

Formation of Professional Skills of Future Teachers of Physical Culture

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Abstract: The article deals with the issue of vocational skills formation of future teachers of physical culture. The following skills have been defined as one of the most important in modern profession of a teacher of physical culture: communicative skills, methodological skills (ability to differentially use different means of physical education, ability to rationally use time for the lesson, ability to develop lesson's structure and adhere to it), and skills to predict potential dangers. On the basis of research of active teachers of physical culture, definition methods and assessment scale of professional skills data have been developed. Special attention has been paid to substantiation of pedagogical conditions aimed at formation of the given skills within professional training. Two pedagogical conditions have been defined as the most important: updating of the content of professional training of future teachers of physical culture on the basis of integration approach, and orientation of pedagogical practical studies on tackling complex studies, health improvement and educational issues.

A pedagogical experiment has been carried out during which effectiveness of implementation of pedagogical conditions in the field of formation of professional skills of future teachers of physical culture has been proven. Participant of the pedagogical experiment were junior and senior students of higher educational establishments who are trained to become teachers of physical culture. By all professional skills, positive dynamics of their improvement was observed. The biggest improvement was achieved in the formation of methodological skills and ability to predict potential dangers (at the level of $p \leq 0,01$). At the level of $p \leq 0,05$, improvement communicative skills in experimental group was achieved.

Keywords: *Teacher of physical culture, professional training, vocational skills.*

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Introduction

Reformation of higher and secondary education, integration processes, and implementation of new information technologies in the educational process call for available trained highly-qualified teachers with new type of thinking, able to generate original ideas, make brave and non-standard decisions, solve complicated specialized tasks and practical issues in the field of education.

Undoubtedly, profession of a teacher of physical culture is not an exception in this context. On the contrary, sedentary life, all-round informatization of youth, new quarantine restrictions related to the spread of infectious diseases around the world increase the demand for highly-qualified teachers of physical culture able to efficiently act under new non-standard, unpredictable, and difficult conditions. Efficiency of teacher's activity and the ability to withstand the aforementioned factors are significantly stipulated by the level of formation of respective vocational skills and knowledge of teachers of physical culture.

Ruzhytsky (2013) suggests considering vocational skills of a teacher of physical culture through the analysis of conditions and means of solving certain problems, selection of available knowledge, styles of activity, skills, and their application in educational process.

In its turn, the character of skills and their manifestation are primarily stipulated by the specifics of pedagogical activity. Given versatile nature of the sphere of physical culture and sport, wide range of various tasks set for teachers of physical culture and defining of teacher's vocational skills has been the subject of study of many researchers.

Thus, Teslenko and Sebalo (2020) point out the importance of formation of teacher's ability to orient in related spheres of labor, preparedness to constant professional development, social and professional mobility, ability to successfully solve typical professional tasks.

As noted by Kreuzer and Weber (2018), in order to cope with modern issues it is extremely important for the teachers of physical culture to have innovation skills of thinking and acting mastery.

Given the fact that during a lesson students are in constant motion, a teacher of physical culture must constantly control them, correctly organize the class, ability to control behavior in class being rather important. O'Sullivan and Dyson (1994) have defined that lesson efficiency and students' performance are better in those cases where there is absence of discipline violation. At the same time, praise and encouragement by the teacher have positive influence on students' behavior and lesson efficiency.

Kirk and Macdonald (2021) pay special attention to formation of future physical culture teachers' ability to make correct decisions in various pedagogical situations. In this relation, the researchers consider application of situational studies in physical culture to be reasonable in the process of professional training.

Skills of future teachers of physical culture in application of information and communication technologies in their professional activity call for extensive spreading of computer technologies and multimedia means in the field of education. Research by Çetin (2008) indicates that educational technologies and multimedia means are either not used in the field of physical culture during lessons or used inefficiently. The researchers set forth a number of propositions for teachers of physical culture regarding better use of information technologies in the educational process.

