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Article Info	Abstract
<p><i>Article History</i></p> <p>Received: 02 April 2020</p> <p>Accepted: 24 August 2020</p> <hr/> <p><i>Keywords</i></p> <p>Professional self-regulation Teachers' professional development Pedagogical practice Future teachers Students of the higher pedagogical institution</p>	<p>The current study aims to understand the development of students' professional self-regulation during pedagogical practice. Fifty participants of this study were fourth-year students of the Ternopil Volodymyr Hnatiuk National Pedagogical University, Ukraine. The following questions were considered: Has any certain level of professional self-regulation been formed before practice? Will it increase during the pedagogical practice? Is it possible to influence the process of formation of future teachers' professional self-regulation during the pedagogical practice by offering them specific tasks? To diagnose the formation of self-regulatory mechanisms of students during pedagogical practice, we propose to use the phenomenon of readiness (namely, how to determine, characterize, and measure it). The research was carried out using the methods of questionnaires, conceptual dictionary, and expert evaluation. The level of readiness for professional self-regulation in most respondents has increased from the "lower" to the "upper" limit within the Medium level. The results contribute to the conclusion that professional self-regulation of a teacher as a necessary component of future professional activity is developed effectively during pedagogical practice; moreover, this process is intensified by the implementation of assignments aimed at understanding self-regulatory mechanisms.</p>

Introduction

Changing technologies of the educational process have led to the emergence of new problems in the field of education in general and teachers' training in particular. Today, many factors hinder their "entry" into professional activity: intensive information, differentiation, and integration of sciences, the phenomenon of "rapid aging of knowledge", the need for constant self-study. This requires not only the qualitative knowledge of teachers but also a higher level of professional development. Besides, not everyone is ready to become an active subject of pedagogical innovation, to develop appropriate professional competencies, because it is much easier to take a stand of self-isolation from complex social and professional problems. Thus, the professional activity of a modern teacher directly depends not only on the level of his/her training but also on personal qualities. The teacher is expected to have a sufficient degree of activity, ability to adjust professional activities in socially appropriate ways according to the situation. Namely, it is a matter of self-regulation of a specialist. Self-regulation is essential to the learning process (Jarvela & Jarvenoja, 2011; Zimmerman, 2008; Voitiuk, 2005). It provides students the ability to create better learning habits and strengthen their study skills (Wolters, 2011). The low level of its formation leads to failures in professional activity, sometimes to asocial behavior. These skills are formed under the influence of strong-willed personal activity in the process of social interaction (with colleagues, students, parents).

Specifically, low levels of self-regulation belong to the group of factors that reduce the effectiveness of learning and upbringing: teachers' misunderstanding with children increases, their health deteriorates, creative activity fades out. On the contrary teachers with high levels of self-regulation are characterized by better developed social and psychological adaptation to environmental conditions. They ensure the achievement of high productivity of pedagogical activities with a creative approach to learning and psychological security for students. Thus, the problem of the formation of professional self-regulation of future teachers is quite urgent in modern conditions, therefore it is about the formation and preservation of the professional level of teachers, the activation of their personal, creative and intellectual potential. The study's innovation is to diagnose the formation of self-regulatory mechanisms of future teachers during pedagogical practice using the phenomenon of readiness.

Literature Review

At the beginning of the 1980s, education reforms concerning teachers' professional development and the effective work of the teacher began (Ellett & Teddlie, 2003). Since then self-regulation skills in correlation with student achievement and motivation have been explored (Zimmerman & Schunk, 2001). Self-regulation is controlled by an interconnected framework of factors that determine its development, meanwhile, motivation is a critical factor in this framework (Kurman, 2001). Motivation, engagement, and self-regulation are the primary determinants of students' learning outcomes, and whether or not they will persist through challenging tasks (Harris, Graham, Mason, & Sadler, 2002). Graham and Harris maintained that spending a marginal amount of time each day demonstrating how specific self-regulation strategies can improve students' learning can go a long way to help them prepare for challenging learning tasks and assessments (Graham & Harris, 2000). Toussi, Boori, and Ghanizadeh investigated the relationship between EFL teachers' self-regulation and teaching effectiveness (Toussi, Boori, & Ghanizadeh, 2011). According to Cardel-Elavar, Irwin, and Lizarraga, successful teachers are self-regulating people who understand themselves as teachers and support motivation, facing different tasks, diverse students, and changing circumstances (Cardel-Elavar, Irwin, & Lizarraga, 2007).

Teachers must train students the self-regulated processes that facilitate learning. These processes often include goal-setting (Winne & Hadwin, 1998), planning (Zimmerman, 2004), self-motivation (Corno, 1993; Zimmerman, 2004), flexible use of learning strategies (Winne, 1995), attention control (Harnishferger, 1995), self-monitoring (Carver & Scheier, 1990), self-evaluation (Schraw & Moshman, 1995), appropriate help-seeking (Ryan, Pintrich, & Midgley, 2001). Theories of self-regulation have been extensively applied to educational settings, resulting in the development of self-regulated learning theory. Self-regulation includes three main components: cognition, metacognition, and motivation which can be further subdivided into several subcomponents. The cognitive component covers simple strategies, critical thinking, and problem-solving. The metacognitive component consists of two general components: knowledge of cognition and regulation of cognition - each contains several subcomponents as declarative, procedural, conditional knowledge and planning, monitoring, evaluation. The motivation component comprises two subcomponents: self-efficacy and epistemological beliefs (Schraw, Crippen & Hartley, 2006). Most studies of teachers' self-regulation are focused on its functioning as an element of creative professional thinking or pedagogical culture, even as an element of emotional flexibility whereas the issue of pedagogical practice was insufficiently studied by scientists.

