

The Professional Mobility and Training Management of the Specialists in the Life Safety Area

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Abstract. The work provides theoretical analysis of the problem concerning formation of the professional mobility for specialists in the area of life safety. Also includes the criteria and indexes of the professional mobility for specialists in this area; results of the empirical study for the extent of the graduated education for the professional mobility of the expected specialists in the area of public safety; general characteristics of the modular-dynamic model formation for the formation of the professional mobility of the training students (cadets). Modular organization of the education process considered as a component of the educative process itself within the higher education institution as a process of mastering learning in accordance with a certain direction of training. In this case, it is a backbone component since it defines certain structure of the educational process that is considerably different from the routine organization of learning in a University.

In our mind, one of the ways and capabilities to form and develop professional mobility of the persons learning in the institutes of Ministry of Emergencies, Russia is incorporation of the developed modular-dynamic model for the formation of the professional mobility of the students (cadets) in the area of vital activity safety. The model designed with the account of the educational process in the institute of Ministry of Emergency, Russia, and the obtained theoretical and empirical data. This model represents systemic interaction of the educational process components.

1. Introduction

Contemporary world is distinguished by a high dynamism of all the social process, by economic and social instability, thus there permanently appear and steadily grow factors which are potentially adverse and even dangerous for the life of people. In this situation, the problems of providing life safety for the people become more and more significant.

Solution of this scaled and complex problem is possible only because of professional approach thus stipulating a necessity of significant transformations as in the professional area of life safety as in the presentation of the high personal and professional requirements to the workers of all the levels employed in this area of activity [1].

Requirements to these specialists include a desire for the permanent improvement of their intellectual potential, creativity and so on [2].

In the conditions of modernization of the higher education, the problem of formation of the professional mobility for the students just in the process of their institute training becomes one of the priority issues. At the same time as it was shown in the practical analysis the graduates from the institutes of Ministry of Emergency of Russian Federation which are the main centers of training professional community for the area of life safety do not show duly professional mobility.

2. Objects and methods of the study

One of the actual aspects in the problem of formation of the professional mobility is the choice of the educational technologies adequate to the goals of competence-oriented education. The greatest scientific interest from this point of view is a modular learning. In spite of the fact that in the native pedagogy modular learning proves to be not a new educational technology and its didactic resources were intensively studied [3-10], its application within the frames of competence-oriented education gains a considerable specific feature requiring a deep comprehension and investigation.

Substantive-functional specificity of training of the professionally mobile personnel in the area of life safety is in the fact that it executes a number of specific functions:

1) social function – it is an agent of the stable development of society providing a professional personnel for the life safety area; this personnel is capable to respond in a flexible and adequate manner to the threats of wellbeing and life of people, quite permanently appearing and varying in the conditions of instability and dynamism of social processes;

2) structural-professional function – facilitating actual and permanent modernization in the area of life safety by professional training of the personnel oriented at the socially responsible horizontal and vertical changes in the professional area in accordance with the objectively determined trends and needs of its development;

3) Personality function – it creates educative-professional conditions for the adaptation and personality self-actualization of a man in the contemporary unstable, continuously changing world [11].

Theoretical analysis of this problem enabled to allocate criteria of the professional mobility for the specialists in the area of life safety and to identify the factors of its formation:

1. Professional adaptation: adaptability, capability for conflict-free establishment of relations, stress immunity.
2. Learning activity: intellectual lability, a high level of trainability, preparedness to the self-sustained mastering of new technologies and techniques.
3. Personal self-realization: self-actualization, self-consistency, positive self-identity.
4. Social responsibility: personal responsibility, developed capability for the goal-setting, internal and external positive reasons for the educative-vocational activity.
5. Valuable relation to the profession: value-orientation of the person, significance assessment of the chosen professional activity for the society.

3. Results and their discussion

It was 169 students (cadets) participated in the investigations directed at the study of the extent of formation of the professional mobility for the expected workers of the State Fire Service at the Ministry of Emergency, Russia. Among all of them 81 learned in the specialty – Fire safety, 88 students learned in the specialty– Technosphere safety (undergraduates). Investigations performed for two years and involved six learning groups of the students.

Empiric studies was accomplished with the use of a complex of psychodiagnostic techniques: multilevel personal questionnaire “Adaptability” (A.G. Maklakov, S.V. Chermynanin); questionnaire “Prognosis” (was elaborated in LVMA named after S.M. Kirov); test «Intellectual lability» (form A) (V.T. Kozlova); “Self-actualization test (SAT)” (L.Ya. Gozman, M. Kroz); test-questionnaire for the level of subjective control (SCL) (J. Rotter); “Technique for the study of self-relation (TSSR)” (S.R. Pantelev); questionnaire “Study of the incentives for the learning activity” (modification of A.A.

