Professionally Oriented Training of Specialists to Work in the Conditions of the Inclusive Educational Environment

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Abstract It is confirmed that the efficiency of an inclusive educational environment functioning is ensured by the presence of diversified psychological and pedagogical professionals and their proficient cooperation. The training of these professionals is of top priority while developing the inclusive education in Ukraine. The results obtained during the pedagogical experiment convincingly prove that the author’s developed and tested methods and teaching and methodological materials allow directing the educational process to the training of the future diversified psycho-pedagogical professionals to work in the conditions of the inclusive educational environment. During the formative stage of the pedagogical experiment, the research and experimental work was carried out to check the effectiveness of the specialists training system of the psycho-pedagogical field to work in the conditions of functioning of the inclusive educational environment. In order to obtain empirical data and to ensure their validity, a questionnaire and methodology to diagnose the levels of formation of Bachelors’ professional competence have been developed, in the context of which the criteria and levels of formation of the investigated quality have been defined, as well as the tools for its implementation have been created.

Keywords Inclusive Educational Environment, A Child with Special Educational Needs, Control and Experimental Groups, Psycho-Pedagogical Specialist, Educational Trajectory

1. Introduction

The national educational system reform which is currently taking place in Ukraine actualizes the training problems of the staff who is able to work in accordance with the new methodological guiding lines, which are outlined by the New Ukrainian School Concept. Among them the prominent position is taken by the inclusive education (IE), which serves as an educational paradigm that is based on the worldview of social inclusion because equality, accessibility, and quality assurance are the fundamental imperative of its functioning.

The development of an inclusive educational system requires the determination of the methodological bases for the specialists training in the psycho-pedagogical field who are directly involved in the organization and ensuring of effective functioning of the inclusive educational environment (IEE) which are based on the professional ability to perform the role of a mentor, tutor, and moderator and determine the individual educational trajectory of a child with special educational needs (SEN).
At the same time, as the practice shows, the willingness of the psycho-pedagogical staff to work in the inclusive educational environment is extremely poor. One of the obvious reasons is the lack of systematic training of the psycho-pedagogical specialists in the institutions of higher education.

The research concept is determined by the process of the inclusive education development in Ukraine and the peculiarities of its introduction. The main idea of the concept is to lay out the formation of the professional competence of the future psycho-pedagogical specialists for IE in the teacher-training institutions of higher education. The research is a scientific basis for solving the problem of the competent specialist formation, who is able to effectively realize his (her) professional potential in a team cooperation in the conditions of IEE. The solution of the outlined problem is possible on condition that there is an introduction of the curriculum for training of diversified psycho-pedagogical staff for the needs of the inclusive education in the educational process. The curriculum should provide an integration of the inclusively-oriented educational content, aimed at the creation of the high level of professional competence formation through methodological coordination of the pedagogical conditions of theoretical and practical training. The unity and integrity of all the system components of the staff training of the psycho-pedagogical field to work in the conditions of IEE (conceptual, target, substantial and procedural) allow to predict, define, and adjust the personal professionally oriented trajectory of the vocational training of every graduate during the whole period of studies.

2. Materials and Methods

The relevance of the training and re-skilling of the psycho-pedagogical staff to work in the conditions of IEE is determined, in particular, by the following factors:

- rapid implementation of the inclusive education during the last years;
- insufficient awareness of the specialists in the methodological principles of the IE, in technological and methodological means of the inclusive education implementation;
- increasing the academic component in the formation of the practical professional competences of students, which are necessary for working with children with SEN in the conditions of the IEE;
- insufficient awareness of the higher education teaching personnel in the importance, peculiarities, and contents of the psycho-pedagogical staff performance in the conditions of the IEE.

2.1. Problem Statement

The analysis of the scientific sources and generalization of the domestic experience in the implementation of the inclusive model of education in the pedagogical practice of the pre-school and secondary general educational establishments gave an opportunity to define theoretical problems in staff training for the inclusive education in the form of the following contradictions:

- on the social-pedagogical level: between a social order for the introduction of the inclusive model of education into the modern domestic pedagogical practice and insufficient number of qualified psycho-pedagogical staff who are able to provide work with children with SEN in the conditions of IEE;
- on the scientific-theoretical level: between a need for psychological and pedagogical staff training to work in the conditions of IEE and the lack of the effective system of such training and theoretical justification of its content;
- on the practical and methodological level: between a need for an inclusive practice implementation and psychological and pedagogical staff training and between the lack of program teaching materials to provide the development of the professional competences of the corresponding specialists.

