's degree. Consequently, it is necessary to create a basic master's Concept for the preparation of various components for higher education institutions of different types (pedagogical and non-pedagogical / research).

The problem of preparing a graduate student as a future teacher is the question of pedagogical and personal potential through pedagogical reflection. Pedagogical reflection is considered the most expedient and possible way of professional self-expression and self-improvement of the teacher of a higher education institution as a way of self-knowledge, self-evaluation of his activity, as well as improvisation and the search for an optimal decision regarding the strategy and tactics of teaching and educational process, since:

professional reflection contains the unity of the human (the way of self-study, the analysis of causal relationships, doubts, the implementation of value criteria, work on oneself), and profession, that the use of this ability for difficult circumstances and professional life (Vulfov & Kharkin, 1995, p. 18).

Pedagogical reflection functions as a technology of self-diagnosis of the success and effectiveness of pedagogical actions of the teacher and students, as a means of flexible response to a particular pedagogical phenomenon, a professional situation. The more thorough the real experience, the more important and difficult it is to manage its reflection: it is difficult for the teacher to be distanced from his own individual feeling, from knowing the real consequences.

Pedagogical reflection in teacher training as a pedagogical technique involves the conditions and stages of mastering this technique. Reflexive training is a set of interrelated means, methods and processes necessary to create an organized, purposeful and predictable pedagogical impact on the formation of reflexive qualities of masters as future teachers.

Expansion of the potential of reflexive teacher training in compliance with the master's degree programme in higher education institutions of different profiles has been conducted in the process of teaching the special and general cultural block subjects, using thus subject oriented approach and special forms of practical and seminar activities in the interaction of the teacher and students. The model of such activity was proposed and implemented at the Mykolaiv National University named after V. O. Sukhomlynskyi (Pekhota, Sereda, & Prasol, 2016).

*Content component of the study*

Analysis of the curriculum of the second educational qualification level "Master" shows that of higher education subjects of psychological and pedagogical bloc take up about 20-25% of the academic time in pedagogical institutions according to the targeted state policy on structuring the study curricula. This leads to the need to strengthen the pedagogical orientation of optional disciplines in order to form a pedagogical reflection of undergraduate students and to additionally use the potential opportunities and reserves of pedagogical practice. The largest reserves are available both in the compulsory and in the variable component of vocational training, since they constitute 62% of the total academic time. It should be noted that the psychological and pedagogical unit occupies almost four times less time, which actualizes the need for special optional subjects, courses, seminars and differentiation of psychological and pedagogical and teaching practices.

Expert evaluation of the curricula and syllabus for the target majors discovered that the latter are burdened with a consolidated list of educational disciplines from the psycho-pedagogical cycle that provide general-pedagogical training for undergraduates in higher educational institutions of a non-pedagogical profile, and their place in curricula indicates lack of common approaches to the content of teacher training in a master's degree, in contrast to a systemic and coordinated approach at the state level, which is used in pedagogical universities (Machynska, 2013) (Table 2).

*Table 2. General pedagogical educational disciplines and their volume in training teachers in the conditions of the master's degree of higher educational institutions of non-pedagogical profile*

Institution	1	2	3	4	5	6	7	8	9
# Term of study / academic discipline	1,8 academic years	1,5-2 academic years	2 academic years	1 academic years	1, 5 academic years	1, 5-2 academic years	1, 8 academic years.	2 academic years	1,5 academic years
1 Psychology and pedagogy of higher education	108 hours / 3 credits								
2 Pedagogy of high school				54 hours / 1,5 credits	54 hours / 1,5 credits			72 hours / 2 credits	
3 Higher education and Bologna process	54 hours / 1,5 credits			36 hours / 1 credits					54 hours / 1,5 credits
4 Methodology of Teaching and the Bologna Process						54 hours / 1,5 credits			
5 Pedagogical practice	144 hours / 4 credits			72 hours / 2 credits		72 hours / 2 credits.		108 hours / 3 credits	
6 High school pedagogy (including module "Methodology of teaching economic disciplines")		126 h. / 3,5 credits							
7 Teaching method in high school			54 h. / 1,5 credits.		54 h. / 1,5 credits.				
8 Fundamentals of Pedagogy and Psychology of Higher Education							54 hours / 1,5 credits		
9 General pedagogy					54 hours / 1,5 credits		54 hours / 1,5 credits		

