Pedagogical model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids

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Abstract: The paper presents a model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids. The structural elements of the development process were identified and the following blocks were distinguished: the block of objectives, which uncovers the individual capabilities and potential of the graduates of higher education institutions affiliated with the GPS of the MChS; the managerial, procedural, integrative blocks and the block of psychological and pedagogical conditions. Training outcome was used as an assessment tool to evaluate the efficiency of the devised model as it creates consistent interrelationships among the rest of the model components and influences with orderly effect all the stages of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids.

Key words: firefighters, cadets, higher education institution, pedagogical model, readiness development, professional activity, physical training aids.

Introduction
Preparing cadets of higher education institutions affiliated with the State Fire Service (GPS) of the Russian Ministry of Emergency Situations (MChS) for professional activity is presently seen as a holistic process [3] which includes developing qualities and skills required for their future careers. The main disadvantage of the current educational situation lies in an inconsistency between cadets’ established expectations about their employment with the GPS of the MChS and external work-related graduation requirements.

Professional training at higher education institutions affiliated with GPS of the MChS involves developing new personality characteristics, professionally important qualities and practical skills that cadets will need to perform their jobs effectively. As this type of training implies using various pedagogical techniques affecting personality development, cadets study a wide range of subjects and are encouraged to take part in different activities. All these efforts are intended to build cadets’ readiness for professional activity which, as experience shows, encompasses such qualities as responsibility, self-control, willpower, emotional resilience, and the ability to exercise a level-headed approach to risk management.

Responsibility is considered to be the most important as well as broad-based quality. It characterizes cadets’ attitude towards their professional duties and influences the process and results of their future professional activity. Responsibility is closely linked to changes in the system of values and value-related attitudes towards their future profession. The professional formation of cadets and building their readiness for professional activity that occur at higher education institutions affiliated with the GPS of the MChS are inextricably connected. In this regard, the essence of the category «professional formation» can be elicited against the categories «growth» and «development».

The development of cadets at higher education institutions affiliated with the GPS of the MChS is an intrinsic process aimed at enhancing their strength of mind and body. It is conducted by changing the personality’s professional orientation via arranging its acquisition of social experiences associated with the profession in question. All of it builds on cadets’ intellectual development and their exercise of will and creativity during the process of training. Preparing cadets at higher education institutions affiliated with the GPS of the MChS for future professional activity involves qualitative changes on the level of the personality organization: various pedagogical influences transform the established mindset and motives of behavior.

Experience shows that higher education should address ever more challenging tasks arising in relevant professional areas. It is important to ensure that the professional formation of cadets at higher education
institutions affiliated with the GPS of the MChS incorporates their independent effort at solving complicated professional tasks, though it is highly dependent on the abilities of each individual cadet.

Thus, the professional training of cadets at higher education institutions affiliated with the GPS of the MChS implies the acquisition of a range of professional knowledge, abilities and skills, and the development of personal attributes required by professional firefighters. Training results are professional orientation, necessary value-related attitudes towards the future profession, and professional readiness which becomes a personal development objective. To achieve it, the following items should be developed:

- motives, value-related attitudes, and social responsibility relating to cadets’ future professional activity;
- personal professional competence;
- personal readiness, referring to mastery of the fundamentals of fire suppression activities;
- personal professional competence;
- personal readiness, referring to mastery of methods of joint professional activities aimed at emergency management and life-saving;
- personal readiness, referring to mastery of expressing individuality and self-development while engaged in professional practice.

Professional competence of graduates of higher education institutions affiliated with the GPS of the MChS includes professional knowledge and the ability to gain insight into unconventional work-related issues. It is the skill/ability to explain any fact associated with the professional activity of an employee of the GPS of the MChS; the ability to make accurate assessment of the quality and consequences of a job.

A theory disclosing the specifics of the influence of physical training on the levels of readiness for professional activity is one of the most substantive ones in regard to the issues relating to the development of the professional readiness of the graduates of higher education institutions affiliated with the GPS of the MChS. According to this theory, it is possible to identify the main constituents of the impact of physical training on the development of cadets’ readiness for professional activity during their stay at higher education institutions affiliated with the GPS of the MChS:

- influence of physical training on motivation for effective professional activity;
- influence of physical training on determining the objectives and content of professional activity;
- modeling individual elements of professional activity with the use of physical training;
- specifying individual elements of the model of professional activity with the use of physical training;
- cadets’ planning their own actions during the process of physical training aimed at achieving readiness for professional activity;
- cadets’ control over their own actions during the process of physical training aimed at gaining mastery in performing them in the context of future professional activity;
- control over a sequence of actions during the process of physical training and their interrelation with the elements of professional activity when doing fire-fighting exercises.