As noted by Pascual (2006), professional activity must be carried out with consideration to aims of physical education taking into account drawbacks, needs, and interests of children and youth. Kårhus (2010) emphasizes that a future teacher of physical culture has to be well- educated, possess the needed set of knowledge related to issues of active lifestyle, sport and recreation. Following this line of thought, Mazolev et al. (2020) suggests better incitement of future specialists for sports and health recreation activity, formation of their ability to organize hiking trips.

Despite the fact that during lessons of physical education attention is primarily paid to motion activity of both students and teachers, communicative skills of future teachers of physical culture pose a significant interest for the researchers. As noted by Kondratska et al. (2018), the majority of young teachers of physical culture experience difficulties in communication with students, which manifest themselves in indistinctive speech, insufficient voice strength, poor enunciation, unconfident speech etc. Amplified noise during the lessons and increased distance between the teacher and the students namely during movement call for increased level of teacher's verbal skills.

Khan et al. (2017) revealed positive dependency of success in professional activity and educational achievements of future teachers of physical culture on communication skills. Pascual (2006) emphasizes positive influence the use of various metaphors and anecdotes during lessons of physical culture.

Since the profession of a teacher of physical culture is a pedagogical profession, Pavlyuk et al. (2020a, 2020b) focus their research on the processes of professional development, improvement of professional mastery, and professional self-improvement. We agree with Sebalo and

Teslenko (2020), who pay special attention of the formation of a number of professional skills, namely: to use various sources and means of mass information; independently find and develop educational material; analyze and compare information and facts; ability to prove your opinion and bear responsibility for the decisions made.

Researcher Brown (2011) assigns an important in the process of professional training of future teachers of culture to independent work of future teachers, skills, and ability for self-education.

Given the spread of inclusive education, Lytle et al. (2003) attach great significance to abilities to correctly organize lessons in physical culture for people with special needs. Bağlama et al. (2019) stress the need to form respective attitude of teachers of physical culture to such category of students.

One of the most important tasks of teachers of physical culture is to keep safety during lessons of physical culture. Unfortunately, students' injuries obtained during lessons are a common phenomenon. In this regard, researches by Kalenskyi et al. (2021) become rather interesting. The authors analyzed the factors that lead to trauma and injuries. The researchers consider being prone to risk as one of these factors. Under these conditions, formation of professional skills related to risks prevention, their localization, minimization, and eradication become very important.

One of the most common issues of professional training is contradiction between content of education and actual aspects of professional activity. In this relation, we assume the research by Richards et al. (2013) to be reasonable. The authors paid special attention to training of future teachers of physical culture to real professional life, the formation of the skills that would improve their ability to guide themselves in modern labor conditions, be prepared for organizational and social challenges of school life. Other researchers also stress the importance of this issue. Thus, Kougioumtzis et al. (2011) revealed significant discrepancy between educational programs in physical culture and typical conditions peculiar to educational establishments, insufficient sports equipment.

Summing up the analysis of references, we may note that the professional of a teacher of physical culture is limited to the aforementioned list of professional skills. At the same time, based on the analysis, we have defined the most important professional skills that significantly influence on professional activity of a teacher of physical culture. These skills include the following: communicative skills, methodological skills (ability to differentially use different means of physical education, ability to rationally use time for the lesson, ability to develop lesson's structure and adhere to it),

as well the ability to predict potential dangers. Given insufficient theoretical and practical study, development of the given issue in academic literature, the aim of our research is to define and form professional skills of future teachers of physical culture within the educational process in higher educational establishments.

Material & methods

Taking into account the fact that professional skills of teachers of physical culture are primarily expressed while doing professional actions, basic empirical material was obtained during pedagogical field studies of future teachers of physical culture.

The research was done on the basis of six higher educational establishments. Students who study in program for teacher of physical culture took part in the research. Overall, 336 students took part in the experiments (control group - 175 persons; experimental group - 161 persons). All participants gave an informed consent for participation. Ethical standards were met for the participants.