Rean, V.A. Yakunin); questionnaire “Motivation for the professional activity” (K. Zamfir; modification by A.A. Rean); test-questionnaire for the value orientations (M. Rokich).

Professional adaptation of the learning persons estimated with the factors of adaptability and stress-immunity. Results of the study of the adaptability presented in Table 1.

Table 1. Differentiated groups of students and cadets on the level of adaptability (%).

Adaptability factors	High level	Average level	Low level
Personality adaptable potential (PAP)	42.1	49.4	8.5
Neuropsychic tolerance (NPT)	48.2	41.4	10.4
Communicative abilities (CA)	35.4	53.4	11.2
Moral normality (MN)	40.8	48.8	10.4

As one can see from the Table about a half of the examined students (49.4 %) characterized by the average level of the adaptable abilities. Many of the students (cadets) possess the signs of different accentuations of their character that compensated as a whole in the conventional circumstances, however, they can be revealed under the change of activity.

The high level of adaptable potential shows 42.1 % of the sampled students. They can easily adapt to the new conditions of their working activity and can quickly enter a new social group. They can guide quite readily in the situation and are capable to elaborate new strategy of their behavior [12].

A special apprehension attributed to the students and cadets with a low level of personality adaptable potential (8.5 %). Low neuropsychic tolerance quite often results in a proneness to conflict, asocial actions, and behavior breakdowns.

Tested students with a high level of neuropsychic tolerance (48.2 %) can be related to the persons with an effective regulation, adequately high self-assessment, and realistic perception of factuality. Low level of neuropsychic tolerance (was revealed for 10.4 % of the respondents) is characterized by the poor communicative capabilities, hardships in their contacts with social surroundings, sudden manifestation of aggression and enhanced proneness to conflict.

One of the indicators of adaptable capabilities for a personality is his/her communicative interpersonal skills. Persons with a high level of the communicative capabilities (35.4 %) quite easily establish contacts with the others and they do not manifest an expressed proneness to conflicts. However, if communicative capabilities are poorly developed (it was found for 11.2 % of the surveyed students), an individual has difficulties while establishing contacts and building relationships with the others, he is inclined to manifestation of aggression and increased proneness to conflicts.

A significant factor of the general adaptability for the personality is his/her normative behavior. A high level of the moral normative in behavior (it was found for 40.8 % respondents) enables a man to estimate his real position *позволяет* in the group, indicates at his observance of the generally accepted rules and regulations of behavior in a certain social community. The respondents with low level of the moral normative (10.4 %) cannot often estimate their position and role in the group in a correct manner.

It can be a sign of vocational unfitness for the worker of SFS of Emergency, Russia.

To estimate the probability of neuropsychic breakout for the students (cadets) during their getting into an extreme situation “Prognosis” questionnaire applied. The obtained data presented in Table 2.

Table 2. Differentiated groups of students (cadets) according to the level of neuropsychic tolerance (NTT) and the prognosis of the effectiveness of activities in extreme conditions.

Group of neuropsychic tolerance (NTT)	Prognosis	Number of the sampled (%)
High NTT	Favorable	18,7
«Good» NTT	Favorable	34,5
Satisfactory NTT	Favorable	43,0
Unsatisfactory NTT	Unfavorable	3,8

According to the results of examination, one can conclude that about half of the respondents characterized by the high (18.7 %) and “good” (34.5 %) levels of neuropsychic tolerance, thus enabling to make a favorable prognosis concerning effectiveness of their activity in the extreme conditions.

Satisfactory neuropsychic tolerance also providing a satisfactory prognosis of coping with critical situation as a whole found for 43.0 % of the respondents.

Unsatisfactory neuropsychic tolerance and, hence, a high probability of neuropsychic breakouts was revealed for 3.8 % of the respondents. In spite of a little number of the respondents who found in the “risk group” this considered as an anxious situation since neuropsychic tolerance is one of the relevant factors for the vocational fitness of the worker in DFS of the Ministry of Emergency, Russia.

Cognitive activity of the students (cadets) studied with the use of such factors as intellectual lability, educability and trainability, readiness and ability independently master new technologies and techniques.

To determine the level of cognitive activity results of solution of the tasks with different difficulty level by the students (cadets) were estimated and results of the test accomplished for revealing of their intellectual lability (form A) [13] were also taken into account.

Table 3 represents results of the cognitive activity level manifested by the students (cadets).

Table 3. Differentiated groups of students with different levels cognitive activity (in %).