**Abbreviations:**

1. Lviv State University of Internal Affairs (Faculty of Law).
2. Kyiv National University named after. T. Shevchenko
3. Kiev National University of Trade and Economics.
4. Publishing-printing institute of HPI NTTU of the National Technical University of Ukraine "Kyiv Polytechnic University".
5. Lviv Polytechnic National University
6. Lviv State University of Internal Affairs (Faculty of Economics).
7. Kremenchuk State Polytechnic University.
8. Ukrainian Engineering and Pedagogical Academy.
9. Admiral Makarov National University of Shipbuilding (Mykolaiv)

The current state of affairs caused problems concerning the study of disciplines in the psycho-pedagogical cycle and the training of a teacher in a master's degree in higher educational institutions of a non-pedagogical profile, as opposed to such training in the conditions of a pedagogical university / humanities and pedagogical academy:

- insignificant amount of hours allocated for studying the disciplines from the psychological-pedagogical cycle (sometimes not more than 1,5 credits);
- excessive dependence of the content of the discipline on the interests and preferences of a scientific and pedagogical worker that is not always related to the logic of constructing the sequence of the subjects studying;

- often the negative attitude of the majority of teachers of professionally oriented (specialized) departments to the study of disciplines of the psycho-pedagogical cycle, who believe that they just distract the attention of masters from the study of the basic (from their point of view) subjects;
- the need for teachers of disciplines in the psychological and pedagogical cycle who received proper education in an academic institution or acquired some practical experience of teaching in pedagogical educational institutions, to overcome certain stereotypes in determining the content of training of future specialists, obtaining the necessary training information with the obligatory consideration of the special vocational training;
- unwillingness (often unwillingness), lack of motivation of masters in institutions of higher education of a non-pedagogical profile to study the disciplines of the psycho-pedagogical cycle, whose role and necessity for the future professional activity seem to be ambiguous for the students and they deliberately refuse to use the acquired knowledge (unwillingness to engage in teaching after graduating with the master's degree) (Machynska, 2013).

Motivational component of research. At the stage of the study, a comprehensive diagnosis was carried out with the help of the method of "Balance Emotional Empathy Scale (BEES)" by Mehrabian and Epstein (Tutushkina, 1996), Boyko's "Diagnostics of the empathic abilities level" (Psychology of a happy life, n./d.) in order to assess the level of empathy of masters as future teachers and Yusupov diagnostics of the level of empathy (Psychology, n./d.). The results obtained with their help made it possible to identify the level (high, medium, low) of the development of activity empathy of postgraduate pedagogical staff (groups E1 and E2) and non-pedagogical (groups E3 and E4) of higher educational establishments, as well as to determine the goal of empathy and the motivation of graduate students as teachers of a higher education institution.

Varban's (1998) method "My symbol of life's success" allowed to determine the degree of the teacher's identity as the basis of the "Self-concept" of a professional at the undergraduate groups E1, E2, E3, E4.

Each student's test results were analyzed, the average value for each student was calculated, and on this basis the average indicators of activity empathy and pedagogical reflexivity for the low, medium and high levels are determined. A comparative analysis of the data obtained at the final stage of the study is presented in Table 3.