Communicative skills are studied via analysis of an audio recording of the lesson. Since the primary task of a teacher is to pass educational information to students, an important indicator that characterizes communicative skills is the quantity of the information passed. Quantitative value is obtained through calculation of words and orders uttered by the teacher of physical culture during the lesson. Specific character of teacher's work lies in the use of a whistle and clapping to give sound signals. These types of sound signals do not belong to teacher's verbal activity though also pass certain information to students. Such signals should be included to communicative skills of a teacher of physical culture, while every single blow of a whistle or clap is considered as a separate word.

Methodological skills are defined by three types: ability to differentially use different means of physical education, ability to rationally use time for the lesson, ability to develop lesson structure and adhere to it.

Ability to differentially use different means of physical education is defined thorough analysis of the content of physical exercises used by the teacher of physical culture during the lesson. When analyzing this ability, attention is primarily paid to revealing the number of physical exercises of different types.

Besides motion tasks, students obtain certain information and explanation on reasonability of physical exercises, methodological advice regarding their execution, acquire knowledge etc. In this relation, ability to

rationally use time of the lesson is very important. To define the given ability, it is reasonable to use such indicator as lesson's general density (GD). General density is calculated a correlation of rationally used time and lesson's duration. Explanation of the educational material, demonstration of drills, control of health state when students do not do motion drills give the teacher ability to assure educational orientation of the lesson of physical culture.

GD was defined on the basis of analysis of pauses made by students during the lesson. In case a student does not do any motion actions, does not receive useful information we start another stopwatch to record wasted time.

To calculate lesson's general density formula 1 was used.

$$GD = (t_1 - t_m) / t_1 * 100 \% \quad (1)$$

in which: GD - lesson's general density;

t_m - overall time wasted during the lesson;

t_1 - lesson duration.

Ability of future teachers of physical culture to develop lesson structure and adhere to it is the most difficult to define. Unlike many other technical and operational professions, in which people do certain production actions, control the given technological process, in the field of humanities, namely in the profession of a teacher of physical culture, it is impossible to outline the whole range and list of possible actions beforehand. Teacher's constant improvement and improvement of professional skills are directly related to the increase of pedagogical actions and possibilities. It practically makes it impossible to embrace the whole list of professional actions and errors related to them that a teacher may make in his work. From the other hand, further research of professional skills of future teachers of physical culture, namely analysis of the ability to develop lesson structure and adhere to it, need quantitative data that have an objective character and do not depend on the experimenter's personal qualities.

We consider that the most optimal way to characterize this ability is to define deviation of work parameters from the regime set. Any deviation in the work that exceeds the "permissible threshold" (fault) is always qualified as an error. While in technical, operational profession the activity is regulated by certain rules, instructions, orders, deviation from which gives reason to state an error, in the profession of a teacher of physical culture lesson plan can be serve as a guideline.

Importance of the ability to develop lesson structure and adhere to it has been analyzed on the basis of deviation of teacher's actions from the plan (lesson plan) during the lesson. Lesson plan is a detailed plan of

teacher's work. In general, a lesson plan contains tasks that must be solved by the teacher during the lesson. It also contains lesson content and the description of exercises that need to be studied. Each exercise is dosed depending on its volume and intensity. Another mandatory component of a lesson plan is methodological and organizational instructions that focus the teacher on important element of the lesson, help him to correctly execute management function.

Assessment of the degree of deviation from the lesson plan is done on the basis of video recordings of the lessons. Comparison of the lesson of physical education with the lesson plan enables to reveal deviations. Ability to develop lesson structure and adhere to it (DEVIATION) has been defined by the formula 2.

$$\text{DEVIATION} = t_b / t_1 * 100\% ; \quad (2)$$

in which: t_b - time that corresponds to the amount of seconds equal to deviation from the lesson plan;

t_1 - time that corresponds to lesson duration (in seconds); usually, lesson duration equals 2700 seconds.

