Innovations in professional activity: what students of specialty "Preschool Education" think about it

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Abstract. Contemporary challenges of society, its dynamic development cause changes in all spheres of life, particularly in education. To obtain a university education in the Ukrainian state, higher Education Standard in specialty 012 Preschool Education for the second (master's) level of higher education (2020) was approved, which provides for the formation of relevant competencies. The purpose of the study was to analyze the essence of innovations in the professional activities of teachers of preschool educational institutions (PEI). To find out the attitude of students to the implementation of innovations in professional activities, a thematic survey was conducted. The selection of questions and respond options is based on all competencies of the Standard and the materials of theoretical analysis. The sample of the online survey covers the students' responses from two state universities of Ukraine (n = 159), who are obtaining the second (master's) level of higher education on the educational-professional program "Preschool Education". Respondents were grouped according to the mode of study. The obtained quantitative and qualitative data revealed the influence of the experience of practical experience in the PEI on the choice of the respond. This determined the necessity to teach students the educational component "Innovation activities in PEI" and the development of corresponding tasks during their teaching practicum in the system of preschool education.

1 Introduction

The current stage of society development is determined by high dynamism and a number of challenges that determine the processes of modernization and transformation, including in the field of education. Today, the Ukrainian state is reforming all components of education in accordance with the adopted and implemented European quality standards of education. It is primarily due to the necessity to train a new generation of professionals who are able to respond quickly and act effectively in a changing environment. A modern teacher is supposed to possess a number of developed competencies that will contribute to their competitiveness in the labor market. Among the key competencies identified in the "Recommendation on Key Competences for LifeLong Learning" one of the priorities is innovation, the formation of which is associated with the development of critical thinking and creativity of an individual [1].

In the professional development of a teacher it is important to realize the irreversibility of innovative processes designed to meet the new requirements of society for sustainable development [2]. The world community of scientists is actively studying how to reconcile higher education programs and sustainable development goals considering "education as a mechanism for social change", to provide with the formation of innovative competence in students by university education [3, 4]. The organization of the educational process in the system of higher education involves the formation of student's "innovation capacities" as a result of obtaining the appropriate level of higher education [5, 6]. In this context, considerable attention should be paid to improving the training of teachers who fulfill the social order of teaching, development and education of the growing generation by finding, producing and implementing various innovative pedagogical models and technologies in the educational process [7]. At the same time, the professionalism of the teacher is not only in awareness and implementing current tasks in education, but also in directing their efforts to continuous self-improvement, building the optimal trajectory of personal development, which determines his readiness for internal change. It is especially important in the curricula of universities to provide for such disciplines, the mastery of which would ensure the development of future specialists' innovative type of thinking in a dynamic society [8]. Only such a systemic combination as the performance of professional duties and the provision of personal growth will lead to professional self-improvement.

Thus, today the issue of actualizing the purposeful training of teachers to implementation of innovative activities in educational institutions and the development of ap-

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propriate competencies for this purpose has become pressing [7–9]. Within the framework of the outlined scientific problem, the process should be started with the first component of the education system, which in Ukraine is preschool education. Innovative activity in preschool educational institutions (hereinafter referred to as PEI) is the fundamental basis for the whole education system, which is currently rapidly developing and is the primary basis for the whole system of education ensuring its quality in accordance with the social requirements of society. In order for this process to be successful, human resources – PEI teachers must be prepared in accordance with modern requirements. In the Ukrainian state, this process is regulated by approved orders of the relevant ministry, in particular one of them – the Standard of Higher Education in specialty 012 Preschool Education for the second (master's) level of higher education, which came into force in 2020/2021 [10]. This Educational Standard provides for the conclusion of an educational and professional program (hereinafter – EPP), which is aimed at obtaining a three-component block of competencies by students, among which: integrated competencies (hereinafter – CI), general competencies (hereinafter – CG) and special or professional competencies (hereinafter – CS), defined in accordance with the specialty. With respect to the suggested above, it is appropriate to find out how higher education students determine the tasks of implementation innovations in the preschool education system and how it corresponds to the formation of their competencies outlined in the Higher Education Standard [10].

Thus, the determined topicality of the raised problem, which mainly involves strengthening the effectiveness of teachers' training in the labor market, gave grounds to outline the following purpose of the study:

a) finding out of the essence of innovations in the professional activity of preschool teachers on the basis of the analysis of the scientific and source base;

b) determination the attitude of students studying on specialty "Preschool Education" to the implementation of innovations in professional activities on the basis of the developed questionnaire;

c) generalization the results obtained and outlining the strong and weak points of this process.

The following abbreviations are used in the text:
Preschool educational institution – PEI
Educational and professional program – EPP
Integral competencies – CI
General competencies – CG
Special competencies – CS

2 The analysis of the recent publications on the essence of innovations in the PEI teacher's professional activity

The analysis of the source base gives grounds to claim that there are different scientific views on the essence of the concept of "innovation" and "innovation activity" in the teacher's performance of professional duties. The implementation of innovations in pedagogical activities itself is an indicator of modernity demonstrating improvement of society. It focuses education on the child's personality and improves the quality of educational services in general as well.

Innovations are considered as a new product that improves the efficiency of the educational process, as it is based on the determination of a specific system of priority indicators that correspond to the innovative development of society and reflect the individual's psychological qualities [9]. The result of the implementation of innovation as a system of professional means of personal development, which provides an innovative way of teaching, is also the formation and development of innovative active personality [5]. Researchers interpret innovation activity as a process carried out at a sufficiently high level of professionalism and manifested in the ability of a specialist to evaluate new ideas objectively, in their readiness to master and implement creatively in their practice everything new and progressive [8].

Innovation activity in the context of the professional activity of a PEI teacher involves their awareness of the meaning and current aims of educational activities at the present stage of society development; ability to define teaching tasks, with respect to social requirements; ability to outline new pedagogical guidelines in accordance with the requirements of personality-oriented education; development of skills to adjust the educational process timely in accordance with the criteria of innovation, etc. The implementation of innovations in PEI requires from the teacher mastery of technologies, forms and methods of innovative teaching of preschool children; development of the ability to analyze changes in educational activities, formation of awareness about the characteristics of children's personal qualities; development of the ability to activate personal creative potential, reflective activity, awareness of the importance and relevance of their own innovative searches and discoveries [11].

Thus, innovations are a subjective category, and their implementation should be considered in two areas: as a professional (pedagogical) activity, which includes the readiness and motivation of teachers to it on the basis of acquired knowledge, skills and innovative competence, and personal needs in the implementation of the system of own values and cultivation of relevant qualities as well. Therefore, the purpose of innovation is seen not only in the performance of professional functions by a PEI teacher, but in ensuring their personal growth and strengthening their own position as a competitive specialist in the labor market. This aspect will be considered when developing the questionnaire for the survey of students studying in specialty 012 Preschool Education, which is determined by the purpose of the study.