*Table 3. Dynamics of forming the levels of future teachers' professional competence according to the master's degree programme of higher education institutions of different profiles*

Indexes	Summative and formative assessment stage of the research				Conclusive stage of the research			
	E1	E2	E3	E4	E1	E2	E3	E4
<b>Level of activity empathy (in%):</b>								
-low	53,02	48,90	52,58	51,14	8,90	10,11	49,41	46,25
-intermediate	33,26	36,95	34,34	36,30	57,81	42,33	35,40	37,40
-high	13,72	14,15	13,08	12,56	33,29	47,56	15,19	16,32
<b>Level of self-identification with teacher's activity (in%):</b>								
- low	44,37	48,49	46,99	45,85	0	0	45,10	42,26
- intermediate	26,72	28,34	27,31	26,59	16,83	14,01	23,18	25,79
- high	28,91	23,17	25,70	27,56	83,17	85,99	31,72	31,95
<b>Types of symbolic representation of the teacher's activity for his "Self" (in%):</b>								
- 1 type	25,63	24,18	23,27	26,94	83,38	77,18	25,49	28,95
- 2 type	43,58	40,92	43,14	44,18	15,19	18,24	45,16	43,92
- 3 type	30,79	34,90	33,59	28,88	1,43	4,58	29,35	27,13
<b>Reflexivity (in%):</b>								
- low	73,82	76,92	79,13	78,48	2,14	3,28	76,42	74,01
- adequate	22,62	20,59	16,30	16,16	85,67	89,31	18,18	22,42
- high	3,56	2,49	4,57	5,36	12,19	7,41	5,40	3,57

Having considered the approaches of Dymchenko (2009), the method of expert assessments and self-assessments of the professional qualities was employed and it was found out that the strongest connections in the teacher / teacher training are observed between the parameters: reflexivity and empathy – Spearman correlation coefficient is +0.738 (at the significance level  $\rho \leq 0.01$ ); reflexivity and sociability +0.759 ( $\rho \leq 0.01$ ); reflexivity and efficiency +0.773 ( $\rho \leq 0.01$ ); communicability and business activity +0.678 ( $\rho \leq 0.01$ ).

The results of the Pearson correlation analysis (r-Pearson) conducted among the selected undergraduate students of groups E1, E2, E3 and E4 as future professors ( $p < 0,05$ ) on the scales of the "Balance Emotional Empathy Scale (BEES)" test by Megrabian and Epstein (Tutushkina, 1996) and "Methodology for diagnosing the level of empathic abilities" by Boyko (Psychology of a happy life, n./d.) testify to the presence of statistically significant positive correlations between the scales: "identification in empathy" and "empathy to children" ( $r = 0.46$ ); "Rational empathy channel" - empathy to strangers ( $r = 0.44$ ). Regarding the training of the future teacher of a higher education institution, with the systematic, purposeful and expedient preparation of undergraduate students, the connection between these channels contributes to better adjustment of a young teacher to the new educational environment, mastering teaching techniques, adaptation of the content and organizational component of teaching activities to the student audience.

On the other hand, differences in the levels of formation and dynamics of activity empathy development among masters as future teachers of higher educational institutions of pedagogical and non-pedagogical profile at the final stage of the research exist and have objective character, as evidenced by the results of the researcher Kormylo (2011) and the author's data given in Table 3.

Varban's (1998) method "My symbol of life's success" has made it possible to find out that (at approximately equal data for all groups at the qualitative stage), at the final stage of the research in groups E3 and E4, the most quantitatively is representation II ("too idealized") and III ("Infantile" types), which is related to the lack of professional / teacher's identity, actualized in the uncertainty of the "Self-concept of a professional" at the end of the training period, as well as in the lack of an adequate self-assessment of professionally important qualities. This results in a low level of professional reflection of the undergraduate students from groups E3 and E4 in comparison with the groups E1 and E2.

*Diagnostic component* of the study. In studying the problem of teacher training in compliance with the master's degree programme in higher education institutions of various profiles, the criterion for its effectiveness is the dynamics of pedagogical reflection (Dymchenko, 2009; Kotyk, 2004; Melnychuk, 2001; Mukan & Fuchila, 2017; Mukan & Havrylyk, 2014; Vasylyeva, 2011; Weinberg, Belton, & Masanori, 2009) of the graduate student.