Ability to predict potential dangers has been studied on the basis of the questionnaire developed by us. Professional activity of a teacher of physical culture requires various professional actions and quick decision making in complicated and unpredictable situations. The questionnaire requires future teachers of physical culture need to imagine one of the situations that can occur any moment during professional activity. Taking into account all the circumstances, a future teacher has to choose one of three suggested options to solve the pedagogical situation. One of the options does not envisage risks for students' health. This option gives two points. Another option envisages small risks - one point. Zero points shall be awarded to those who choose the option that envisages potential risks and dangers for students' health. Respectively, every situation is graded on the scale from 0 to 2 points. The level of formation of the ability to predict potential dangers in professional activity of a teacher of physical culture is defined by the amount of points scored. Previous research of skills data manifestation on the example of active teachers of physical culture allowed formation of the respective scale of assessment (Table 1) (Pavlyuk et al., 2020a).

Table 1. Values of the level of professional skills of future teachers of physical culture

Professional skill	Low level	Average level	High level
Communicative skill (number of words)	<1494	[1494-2114]	>2114
Ability to differentially use different means of physical education (number of drills)	<24	[24-36]	>36
Ability to rationally use time for the lesson (%)	<76	[76-92,2]	>92,2
Ability to develop lesson structure and adhere to it (%)	>25,5	[16,2-25,5]	<16,2
Ability to predict potential dangers (point)	<15	[15-24]	>24

Results

Effective formation of professional skills of future teachers of physical culture in higher educational establishments is impossible without creation and implementation of effective pedagogical conditions. Based on theoretical analysis of the given issue and taking into account specific nature of professional training of future teachers of physical culture we have substantiated two pedagogical conditions of the formation of professional skills of the given teachers, namely: updating of the content of professional training of future physical culture teachers on the basis of integration approach; orientation of pedagogical practical studies on execution of complex educational and health-improving tasks.

Implementation of the first pedagogical condition is done through integration of knowledge in vocational subjects that are part of educational plans for professional training of future teachers of physical culture and updating of the content of certain vocational subjects that are closely related to the issue of formation of professional skills of future teachers of physical culture.

Since the defined professional skills have an extensive complex character, thorough analysis of the process of their formation requires their detailed representation in the form of more specific knowledge related to the use of certain professional actions by the teacher of physical culture.

Communicative skills are viewed through the skills in verbal follow-up of drills executions and the skills of verbal administering of lesson's organization.

Ability to differentially use different means of physical education consist from: possession of a wide range of physical drills, ability to show

correct execution of physical drills, ability to execute the drills together with the students, ability to select physical drills.

Ability to rationally use time for the lesson depends on: ability to set the tasks of the lesson, sports equipment, methods and forms of lesson organization, ability to motivate students to do physical drills, ability to structure the lesson by components.

Ability to develop lesson structure and adhere to it is determined through: ability to dose physical drills, ability to control physical state, ability to control accuracy of physical drills execution.

Ability to determine and predict potential dangers is related to: ability to assure insurance during execution of physical exercises by the students, ability to accurately and safely use sports equipment, ability to observe sanitary norms and rules of labor protection, ability to correctly act in emergency situations.

Let us consider implementation of the first pedagogical condition aimed at formation of the given pedagogical skills of future teachers of physical culture.

An important role in the formation of communicative skills is played by subjects within a future teacher of physical culture studies different physical drills, methods of their application, verbal follow-up. To possess high level of verbal activity future teachers of physical culture need not only to know what to say and to teach, but also to be able to pass educational information.

Ability to differentially use different means of physical education depends on many other skills. A wide range of physical drills possessed by future teachers of physical culture has the greatest importance for the formation of this skill. A wide range of physical drills requires the teacher to select physical drills according to the topic of the lesson, environment, and taking into account students' abilities, available infrastructure and sports equipment. Effectiveness of the use of a certain drill depends on the ability to demonstrate correct execution of physical drills. Formation of these skills requires integration of knowledge of a number of subjects, primarily of a practical character that envisage the study of various physical drills.

The ability to rationally use time for the lesson primarily depends on how well the teacher is prepared for the lesson. Accurately set tasks of the lesson and clear lesson division by its components prevent waste of time. An important role during the lesson is played by the ability to use methods and forms of lesson organization. Ability to perfectly use sports equipment allows its efficient use during the lesson. Keeping up students' motion activity at an appropriate level, especially in case of a more complex and

heavier physical load, requires teacher's ability to motivate students for physical drills. To form the aforementioned skills during professional training attention should be paid to studying appropriate topics in a number of vocational subjects.