In clarifying the essence of innovations, it is important to state that they are not "homogeneous". Depending on the potential and degree of novelty, they are divided into:

- innovations a new product development – is a kind of invention, which lies in the development of technology, methods, techniques, etc.;
- innovations in the implementation (introduction) of new and progressive elements in the educational process;
- innovations-reproductions, presented in a form with methodical developed recommendations [12].

As innovations have different degrees of novelty, the mobilization of human resources for their implementation also differs in the nature of workload. Discovery innovations (heuristic innovations) are the most difficult, because they usually emerge as a result of a teachers' creativity, in their corporate integration with others, because the development of fundamentally new products requires the support of colleagues. Creative innovations are the ones, the implementation of which provides improvement, rationalization, modification, modernization of what an analogue or prototype has. The most common in the PEI practice are the innovations that are reproductive in nature, they have been widely tested and have a thorough methodological support [11]. In fact, the considered conditional classifications of innovations are the same in terms of explaining their content, do not contradict each other, which allows us to take this as a basis in the process of conducting the empirical investigation.

Scholars express unanimity in the viewpoint that the innovative activity of a teacher ensures their professional growth [4, 6, 8]. This is due to the desire of an individual to self-education in search of new information, which helps to broaden knowledge; to self-improvement in the development of the ability to organize the educational process, to establish cooperation with other subjects, which ensures self-realization in professional activities. This is interpreted as CS-9 of the Standard of Higher Education in the specialty 012 Preschool Education [10].

The intensification of innovation is significantly influenced by a range of factors, among which there are external and internal. External factors include: level of professional training; improving the material conditions of the educational institution, overcoming conservatism; internal factors include: motivation, creativity, corporatism [7, 13–16]. With regard to external factors, they are easier to state, identify gaps and take corresponding measures to eliminate them. In particular, the level of professional training of preschool education specialists is increased by obtaining university or postgraduate education. For this, educational and professional standards have been approved in Ukraine. The implementation of the Standard ensures the formation of the competencies for students outlined in it. According to the initiated research, these are the students of the 2nd (master's) level of higher education in the specialty 012 Preschool Education, who develop the ability to innovate (CI) during their studies; to generate new ideas (creativity) (CG-2), as well as the ability to organize the educational process in preschool educational institutions implementing modern tools, methods, techniques, technologies (CS-1) [10].

Revealing the internal factors, we focus on motivational one, which is a priority, because the motivation of an individual, determined by needs, goals, ideals, operating conditions, worldview, beliefs, is a powerful driving force that motivates teachers to innovate [13–15]. According to researchers who have studied the motives aimed at stimulating the introduction of innovations, their (motives) should be grouped as follows:

- internal motives manifested in the interest of teachers in innovation activities through the desire for self-improvement, the hope of recognition of their own professional significance;
- external motives that motivate teachers to innovation and are related to the prestige of innovation and are maintained by the image of the educational institution [14].

A striking example of the manifestation of internal motives is the motivation of PEI teacher's professional self-improvement.

The development of innovative activity is influenced by the ability of the teacher to critical thinking, solving pedagogical problems in a non-standard way, creative thinking in a constructive direction, the correct expression of evaluative judgments; improvisation, creative imagination; production of original ideas (going beyond the stereotypes of pedagogical thinking) and building a strategy for their implementation in the educational process [16]. An important place is given to such a factor as corporatism – the ability to work in a team, implementing the idea of creating a new original product, supporting the team [7]. It promotes the development of an individual in the process of innovation, the ability to manage their own development; understand and evaluate yourself, take a subjective position; realize their own problems, mistakes, complications; analyze their causes, correlate their actions with the problem situation, find effective ways to eliminate them (providing CS-9 of the Standard) [10].

It is especially important to start applying innovations in the educational process of preschool education, as the modernization of the preschool education system, its current development requires effective methodological management of the process of implementation of pedagogical innovations in practice to improve the quality of educational services [11, 17]. The educational process in PEI should be carried out according to the formula: "implementation of innovations = correspondence to the requirements of the time and social demands + vector of progress in the implementation of educational aims". To perform this, it is necessary to ensure the systematic growth of innovative skills of PEI teachers; inform them about the essence of innovation, etc. [18–22]. The readiness of the teacher for innovative activity is characterized by a range of developed professional skills, which justify the conscious implementation of personal innovations in the educational process of PEI [18–20]. The development of the teacher's skills in planning the educational process in PEI (with respect to the conceptual foundations of innovation, the goals of teaching and teaching children, the use of optimal forms, methods and techniques of professional activity, specification of goals and objectives) allows to

implement new technologies, including information and communication technologies [21, 22].

It is appropriate to give examples of the implementation of innovations in the system of preschool education in different countries. In Slovenia and Poland, training courses have been introduced in the process of university training of future PEI teachers for innovative work aimed at the development of engineering thinking [23]. This type of thinking contributes to the improvement of technological knowledge, provides a creative approach to solving problems, as well as enriches the experience of behavioral practice, which is an important component in the formation of pedagogical skills. The importance of innovations in the educational process was noted by preschool teachers-practitioners from California [24]. The application of innovations, on the one hand, means the improvement of the processes of education and upbringing children, and on the other – the motivation of teachers to perform their professional duties effectively. Regarding the difficulties that future PEI teachers in Jordan have in the process of training, they pointed out the lack of "field training" in the context of the implementation of innovative work with young-age children [25]. The necessity to improve the quality of preschool education programs and the optimal use of teamwork of preschool education professionals from different countries through cross-cultural research is emphasized. In particular, the conducted international research emphasizes the importance of professional training of PEI teachers to perform the tasks of pedagogical activity. Thus, the need to innovate in Norwegian kindergartens is seen as a "natural part of a day-to-day practice" [26]. Similar results were obtained in the process of conducting a survey among unexperienced PEI teachers of New Kindergarten Teachers' (NKTs') in Israel [27]. Regarding the obtained responses on the essence of innovation implementation, the respondents noted the professional unity in starting a new idea, high motivation and improving their own pedagogical skills.