The level of development of reflexive general pedagogical characteristics of masters as future teachers specifies the following indicators: finding the content of educational material on their own; possession of rational methods of mastering the educational material; the usage of methods for the active work with the educational data (understanding the logic of presentation, the allocation of key concepts, the ability to translate their words); possession of systematization techniques (in compiling reviews, summaries, annotations, charts, tables); the ability to carry out the logical analysis of the text (selection of facts, theoretical postulates, explanatory principles, the implications); knowledge of the requirements applied to the acquired material; the ability to work out a system of verification tasks to determine the level of assimilation.

Based on the purpose of the research and on the basis of observation, tests, questionnaires, conversations, as well as the study of individual differences in the formation of reflexive qualities, we consider it appropriate to distinguish three levels of the formation of reflexive abilities of future professors: high, medium / adequate, low.

Measurement of the levels of pedagogical reflexivity of masters in institutions of higher education of various profiles with the help of the method of "Diagnosis of communicative characteristic features of personality" (VseTesti, n./d.) in the form of self-assessment showed that with preliminary relatively equal indicators appear at the final stage of the study, as opposed to undergraduates of pedagogical institutions (groups E1 and E2), the majority of undergraduates of groups E3 and E4 are low-reflexive individuals as on the record (respectively 79.13% and 78.48%), and on the final research phase (73.42% and 74.01% respectively). For graduates of non-pedagogical higher educational institutions it's difficult to independently carry out an important and pedagogically reasonable choice, they cannot make grounded pedagogical decisions, and therefore - provide adequate pedagogical reflection as a teacher of a higher education establishment. The inadequate effectiveness of teacher training for the master's degree in institutions of higher education in the non-pedagogical profile reveals the indicators of personal identification in the teacher's activities and the dynamics of the formation of types of symbolic representation of the teacher's activities for his "Self". Only individual students of the E3 groups (5.40%) and E4 (3.57%) had a constant need for access to their past, present and future in order to further objective reflection and reflection on the pedagogical situation of interaction with students. Instead, the presence of the previous (at the level of the bachelor's degree) purposeful general-pedagogical training of undergraduate students of groups E1 and E2 resulted in significantly higher personal identification indicators with the teacher's activity and the positive dynamics of the formation of types of symbolic representation of the teacher's activity for his "I" (E1 group: for a high level of 28, 31% and 83.17% respectively, with an average of 26.72% and 16.83%, for a low level of 44, 37% and 0%; group E2: for high levels, respectively, 23.17% and 85.99%; for the average level, respectively, 28.34% and 16.83%, for the bottom level 48, 49% and 0%).

The dynamics of changes in the formation of pedagogical reflexivity of masters as future teachers of pedagogical (groups E1 and E2) and non-pedagogical (groups E3 and E4) profiles in the educational process of higher education institutions has been presented in Figure 2.