This is an outline of the structure representing the interrelationship of the elements of professional activity with fire-fighting physical exercises. Cadets studying at higher education institutions affiliated with the GPS of the MChS reveal links between individual elements of professional activity and fire-fighting exercises, determine the significance of these links, and unravel their functional hierarchy. A dynamic organization of the structural elements of professional activity and different physical training aids is formed.

The influence of physical training on future professional activity of the graduates of higher education institutions affiliated with the GPS of the MChS is analyzed from the object-action point of view as well as in the context of developing physical and other qualities of a person. Cadets’ readiness for professional activity is built through the subject-related aspect of their student activities. This is accomplished via modeling the elements of professional activity during physical training sessions.

Modeling is a scientific method of inquiry characterized by the reproduction of the elements of the professional activity of an employee of the GPS of the MChS during physical training with the objective of researching specific characteristics of such an activity. It should be noted that the optimum condition for researching any professional activity is associated with having a clear idea of its content.

The review of psychological and pedagogical literature suggests that in this case, modeling can be regarded as an indirect method of studying the elements of the professional activity of an employee of the GPS of the MChS during physical training [2, 5].

Thus, modeling certain aspects of the professional activity of an employee of the GPS of the MChS during physical training helps cadets to organize their knowledge about the content of this activity and indicates how to use physical training aids aimed at developing professional readiness in a more effective way.

A model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids must comply with a set of requirements:
- it must provide a comprehensive representation of a system of physical and professional training at higher education institutions affiliated with the GPS of the MChS;
- physical training aids must conform to existing elements of the system of the professional activity being modeled and interrelationships among these elements to the physical training aids used to build readiness for such an activity;
- a model of future professional activity should be developed until it reaches the level where it becomes possible to determine the efficiency of using physical training to form the professional readiness of the graduates of higher education institutions affiliated with the GPS of the MChS.

To devise a model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids, it is necessary to examine the structure and content of the process of their professional training.

**Method**

The development of a model for building the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids rested on the content of professional competence. The professional competence of the graduates of higher education institutions affiliated with the GPS of the MChS entails expert knowledge and skills. Competence is the skill/ability to explain any facts related to the activity of an employee of the GPS of the MChS and to give a precise evaluation of its quality and consequences [5, 6].

The structure of the professional competence of the graduates of higher education institutions affiliated with the GPS of the MChS is characterized by such features as the number and quality of solved tasks, effectiveness and a success rate in settling problematic situations associated with emergencies and rescue of people. Different graduates of higher education institutions affiliated with the GPS of the MChS at different stages of their professional development display different sets of the above-mentioned characteristics inherent in the structure of their competence. The achievement of the required competence indicates a high level of graduates’ effectiveness and professional performance.

The development of the professional readiness of the graduates of higher education institutions affiliated with the GPS of the MChS stems from inconsistencies between the achieved level of personal enhancement and the requirements that professional activity imposes about the level of their knowledge, skills, abilities as well as their physical, moral, volitional and other qualities [1–4].

To develop readiness and personal and professional qualities necessary for professional activity among cadets studying at higher education institutions affiliated with the GPS of the MChS, it is requisite to identify some particular components, such as:

- requirements concerning the level of the physical and professional preparedness of the graduates of higher education institutions affiliated with the GPS of the MChS;
- specific principles of training and educating cadets at higher education institutions affiliated with the GPS of the MChS;
- programs and plans of their physical and professional training;
- methods of physical and professional training;
- forms of professional training aimed at developing skills for containing and extinguishing fires as well as life-saving;
- cadets are the recipients of professional training provided at higher education institutions affiliated with the GPS of the MChS;
- teaching staff are the providers of professional training at higher education institutions affiliated with the GPS of the MChS;
- developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS results in the necessary knowledge, skills, abilities and personal qualities determining the reliability of their behavior in emergencies.

The identification of structural constituents of the process of developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids makes it possible to distinguish five blocks: the block of objectives, which uncovers the individual capabilities and potential of the graduates of higher education institutions affiliated with the GPS of the MChS; the managerial, procedural, integrative blocks and the block of psychological and pedagogical conditions.

The system-forming factor for the devised model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids is the outcome of training as it is indicative of the effectiveness of the given model. This research considers outcome as the tool to create consistent interrelationships among the rest of the components and influence with orderly effect all the stages of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids.