Introduction of elements of innovative activity in PEI has a number of advantages: it provides creative climate between teachers and children, develops creative abilities at the subjects of educational process [28]; increases the level of pedagogical skills in the context of the organization of play activities as a leading type in preschool age [29]; promotes the development of the social and emotional sphere of children [30]; changes their attitude to the environment [31] etc. It is the introduction of innovations by PEI teachers that develops their sense of professional responsibility for improving the quality of the educational process [32]. For example, in Saudi Arabia, PEI teachers have called for the need to improve their own professional development in order to implement the tasks of STEAM Education with children of young age [33]. Defining such innovation as progressive, as it provides a combination of creativity and technical knowledge, educators noted the necessity to improve basic strategies and skills. Thus, we generalize that in order to make innovations effective it is necessary to provide purposeful preparation of future PEI teachers for performance of pedagogical activity and formation of the corresponding professional competences.

Thus, summarizing the analyzed materials of the scientific source base, we can conclude that the effectiveness of innovation in the professional activities of PEI teachers is provided by considering a range of conditions: the goal, the chosen type of innovation, the influence of interdependent factors. Their outlined significance is the foundation for the practical implementation of the main innovative tendencies in the modern system of Ukrainian preschool education as well.

Analyzed research, which is the theoretical basis for clarifying the essence of innovations in the professional activities of teachers, as well as competencies outlined in the current Educational Standard for students for the second (master's) level of higher education in specialty 012 Preschool Education will be the basis for the questionnaire for students.

3 Methodology of research of determining the attitude of "Preschool Education" (future PEI teachers) students to the implementation of innovations in professional activity

Research tools. The empirical basis of the study was a survey of students. They were to fill in an online questionnaire "Innovation in the professional activity of preschool teachers: what is it and what for?" (using Google Forms). The main goal was to find out the attitude of students of specialty "Preschool Education" to the application of innovations in professional activity. Information about the survey among students was offered to academic groups of followers on social networks Facebook, Viber, WhatsApp. Students of the second level of higher education – master's students studying on the educational and professional program (EPP) 012 Preschool Education, from two state institutions of higher education of Ukraine – Hryhorii Skovoroda University in Pereiaslav and Bohdan Khmelnytsky National University of Cherkasy were involved in the survey. The choice of such a research group is due to the implementation of the order of the Ministry of Education and Science of Ukraine from 29.04.2020 № 572 "On approval of the Standard of higher education in the specialty 012 Preschool Education for the second (master's) level of higher education" [10].

The questionnaire included 8 questions: of which 7 questions include selective options (for three (only the 6th question has four) response options for respondents), from which they had to choose only one. One question (the last, eighth) – a kind of "passport", the respond to which determined the respondent's correspondence to the group according to their sample. The content of the questions was based on the educational standard, according to which the formation of 3 types of students' competencies (integrated, general and special (professional)) are determined. In particular, the implementation of innovations (integral), CG-2 (general), CS-1, CS-9 (special) [10].

According to EPP 012 Preschool Education for the second (master's) level of higher education includes one of the educational components "Innovative activity in

preschool educational institutions", which is provided by the curriculum for 2021/2022 academic year. The study of it provides for the formation of competencies noted in the standard of education by students. Respondents were asked to respond the questions of the questionnaire without prior explanation and notification of the purpose of the study, which eliminated the possibility of external influence on them.

Data collection procedures and methods of analysis. Empirical data from the study were collected in the first decade of September 2021 by students filling out an online questionnaire. This preceded the study of the discipline (educational component of the EPP) "Innovation in preschool education", which allowed to clarify the students' views on the implementation of innovation in professional activity before the lecture and provided the study of the real state of research. Processing of the obtained questionnaire materials, namely how many of them were filled in (quantitative analysis) and the content of the responds provided (qualitative analysis) took place in October-November 2021, generalization and analysis – during December 2021.

Study sample are described. 2nd year students who obtain a master's degree in EPP 012 Preschool Education of various modes of study were involved in conducting an empirical study – thematic survey. This, in fact, determined their division into groups: 1st group – full-time students (38 respondents), 2nd group – dual-form students (27 respondents), 3rd group – part-time students who do not work on the specialty (51 respondents), the 4th group – part-time students working on the specialty (43 respondents). The total number of respondents who took part in filling out the questionnaires was 159 students. Such conditional division of students into research groups is due to the fact that the experience of practical activity largely determines the individual's views on the performance of professional functions [8, 11–13]. If the students of the 1st and 3rd groups (full-time and part-time, who do not work in the specialty) had the experience gained only during the various types of teaching practicum at higher educational institutions, then the students of the 2nd and 4th groups – had the experience of pedagogical activity (these are the ones of dual and part-time mode of study, working in the specialty).

4 Results of research of determination the attitude of "Preschool Education" students to the implementation of innovations in professional activity

Based on the collected data of the questionnaire "Innovations in the professional activity of a preschool teacher: what is it and what for?", which was offered to students obtaining education at the second (masters) level (n = 159) it was stated that all forms were filled in. There was no spoiled questionnaire, so all the responds were taken to carry out quantitative and qualitative analysis. In addition, this attitude of students proved their responsibility in fulfilling the task. Quantitative results of determining the attitude of students of specialty "Preschool Education" to the implementation of innovations in professional activity (which were noted in questions 1–7) are presented in the diagrams (see figures 1–7).

Symbols which are characteristic for all figures presented in the text: Full-time mode of study (group 1); Dual mode of study (group 2); Part-time mode of study (do not work on the specialty) (group 3); Part-time mode of study (work on specialty) (group 4).

After the presented visual images, a qualitative analysis of the actual content of the responds to all questions of the questionnaires was performed. We continue with the presentation of the results of the survey among students.

Giving response to the first question of the questionnaire: "In your opinion, what is the essence of the innovative activities of preschool teachers?" respondents chose one of the response options, which characterized the type of innovation:

- developing a new product;
- introduction of innovation to the educational process;
- reproduction of widespread innovations.

Quantitative results of the obtained responses are given in figure 1.

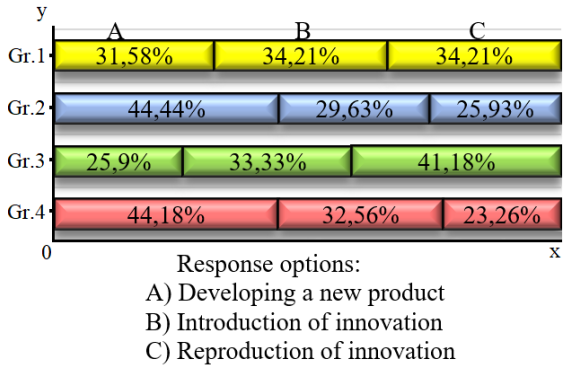

Figure 1. Quantitative analysis of the responds to the question: "In your opinion, what is the essence of the innovative activities of preschool teachers?".