Semantics of Concept

The term "self-regulation" is quite a challenging concept to define. The semantic analysis made it possible to distinguish two parts in self-regulation: "regulation" (Latin "regular" - order, adjust, normalize) and "self" (indicating that the source of regulation is in the system itself). This term is universal and used in different fields of science. In pedagogy, self-regulation is commonly viewed as an integrative personal and professional characteristic of the teacher that implies the awareness of his/her actions, feelings, motives, position, and appropriate modification of the activity according to the requirements of the situation (Melazoniya, 2004). Mamonova defined self-regulation as the conscious activity of an individual, aimed at the optimal use of one's internal reserves and real opportunities of the environment on the way to achieving a meaningful goal (Mamonova, 2004). Konopkin interpreted the notion as a systematically organized process of human internal mental activity regarding the support and management of various types and forms of activity that directly accomplish the achievement of goals (Konopkin, 1995).

Researchers emphasized the important role of processes of self-knowledge, self-awareness, and functioning of mental self-regulation. Pov'yakel stated that self-regulation is a property of the person to realize goals and determine the ways to achieve them (Pov'yakel, 2004). The concept of self-regulation is one of the levels of activity regulation that ensures the successful performance of an individual's activity (Rogovyk, 2004). According to Zimmerman & Risemberg (1997) self-regulation refers to one's actions, thoughts, and feelings which imply efforts to achieve the goal. Roy Baumeister, one of the leading social psychologists who studied self-regulation, defined its four components: standards of desirable behavior, motivation to meet standards, monitoring of situations and thoughts that precede breaking mentioned above standards, and lastly, willpower. The researcher also developed three models of self-regulation designed to explain its cognitive accessibility: self-regulation as a knowledge structure, strength, or skill. Studies have been done to determine that the strength model is generally supported because it is a limited resource in the brain and only a given amount of self-regulation can occur until that resource is depleted (Muraven & Baumeister, 2000).

The process of personal self-regulation takes place under the indispensable condition of involving the results of self-knowledge and emotionally valuable attitude towards oneself. It should be noted that the differences in definition and interpretation of the concept are generally small. The analysis of definitions made it possible to ascertain that the basis of differentiation of the concept in the psychological and pedagogical sciences is the following characteristics of self-regulation: awareness of reality, purpose, and regulation of activity (external and internal) to the security situation. Such diversity is explained by the versatility of the concept since self-regulation has a procedural systemic character, proceeds with the inclusion of all mental processes (Myslavskiy, 1991).

The functioning of mental self-regulation of a personality is greatly influenced by professional activity (Kyrechenko, 2016). Therefore, the teacher's self-regulation requires special self-management, making optimal professional decisions, and most importantly – enabling to develop morally, to expand the outlook, to engage in self-knowledge, and to harmonize professional relations with people. This means that the teacher should be able to carry out self-analysis, self-planning, self-control, self-correction to manage internal emotional and physical states, to create a psychologically comfortable atmosphere during professional activity, to develop the motivation of actions and engagements, proceeding from social standards, values and norms. Consequently, the teacher's self-regulation contains 1) ability to control the physiological states through active volitional processes; 2) analysis of one's own emotions, feelings; 3) intellectual actions, namely decision making in the usual and non-standard conditions; 4) moral behavior (Kudin, 2016).

The process of self-regulation is expressed at various levels of personality. Mental self-regulation involves managing one's feelings, emotions, imagination, attention, etc. It includes the ability to change physical condition, restraining anger, irritation, and insult; causes calmness, working mood, demonstrates confidence, goodwill, optimism (Tsupryk, 2014). Physical analysis of psychological studies of self-regulation as the component of self-awareness made it possible to distinguish its various mechanisms. Bekh noted that the emergence and formation of regulatory mechanisms of self-regulation of the subject are due to the ability to dismember the inductive-operational and executive parts of the behavioral act in time (Bekh, 1995). Mechanisms of self-regulation can be based on such structural components as self-esteem which is a result of thinking operations (comparison, analysis, and synthesis), in which the emotional component is constantly present, self-image as a result of self-cognition; as a psychological entity, which provides the main function of self-regulation, namely the function of goal-setting (Morosanova, 2014). Self-regulation can be carried out under the following conditions: when the individual can reflect and simulate the existing situation adequately; when the individual can transform his/her own internal and external activities by the model of the proposed situation; when the individual can overcome incentives to achieve a goal if he/she has an opportunity to go beyond the existing situation (Mamonova, 2004).

Readiness for Professional Self-Regulation

Readiness for professional self-regulation is a complex multifaceted personality formation necessary for successful implementation of the professional requirements. Scientists distinguish the motivational, theoretical, and procedural components of readiness for professional self-regulation (Melazoniya, 2004). The motivational component of the future teacher's readiness for professional self-regulation is the desire to master the system of knowledge and skills, general cultural and pedagogical values, professional requirements for the activities of the teacher, which stimulate social, cognitive, and learning activity. The theoretical component of readiness for professional self-regulation is based on the student's knowledge and experience.

The procedural component of the readiness for professional self-regulation is the ability to carry out self-analysis, self-control, self-correction of behavior and activity in various pedagogical situations, to understand the purpose of one's actions, to take into account the obtained result, and to express emotions. These levels are based on the relevant components of self-regulation of personality: motivational, reflexive, activity-oriented, and emotional-volitional (Nevzorova, 1998). Considering that the professional self-regulation is formed under the influence of will (first of all, it is the student's own decision to become a teacher) and society (to what extent methodologists and experienced colleagues are ready to see him/her as a teacher), pedagogical practice is the period during which professional self-regulation will be intensively formed (Stryzhak, 2019). Besides, there are reasons to assume that at the beginning of practice such self-regulatory mechanisms as rigidity, identification, projection, acceptance of social roles, the spontaneous activity will prevail, and at the end – isolation, rationalization, change of action, pedagogical reflection (Hrynova, 2017).

Undoubtedly, the professional self-regulation of future teachers is developed throughout the period of study at higher education institutions. While working with first-year students, attention is usually focused on values and motives, and the importance of self-regulatory skills for the teacher is highlighted. It is also necessary to actualize the formation of students' knowledge about self-education and self-development, requirements for the personality of the teacher, recommendations for self-regulation. Sophomores (II-III) usually acquire specialized professional knowledge (awareness of the main categories of the theory of professional self-regulation, its mechanisms, and methods of formation). Finally, this activates the processes of self-regulation of future teachers.

Meanwhile, the most effective period of development of a teacher's professional self-regulation is the senior course. Fourth-year students get an opportunity to practice within 5-6 weeks at general comprehensive schools, high schools, lyceums, and gymnasiums. This is a period of active formation of professional experience for students in the field of self-control, management of emotions, skills of professional self-regulation. We consider practice as the ability to assess one's level of professional self-regulation in the professional environment; ability to characterize the professional self-regulation of other teachers and colleagues; to act in every day and conflict situations of the educational process. Methodists who monitor the progress of practice are also able to evaluate the effectiveness of students' professional self-regulation. Within the pedagogical practice, the results of the use of professional self-regulation skills are also discussed. Thus, the pedagogical practice of students is very important for the formation of professional self-regulation of future teachers. At the same time, even if you do not emphasize the importance of professional self-regulation, its level will still increase. However, the purposeful provision of students with appropriate special tasks will make the process much more efficient. Therefore, it became necessary to find out exactly how the mechanisms of professional self-regulation of future teachers are activated during the first 6 weeks of pedagogical practice.

The proposed research is aimed at studying the peculiarities of the formation and functioning of students' self-regulatory processes during pedagogical practice. The following questions were considered:

- 1) Has any certain level of professional self-regulation been formed before practice?
- 2) Will it increase as a result of 6 weeks of practice?
- 3) Do practitioners themselves realize the importance of self-regulatory processes?
- 4) Is it possible to influence the process of formation of future teachers' professional self-regulation during the pedagogical practice, for example by offering them special assignments? To what extent?

The research hypothesis is the growth of the professional level of future teachers is provided by self-regulatory processes that are activated and realized in the process of practice.

Method

Fifty participants of this study were fourth-year students of the Ternopil Volodymyr Hnatiuk National Pedagogical University, Ukraine (faculties: Philology and Journalism, History, Chemistry and Biology, Foreign Languages). During the first term of the 2019-2020 academic year, they were engaged in pedagogical practice in secondary schools in the city of Ternopil (2-7 students from a certain faculty per school), and each student was referred to a single class (usually 5-8 grade). Students conducted lessons and learned how to perform the functions of a class teacher (they were supervised by the class teacher). Often several students conducted lessons in parallel classes (for example, 6-A, 6-B, 6-C, 6-D). Pedagogical practice of students was also guided by methodists from the university who were the curators of particular kinds of practice (physiology and school hygiene, educational work, methods of teaching of certain subjects). As part of our research, we worked closely with methodists and class teachers. Of course, students from different faculties didn't have practice at the same time. It lasted for 6 weeks (5 working days per week) and covered the following time limits during the study period: 1) Faculty of Philology and Journalism - from September 23 to November 1, 2019; 2) Faculty of Chemistry and Biology - from November 4 to December 13, 2019; 3) Faculty of History - from November 18 to December 27, 2019; 4) Faculty of Foreign Languages - from November 19 to December 27, 2019.

The study covered 5 secondary education institutions: 1) Ternopil specialized school № 7 (10 students: 5 from the Faculty of Foreign Languages, 5 from the Faculty of Philology and Journalism); 2) Ternopil Economic Lyceum № 9 (9 students: 5 from the Faculty of Philology and Journalism, 4 from the Faculty of Chemistry and Biology); 3) Ternopil Educational School Collegium № 12 (11 students: 6 from the Faculty of Foreign Languages, 5 from the Faculty of Philology and Journalism); 4) Ternopil Volodymyr Levytskyi Secondary School № 16 (13 students: 7 from the Faculty of History, 6 from the Faculty of Chemistry and Biology); 5) Ternopil Secondary School № 24 (7 students: 2 from the Faculty of Foreign Languages, 5 from the Faculty of History). All students were divided into two groups – control and corrective. The control group included those

who were on practice at Ternopil specialized school № 7 (10 students), Ternopil Economic Lyceum № 9 (9 students), Ternopil Secondary School № 24 (6 students). The corrective group included those who were on practice at Ternopil Educational School Collegium № 12 (11 students), Ternopil Volodymyr Levytskyi Secondary School № 16 (13 students), Ternopil Secondary School № 24 (1 student). Thus, there were 25 students in control and corrective groups from different faculties who were on practice in different secondary schools and educational institutions.

The study contained three stages: I – Statement Stage (1st week of pedagogical practice) – assessment of the existing level of professional self-regulation of students; II – Formation Stage (2-5 weeks of practice) – students of experimental groups were given additional tasks; III - Completion Stage (6th, last week of teaching practice) – the formation of professional self-regulation was re-evaluated. To assess the level of professional self-regulation of students the phenomenon of readiness was used (Melazoniya, 2004). The study examined the formation of motivational, theoretical, and practical components of readiness for professional self-regulation, and also determined its general level in corrective and control groups.

Levels of Formation of Professional Self-regulation

The following methods were used for diagnostics: questioning, “conceptual dictionary”, observation, a method of generalizing independent characteristics, expert evaluation, analysis of results. It was necessary to ensure the compatibility and the ability to perform joint calculations of data, their comparison to obtain a conclusion on the overall level of formation of students’ readiness for professional self-regulation. For this purpose, the coefficient of formation (“K”) was used. Studying students’ readiness for professional self-regulation at the beginning and at the end of practice, we focused on three levels of its formation (Voitiuk, 2005):

- 1) Low level (0.499 – 0.000) – the student adapts to circumstances and relationships; his\her professional activity is passive, optional; professional self-regulation manifests itself as reactions to environmental stimuli; there is no awareness of life prospects, self-criticism, self-seeking; practical experience and knowledge of the theory of self-regulation has not transformed into a conscious system; trainee mainly applies self-regulatory mechanisms of rigidity, identification, projection, acceptance of social roles, spontaneous activity; pedagogical reflection is carried out fragmentarily.
- 2) Medium level (0.799 – 0.500) – the student’s independent behavior alternates with unconscious adaptation to the environment; a keen interest can be observed in the process and results of professional activity; student periodically demonstrates self-control, conscious revision of the motivation system, introspection, generalization of knowledge and experience into a single theoretical system; assessment of one’s self-regulatory skills and knowledge is inadequate (overestimated or understated); trainees apply different self-regulatory mechanisms, not always adequately predict effectiveness and appropriateness; pedagogical reflection is carried out systematically.
- 3) High level (1.000 – 0.800) – the student himself organizes his\her professional activity, is responsible for own results, conscientiously performs duties; is guided by one’s own goals and motives, self-defining and changing personal attitudes and values, independent in judgments and actions; theoretical consciousness and thinking are formed on the basis of available knowledge and experience, situations are solved in the context of the educational process; trainee applies self-regulatory mechanisms of isolation, rationalization, change of action meaning; pedagogical reflection is carried out constantly.

Figure 1 demonstrates the implemented research model of the formation of professional self-regulation of students during pedagogical practice. Professional self-regulation contains four main structural elements that correlate with the components of readiness we have identified: 1) motivation – with a motivational component of readiness; 2) reflection – with the theoretical; 3) – 4) emotional and active reactions – with procedural. Taking into account all the above, we began to study the formation of professional self-regulation of students during the pedagogical practice with the goal-setting (formulated the goal, hypothesis, and research questions). Particular attention was paid to the location of the research experiment, namely secondary schools where students were on practice. The research conditions contributed to the formation of self-regulatory skills of students in both control and correction groups. The presented model also includes three stages of research as well as the monitoring of results that involved summarizing the conclusions, our proposals, and recommendations. This is graphically shown in Figure 1.

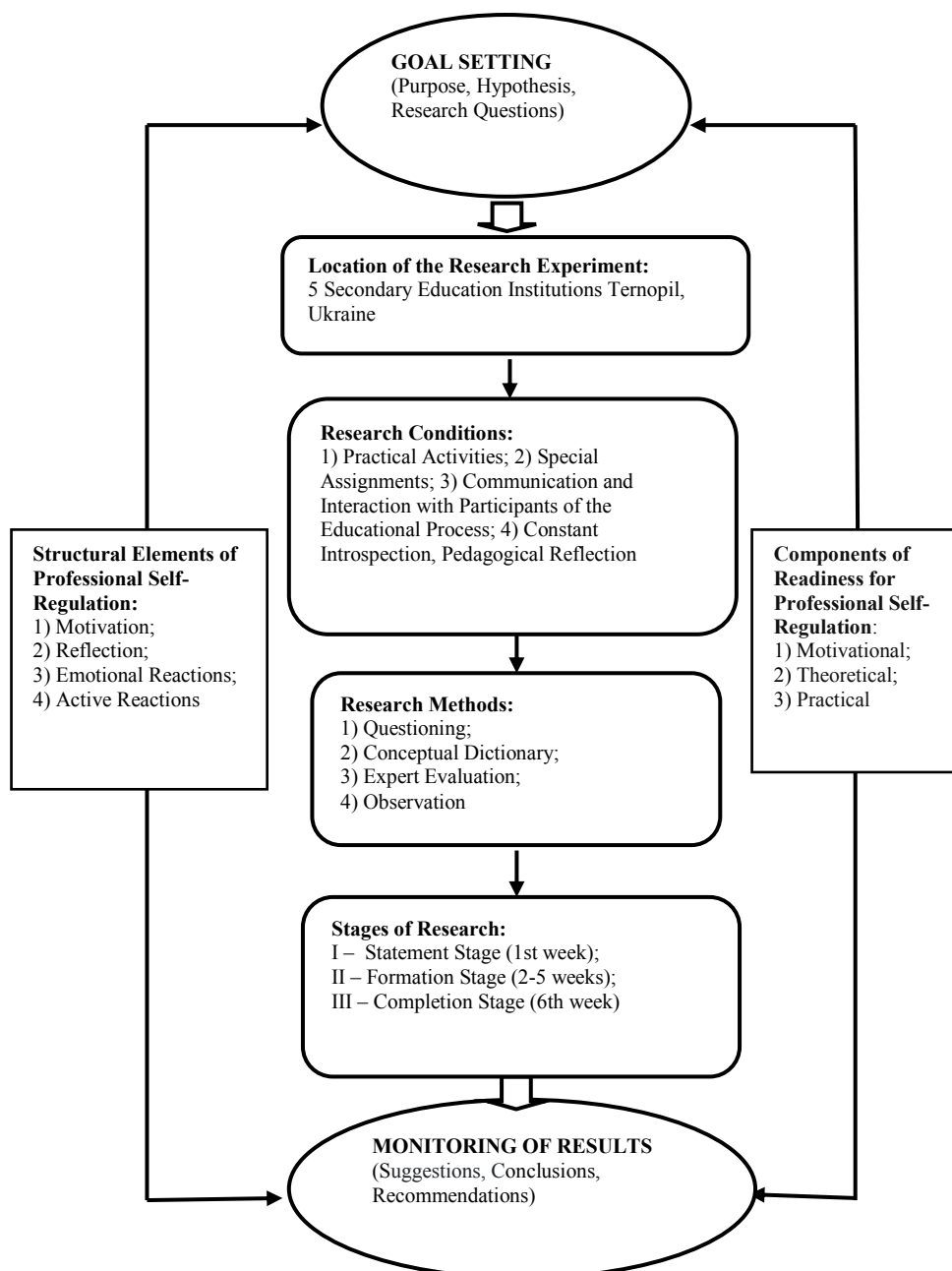


Figure 1. Model of the Formation of Students' Professional Self-Regulation during Pedagogical Practice

The Calculation of Readiness for Professional Self-regulation

The formation of each component of the future teacher's readiness for professional self-regulation was estimated by a certain number of points. According to the formulas, *the coefficient of formation (K)*, *the general coefficient of formation (K g.)*, and *the coefficient of formation of readiness for self-regulation (K f.r.)* were calculated. Considering three components (motivational, theoretical, and procedural) of readiness for professional self-regulation (described above) (Melazoniya, 2004), *the general coefficient of students' readiness for professional self-regulation (G K)* was also calculated.

The questionnaire contained 18 questions. Nine of them (1-9, "motivational block") diagnosed the level of formation of a *motivational component*. For example, "Do you often correct professional actions under the influence of external circumstances (the environment, changing conditions, new requirements, obstacles)?" "Do you analyze the causes of success and failure of any of your actions?" "How often do you regulate your mental states? What causes this?" Responses illustrating the various manifestations of conscious self-regulatory activity have been scored with one point per question. If professional self-regulation is not yet realized, the respondent is

not interested in its mechanisms – zero points. Therefore, the respondents could have received a maximum of nine points in the assessment. *The coefficient of formation of the motivational component* (K m.) was calculated dividing received points by 9. To study the level of formation of the *theoretical component* of the student's psychological readiness for professional self-regulation, we used the method of "conceptual dictionary" (respondents were asked to characterize the concept, category, or problems related to professional self-regulation). Theoretical questions (10-18, "theoretical block") of the questionnaire were the following: "What do you mean by „self-regulation“?"; "Is mental self-regulation a conscious or unconscious process?"; "What indicators can you use to determine the level of professional self-regulation (high or low) of a teacher?". The correct answer to one question is estimated by one point, the wrong answer – zero points. Accordingly, during the assessment, the respondent could receive a maximum of nine points. Then *the coefficient of formation of the theoretical component* (K th.) was calculated by the same Formula. To study the level of formation of the *procedural component* of readiness for professional self-regulation a method of generalizing independent characteristics was used (a combination of indirect observation and inquiry related to the evaluation of the phenomenon being studied, by the most competent people whose opinions complement and control one another). We compared data, received from experts (methodologists, curators of practice, class teachers, school teachers). Their task was to evaluate the student in the following: 1) application of mechanisms of professional self-regulation in the process of fulfilling professional duties in a stressful situation (acquaintance with the class; organization of pupils' activities during the break; defending pupils' position in front of teachers; the first self-taught lesson; conducting a lesson in front of methodologists; organization of the educational event; evaluation of the Olympiad or competition among students, etc.); 2) characterization the process of self-regulation of a definite teacher; 3) drawing up a plan for raising the level of one's professional self-regulation (orally or in written form). The rating scale was the following: 3 - qualitatively; 2 - slight deviations; 1 - poor quality; 0 - not done at all. In evaluating the procedural component, each expert could assign a maximum of nine points (three for three tasks) to the respondent. After that, we calculated *the coefficient of formation of the procedural component 1* (K p.1) according to the data received from each expert. Thereafter dividing the sum of coefficients by the number of experts, *the coefficient of formation of the procedural component of students' readiness for professional self-regulation* (K p.) was calculated. Two experts evaluated students' achievements: pedagogical methodist and class teacher. Finally, the *total coefficient of formation of students' readiness for professional self-regulation* (K r. P SR) was calculated.

Results and Discussion

At the Statement stage of the study, the coefficients of the formation of students' readiness for professional self-regulation were calculated separately for each student in the control and corrective groups and then summarized into a single indicator. Accordingly, the coefficients of the formation of motivational, theoretical, and procedural components and the general coefficient of students' readiness for professional self-regulation were calculated. For this purpose, the sum of the coefficients of each component was divided by the number of students (separately for control and corrective groups). The average coefficient of formation of the motivational component was 0.6444 in control groups (K m. contr. gr. = 0.6444) and 0.6608 in corrective groups (K m. cor. gr. = 0.6608). The coefficient of formation of the theoretical component of readiness for professional self-regulation was 0.5708 in control groups (K th. contr. gr. = 0.5708) and 0.5644 in corrective groups (K th. cor. gr. = 0.5644). The coefficient of formation of the procedural component of readiness for professional self-regulation was 0.4704 in control groups (K p. contr. gr. = 0.4704) and 0.4804 in corrective groups (K p. cor. gr. = 0.4804). The general coefficient of the formation of students' readiness for professional self-regulation at the Statement stage of the study was defined as Medium level – 0.5619 in control groups (G K cor. gr. = 0.5619) and 0.5685 in corrective groups (G K cor. gr. = 0.5685). So, the received results have shown that students have a Medium level of coefficient of the formation of readiness for professional self-regulation at the Statement stage. Results of the empirical study of students' readiness for professional self-regulation (control and corrective groups together) are summarized in Table 1.

Thus, 56% of respondents (28 students) interpreted self-regulation as an internal process that takes place at the conscious and unconscious levels – 40% (20 students) confirmed that self-regulation occurs only at the level of consciousness, and 4% (2 students) – that it is an extremely subconscious process. 64% of respondents (32 students) stated that a teacher should have professional self-regulation skills, 36% (18 students) stated that it is a teacher's choice. To master the skills of professional self-regulation students chose the following changes: to increase the number of practical classes – 60% (30 students); to introduce new specialized courses – 14% (7 students); in-depth study of methodology – 6% (3 students); change nothing – 10% (5 students); not sure what is needed – 10% (5 students). These data were taken into account while assigning tasks on the Formation stage.

Table 1. Results of the Empirical Study of Readiness for Professional Self-regulation

Components of Readiness for Professional Self-regulation	The Content of the Question	Answers	Number of Respondents (%)
Motivational Component	Awareness of the processes of self-regulation	Conscious	40
		Unconscious	4
		Both	56
Theoretical Component	Acquaintance with the theory and practice of readiness for professional self-regulation	Necessarily	64
		Formal	-
		Optional	36
Procedural component	Ways of forming professional self-regulation	Add practical lessons	60
		New specialized courses	14
		Change nothing	10
		Deepen the study of the methodology	6
		Difficult to answer	10

The Formation stage of the study covered most of the teaching practice (weeks 2 – 5). Pedagogical Methodists gave students of control groups standard tasks and instructions: 1) Before planning the educational work, apply various methods to study the needs, interests, features, level of development of pupils; 2) Pay special attention to their wishes and the level of education; 3) Communicate and collaborate with the class teacher, subject teachers, school staff and parents of pupils; 4) Constantly analyze your lessons and educational activities, preferably with the class teacher, pedagogical methodists, other trainees; 5) Follow the rules of constructive, tolerant communication, demonstrate pedagogical tact; 6) Constantly exercise reflection and introspection of your professional activity to correct it; 7) Apply different methods, techniques, means of education and training, taking into account specific conditions or pedagogical situations.

Additional assignments have been elaborated for students of corrective groups. Pedagogical methodists recommended the following: 1) Keep watching teachers' activities to identify what mechanisms of readiness for professional self-regulation they are more likely to use and how they manifest themselves; 2) Participate in the preparation and implementation of a variety of school activities to realize self-regulatory skills in different situations; 3) Observe other students' self-regulation (with subsequent analysis of its effectiveness); 4) Analyze your self-regulatory mechanisms, try to identify the prospects for their improvement in the diary of pedagogical practice. The tasks were selected because the most effective methods of guiding the pedagogical practice of students are the organization of discussions, including discussion of problematic issues, collective analysis of students' activities, self-esteem, and self-analysis.

The Completion stage of the study covered the last (6th) week of teaching practice. Likewise, we have determined the level of students' readiness for professional self-regulation (in control and corrective groups) again. The results were different compared to the Statement stage. The average coefficient of formation of the motivational component was 0.6848 in control groups (K m. contr. gr. = 0.6848) and 0.7904 in corrective groups (K m. cor. gr. = 0.7904). The coefficient of the formation of the theoretical component of readiness for professional self-regulation was 0.6612 in control groups (K th. contr. gr. = 0.6612) and 0.7704 in corrective groups (K th. cor. gr. = 0.7704). The coefficient of formation of the procedural component of readiness for professional self-regulation was 0.5888 in control groups (K p. contr. gr. = 0.5888) and 0.7108 in corrective groups (K p. cor. gr. = 0.7108). The general coefficient of formation of students' readiness for professional self-regulation at the Completion stage of the study corresponded to the Medium level – 0.6449 in control groups (G K cor. gr. = 0.6449) and 0.7572 in corrective groups (G K cor. gr. = 0.7572). The results of the study are summarized in Table 2.

We can state that the distribution of students of control groups by levels of formation the readiness for professional self-regulation at the beginning and end of the experiment is slightly different because the number of low-level respondents decreased to 8% (2 people); with high and medium levels – increased to 4% (1 people). The distribution of students in the corrective groups began to differ since the number of respondents with a high level of preparedness for professional self-regulation increased by 5 times (from 4% to 20%); with a low level – decreased by 7 times (from 28% to 4%). This is graphically shown in Figure 2.