The ability to develop lesson structure and adhere to it treated as one of the most complex professional skills of future teachers of physical culture. It has been noted that the most common type of mistakes in professional activity of a teacher of physical culture is caused by incorrect dosage of physical drills. Adequacy of the load depends on many factors. On one hand, intensity, bio-mechanic structure, type of load, volume, and duration of the drill have influence on student's body; on the other hand, student's level of training, physical, psychological, and functional abilities reflect the effect of the use of a specific drill. Accuracy and correctness of teacher's professional actions depends on how he feels the influence of the drills on students' bodies. Formation of the ability to dose physical drills and control students' physical state is envisaged within the subjects of medical and biological field.

Available special labor conditions should be mentioned among peculiar features of professional activity of a teacher of physical culture. As noted before, high motion activity, increased emotional state constant contact between students, especially while playing sports games, often result in various dangerous situations. Often, discipline violation, conflict situations, violation of sanitary norms and rules of labor safety result in trauma and injuries during the lesson, sometimes leading to disability and loss of working capacity for an extensive period of time.

That is why the ability of teachers of physical culture to predict potential dangers has been distinguished as an important one. Efforts to avoid and prevent dangers guarantee minimization of trauma and injury risks during lesson of physical culture. Ability to assure safety support during execution of physical drills is one of the preventive measures taken by teachers of physical culture during lessons.

Moreover, it is important pay attention to correct and safe use of sports equipment, observation of sanitary norms and rules of labor safety. An important element in professional training of future teachers of physical culture is knowledge in medical aid in emergency cases.

Now, let us analyze the second pedagogical condition - orientation of pedagogical field studies on tackling of complex, health-improvement, and educational tasks. Formation of communicative skills is viewed in two areas: 1) use of words that encourage students; 2) knowledge and use of clear commands.

An important area of improvement of communicative skills of a teacher of physical culture is related to the use of various words and word-combinations, catch phrases, hyperboles, proverbs and sayings during the lesson. Correctly and accurately selected words can have a great educational impact, significantly increase emotional background during the lesson, and improve motivation to do the drill.

Teachers of physical culture gradually increase vocabulary in the process professional training. However, it is important for future teachers to possess such elements of influence from the first days of work. That is why during pedagogical field studies, students have to create their own vocabulary of such words and phrases. It is important that these words are not offensive and humiliating. The same word can have both positive effect and lead to conflict situations. Students have to constantly study various expressions, analyze effectiveness of their influence of each student or a group of students in general.

Another element of the development of speech activity during the lesson of physical culture is terminology apparatus, correct and clear use of commands, their grammatical enunciation. Special terminology that encompasses names of commands, accuracy of counting, directing of motions, instructions regarding execution of physical drills help future teachers to complete a number of tasks: to improve communication between the teacher and students, mastering of physical drills, increase of student's motion activity etc. Students have to develop and improve their terminological vocabulary and use it as correctly as possible during the lesson.

The ability to differentially use different means of physical education, which is stipulated by the number of physical drills proposed by the teacher of physical culture during the lesson, is one of the most important characteristics of professional activity that improves quality of the lesson and makes more diverse. That is why, during pedagogical field studies, students must always broaden their range of motion activities, study new physical drills, and try to conduct a lesson using as many physical drills as possible. An important aspect of the use of various physical drills is observation of students' reaction and their emotional state. This enables future teachers to know what drills are more interesting for the students and what drills require additional methods of stimulation. Correct coordination during execution of various drills helps future teachers to increase students' level of interest and activity regarding motion activity during a lesson of physical education.

Formation of the next two methodological skills (ability to rationally use time for the lesson and ability to develop lesson structure and adhere to

it) depends not only on correct lesson structure, but also on quality preparation work prior to the lesson.