As figure 1 displays, the responses of all groups of students denoted almost identical results with insignificant differences. In fact, they chose a proportionally equal distribution between all three response options, namely the three types of innovation. The difference is found in the greater advantage of the first option of the response – "developing a new product" in groups of dual and part-time students working in the specialty. It was 44.44% (n = 11) in the 2nd provisional group and 44.18% (n = 11) in the 4th one. On the other hand, the responds of the 3rd provisional group (part-time students who do not work in the specialty) for the choice of familiar and developed innovation with a number of methodological recommendations was predominant – 41.18% (n = 11). It is explained by the fact that the reproductive type of innovation has developed methodological support for its implementation and students who were in the PEI only during teaching

practicum, considered it the most widely used. This respond was the least chosen among students who obtained education on the basis of dual education – 25.93% (n = 7) and part-time students working in the specialty – 23.26% (n = 10).

The obtained data give grounds to generalize that the choice of the respond option is significantly influenced by the gained experience of pedagogical activity and direct (practical) awareness of the specificity of performing professional functions of a preschool teacher. Those respondents who work at PEI (2nd and 4th groups) in greater number chose the option A) – it is the creation of a new innovation, as it allows you to develop your own creative ideas and implement them. The total calculation (n = 159) of the responds to the 1st question of the questionnaire has the following results: A) developing of a new product – 35.22% (n = 56); B) introduction of innovation – 32.70% (n = 52); C) reproduction of innovation – 32.08% (n = 51) (summary analysis of the obtained data is presented visually in figure 8).

Obtained data to the second question of the questionnaire involved finding out from the students what, in their opinion, is the driving force in determining the purpose of innovation in the PEI. Respondents were asked to choose one of the options, namely: A) improvement the quality of preschool education; B) implementation of program tasks of education, training and development of preschool children; C) personal growth of a PEI teacher. Quantitative analysis of the results is presented in figure 2.

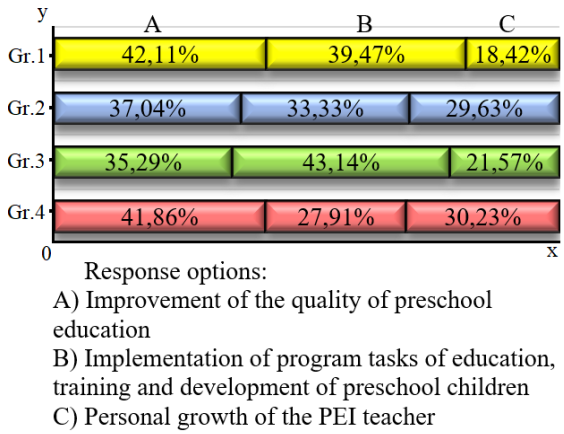

Figure 2. Quantitative analysis of the responds to the question: "What is the purpose of innovation in PEI?".

Providing a qualitative analysis, first of all, it should be emphasized that options A) and B) included the context of obtaining high professional achievements. As for the option C), it includes the content that implemented the formation of CS-9 according to the Educational Standard of training masters in specialty 012 Preschool Education [10]. The largest number of choice among the respondents of all four groups obtained option A). Thus, it was preferred by the students of full-time education (1st group) – 42.11% (n = 16); part-time students working in the specialty (4th group) – 41.86% (n = 18). With a slight decrease in accordance with these groups, the indexes of this option were recorded for respondents of the 2nd group – students of dual mode of study – 37.04% (n = 10) and respondents of the 3rd group – part-time students who do not work in the specialty – 35.29% (n = 18). On the other hand, the representatives of this group (3rd group – part-time students who do not work in the specialty) demonstrated the highest index of option B) – 43.14% (n = 22), which indicates that they have theoretical knowledge about the necessity of performing the tasks of current educational programs of PEI. Respondents of the 1st group (full-time students) presented almost similar opinions on this issue – 39.47% (n = 15). In contrast to the indexes on the choice of option B) in the 3rd and 1st groups, the 2nd and 4th groups demonstrated a significant decline. In particular, only 33.33% (n = 9) among students of dual mode of education tend to think that the purpose of innovative activities is the implementation of program tasks of education, training and development of preschool children; and among part-time students the index is 27.91% (n = 12). In contrast to the data obtained on the choice of option C), where the largest number of it is made by the 4th and 2nd groups, including part-time students working in the specialty – 30.23% (n = 13), and students of dual mode of study – 29.63% (n = 8). Respectively, in the 3rd and 1st groups the indexes of the response that the goal of innovative activity is the personal growth of a teacher are recorded by 21.57% (n = 11) of part-time students who do not work in the specialty, and 18.42% (n = 7) by respondents of full-time mode of study. This can be explained by the fact that students who are practitioners of PEI are aware of the necessity to be successful and competitive in the labor market, and therefore consider the implementation of innovative activities as a factor of self-realization.

Summing up the responses to the second question of the questionnaire, we state that the first two options were in more priority among student choices: A) improvement of the quality of preschool education – 38.99% (n = 62); B) implementation of program tasks of education, training and development of preschool children – 36.48% (n = 58); C) personal growth of the PEI teacher – 24.53% (n = 39) (summary analysis of the obtained data is presented visually in figure 8). These results convincingly demonstrate that respondents have chosen professional growth and, in particular, completion the regulatory framework governing preschool education as the main goal of innovation.

It was important for understanding the research problem to obtain data if respondents had an opportunity to implement innovations in their professional activities or during teaching practicum (this concerned to the students of full-time and part-time mode of study who do not work in the specialty). Such was the 3rd question in the questionnaire, which contained three possible options: A) Yes; B) Partially; C) No. Figurative indexes of the obtained results are presented in figure 3.

As it can be seen from the figurative indexes presented in figure 3, unfortunately, the majority of respondents chose the option that they did not implement innovations either in their professional activities or during teaching practicum. Most of them are part-time students who

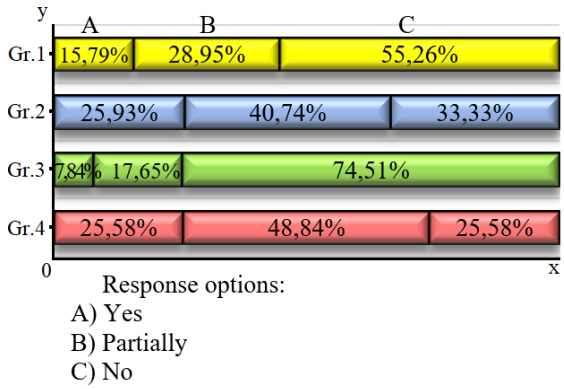

Figure 3. Quantitative analysis of the responds to the question: "Do you implement innovations in your professional activity (during teaching practicum)?".

do not work in their specialty – 74.51% (n = 38) and full-time students – 55.26% (n = 21). It demonstrates that they are unable to implement at least some of the elements of innovation during their short practicum. A significant percentage of such respondents are also students of dual and part-time mode of study who work in their specialty (almost a third part in each). In particular, in the 2nd group – students of dual mode of study – 33.33% (n = 9) and in the 4th – part-time students working in the specialty – it's 25.58% (n = 11). However, it was comforting that the respondents of these groups still partially implement innovations in their own professional activities (option B). It is correspondingly most recorded in the 4th group (part-time students working in the specialty), which is almost half of the number of these respondents – 48.84% (n = 21), as well as in the 2nd group (dual mode of study) – 40.74% (n = 11). That is, in direct practical activity, they, as subjects of the educational process at the PEI, from time to time try to implement innovations in their practical work. The indexes which demonstrate partial application of innovational activity turned out to be lower in those groups of respondents who had an opportunity to do it during their teaching practicum (in accordance with the curriculum). In particular, in the group of respondents who study full-time (1st group), such were 28.95% (n = 11) and in the group of part-time students who do not work in the specialty there were only 17.65% (n = 9). Indexes of the previous option are similar to option A) as well. Those who are practical teachers (dual mode of study and part-time students working in the specialty) implement innovations in their professional activities, although the quantitative results were not high enough. Thus, in the 2nd group (dual mode of study) there was 25.93% of such respondents (n = 7), and in the 4th group (part-time students working in the specialty) – 25.58% (n = 11). These indexes were much lower in the groups of respondents both full-time (15.79% (n = 6) and part-time, for students who do not work in the specialty (7.84% (n = 4)), which convincingly indicates the lack of appropriate conditions and opportunities to implement innovations during teaching practicum. It outlines the scientific problem of reconsidering teaching practicum programs, strengthening them with the task of introducing innovations to the educational process of PEI, conducting credit classes for students with elements of innovation, and so on.

The generalization of the obtained data on the 3rd question of the questionnaire gave grounds to determine that the responses were distributed as follows: option A) Yes – was recorded by 17.61% (n = 28), option B) Partially – 32.7% (n = 52); Option C) No – 49.69% (n = 79) of the total number of respondents (n = 159) (summary analysis of the obtained data is presented visually in figure 8). Such results lead to increased attention to the organization of practical activities of students as future PEI teachers, as well as motivation to introduce elements of innovation in the educational process during the teaching of the discipline "Innovation in PEI".

The 4th question of the questionnaire "Do you know preschool teachers among your colleagues (or practicum supervisor as a preschool teacher) who implement innovative activities, while performing their professional functions?" had another correlation. The students' responses ("almost") were distributed proportionally: A) Yes; B) I am not sure that their activity is innovative; C) No. We present a quantitative analysis of the obtained data in figure 4.

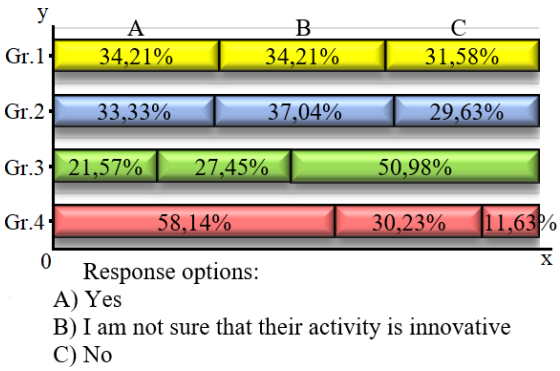

Figure 4. Quantitative analysis of the responds to the question: "Do you know preschool teachers among your colleagues (or practicum supervisor as a preschool teacher) who implement innovative activities, while performing their professional functions?".

In particular, the numerical value shown in figure 4 clearly demonstrate that the responses of students of the 1st research group (full-time) and the 2nd research group (dual mode of study) do not differ much, who actually have chosen each of the options equally. However, in the 2nd group there is a slightly higher number of those who preferred option B). If in the 1st group such index was 34.21% (n = 13), then in the 2nd one their index was 37.04% (n = 10). On the other hand, in the 2nd group the number of respondents who have chosen the option C) decreased (29.63% (n = 8)), while in the 1st group it turned out to be 31.58% (n = 12). This proves that students of the dual mode of study still have more opportunities to study problems in the organization of the educational process in the PEI and to contact with specialists in preschool education.

As for the responses of part-time students who were in the 3rd group (those who do not work in the specialty) and in the 4th group (those who work in the specialty), they were radically different. In particular, the majority of respondents of the 3rd research group noted that they didn't not know their supervisors while having teaching practicum in PEI and, performing their professional functions, applied innovations. Their index equals 50.98% (n = 26). At the same time, their choice of response options A) and B) was almost the same: yes – 21.57% (n = 11); C) I am not sure if their activity is innovative – 27.45% (n = 14). The response options among the respondents of the 4th research group was completely different. Thus, part-time students working in the specialty, mostly have chosen option A, noting that they know colleagues among preschool teachers who apply innovative activities, performing their professional functions. Their index was 58.14% (n = 25). Accordingly, response option B) was chosen by 30.23% (n = 13) of respondents and option C) – by 11.63% (n = 5), which is the lowest among all others. It can be explained by the fact that part-time students who work in the specialty, obtain a master's degree, having some experience in teaching, and therefore are more oriented in implementing innovations in PEI.

In general, the conducted quantitative analysis of the responses to the 4th question of the questionnaire gave grounds to note that the distribution of responses by all of the respondents was as follows: option A) Yes – 36.48% (n = 58); option B) I am not sure if their activity is innovative – 31.44% (n = 50); option C) No – 32.08% (n = 51) (summary analysis of the obtained data is presented visually in figure 8). It demonstrates that students of specialty 012 Preschool Education during teaching practicum and their professional activities as PEI teachers had examples of implementation of innovative activities in the educational process.

More optimistic results were recorded when considering the responses to the 5th question of the questionnaire: "Do you believe that innovation is a necessary component of a preschool teacher's professional growth?" Students had to choose one of the suggested options: A) Yes; B) Partially; C) No. The obtained quantitative data are presented in figure 5.