Indicator	Solution of the tasks with different difficulty level	Intellectual lability	Cognitive activity (общий показатель)
High level	29.8	13.0	12.3
Average level	41.9	49.5	44.5
Low level	28.3	37.5	43.2

As it seen from the Table, many of the respondents demonstrated average and low levels of the cognitive activity (44.5 % and 43.2 %, respectively) and only 12.3 % – high level.

Personality self-actualization of the learning students was determined with the indicators of personality self-actualization, his/her self-sufficiency, and positive self-identity concept.

Basing on the criteria of “Self-actualization test” for groups of the respondents selected with different level of personality self-actualization:

- 1) students (cadets) characterized by the optimal level of personality (results on the average according to the scales – 55-66 grades);
- 2) those learning with a conventionally mean level of self-actualization (on the average according to the scales – 40-54 grades);
- 3) respondents with a low level of self-actualization (on the average according to the scales – below 40 grades);
- 4) Cadets (students), manifesting social desirability of their responds in the process of questionnaire (according to one or several scales the obtained results were higher than 70 grades).

Results of the study of the personality self-actualization demonstrated that a number of cadets (students) – 26.4 % – showed their orientation towards a social desirability of the responds. Optimal level of self-actualization revealed for 9.7 % of the respondents, average level – for 50.9 %, low level – for 13.0 % of the students and cadets.

Social responsibility supposes personal responsibility, an expressed ability for goal setting, awareness of significance of the chosen professional activity for the society. Table 4 represents the results of the study of locus in the control of students (cadets) in the field of achievements/failures, in the production/interpersonal relations.

Table 4. Average indicators of internality of students (cadets).

Internality scale	Average value
Internality in the area of achievements	17.45
Internality in the area of failures	14.45
Internality in the area of production relations	14.22
Internality in the area of interpersonal relations	7.42
Total internality	38.75

For majority of the respondents an internal type of relation to the achievements identified. High level of subjective control in the field of achievements means a conviction of the individual that the successes, joy and other emotionally positive events of life is a result of his own exertions; assurance in his ability to successfully realize his own goals in the future.

Average level of the subjective control in the field of failures (intermediate between internal and external ones) found doe majority of the respondents. It indicated at the disposition to consider various negative events occurring over the period of life as a consequence of the effect of both external factors (unfavorable concurrence of circumstances or the influence of other people) and the internal ones (his own erroneous actions or the negative personality features) [14].

Internality in the field of the product relations for many respondents also manifested at the average level.

For majority of the students (cadets) the average general level of the subjective control identified as intermediate between external and internal type of personality. A number of the respondents are persuaded that the events occurring in their life prove to be a consequence of the effect of as external factors (such as a luck, fortuity, deeds and actions of the surrounded people, fate and something alike) as internal ones (his/her own personality features, deeds and actions).

Because of the study for motivation of the vocational activity, the following motivation complexes were revealed representing interrelations between internal motivation (IM), external positive motivation (EPM) and external negative motivation (ENM).

The values of the variants for motivation complexes $IM > EPM > ENM$ and $IM = EPM > ENM$ in the process of the study were united due to the attributing to the most favorable ones. All the rest variants of the combination for the different types of motivation united in the following groups.

The first group involves two variants of the most favorable motivation complexes.

The variants including predominance of the internal motivation related to the second group, while the variants with a predominance of the external positive motivation related to the third group.

The fourth group comprised of the motivation complexes with a predominance of external negative motivation. So:

1. $IM > EPM > ENM$; $IM = EPM > ENM$. The number of respondents showing motivation complexes of his type was of 78.7 % from the total sampling.

2. $IM > EPM = ENM$; $IM > ENM > EPM$. Total number of respondents with a predominance of internal motivation, however quite clearly an external negative motivation revealed – 10.4 %.

3. $EPM > IM > ENM$; $EPM > IM = ENM$; $EPM > ENM > IM$. Part of the respondents with a predominance of external positive motivation was of 5.7 %.

4. $ENM \geq IM > EPM$, $ENM > EPM > IM$. External negative motivation dominated for 5.2 % of the respondents. This fact indicates at the need for performing of special work concerning formation and development of the constructive motivation for the learning activity of the students and cadets.

4. Valuable attitude to the profession

The study of the values in the student and cadet groups [performed with the use of questionnaire by M. Rokich enabled to identify the hierarchy of the terminal and instrumental values of a personality [15].

Results obtained in the study of the factors making the profession attractive presented in the diagram of fig. 1.

It should note that not only significance coefficient (SC) but also the number of the learning students choosing and noting this factor as attractive or unattractive one determine significance of the factor.