During pedagogical field studies, students must learn to avoid unreasonable waste of time when students do not execute motion activity and do not receive any educational information. In case of such pauses, it is important not only detect them, but also to reveal the reason in order to make necessary corrections in further work.

As a result of empirical research, basic difficulties that influence on the formation of the ability to rationally use time for the lesson have been revealed. Among the most common reasons are: irrational and unskillful use of the available sports equipment in respect to the number of students present at the lesson. When the equipment that the teacher may use during the lesson is a relatively fixed quantity, the number of students at the lesson of physical culture always changes. Changes are done by the sex distinction (ratio of boys and girls) and depend on students' state of health, morbidity, division into groups that are part of basic, preparatory, and special medical department. These circumstances require teachers of physical culture to be very skillful, apply creative approach, broaden their minds and views on possibilities to use various physical drills during the lesson etc.

During the research a significant drawback has been revealed - teachers of physical culture being prone to sticking to a certain individual style, i.e. to use to the drills and lesson structure that is easiest for them. Teachers are reluctant to pick up innovation means to conduct lessons, do not try to master new modern sports equipment and implement new drills using new equipment. This conventional style greatly limits the quality of the lesson, decreases students' motivation for lesson of physical culture.

As opposed to the aforementioned issues, an important aspect is formation of future teachers' ability to correctly and accurately correlate the existing infrastructure, sports equipment with the group of students taking into account their capabilities. What needs to be formed is students' preparedness to conduct lessons under various changeable conditions. When being introduced to the school, its infrastructure, available sports equipment, and students, a student-apprentice plans beforehand how to correctly conduct a lesson, what methods and means to use. Thus, an important aspect of successful lesson is timely preparation.

It is very important to use information resources, references, Internet, television in this work. A compulsory component of preparation is modeling of the lesson structure, during which the student thoroughly plans how to organize the group, divide students into subgroups, ensure their

movement during the lesson etc. A detailed plan is presented in the form of lesson plan.

When conducting a lesson, the student tries to implement the plan as accurately as possible. The most important stage in application of this method is analysis of the work done. The student individually assesses personal actions during the lesson, takes into account efficiency of drills usage, assess emotional state of the students, their level of interest and desire to execute the drills. The greatest attention is paid to lesson elements that turned out to be the most complicated, unsuccessful, and to the ones that can be qualified as positive. Student's analytical activity after the lesson is a stating form of personal work; it serves a powerful tool to improve theoretical professional level in combination with practical skills. A future teacher manages to master new drills, ways of their execution, develop mnemonic apparatus. Improvement of professional potential has positive influence on self-confidence and confidence in personal professional abilities.

The formation of teacher's preparedness to conduct lessons under changeable conditions is significantly promoted by the available teacher's range of motion drills. In case of absence or lack of this range, changes in lesson conduct, lack of students' desire to complete the tasks set, a future teacher of physical culture should always have a spare option of lesson plan, other physical drills, or ways of students' motion activity organization. Due to reservation during the lesson, it is possible to decrease unreasonable pauses, improve both motor and general density of the lesson.

Ability to develop lesson structure and adhere to it is analyzed by the level of deviations from the lesson plan. Future teachers should take care of quality preparation, conduct a lesson, and thoroughly analyze the content of the lesson, detect deviations from the lesson plan, reveal the causes of the errors. Consideration of the drawbacks optimizes further professional activity, improves lesson accuracy and professional mastery of future teachers.

The results of the research of professional activity of teachers of physical culture enable us to point out the most common errors. Primarily, deviation from the lesson plan and incorrect dosage of physical workload are meant.

Accuracy of physical workload dosage depends on many factors that every teacher of physical culture has to take into consideration when planning physical workload. Primarily, attention should be paid to students' capabilities. It is inadmissible for students to be fatigued or over-trained during the lessons. This may result in trauma, injuries, or health

deterioration. One of the drawbacks is insufficient level workload with no positive changes in students' body. Reaction of the body on physical workload is determined by measuring heart rate.