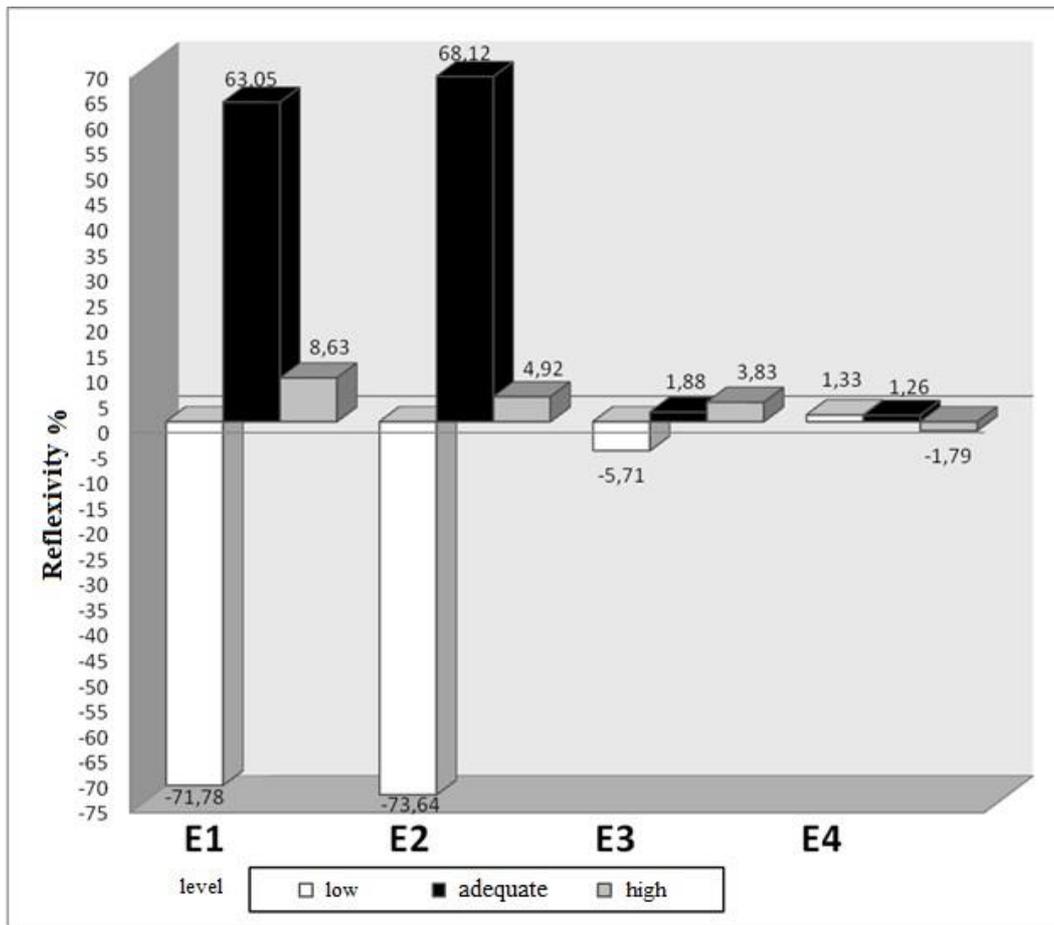


Figure 2. Effectiveness of training teachers in compliance with the master's degree programme of the higher education institutions of pedagogical and non-pedagogical profiles

The analysis of the results of the research showed a positive dynamics of teacher training levels in the conditions of the master's degree programme of pedagogical higher educational institutions: in groups E1 and E2 there is a significant increase in pedagogical reflexivity at a high level (correspondingly, at 8.63% and 4.92%), on the average / adequate level, respectively by 63.05% and 68.12%, while the low levels decreased by 71.78% and 73.64%, respectively. The dynamics of the indicators of the effectiveness of teacher training in compliance with the master's degree programme of institutions of higher education of the non-pedagogical profile is associated with the natural course of study and is not effective enough: in groups E3 and E4 there are changes in pedagogical reflexivity at a high level, respectively, growth by 3.83% and drop by -1, 79%, at the average / adequate level, respectively, by 1.88% and 1.26%, while the low levels decreased by 5.71% and 1.33%, respectively.

Thus, the assumption is based on the existence of differences between the effectiveness of teacher training in the conditions of the master's degree in institutions of higher education of various profiles, due to objective conditions and the course of the educational process at the second level of higher education in Ukraine.

This study proves that integration processes in the higher education system demand the development and implementation of a professional standard for the training of teachers for the master's degree in higher education institutions of different profiles, which, in the conditions of global standardization and the identification of qualification requirements for all specialties, is, on the one hand, an educational quality management tool, on the other hand - ensures the productive nature of this process and training a specialist, competitive in the world labor market. The experiment results also prove effectiveness of the changes brought to the master's degree programme as there was observed the positive dynamics of teacher vocational training levels. The student-teacher training suggested in this study is also capable to develop life-long learning skills of the participant-students.

The results of this study contribute to the concept of training of futures teachers from the psychological and pedagogical point of view which is highlighted in studies of native and foreign scientists (using the trainer model - Murphy and Carson-Warner (n./d.); Cserti (2018); (continuous) teacher professional development - Bautista and Ortega-Ruiz (2015), Boudersa (2016), Darling-Hammond, Hyler and Gardner (2017); Master degree students training - Vasylyeva (2011), Gura (2008), Machynska (2013), Fokin (2005)).