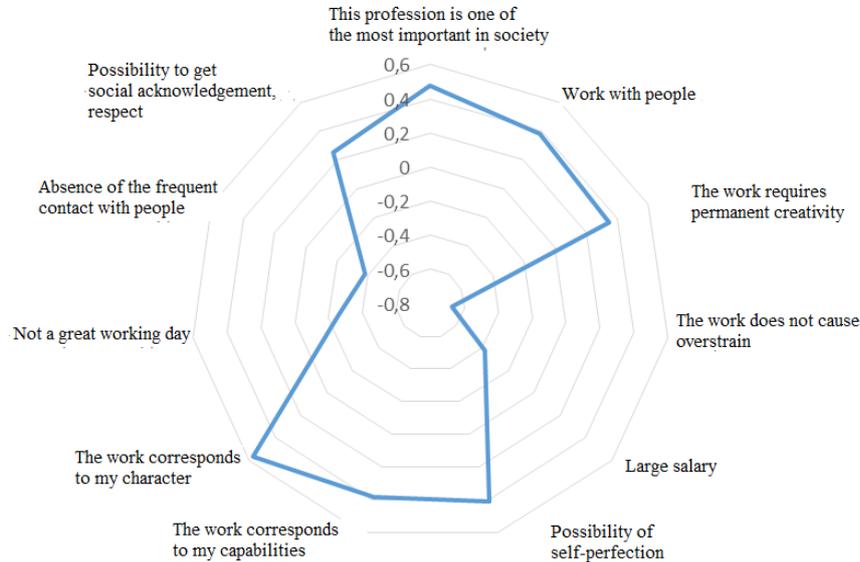


Figure 1. Indicators of significance in the attractiveness of the profession.

It was established that the most significant factors characterizing the expected vocational activity are social importance of the profession (positive grades are prevailing); overstrain connected with the work (evaluated as negative factor), correspondence of the work to personal capabilities (mainly evaluated as positive) and the character of individual (mainly evaluated as positive); level of salary (mainly evaluated as negative); possibility to get social acknowledgement and respect (evaluated as ambiguously); possibility to work with people (evaluated as ambiguously). Possibility of self-perfection and creative character of activity (are evaluated mainly positively) while duration of the workday is evaluated negatively.

5. Conclusion

The professional mobility of specialists in the area of life safety is characterized by multi-level structure involving the following: the level of professional adaptation providing ability and readiness to the horizontal and vertical mobility in the vocational sphere; level of the personality self-actualization ensuring personality orientation of the professional relocations directed at the satisfaction of demands in self-awareness, self-actualization, self-development; level of social responsibility providing realization of the vocational relocations based on the recognition of social significance of his/her professional deeds, own business activity; axiological level ensuring valuable relation to the professional activity and its social mission.

One of the ways and means in the formation and development of the professional mobility for those learning at the higher educational institutes of Ministry of Emergencies, in our mind is the incorporation of the developed modular-dynamic model into educational process that is concerned with the formation of the vocational mobility of the students in the area of life safety. The model designed with the account of specific features of the educational process at the institute of Ministry of Emergency, Russia, and the obtained theoretical and empirical data.

According to our studies, a traditional approach is prevailing in the teaching at the institutes. It is oriented on the reproductive learning of knowledge by the students and it extended not only beyond the part of education connected with lecture courses but also at the practical lessons. According to our observations for the practical lessons on the technical subjects (64 lessons) at the Ural’s Institute of SFS of Ministry of Emergency, Russia, about 72 % of the educational process dealt with a speech of a

teacher. Control for theoretical component of the studied subject is a prevailing one at the laboratory lessons. Considerably less attention attended to the self-sustained work of the students in the process of the laboratory tasks execution. Questionnaire of the students concerning the preferences of the types of activity showed that about 68 % of the students prefer to apply reproductive techniques of work that mainly stipulated by the pedagogical style of activity of the teachers.

In accordance with the results of the performed studies as well as basing on the analysis of documents at the educational institutions of Ministry of Emergencies, one can make a conclusion that only about 3 % of the learning students show high intellectual lability, a high capability of attention switch, a competence to quickly move on from solution of a certain task to the execution of other ones, without any mistakes [8].

The main motivation aspect for choosing profession are stability, possibility of self-realization, desire to eliminate possible punishments or troubles, reasonable salary [6].

The presented data mean rather weak vocational orientation when choosing of the future profession and educational institution by the students of SFS of Ministry of Emergency, Russia. Thus, it puts forward the task of formation the motivation for the vocational activity and professional orientation in the process of learning the students and cadets.

In our opinion, one of the efficient ways for solution of this problem is a modular organization of learning of the specialists in the area of life safety.

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