The block of psychological and pedagogical conditions entails a set of conditions that has a significant impact on all the components of the model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids.
The block of objectives as a component of the model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids combines several objectives:
- creative application of knowledge concerning the use of physical training aids to prepare cadets for fire extinguishing operations;
- ability to analyze professional activity and find creative ways to solve tasks related to the achievement of physical readiness to perform it;
- ability to communicate directly with co-workers displaying one’s physical qualities and practical skills during fire distinguishing operations;
- ability to enhance one’s own physical qualities, professional knowledge, skills, and abilities.

When analyzing the managerial block, it should not be overlooked that teaching staff fulfill a specific function in using physical training aids to build the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS. This type of activity is aimed at:
- developing professional skills and qualities needed to execute fire extinguishing operations;
- improving meaningful relationships between faculty members and cadets while developing cadets’ readiness for professional activity with the use of physical training aids at higher education institutions affiliated with the GPS of the MChS.

The managerial block of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids rests on one critical prerequisite which is the consistent operation of coordinating mechanisms represented by teaching personnel and academic executives.

This block gives an indication for the cyclicity of the process under consideration: it proceeds in time and consists of certain sections which determine management cycles. Each cycle is an operational unit in the process of developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids. Any management cycle encompasses five functions: planning, organizing, staffing, coordinating, and controlling.

To evaluate the process of developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids, it is worth considering a system of management functions. The system ensures the effectiveness of coordinating mechanisms in the process of developing cadets’ readiness for professional activity. There are such management functions as analysis, motivation, prognosis, implementation, control, and correction.

An increased focus in the structure of the model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids should be put on the mobilization function. Since this function aims to enhance the effectiveness of development efforts, it becomes the ongoing driving force behind the whole process.

It follows that the managerial block of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids can be represented via the execution of the management functions of the given process.

Teaching personnel who implement the process of developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids play a critical part in their acquisition of professional knowledge, skill and abilities.

The objective function is an intrinsic attribute of the managerial block of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids. It provides the framework that allows determining the objectives of the overall process of developing cadets’ readiness for professional activity. This encompasses an awareness of the requirements for cadets’ readiness for professional activity and their personal qualities. It is highly important to know how to assess the level of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS as such an assessment provides a reference standard which cadet personality can be measured up against. This ensures:
- integrated forecasting and impact of physical training on the professional readiness of cadets;
- stability and flexibility of forecast-based planning.

The executive function, which is concerned with implementation, entails developing a model related to the actual objectives and plans of the physical and professional training of cadets. Fig. 1 shows the organization chart for the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training.

Alternatively, there are other sources of cognitive activity, such as learning techniques and aids, which ensure the infallibility of professional behavior in emergencies.

It is apparent that the physical and professional training of cadets requires feedback, which is delivered by the control function. Performing this function involves analyzing and evaluating the results of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids. The resulting analysis serves as a framework to monitor against when introducing corrections into the development of the professional readies of cadets.
Fig. 1. Organization chart for the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids

The procedural block is regarded as the one of the outmost importance as it is indicative of the training provided to cadets. The outcome of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS depends on three elements: the objectives and content of professional training, its management.

The development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids is a social process. Therefore, it is critical to correctly determine a controlled object in the given pedagogical system. The controlled object in the pedagogical system of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids is represented by the cognitive ability of cadets. Pedagogical research identified two trends to enhance the cognitive activity of cadets studying at higher education institutions affiliated with the GPS of the MChS. The first one rests on a holistic approach to developing the readiness of cadets for professional activity and ensures a boost to cadets’ activity throughout the whole training process.

After an examination was had into the above-mentioned statements, a pedagogical model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids was devised. This model is the principal component of the procedural block (Fig. 2).

Generally, the procedural block is viewed as a consistent model comprising the elements of the process of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids as well as the learning content and its structure where physical training combines professional and practical aspects.

This research makes use of the above definition because of its constructive nature, i.e., it identifies the core elements of the model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids.

The model is intended to serve as a guide mark in regard to the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids, which is accomplishable only during actual training.

It follows that the training activity of cadets provides the ground for a methodological system in the given model.