Table 2. Comparative Analysis of Readiness for Professional Self-regulation at the Statement and Completion Stages

Level of Readiness for Professional Self-Regulation	Control groups				Corrective groups			
	Statement stage		Completion stage		Statement stage		Completion stage	
	Number of respondents	% of respondents	Number of respondents	% of respondents	Number of respondents	% of respondents	Number of respondents	% of respondents
High level	1	4	2	8	1	4	5	20
Medium level	16	64	17	68	17	68	19	76
Low level	8	32	6	24	7	28	1	4
Total	25	100	25	100	25	100	25	100

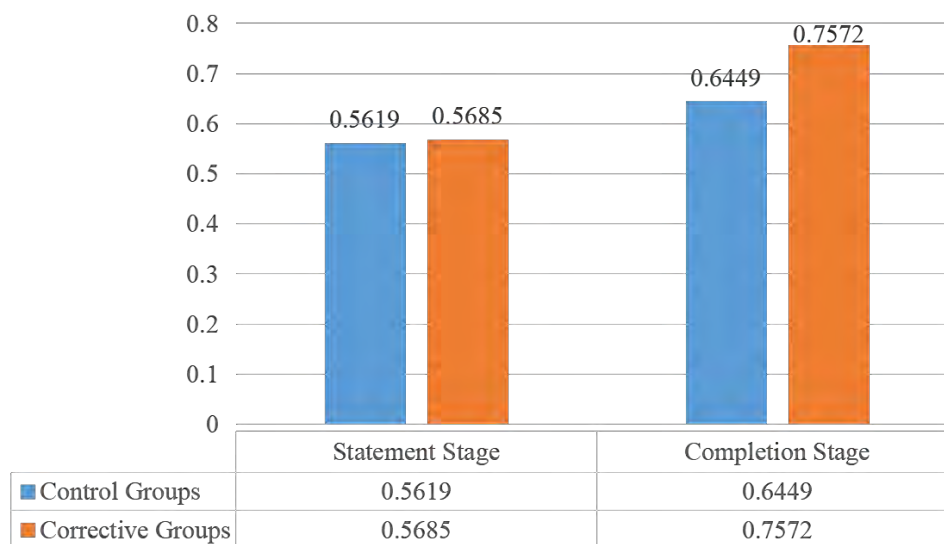


Figure 2. Achievement Level of Formation the Readiness for Professional Self-regulation

Component analysis of the readiness for professional self-regulation (in control and corrective groups) showed that the coefficients of formation increased (see Table 3).

Table 3. Dynamics of Results of the Readiness for Professional Self-regulation (in Control and Corrective Groups)

Coefficients of Formation of Components of Students' Readiness for Professional Self-regulation		Motivational component	Theoretical component	Procedural component	General coefficient of formation
Corrective Groups	Statement Stage	0.6608	0.5644	0.4804	0.5685
	Completion Stage	0.7904	0.7704	0.7108	0.7572
Control Groups	Statement Stage	0.6444	0.5708	0.4704	0.5619
	Completion Stage	0.6848	0.6612	0.5888	0.6449

However, there was no significant change in the level of readiness for professional self-regulation – the general coefficients of formation in the corrective and control groups differed, but all changes occurred within the Medium level (0.500 – 0.799). Considering the relatively short duration of teaching practice (6 weeks) the result is expected. The general coefficient of formation of the motivational component in corrective groups was 0.7904, corresponded to the Medium level of formation, and was 0.1056 higher than in the control groups, where the coefficient of formation was 0.6848 (also corresponded the Medium level). However, in control groups, this indicator changed slightly – 0.0404 (from 0.6444 to 0.6848), and in corrective groups, the indicator changed more significantly – 0.1295 (from 0.6608 to 0.7904). This was facilitated by the promotion of information about the importance of professional self-regulation for the teacher. The general coefficient of formation of the theoretical component was 0.7704 in experimental groups, which corresponded to the Medium level of formation, and was 0.092 higher than in the control groups, where such coefficient was 0.6612. Thus, in all groups, the coefficient of the theoretical component of readiness for professional self-regulation increased within the Medium level. However, in control groups, it has changed a little – 0.0904 (from 0.5708 to 0.6612),

and in corrective groups, it changed more significantly – 0.206 (from 0.5644 to 0.7704). The received result is in consequence of the introduction of self-regulation theory assignments in experimental groups. The general coefficient of formation of the procedural component in corrective groups was 0.7108 (by 0.122 higher than in the control groups, where this ratio was 0.5888) and corresponded to the Medium level of formation. However, in control groups, this indicator changed slightly by 0.1184 (from 0.4704 to 0.5888), and in the corrective groups, it changed significantly by 0.2304 (from 0.4804 to 0.7108). This was facilitated by the presence of special tasks, assignments aimed at awareness and development of self-regulatory mechanisms in corrective groups. The general coefficient of formation of the readiness for professional self-regulation in the corrective groups was 0.7572, which corresponded to the Medium level of formation (increased by 0.1887), and was 0.1123 higher than in the control groups, where this coefficient was 0.6449 (increased by 0.083).

Discussion

Professional self-regulation of the teacher is a necessary component of future the profession. Furthermore, the new environment, responsibility, and expectations of others stimulate it (Mamonova, 2004). It is activated by various professional activities: planning of educational work; studying the needs, interests, features, level of development of the pupils of the class; analyzing the level of pupils' education; communication and cooperation with subject teachers, school staff and pupils' parents; analyzing lessons and educational activities; choosing appropriate and varied methods, techniques, means of education and training. Trainees have to formulate a goal for themselves, consider meaningful conditions, draw up a program of action, choose a system of criteria for success, evaluate their results and adjust them (Pov'yakel, 2004). Therefore effective professional activity is often impossible through psychological barriers at the stage of choosing goals; personal unconscious conflicts during planning; inability to evaluate objectively oneself and others (Rogovyk, 2004).

Analyzing the results of corrective groups, it can be stated that special tasks and assignments increased the level of professional self-regulation. Pedagogical methodists directed students to activities that involve the conscious use of self-regulatory mechanisms. To make it easier for students of the corrective groups to adapt to the conditions and tasks of pedagogical practice, methodists organized discussions, in particular on problematic issues, and corporate analysis for trainees of their activities encouraged self-assessment and introspection. This made it easier for experts (pedagogical methodists and class teachers) to capture the progress of professional self-regulation (analyzing the activities of teachers and other students; participating in the preparation and conducting a variety of school activities). Changes in self-regulation in the corrective groups were more significant than in the control groups, although they also occurred within the Medium level. However, considering the duration of teaching practice (only 6 weeks) this is the expected result. It should be noted that trainees in both groups (corrective and control) often used intuitively the methods of professional self-regulation in the process of professional activity. They felt the need to improve both their activities and relationships in society, to carry out self-education and self-formation as a specialist.

Based on the results of the study, we offer the following suggestions:

1. It is advisable to intensify the attention of trainee students to the processes of self-analysis of their professional activities and pedagogical reflection. We recommend keeping A Diary of Practice to record preparation for classes; feedback received from teachers, fellow trainees, methodists, students; own observations, and most importantly – conclusions (what were unacceptable, bad, average, good, excellent, and why).
2. Future teachers need more tasks that involve active participation in the life of the educational institution where they practice. Thus during the pedagogical practice, it is advisable to offer trainees to participate in the preparation and implementation of a variety of school activities to realize self-regulatory skills in different situations; to observe the manifestations of self-regulation of other students and its effectiveness. A large number of classes (conducted and attended), frequent communication with children and their parents, colleagues will help to improve self-regulatory mechanisms, consequently, methods of professional self-regulation will be more diverse. Another important task is to observe the professional activities of experienced teachers – how they work in the classroom, what methods of interaction with children are used, and what self-regulatory mechanisms are implemented. Additionally, it is important to encourage students to be active constantly and initiative at the educational institution where they had practice. The more students will teach during pedagogical practice, communicate with children and their parents (including extracurricular activities), colleagues, the more often they will use a diversity of methods of self-regulation.
3. To monitor the level of students' readiness for professional self-regulation, as well as its quantitative and qualitative changes, it is necessary to use the presented methodology that is based on a

combination of questionnaires, “conceptual dictionary” and expert evaluation. This makes it possible to obtain comprehensive and reliable information for conclusions and long-term planning.

Conclusion

The process of personal self-regulation takes place under the indispensable condition of involving the results of self-knowledge and emotionally valuable attitude towards oneself. It should be noted that the differences in the formulation and interpretation of the concept of self-regulation are generally small. The analysis of definitions makes it possible to ascertain that the basis of differentiation of the concept in the pedagogical sciences is the following characteristics of self-regulation: awareness of reality, purpose and regulation of activity (external and internal) to secure situation, a procedural systemic character (involves all mental processes). Professional self-regulation is an important component of a teacher’s professional activity and is in the awareness of one’s actions, feelings, motives, position, and appropriate change of behavior patterns depending on the situation (Voytyuk, 2005). To develop the professional self-regulation of students of higher education institutions, it is necessary to optimize the action of two main factors: external (society) and internal (will) (Myslavskiy, 1991). The authors consider the period of pedagogical practice (the fourth year of study) as the best period for this opportunity.

Exploring students’ readiness for professional self-regulation at the beginning and the end of pedagogical practice, we have focused on three components of its formation: motivational, theoretical, and procedural (Malazoniya, 2004). These components are based on the structural elements of self-regulation: motivation; reflection; emotional reactions; active reactions (Nevzorova, 1998). Thus, the motives of future teachers’ professional activity were studied, their knowledge of professional self-regulation was assessed, as well as self-regulatory mechanisms used in the practice were analyzed, attention was paid to skills and composure. Our research has shown that at the beginning of teaching practice, fourth-year students have already demonstrated a certain level of professional self-regulation. In the digital equivalent, it corresponds to the lower boundary of the Medium level (0.5619 – 0.5685). After 6 weeks of professional activity during pedagogical practice, the level of self-regulation increased at 0.083 (the indicator was 0.6449). In corrective groups the results are higher, the level of self-regulation increased at 0.1887 (the indicator was 0.7572), this corresponds to the “upper limit” of the Medium level). The following results were obtained as a consequence of the implementation of assignments aimed at understanding self-regulatory mechanisms. Likewise, methodists emphasized on the importance of self-regulatory processes in professional activity. The results of the study make it possible to conclude that the teacher’s professional self-regulation as a necessary component of future professional activity is actively developing during pedagogical practice.

Recommendations

It is advisable to continue research in the following areas: a) to formulate several blocks of various tasks, the fulfillment of which will facilitate the development of self-regulatory mechanisms for future teachers and compare their effectiveness; b) to find out whether there are differences in the formation of professional self-regulation among students of different faculties and areas of preparation; c) to compare the features of the formation of professional self-regulation of students and new teachers who have just started their professional activity.

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