The results presented in figure 5 show that the prevailing response in all four research groups is A). Even before studying the discipline "Innovative activity in PEI", students indicated such activity to be necessary for the teachers' professional growth. Their responses were distributed as follows: the most preferred by those who know the peculiarities of the organization of the educational process in PEI were respondents of the 2nd group (students of dual mode of study) – 62.96% (n = 17) and respondents of the 4th group (part-time students working in the specialty) – 60.47% (n = 26). With slightly lower indexes, this response was recorded by the respondents of the 1st group (full-time study) – 47.37% (n = 18). The lowest number of choice option A) to this question was found in the responds of the 3rd group (part-time students who do not work in the specialty) – only 37.26% (n = 19), which indicates that they are still insufficient, in comparison with respondents from other groups, who familiar with the specifics of the educational process in the system of preschool education. Almost the same indexes were recorded for the choice of option B) in all the research groups. This was approximately one third of the number of respondents. In particular, we present in decreasing order: in the 1st group (full-time study) there were 36.84% (n = 14) of respondents; in the 4th group (part-time students working in the specialty) – 30.23% (n = 13); in the 3rd group (part-time students who do not work in the specialty) – 27.45% (n = 14); in the 2nd group (dual mode of study) – 25.93% (n = 7). These results prove that students are still concerned about making a successful future professional career. As for the choice of option C) to the question of recognizing innovation as the mandatory component of professional growth of a PEI teacher, it was chosen by a small number of respondents. Nevertheless, unfortunately, we state that one third of the respondents of the 3rd research group (part-time students who do not work in their specialty) have chosen such option – 35.29% (n = 18). Twice less than in the 3rd group, option C) was chosen by the 1st group (full-time students) – 15.79% (n = 6). And a very small number of them all was in the 2nd (dual mode of study) – 11.11% (n = 3) and 4th groups (part-time students working in the specialty) – 9.3% (n = 4).

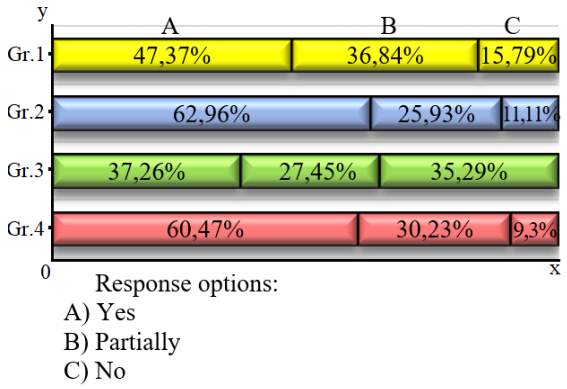

Figure 5. Quantitative analysis of the responds to the question: "Do you believe that innovation is a necessary component of the preschool teacher's professional growth?".

Based on the generalization of the obtained data, we state that, in general, among all the respondents of the survey the responses were distributed as follows: option A) Yes – 50.31% (n = 80); option B) Partially – 30.19% (n = 48); option C) No – 19.5% (n = 31) (summary analysis of the obtained data is presented visually in figure 8). These data convincingly prove the necessity to increase the motivation of students to carry out innovative activity as compulsory component of the PEI teachers' professional development. This will be implemented in the process of teaching the discipline "Innovative activity in PEI", which will develop students' competencies outlined in educational standards.

Giving the response to the question: "What factors, in your opinion, hinder the implementation of innovative

activities in PEI?" (6th in the questionnaire), the respondents were to choose one of the following four options: A) teachers' low level of motivation to such activities; B) lack of proper material resources in the PEI; C) insufficient training; D) conservatism. The collected quantitative data are presented in figure 6.

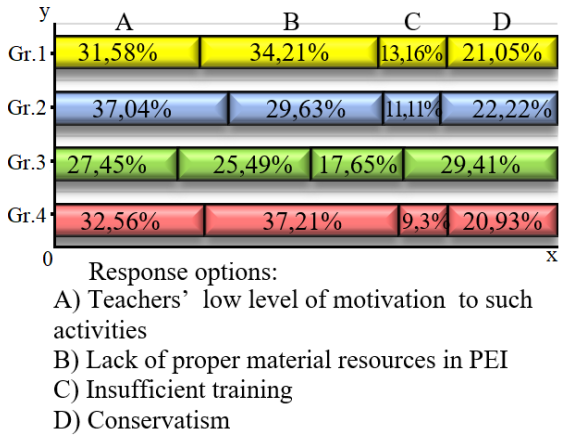

Figure 6. Quantitative analysis of the responds to the question: "What factors, in your opinion, hinder the implementation of innovative activities in PEI?".

According to the quantitative data demonstrated in figure 6, the choice of almost a third of respondents in all groups of option A) is directly related to the analysis of the results obtained on the previous 5th question. The largest number of students who chose this option was in the 2nd research group (dual study) – 37.04% (n = 10); then, with a slight difference, students of the 4th group (part-time students working in the specialty) – 32.56% (n = 14) and students of the 1st group (full-time students) – 31.58% (n = 12). The choice of the influence of motivation on the innovative activity of a PEI teacher was slightly lower in comparison with the responds of the respondents of the 3rd group (part-time students who do not work in their specialty) and their index was 27.45% (n = 14). Identical indexes were recorded for the choice of option B) and it was also preferred by one third of the students from the total number of respondents. Although the order (from higher to lower) has changed. Thus, the largest number of respondents who chose this option are part-time students working in the specialty – 37.21% (n = 16), followed by full-time students but with a slight decrease – 34.21% (n = 13) and students of dual study – 29.63% (n = 8), who are aware of weak points in the material resources of modern PEI, so to say "from the inside", because they are the subjects of the educational process. Regarding the respondents of the 1st group, who chose this answer, we believe that they gave such response relying on their observations during their teaching practicum. As for the respondents of the 3rd group (part-time students who do not work in the specialty), their choice of this option, which was 25.49% (n = 13) was also due to the impressions got during teaching practicum. According to the number of choices option D) conservatism is in the third place. It was preferred by 29.41% (n = 15) of respondents from the 3rd group (part-time students who do not work in the specialty); 22.22% (n = 6) of respondents of the 2nd group (students of dual mode of study); 20.93% (n = 9) of the respondents of the 4th group (part-time students working in the specialty) and 20.05% (n = 8) of students of the 1st research group. We believe that this choice can be explained by the fact that innovation is a change, and not all teachers with whom respondents contacted were intended to step out of "comfort zone" of the usual stereotypical process of their own professional activities. It is encouraging that the least number of respondents chose the option C) – insufficient training, believing that modern higher educational institutions provide full training for future professionals in preschool education. The responds were distributed as follows: this was typical for 17.65% (n = 9) of part-time students who do not work in the specialty (3rd group); for students of dual mode of study (2nd group) – 11.11% (n = 3); for full-time students (1st group) – 13.16% (n = 5); and for part-time students working in the specialty (4th group) – 9.3% (n = 4).