Therefore, poor elaboration of the psychological and pedagogical staff training problem to work with children with SEN in the conditions of IEE has determined the choice of the research theme.

2.2. Literature Review

The experience of social and educational inclusion indicates the search of methodological bases for IE problem investigation. Theoretical foundations of the inclusive education model are based on the integrated systematic researches of scientists.

It becomes obvious that all the modern socio-philosophical concepts influence the formation of a new educational paradigm, which will lead to the synthesis of theories aimed at a search and implementation of optimum inclusive practices [3].

At the methodological level of our research, the leading idea was stated, which, in our opinion, can be put into the basis of the modern concept of the inclusive education [1; 4]. At this stage of the research, we consider it expedient to analyze philosophical bases of the methodology of the inclusion modeling [2, 5].

While studying the philosophical problems of the inclusion, it’s impossible to neglect the issue of pedagogical anthropology. Modern pedagogical anthropology aims to identify practical ways of the holistic study of human qualities. The task of a teacher is to support the development of the inner world of a child, to strengthen this position, not to hurry to raise it to the next one, ‘more progressive’ position. Pedagogical anthropology views a child in a dialogue with “the others”
strategy and comprehension of the modern IE problems become an integral part of the general development systematically and from different methodological angle of the competency-based approach assure that it has perspective in the research of the education problems. The implementation.

misrepresent the process of inclusive education find the way to solve the problems, which slow down and positions comprehend the inclusion specification and to children regardless of their specific educational problems with the organization of education and upbringing of all opportunity to successfully complete the tasks connected the innovative conditions of the IEE and give an personal and professional qualities which activate right in description of a teacher’s competence as a combination of connected with the distinguishing and meaningful conditions of the IEE.

The essence of a social theory of autopoiesis lies in the necessity to provide every child with an individual educational route, which is focused on an active communicative interaction with the social environment, which allows to adequately check the received knowledge and skills. From the standpoint of these concepts, IE is implemented through a socially built individual educational route [11, 12].

The formation of the pedagogical process as a dialogue between the participants of the educational space suggests a high level of professional competence of a teacher, that is why a competency-based approach in the inclusive education is of a particular value for the investigation and modeling of the inclusive processes [12]. A competency-based approach is a relatively new perspective in the research of the education problems. The studies of professional and pedagogical activity at the angle of the competency-based approach assure that it has become an integral part of the general development strategy and comprehensibility of the modern IE problems and allow to represent the results of education as systematic integrative qualities which provide successful solution of the important professional tasks [19].

The implementation of the inclusive practice is connected with the distinguishing and meaningful description of a teacher’s competence as a combination of personal and professional qualities which activate right in the innovative conditions of the IEE and give an opportunity to successfully complete the tasks connected with the organization of education and upbringing of all children regardless of their specific educational problems [20].

Polyfundamental approach [13] allows to systematically and from different methodological positions comprehend the inclusion specification and to find the way to solve the problems, which slow down and misrepresent the process of inclusive education implementation.

Humanistic paradigm of the public consciousness is built on the idea that the modern world is based on the integrated humanistic system of values where traditions are respected and innovations are accepted, dialogic and equitable relations between people are established no matter what capabilities (intellectual, physical and others) a person possesses [14].

Thus, modern IE is a structurally innovative educational system that determines the change of a social system of a state. At the same time, psychological and pedagogical support of children with SEN in the conditions of a mass educational institution should become closer to the tasks of the society change on the basis of tolerance, humanism, professional competence according to a new educational paradigm [18].

Within the framework of the formation of pan-European educational space the problem of improving the training and retraining of psycho-pedagogical staff for the inclusive education in Ukraine has become particularly relevant.

The problems of professionalism formation of psychological and pedagogical specialists are connected with the high-level requirements which are dictated by the modern society and professional community regarding the organization of the pedagogical activity. It demands the constant improvement of personal features, an increase of existing and acquiring new knowledge, orienting each specialist to personal growth and professional excellence. A way to solve this task is a concept of continuing education which determines new approaches to educational system design, to the contents of the pedagogical process, to the sequence of its levels [17].

Human resources policy in the field of the inclusive education may be successfully implemented if the developed strategies are grounded on the scientific concept of reformation and its implementation mechanisms. Scientific explorations of [15] foresee several options in the training of psycho-pedagogical staff for the inclusive education – from retraining of the specialists of the mass educational institutions in the system of post-graduate education to the introduction of new combined specialties which will provide graduates with universal knowledge.