Since the issues of comparative effectiveness of such training at different universities are not sufficiently highlighted, the following areas of study of the problem of preparing a teacher according to a master's degree programme are found to be relevant. They are as follows:

- the optimal correlation of professional, scientific and teaching components in preparing a graduate student in institutions of higher education of different types;
- the differentiation of the content and approaches to the training of a teacher in pedagogical and non-pedagogical higher educational institutions at the level of bachelor's, master's and postgraduate studies;
- taking into account the training of the teacher in terms of empathy and pedagogical reflection as psychological and pedagogical factors, the prerequisites for its effectiveness;
- reasonable training of teachers with the sufficient level of the professional and pedagogical competence of masters in pedagogical and non-pedagogical universities for the specifics of the knowledge and activity paradigms of education, and the main direction of higher education;
- differentiation in the conditions for preparing a teacher on a master's degree programme of a higher educational institution of a different profile, taking into account the needs of research and classical models.

The reliability of the results of the study is due to the system of methods and techniques for studying the effectiveness of teacher training within the master's degree programme, the objectivity of the data obtained is confirmed by t-criterion Student, the conclusions are based on the expediency of providing the main components of the system under study.

The study confirmed the assumption that teacher training systems in the conditions of the master's degree of higher education institutions of different profiles should have common and specific peculiarities.

### **Conclusion**

Based on the analysis of psychological and pedagogical and scientific sources, taking into account various researches of scientists, it was found out that training a teacher in the settings of the master's degree programme of institutions of higher education is an urgent task of three-level training of a specialist in Ukraine and requires a differentiated approach in institutions of higher education of various profiles.

In the course of the research, the components (organizational, content, motivational and diagnostic) were determined, based on their comparative characteristics, the status of teacher training in the conditions of the higher education institutions of different profiles with the application of certain criteria, indicators and levels were studied.

Comparative analysis of the results of determining the levels of activity empathy and pedagogical reflection formation at the final stage of the study showed objective differences in teacher training in compliance with the master's degree programme of institutions of higher education of different profiles: in groups of graduate students of higher education institutions of pedagogical profile, with minor positive changes in activity of empathy, there is a significant increase in pedagogical reflexivity – at a high level of 8.63% and 4.92% respectively, at an average / adequate level, respectively 63.05% and 68.12%; at low levels, the indicators decreased by 71.78% and 73.64%, respectively; in case of absence of positive changes in the activity of empathy in the groups of masters of institutions of higher education of the non-pedagogical profile there are changes in the pedagogical reflexivity at a high level, respectively, growth of 3.83% and falling by -1.79%, on the average / adequate level, respectively, 1.88% and 1, 26%, at low levels, respectively, decreased by 5.71% and 1.33% respectively. The indicated differences determine both general and differentiated approach in preparing a teacher in accordance with a master's degree programme of institutions of higher education of various profiles.

The validity of the results of the study is confirmed by the criterion of the reliability of the differences between the values of the Student's t-criterion for independent samples.

The perspective directions of the problem development are the study of the didactic conditions of effective teacher training in the conditions of the master's degree in higher education and the development of the Concept of master's training in higher education institutions on this basis, the study of the influence of the main factors on the formation of a teacher of a higher educational institution in compliance with a master's degree programme, taking into account the profile of the professional training.

### **Limitation of this study**

The major limitation to this study is the number of institutions involved - the Khmelnytsky humanitarian and pedagogical academy and the Admiral Makarov National University of Shipbuilding (Mykolaiv). The students and the researcher's bias might be regarded to be another limitation.

### Recommendation for researcher and practitioner

The teacher vocational training system could be improved through expanding the academic and scientific cooperation internationally which will certainly lead to an increase in students' academic performance, the quality of their projects and internships. With regard to methods, practical skills aimed at activities could bring a great deal of value to the future teachers.

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