Among effective measures regarding formation of the ability to predict potential dangers teacher's motion actions related to personal example of drills execution, safety support, assistance in drills execution to students who fall behind should be mentioned. Execution of the drill by a future teacher implements educational task and help verify complexity and efficiency of its influence on the body. This helps a student-apprentice to avoid difficult physical drills that can result in student's fatigue. Constant movement of the student-apprentice together with the students optimizes control of the field of vision covering all the students. Efforts to be closer to students promote timely safety measure, which improves safety at the lessons of physical culture.

Implementation of the aforementioned pedagogical conditions and verification of their efficiency regarding formation of professional skills was done on the basis of a pedagogical experiment.

Students who were admitted to colleges in 2016 - 2017 and 2017 - 2018 academic years took part in the formation stage of the pedagogical experiment. During the work, control group was created including the students who studied to be future teachers of physical culture in higher educational establishments (Lesya Ukrainka Volyn National University (57 persons); Pavlo Tychyna Uman State Pedagogical University (58 persons); Ternopil Volodymyr Hnatiuk National Pedagogical University (60 persons)). Overall number of student in the controls group (CG) was 175 persons. Experimental group included students from Khmelnytskyi National University (39 persons), Kamianets-Podilskyi National Ivan Ohiienko University (69 persons), Drohobych Ivan Franko State Pedagogical University (53 persons). Overall number of students in the experimental group (EG) was 161 persons.

Unlike control group, students of which studied by educational programs, plans, lists of subjects approved in effective order, in the experimental group a number of influences in interventions into educational process were done, namely the aforementioned pedagogical conditions were implemented.

The level of formation of the researched professional skills was determined via the aforementioned methods separately in control and experimental group at the beginning and upon completion of the experiment. With the help of Student's T-criterion, the value of changes I formation of professional skills was checked (Table 2.).

Table 2. Comparative analysis of the level of formation of professional skills of future physical culture teachers during the pedagogical experiment

Professional skills	CG					EG				
	Before the experiment (N=113)		After the experiment (N=175)		t	Before the experiment (N=93)		After the experiment (N=161)		t
	M	σ	M	σ		M	σ	M	σ	
Communicative skills	1384	345	1442	358	1,26	1448	334	1558	365	2,38
Ability to differentially use different means of physical education	24	3,47	24,6	3,95	1,28	24,5	3,53	28,4	4,57	7,06
Ability to rationally use time for the lesson	74,4	7,63	73,7	8,13	1,18	74,7	6,57	79,6	9,11	4,59
Ability to develop lesson structure and adhere to it	42,1	6,9	41,2	8,01	0,9	41,2	6,9	32,3	7,86	9,09
Ability to predict potential dangers	20,2	4,54	20,4	4,27	0,47	20,8	4,73	23	4,87	3,46

Note: $t_{sp}=1,97$ for $p=0.05$

$t_{sp}=2,60$ for $p=0.01$

The obtained results prove efficiency of the aforementioned pedagogical conditions regarding formation of professional skills of future teachers of physical culture. The most significant changes toward improvement were obtained in the field of the ability to develop lesson structure and adhere to it, and ability to differentially use different means of physical education (at the level of $p \leq 0,01$). To a lesser extent positive dynamics was shown in ten field of formation of the ability to rationally use time for the lesson and ability to predict potential dangers. At the level of $p \leq 0,05$ improvement in the formation of communicative skills was obtained.

Discussion

Given versatile character, wide range of tasks related to the sphere of responsibility of a teacher of physical culture, effective implementation of professional activity requires the teacher to possess professional skills. We agree with Khan et al. (2017), Kondratska et al. (2018) and Pascual (2006), regarding the necessity to improve communicative skills of teachers of physical culture. As shown by experimental research, an efficient means in

this relation is formation of vocabulary of personal expressions, proverbs, study of terminology, improvement of command and instructions enunciation during the lesson of physical culture.

Formation of the ability to rationally use time for the lesson, develop lesson structure and adhere to it, predict potential dangers supplement academic results (Kalenskyi et al., 2021). Mozolev et al. (2020) namely promote improvement of teacher's personal potential in regards to risks prevention not only during the lessons, but also during extra-curricular activities, organization of health improvement, mass sports events, hiking trips etc.