According to Slee, R. [16], the insufficient level of professional competence of specialists in the mass educational institutions in the field of inclusive education reveals the existence of a serious problem in modern higher education that cannot be solved by special education staff and using existing traditional technologies.

In the context of our investigation, it’s important to study theoretic-methodological providing of training of psycho-pedagogical staff in the higher educational institutions of Ukraine for the introduction of the inclusive education. Today there is a sharpened contradiction between the traditional system of special pedagogical staff training and the needs of the practice, in which psycho-pedagogical specialists of the mass educational institutions become necessary, who are able to provide a child with SEN with qualitative educational services in the conditions of the IEE.
To solve the outlined tasks and to ensure the veracity of the theses and conclusions of the study, a complex of mutually complementary methods was used:

Theoretical: retrospective comparative logical analysis of philosophical, psycho-pedagogical, methodological literature for the development of theoretical foundations of the psycho-pedagogical staff training system to work in the conditions of the IEE; systematization, synthesis, generalization for comparing and matching of philosophical and pedagogical views on different aspects of the studied problem, definition of the conceptual-categorical apparatus.

Empirical: diagnostic (conversations, tests, questionnaires, surveys, interviews), observational (psycho-pedagogical monitoring, self-evaluation) in order to find out the formation level of the professional competence; pedagogical experiment to prove the effectiveness of the training system of specialists in the psychological and pedagogical field to work in the conditions of IE; of mathematical statistics (statistical processing of empirical data, graphic display of results, Pearson’s criterion) for quantitative and qualitative analysis of the results received during the pedagogical experiment.

The reliability of the received results is provided by methodological and theoretical substantiation of the starting points of the investigation; by using the system of methods which are adequate to the purpose, subject and tasks of the research, by the representativeness of the sample; by combination of quantitative and qualitative analysis of the empirical data; by effectiveness of experimental work which is conducted in the conditions of a real educational process of the teacher training institutions of higher education.

The investigation platform covered the teacher training institutions of higher education which implement Bachelors training in the specialties like “Preschool education”, “Primary education”, “Social pedagogy”, “Practical psychology”, including: Poltava State Pedagogical University named after V.G. Korolenko, Sumy State Pedagogical University named after A.S. Makarenko, Pavlo Tychyna Uman State Pedagogical University. 176 psycho-pedagogical workers (educators, primary school teachers, social care teachers, psychologists), more than 40 lecturers of the teacher training institutions of higher education, 673 students participated in the experimental-research work

2.3. Results

Under the influence of the world's humanistic requirements, the modern system of education has been in the state of reformation due to socio-economical, political, and spiritual-cultural transformation. In modern education, they implement an idea connected with the change of the target guidance in the education field-from knowledge formation to the formation of competences, from “a personality for society “to” a personality in the society”. The necessity to update education technology for a purpose of raising the quality of the educational process has become relevant, as well as educational services capable of ensuring the development of children regardless of their health condition and social origin.

A characteristic feature of nowadays is the improvement of the special education system on the democratic, humanistic principles, the creation of alternative models of psycho-pedagogical support, the free choice mechanisms for the forms of education of children, level and range of educational needs. The state of modern education indicates the partial introduction of humanistic, democratic, and axiological bases into the educational process, that is why every form of atypicality (belonging to ethnic, language, cultural, religious minority, giftedness, psychophysical peculiarities, disability, etc.) is not considered in the education as a natural condition of coexistence of different people, and this frequently leads to social deprivation and isolation of children who according to certain criteria are different from the majority of their coevals. This humanistic paradigm is embodied by the inclusive education, which according to the world pedagogical community is the most powerful innovative movement in the education of the 20-th century.

Civil society development contributes to the promotion of democratic values, which are laid out on the basis of the inclusive education, since just the inclusive education as a fundamental pedagogical condition for the success of every child in adulthood has its clearly outlined value.

In order to study the problems of IE in the context of modern democratic transformations, it is necessary to analyze its philosophy and epistemology, empirical experience of its development and implementation, to realize its relevance and social phenomenon.

During the under-graduation pedagogical practice, using our developed methodology of team professional activity of diversified psycho-pedagogical specialists in the conditions of the IEE and teaching and methodological materials for inclusive groups/classes, the students proved that they not only can organize the IEE but also successfully cooperate in its conditions. Future psycho-pedagogical specialists have learned to plan the educational process: to study the actual level of mental development, cognitive sphere, communication capabilities, peculiarities of the emotionally volitional sphere, individual capabilities, mental performance and a pace of mental activity of children with SEN; to define the purpose, to coordinate the time, space, materials and different kinds of activities of the correctional and developmental work with children with the SEN; to watch and analyze the progress in the comprehensive development of children with the SEN; to increase the level of educational achievements of children using the technology of differential teaching. As a result of the
teamwork of the future psycho-pedagogical specialists, the children with SEN began to freely communicate with their coevals with the typical development and trainees, began to share their problems and achievements. During the experimentally practical activity children with the SEN were partners in classes/lessons conducting, they felt the responsibility, received better skills to understand their needs and to choose the methods which would facilitate their learning. During schooling, according to our methodology, all the children were constantly at the center of attention. The success of the inclusive class/lesson was increasing as the children became more skillful and helped each other to achieve the group and individual goals.

Analyzing their own teamwork, the students stated that the organization of the team professional activity of the diversified specialists in the conditions of the IEE makes the educational process of all the pupils effective and accessible.

In order to define during the experimental activity a formed level of professional competence of Bachelors and to analyze the results of the forming experiment, one more diagnosis was made at the end of 2016-2017 school years. To diagnose the levels of formation of the studied quality, respondents of the control and experimental groups were offered the same questionnaire which was used at the initial stage of the forming experiment.

To check the presence or absence of the statistical discrepancy between the parametric values of the studied quality of the respondents of the control and experimental groups, the two hypotheses were formulated by us:

1. \( H_0 \): the difference in the levels of formation of professional competence of the future psycho-pedagogical staff of the inclusive education is insignificant.
2. \( H_1 \): the difference in the levels of formation of professional competence of the future psycho-pedagogical staff of the inclusive education is quite significant.

To check the raised hypotheses we used nonparametric criterion of Pearson \( \chi^2 \) (Pearson’s chi-squared test). The selection of the indicated statistical method is conditioned by the execution of the main conditions of its implementation: our sample significantly exceeds the boundary volume of thirty people; determined levels cover all the range of variability of features; ranges of the respondents’ accumulated points are clearly fixed to the levels and do not intersect. Other requirements to the theoretical frequency and quantity of digits are also observed.

Generalized and adapted data, received from the students’ personal cards, are presented in Table 1.

### Table 1. Quantitative indexes of the distribution of the levels of professional competence formation of students at the final stage of the forming experiment of the control group (CG) and experimental group (EG)

<table>
<thead>
<tr>
<th>Institution of higher education of Ukraine</th>
<th>Groups</th>
<th>Total number of people</th>
<th>Levels, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poltava State Pedagogical Univ. named after V. G. Korolenko</td>
<td>CG</td>
<td>69</td>
<td>elementary 33.3 average 58.0 sufficient 8.7</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>53</td>
<td>34.0      49.1 17.0</td>
</tr>
<tr>
<td>Sumy State Pedagogical Univ. named after A. S. Makarenko</td>
<td>CG</td>
<td>68</td>
<td>35.3      58.8 5.9</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>70</td>
<td>34.3      50.0 15.7</td>
</tr>
<tr>
<td>Pavlo Tychyna Uman State Pedagogical University</td>
<td>CG</td>
<td>115</td>
<td>33.0      58.3 7.9</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>103</td>
<td>33.0      49.5 17.5</td>
</tr>
<tr>
<td>Total</td>
<td>CG</td>
<td>252</td>
<td>33.8      58.3 7.9</td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>226</td>
<td>33.6      49.6 16.8</td>
</tr>
</tbody>
</table>

The data of Table 2 allows to make a conclusion that qualitative positive changes have happened in the experimental group, in particular, the number of students has increased who demonstrated a sufficient level of professional competence of the future specialists in the field of the IE -16.8% (at the beginning of the experiment this index was 8.4%). At the same time, the number of students who achieved an average and low levels has reduced by 3.9% and 4.5% respectively.

### Table 2. Generalized results of diagnostics of the levels of formation of professional competence of students at different stages of the forming experiment

<table>
<thead>
<tr>
<th>Groups</th>
<th>Stages of experiment</th>
<th>Levels, %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>elementary</td>
</tr>
<tr>
<td>CG</td>
<td>initial</td>
<td>36.1</td>
</tr>
<tr>
<td></td>
<td>final</td>
<td>33.7</td>
</tr>
<tr>
<td>EG</td>
<td>initial</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td>final</td>
<td>33.6</td>
</tr>
</tbody>
</table>

Among the students of the control group, a positive trend in the quantitative index was also seen. Thus, according to the results of the analysis, there was an insignificant increase in the number of students who received an average level - 56% at the beginning of the experiment and 58.3% at its final stage and the number of students with an elementary level decreased by 2.3%.
Therefore, without introduction into the educational process of the institutions of higher education the system of specialists training in the psycho-pedagogical field developed by us, it is impossible to create such a level of professional competence which would allow to effectively realize their own potential for Bachelor’s graduates in the conditions of the IEE.

However, the results of the analysis still need to be confirmed by the methods of mathematical statistics. Summarized data is presented in Table 3.

Let us check the empirical data which we received to prove or refute the hypothesis set up by us about the fact that the difference in the levels of formation of professional competence of the future psycho-pedagogical specialists in the inclusive education in the experimental and control groups after the introduction of the author’s system of training is significant enough.

Generalized results of the final stage of the forming experiment (Table 4).

The cells of this table have empirical value of the criterion \( \chi^2 \) for the compared groups, which match the column and the line. The value of the criterion \( \chi^2 \) is highlighted in bold, which was received at the initial stage - 0.280 \((\alpha < 0.05)\) and the final stage of the forming experiment - 9.433 \((\alpha < 0.05)\).

Characteristics of all the compared samples, except the experimental and control groups at the final stage of the forming experiment, coincide with the level of significance 0.05 (that means the criterion value \( \chi^2_{imp} > \chi^2_{0} \)). Since the received value \( \chi^2_{imp} = 9.433 > 5.991 = \chi^2_{0} \), then the precision of deviation between the characteristics of the experimental and control groups after the forming experiment is finished is 95%. Therefore, the null hypothesis is refuted and it confirms our hypothesis that the effect of changes is ensured by the training system of specialists of the psychological and pedagogical field to work in the conditions of the IEE which was offered by us.

3. Conclusions

In the course of the experimental work, the methodology of Bachelors training of the psycho-pedagogical field to work in the conditions of the IEE was developed and introduced, which aimed at the creation of professional competence on the basis of team interaction. To the main features of the team of diversified specialists capable of working in the conditions of the IE, we relate initiative, activeness, personal responsibility and concern of each educational entity, as well as cohesion and compatibility of all its members. The primary goal of work of such a team is a successful adaptation and
socialization of children with SEN in the society. To achieve this goal every psycho-pedagogical specialist should aim his/her activity to the development of professional competences, establishment of ideas of personality-oriented education, differentiated teaching, modern innovative pedagogical, psychological, and social technologies on the basis of team interaction.

For the purpose of checking the effectiveness of the training system of specialists in the psychological and pedagogical field to work in the conditions of IE, the final stage of the forming experiment was conducted, during which the author’s methods were tested. In particular, in the process of theoretical Bachelors’ training in the specialties like “Preschool education”, “Primary education”, “Practical psychology”, “Social pedagogy, a combined approach (mono-subject and poly-subject) was implemented. As the pedagogical experiment revealed, such an approach was the most efficient and provided a purposeful, systematic, and consistent process of training of the future psycho-pedagogical specialists during the four years of studies.

Besides that, the methodology for the organization of the team professional activity of the diversified specialists in the conditions of the IEE was developed, which was tested both in the course of the theoretical training of the students and during their pedagogical practices. To provide Bachelors with the corresponding teaching materials, we have developed and implemented the educational and methodological manuals and guidelines in the educational process of the teacher training institutions of higher education (“Pedagogical technologies of the inclusive education”, “Organization of the team professional activity of the psycho-pedagogical specialists in the conditions of the inclusive educational environment”) and methodological recommendations (“Professional activity of the psycho-pedagogical specialists in the inclusive educational environment”).

The empirical data received at the final stage of the forming experiment allowed to identify the levels of professional competence of Bachelors of the studied specialties. In order to confirm the general positions of our study, we used the nonparametric criterion of Pearson $\chi^2$. Processed in this way generalized experimental data demonstrated significant differences between the indexes of the control and experimental groups. According to the method of mathematical statistics used by us, the empirical value $\chi^2_{imp} = 9.433 > 5.991 = (\alpha < 0.05)$. It gives a reason to state that the effect of changes is caused by the implementation of the author’s system of specialists training of psycho-pedagogical field to work in the conditions of the IEE.

The conducted study does not exhaust all the problems, raised in the dissertation work. We consider the following issues as perspective directions of this problem: studying of theoretical and methodological approaches of foreign and domestic experience in training of psycho-pedagogical staff for complete general secondary and technical and vocational education and substantiation of the possibilities of introduction of the elements of the developed training system of psycho-pedagogical staff to the process of organization of the post graduate pedagogical education etc.

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