A certain set of moral, volitional, and personal qualities enables the cadet to achieve his long-range objectives and reach a high level of professional readiness. Physical training is an integral part of this process. If cadets studying at higher education institutions affiliated with the GPS of the MChS want to master their learning content, they have to rely on the acquired knowledge and their own mobility which are dependent on their individual moral, volitional, and personal qualities formed during physical training sessions.
Results

The efficiency of the process of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids was examined through a comparison of the levels of the professional readiness in the control (19 cadets) and experimental (22 cadets) groups. The parameters of professional readiness among the cadets were determined on the basis of the established criteria and indicators. The qualitative analysis of these indicators was conducted by comparing them in the control and experimental groups. Comparison results made it possible to estimate the efficiency of the devised model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids.

Functional, psychological and professional criteria were chosen as the basic tools for estimating the efficiency of the generated model (Table 1).
Table 1. Basic criteria and indicators of the efficiency of the pedagogical model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Indicator Description</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Military medical board findings on entering a higher education institution. Results of the medical examination. Keeping regular hours, cold training, hardening, leading a healthy lifestyle.</td>
<td>High: Fully fit for military service; Medium: Fit for military service with minor restrictions; Low: Partially fit for military service.</td>
</tr>
<tr>
<td>Functional capabilities</td>
<td>Check-ups to take the measurements of functional capabilities and their dynamics (HR, ABP, VC).</td>
<td>High: Conform with standards, rapid recovery; Medium: Mostly conform with standards, slow recovery; Low: Serious heart rhythm disturbances.</td>
</tr>
<tr>
<td>Motivation to serve in the GPS of the MChS</td>
<td>Enhanced motivation to study and expand the knowledge base. Improved initiative and creativity in all types of training and professional activities at the GPS of the MChS.</td>
<td>High: Displayed continuously; Medium: Displayed occasionally; Low: Not displayed.</td>
</tr>
<tr>
<td>Personality profile</td>
<td>Reports from commanders and teaching staff. Results of practical and professional trainings. Development level of professionally important personal and physical qualities.</td>
<td>High: Recommended in accordance with results; Medium: Recommended with minor restrictions; Low: Not recommended.</td>
</tr>
<tr>
<td>Learning success</td>
<td>Quality of preparation for all types of classes. Pursuits of self-actualization and physical development. Current academic performance. Results of examinations and physical performance tests.</td>
<td>High: Internalized more than 75% of the learning material; Medium: Internalized 75–50% of the learning material; Low: Internalized less than 50% of the learning material.</td>
</tr>
<tr>
<td>Professional readiness</td>
<td>Learning activity level. Performance creativity. Task success.</td>
<td>High: Ready to perform job duties in a conventional way; Medium: Able to perform job duties in a creative way; Low: Unable to fully perform job duties.</td>
</tr>
</tbody>
</table>

These criteria are reflected by the following indicators: the level of physical capabilities; the level of professional motivation; the learning success rate of the future officers of the GPS of the MChS; the level of their professional readiness.

Furthermore, the study aimed to explore the potential of using special physical training aids to enhance the level of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS. To this end, each subject in the control and experimental groups received points against the basic indicators of the development level of an individual professional attribute. The scores corresponding to each indicator were added up.

The conclusive result was determined by the total points obtained by the subject for all the three criteria as part of the study and the appraisal characterizing professional qualities as part of the undertaken rating. The acquired data was validated against the evaluation of the performance displayed by cadets engaged in complex professional tasks. The essentials were recorded on the evaluation sheet.

The experimental work included three sequential stages, with each stage intended to provide data on changes in the level of the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS. By processing and correlating the data, it became possible to identify a dynamic pattern in the development of the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS.

The study of the dynamics of change in the professional readiness of cadets studying at higher...
education institutions affiliated with the GPS of the MChS drew on the levels achieved by them in tackling professional tasks related to extinguishing fires and live-saving.

The conducted research showed that the professional readiness of cadets entails the ability to quickly and efficiently solve fire-extinguishing and life-saving tasks, the ability to promptly adapt to the ever-changing environment of emergency situations, confidence and reliability in decision-making. In addition, it was revealed that the quality of the development of the professional readiness of cadets is influenced not only by subjective personal characteristics, but also by objective ones, such as the nature and level of professional training provided by a higher education institution.

The main findings obtained in the course of the formative pedagogical experiment are shown in Table 2. The analysis of the dynamic pattern in the development of the professional readiness of cadets involved comparisons among the above-listed indicators. The majority of the subjects having reached the highest level of professional readiness were from the experimental group. Also, there was consistent progress among the cadets from the experimental group who had reached the greatest state of readiness for professional activity.