The analysis gives grounds for making the following summaries: in general, respondents (n = 159) identified the following correlation between the factors that inhibit the implementation of innovative activities in the PEI: option A) teachers' low level of motivation to such activities – 31.44% (n = 50); option B) lack of proper material resources in PEI – 31.44% (n = 50); option C) insufficient training – 13.21% (n = 21); option D) conservatism – 23.91% (n = 38) (summary analysis of the obtained data is presented visually in figure 8). This encourages the specification of the following priority actions:

- strengthening of such a factor as motivation, which will encourage PEI teachers to develop, implement and apply innovations in the educational process;
- improvement of material resources in PEI, which will allow teachers to work fruitfully on the implementation of innovative activities in PEI;
- in order to overcome conservatism as one of the factors that hinder the implementation of innovative activities in the PEI, it is necessary to use motivation and encouragement for teachers;
- to conduct quality training of a modern competent specialist in the field of preschool education.

Giving response to the 7th question of the questionnaire: "What, in your opinion, the personal traits of a preschool teacher that are decisive in the implementation of innovative activities in PEI?", students were asked to choose one of the following three options: A) creativity; B) corporatism; C) ambition. The responds got from the students were analyzed and visualized in figure 7.

The indexes shown in figure 7 convincingly demonstrate that in total almost half of all the respondents preferred option A) creativity. In particular, the largest number of such respondents was found in the 4th and 2nd groups: among part-time students working in the specialty, it was – 60.47% (n = 26) and, accordingly, among students of dual study – 55.56% (n = 15). Lower rates of preference for this option were recorded in the 3rd and 1st

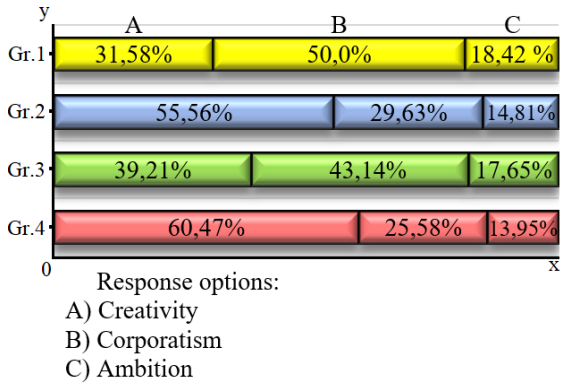

Figure 7. Quantitative analysis of the responds to the question: "What, in your opinion, are the personal traits of a preschool teacher that are decisive in the implementation of innovative activities in PEI?".

research groups. Thus, part-time respondents who do not work in their specialty chose "creativity" in the amount of 39.21% (n = 20) and in the group of full-time students this index was 31.58% (n = 12). Creativity as the ability of an individual to make non-standard decisions, generate and implement new ideas is defined as one of the priority qualities by many researchers [13–15]. The next option – C) corporatism – the ability to work in a team is no less important in the process of development, implementation and use of innovations in PEI. It was chosen by: full-time students (1st group) – 50.0% (n = 19); part-time students who do not work in the specialty (3rd group) – 43.14% (n = 22); students of dual study (2nd group) in the number of 29.63% (n = 8); and among part-time students working in the specialty (4th group) – 25.58% (n = 11), which is also the right choice. At the same time, we note that the respondents of the 2nd and 4th groups actually gave twice as much advantage to creativity (option A). No less interesting was the result of students' choice of option C) – ambition, because this personality trait in a correct dosage stimulates to move towards the goal, although on the verge of overestimating their own importance. This respond was typical for 18.42% (n = 7) of full-time respondents (1st group); for 17.65% (n = 9) part-time students who do not work in the specialty (3rd group); for 14.81% (n = 4) of students of dual study (2nd group) and for 13.95% (n = 6) of part-time students working in the specialty (4th group).

The general distribution of responds (n = 159) to the question: "What, in your opinion, are the personal traits of a preschool teacher that are decisive in the implementation of innovative activities in PEI?" has the following picture: option A) 45.91% chose creativity (n = 73); option B) corporatism – 37.74% (n = 60); option C) ambition – 16.35% (n = 26) (summary analysis of the obtained data is presented visually in figure 8). Such results are a proof of the students' conscious approach to the problem of innovation in the PEI teacher's professional activity. The obtained results are demonstrated in the integrated presentation in figure 8.

The results of determination the attitude of students of specialty "Preschool Education" to the implementation of innovations in professional activities present only a limited sample of students from two universities in Ukraine, and these data cannot be summarized. However, as it is presented in figure 8, the survey demonstrates some tendency regarding the essential importance of innovation and the implementation of innovative activities in the structure of specialty 012 Preschool Education. Respondents' interpretation of the essence of innovative activity (1) depends on their awareness of the specifics of the pedagogical functions of the PEI teacher; determining the purpose of innovation (2) was seen in the implementation of the tasks of modernization of preschool education at the present stage; personal experience in the process of innovative activities implementation (3) is clearly fixed by the mode of study of students of speciality "Preschool Education" (see the description of the presentation of four research groups); the latter is directly dependent on the production of the best patterns – the experience of innovations implementation by PEI teachers (4); the need to innovate as a mandatory component of professional growth (5) should be provided with appropriate practical training of students; the factors that hinder the implementation of innovation activities are identified (6), which gave grounds to outline the priority lines of professional training of future PEI teachers; it is established how students of speciality "Preschool Education" characterize the image of a modern PEI teacher, capable of implementing innovations (7). We state that the respondents of all research groups have chosen different options. However, the responds of the respondents, who were in the 2nd (dual mode of study) and 4th (part-time students working in the specialty) groups, were especially different. Representatives of these two research groups consciously perceive the necessity to apply innovative activities, understand its basic principles, which will directly influence both professional and personal growth. The explanation for this is that the students of these groups are the subjects of the educational process in the PEI themselves, performing professional duties have deep theoretical knowledge and skills in relation to its organization and solving complex problems. The latter is defined as the development of the competence of a teacher in implementing innovative activities, which is determined by the Educational Standard of Ukraine for students of the second (master's) level of higher education on the specialty 012 Preschool Education [10].

5 Conclusion

Taking account the global trends to meet the needs of sustainable development, the question of finding optimal ways to modernize the education sphere is increasingly being raised in modern society. This is due to the necessity to form a new generation of professionals able to compete in the labor market. This directly concerns to the training of PEI teachers, which takes place in the process of implementing the Standard of Higher Education for the second (master's) level of higher education in specialty 012 Preschool Education, in particular the development of

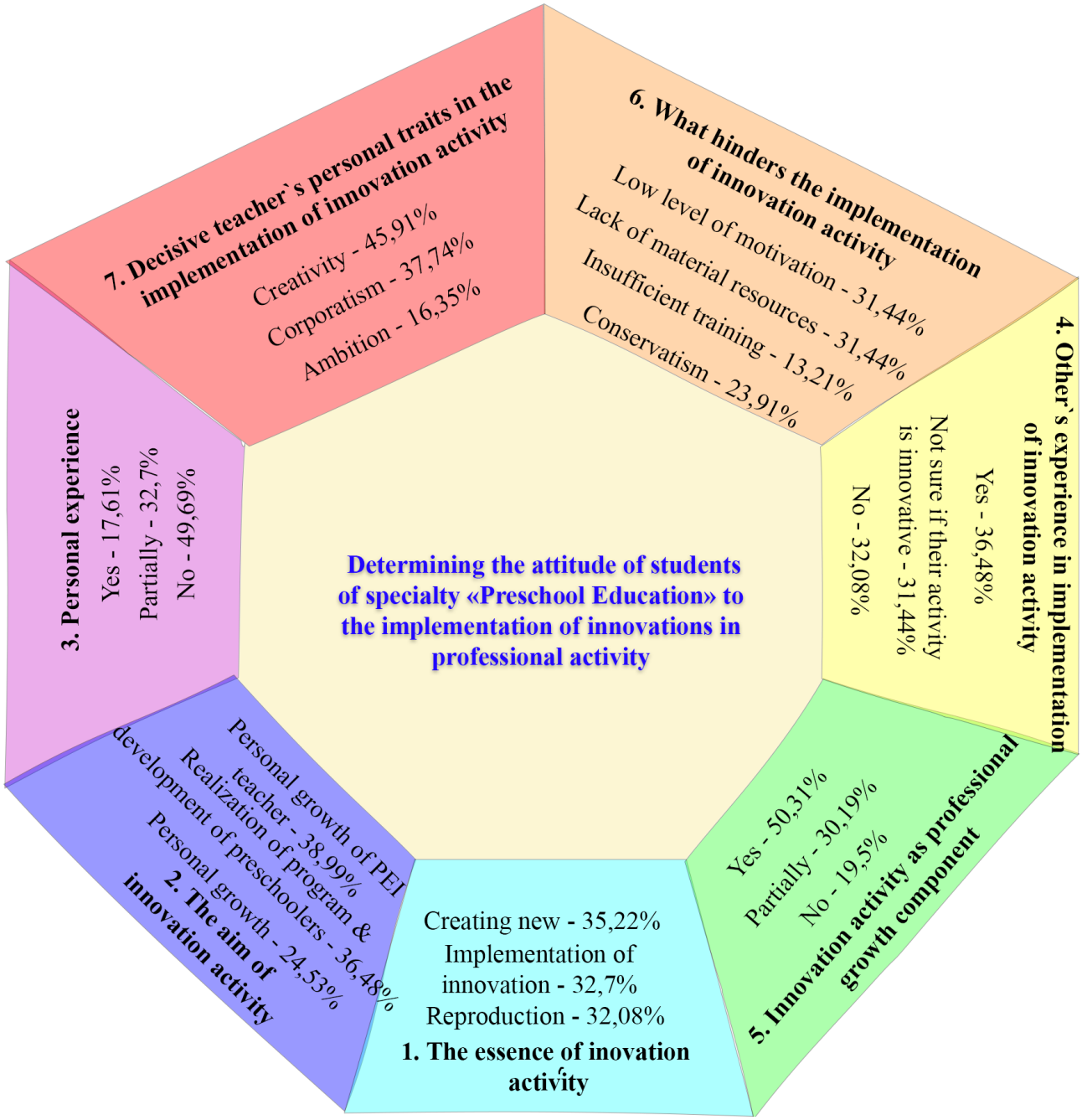

Figure 8. Summarizing the data obtained from the survey "Innovation in professional activity of PEI teacher what is it and what for?".

competencies for innovation. This was the relevance of the study, which accumulated a *three-component goal*:

a) on the basis of the source base handling the essence of innovations in professional activity of PEI teachers is defined. Different viewpoints of scientists on the explication of the concepts of "innovation" and "innovation activity" are identified [5, 8, 9, 11]. It is specified that innovative activity produces increase of professional level of the teacher and their personal growth. Varieties of innovations that can be used in the organization of the PEI educational process are revealed [11, 12]. The range of relevant internal and external factors that contribute to the formation in students (of the specialty 012 Preschool Education), competencies in accordance with the Standard of Higher Education (CI, CG-2, CS-1, CS-9) is outlined [7, 10, 13–16]. Based on the analysis of the latest publications, the essential content of innovations in the educational process of PEI was characterized [28–33], as well as the specifics of the training of students for their implementation (on the example of different countries) [23–27];

b) to determine the attitude of students studying on specialty "Preschool Education" to the implementation of innovations in professional activities there was developed a questionnaire "Innovations in the professional activities of preschool education teachers: what is it

and what for?" considering the content of all the competencies mentioned above and the results of the theoretical review of the literature. The survey was conducted online, it was conducted by students of the second (master's) level of higher education, studying in the educational-professional program (EPP) 012 Preschool Education from two state universities of Ukraine (159 students in number). Grouping into research groups took place on the basis of the application of the criterion of the mode of study: full-time mode of study (1st group) – 38 respondents, dual mode of study (2nd group) – 27 respondents; part-time mode of study – students who do not work in the specialty (3rd group) – 51 respondents, part-time mode of study – students who work in the specialty (4th group) – 43 respondents;

c) as a result of generalization of the obtained data the attitude of students of the specialty "Preschool education" to implementation of innovations in professional activity is defined. The analysis demonstrated that the respondents' responds to the questionnaire and their choice was mainly different from the existing experience of pedagogical activities in the system of preschool education, namely, depended on the mode of education. Students who made up the 2nd and 4th research groups (practicing educators) have personal experience of implementing innovations, which mobilizes their internal resources (personal aspect) and leads to improving the quality of preschool education (professional aspect). As for the students of the 1st and 3rd research groups, they still lacked awareness of the essence of innovation, the necessity for pedagogical innovation, understanding of the social significance of modernization of education. We anticipate that the study of the educational component "Innovation activity in PEI", defined by the EPP, will help to increase the effectiveness of future specialists' training.

In general, a study to determine the attitude of students of two Ukrainian universities studying on specialty 012 Preschool Education to the implementation of innovations in professional activities showed positive results, which is an important indicator for their future career and personal growth. However, we currently consider the following issues to be debatable:

- providing organizational and methodological base for the implementation of innovation activities in the process of teachers' training;
- choice of diagnostic tools to determine the levels of innovative activity of the PEI teacher.

Prospects for further research will include adjustments to the first (bachelor's) level of higher education in relation to the formation in accordance with the requirements of the Standard of Competences and the development of appropriate tasks for their "practice" during students' (of specialty "Preschool Education") teaching practicum in PEI. The aim will be to implement the best examples of world preschool education for the professional training of future PEI teachers in the context of the introduction of innovations in the teaching process.

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