Formation of the feeling of influence of physical workload on student's body has positive effect on teacher's ability to plan and conduct the lesson. In its turn, students' behavior depends on how accurately the lesson is planned and the drills are selected. Formation of methodological knowledge given in our research correlates with the research by O'Sullivan & Dyson (1994) in which authors view behavior and keeping the discipline during the lesson as a guarantee of efficiency of the lesson.

We assume that formation of professional skills during pedagogical field studies is efficient. This totally correlates with opinion of Kougioumtzis et al. (2011) and Richards et al. (2013), according to which students learn actual aspects of school life, available sports equipment, normative documentation, existing problems in school during pedagogical field studies. However, the main aspect is that they are introduced to students, their needs, and interests.

Assurance of successful formation of professional skills is impossible without educational efforts made by the students. It is important for the students to be responsible, independent, strive for constant development, self-education, self-improvement etc., which is proved in a number of academic research (Brown, 2011; Kårhus, 2010; Teslenko & Sebaló, 2020).

Views of Kirk and Macdonald (2021) and Kreuzer and Weber (2018), on the necessity to use various pedagogical situations, case studies in the process of training of future teachers of physical culture have been implemented within formation of certain professional skills, namely: ability to rationally use time for the lesson, ability to develop lesson structure and adhere to it, ability to predict potential dangers. A detailed analysis of the lesson conducted, detection of errors in execution of professional actions during the pedagogical field studies broadens students' conception of various possible situations during the lesson and ways to tackle them. In its turn, it improves self-confidence, positively reflects on pedagogical mastery of future teachers of physical culture.

Determination of the level of formation of professional skills that manifest themselves during pedagogical field studies requires the skills in video recording of the lesson and further analysis of the obtained data. This condition indicates on the importance of computer literacy and knowledge of modern means of information and communication technologies, which proves relevance of research by Çetin (2008).

Undoubtedly, the analyzed professional skills do not encompass the whole range of professional action of teachers of physical culture. However, their consideration in the process of education will significantly improve the level of professional training and promote further professional growth.

Conclusions

Implementation of the “updating of the content of professional training of future teachers of physical culture on the basis of integration approach” pedagogical condition envisages updating of the content of a number of vocational subjects, namely via inclusion to educational programs of topics that are oriented on high level of integration of professional knowledge, improvement of professional skills, improvement of individual and typological as well as professional qualities of future teachers of physical culture.

Implementation of “orientation of pedagogical field studies on execution of complex educational and health-improvement tasks” pedagogical condition envisages taking a number of measures during pedagogical field studies that are aimed at formation and improvement of skills related to professional skills of future teachers of physical culture.

Improvement of communicative skills of future teachers of physical culture is promoted by improvement of speech, distinguishing optimal distance from the students, control of voice strength, verbal assessment of the quality of motions done, encouragement and stimulation, creation of personal vocabulary of motivational words and expressions. Methodological skills have been developed via detection of unreasonable pauses and losses of time during the lesson, analysis of their causes, detailed analysis of the lesson conducted, detection of deviations from the lesson plan, find causes of errors, effort to conduct a lesson increasing the number of physical drills, error correction, which positively influences on students’ emotional state, safety support, assistance to students who fall behind. Author’s method of assessment of the level of formation of future physical culture teachers’ feeling of reaction of students’ body to physical workload has been developed.

Formation of the ability to predict potential dangers is promoted by a detailed analysis of various pedagogical situations within professional activity of a teacher of physical culture and by the search of optimal ways to tackle them.

Experimental verification of the efficiency of implementation of pedagogical conditions in the educational process showed positive changes in the levels of formation of professional skills of future teachers of physical culture in the experimental group. The biggest improvement was obtained in the formation of methodological skills to predict potential dangers (at the level of $p \leq 0,01$). At the level of $p \leq 0,05$ improvement of communicative skills were obtained.

Conflicts of interest

The authors report no conflicts of interest.

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