Table 2. Evaluation of the professional readiness of cadets in control and experimental groups

<table>
<thead>
<tr>
<th>Attainment level</th>
<th>Training stage</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CG</td>
<td>EG</td>
<td>CG</td>
<td>EG</td>
</tr>
<tr>
<td>«High»</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>«Medium»</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>«Critical»</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>«Unacceptable»</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

The significance of differences in the attainment level in the control and experimental groups was estimated by the Kruskal-Wallis H-test. Estimation results presented in Table 3 are indicative of the steady growth of differences in the readiness levels of cadets from the control and experimental groups as they advanced through training.

Table 3. Evaluation of the significance of differences in professional attainment levels of cadets in control and experimental groups by the Kruskal-Wallis H-test

<table>
<thead>
<tr>
<th>Critical value for the Kruskal-Wallis H-test</th>
<th>Training stage</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>α = 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H_{emp}</td>
<td>p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.843</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>α = 0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.637</td>
<td>1.865</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.027</td>
<td>present</td>
<td></td>
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</tbody>
</table>

Moreover, the results of the second stage showed an increase in the percentage of cadets with a medium level of professional readiness in the control group as compared to the experimental group. This fact suggests that in order to achieve intermediate levels of professional readiness, cadets need some time to adapt to conditions associated with resolving job-related tasks in emergency situations.

Pedagogical influences intended to facilitate individualized learning and the development of the physical qualities required for effective professional activity bring quite significant results. Indeed, the number of cadets with a medium level of professional readiness in the experimental group was growing fast and fully made up for those subjects whose level was unacceptable.

The validity of the acquired data was verified by the outcomes of the activity performed by cadets engaged in complex professional fire-extinguishing and life-saving tasks. Performance results in the control and experimental groups were rated on a 4-point rating scale and then compared. That is how the credibility of the conclusions drawn in the course of this study was proven. The results of the cadets who achieved the highest level of professional readiness were compared against changes in the amount of the complex professional tasks they solved with an excellent grade, the medium level of professional readiness was compared with reference to a 'good' performance, etc.

Furthermore, the data on the development of professional skills for extinguishing fires and rescuing people (Table 4) was analyzed. Even a very general approach to the comparative analysis of the acquired data allows for the conclusion that efforts at developing professional readiness among cadets from the experimental group produced much better results as compared to the control group.

Discussion

The study of the dynamic pattern in the performance rate related to the solution of complex professional tasks brought certain noteworthy issues to the foreground.

Firstly, the performance results of cadets engaged in solving complex professional tasks appeared to be
much lower in the initial stage than at the end of the third stage. After careful analysis, it was concluded that the explanation lies in the fact that they were much better prepared, both physically and psychologically, for intensive professional fire-extinguishing and life-saving activity. That was due to a more effective adaptation to activities performed in emergency situations.

Table 4. Final professional attainment levels of cadets

| Program content                                                                 | Learning succeed rate, (M ± m) points | p <  
|--------------------------------------------------------------------------------|---------------------------------------|------
| Theoretical framework for professional fire-extinguishing and life-saving activities | 4.0 ± 0.12                            | –    |
| Assessment of practical fire-containing activities                              | 3.5 ± 0.11                            | 0.05 |
| Assessment of practical fire-extinguishing activities                           | 3.4 ± 0.14                            | 0.05 |
| Assessment of practical life-saving activities in emergency situations           | 3.3 ± 0.16                            | 0.05 |
| Assessment of joint fire-extinguishing and life-saving activities                | 3.5 ± 0.15                            | 0.05 |

Secondly, the comparative analysis of performance results in the control group indicates that they never changed, which raises relevant doubts concerning the effectiveness of the traditional approach to developing the professional readiness of cadets.

Thirdly, the commitment of subjects from the experimental group to the efficient use of physical training aids and practical physical exercises for developing necessary personal and professional qualities was conducive to their quicker adaptation to intensive professional activity. During the application of the model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids, it was found that about 11% of the subjects with critical levels of professional readiness scored ‘good’ for solving complex professional tasks. This trend was also present but less prominent in the control group.

Conclusions

The devised pedagogical model for developing the professional readiness of cadets studying at higher education institutions affiliated with the GPS of the MChS with the use of physical training aids is instrumental in improving the level of their professional, physical, moral, and volitional preparedness for intensive professional activity. Due to highly developed moral, volitional, and physical qualities, cadets are able to efficiently solve professional tasks in the extreme conditions relating to extinguishing fires in emergency situations.

References:


