

DYNAMIC OF PROFESSIONALLY IMPORTANT QUALITIES' CHANGES IN CADETS OF HIGHER FLIGHT ESTABLISHMENTS

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Abstract. *Purpose:* determination of dynamic of professionally important qualities changes in cadets- flihters in the course of study. *Material:* The research covered 223 cadets during 4 years' study with the help of complex of prognosis-informational psychological methods. Testing was fulfilled at devices RKN and PPV-2. *Results:* it was found that at the end of studying temp of development of such qualities as quickness of psycho-motor skills' mastering, ability to operate space images, distribution and re-switching of attention increase noticeably. Indicators of emotional stability, re-construction of psycho-motor skills, resistance to obstacles substantially reduce. Scope of attention, reproductive thinking, operative memory, coordination of movements, ability to work in forced temp change in negligible limits. As per prognosis stabilizing of most of professionally important qualities that is connected with over-tension of organism's physiological reserves is envisaged. *Conclusions:* We have found steady positive dynamic of cognitive psychic processes' development, reduction of some psycho-physiological and psycho-motor qualities' development in last period of studying.

Key words: dynamic, qualities, cadets, flighter, studying.

Introduction

Professional formation of specialist in higher military educational establishment of flight profile is a complex psychological-pedagogic process, which is to solve the following tasks: formation of positive professional orientation; comprehensive development of pilot's personality, his cognitive and will-emotional spheres; acquiring of main knowledge in special disciplines, skills; formation of principles of professionally important qualities (PIQ) [1, 4, 5, 9, 18].

Studying influence of professional functioning in period of re-training for new machinery, R.M. Kadyrov (1980), Yu. Borodin (2004), A.A. Gorelov (2008) [3, 5, 12, 20], O.M. Kernitskiy (2004), M.S. Kovalchuk (2004) established factors, which influence on flihters' PIQ [11, 13, 19]. D.V. Gander (2003), F.I. Popov (2004), M.A. Khairemdinov (2007), V.M. Kirpenko (2012) determined dependence between level of PIQ and readiness for independent flights [6, 14, 16].

In scientific works of V.A. Tovt (1987), Yu.K. Demyanenko (1988) authors studied influence of professional functioning on military pilots' PIQ development [3, 8, 10, 17]. But we have not found data about dynamic of PIQ development in new conditions of flight training. Though it is rather urgent because at initial stage of flight training reduction of these qualities influences on effectiveness of flight training [3, 7, 10, 16].

Purpose, tasks of the work, material and methods

The purpose of the research: determination of dynamic of professionally important qualities' changes in cadets- pilots during process of their study.

The research covered 223 cadets of flight faculty of KhUAF, named after Ivan Kozhedub, in whom changes of PIQ development were studied during 4 academic years. Level of movements' coordination and emotional stability of the tested were assessed during testing on device RKN. Determination of sensor-motor responses was carried out with the help of device PPV-2 [4, 7, 9]. The received data were processed with methods of mathematical statistics.

Results of the research

In the course of separate PIQ and their structural changes in psychic sphere under influence of social, professional and other factors studying we found principle regularities of their development [7].

For example, during first period of studying (1st-2nd academic years) there is expressed increase of such indicators ($p \leq 0.001$) as operative memory, coordination of movements, emotional stability, quickness of psycho-motor skills' mastering; some increase of ($p \leq 0.05$) reproductive thinking, stability, distribution and re-switching of attention and reduction of resistance to obstacles and ability to work in forced temp.

In second period of cadets' studying (2nd-3rd academic years) there happen further substantial increase ($p \leq 0.001$) of movements' coordination and re-construction of psycho-motor skills; a little reduction of temps of increase ($p \leq 0.01$) of operation of space images, reproductive thinking, stability of attention and emotional stability; there also happened noticeable raising of attention, resistance to obstacle and ability to work in forced temp ($p \leq 0.001$).

The third period of cadets' studying (3rd-4th academic years) is characterized by especially expressed PIQ dynamic: noticeable increase in temp of such qualities as quickness of psycho-motor skills' mastering, ability to operate space images, distribution and re-switching of attention development ($p \leq 0.05-0.001$); but indicators of emotional stability, reconstruction of psycho-motor skills, resistance to obstacles substantially reduce ($p \leq 0.05-0.001$); a number of other qualities (level of attention, reproductive thinking, operative memory, coordination of movements, ability to work in forced temp) change rather little. It should be noted that indicators of all PIQ significantly grow during 4-years period.

It is conditioned by change and combine action of different by content and complexity kinds of functioning (theoretical study, training on stimulators, physical training, initial stage of flight training, replacement of training aircraft with training combat one, piloting with instructor and independent flights, different flight tasks and etc.), by different cadets' adaptation to conditions and content of flight training, distinctions in initial level of mental and physical condition and so on.

Discussion

In the course of our research we confirmed the data, regarded in scientific works by Yu.A. Bazhenov (2004), E.V. Muminov (2006), about influence of professional functioning on PIQ development of military pilots [3, 11]. The found in the course of our research fact of PIQ structure's change permits to make prognosis for 5th academic year (changes in curriculum admit acquiring of magister degree). Approximation results are given in table 1. Poly-nominal and linear equations of approximation were selected with confidence value $R^2 > 0.94$. As per prognosis it is stipulated stabilization of most PIQ development that is connected with over-tension of functional and physiological organism's reserves, resulted from increasing of professional loads.

Table 1

Prognosis of cadets' professionally important qualities for the period of study ($x \pm m$ in points)

№	Professionally important qualities	Approximation equation	Prognosis for 5 th ac. year
1	Operating with space images	$y = 0.0657x^2 + 0.1216x + 4.8002$	6.338 ± 0.129
2	Reproductive thinking	$y = -0.1845x^2 + 1.1763x + 5.4675$	7.221 ± 0.189
3	Operative memory	$y = -0.2963x^2 + 2.0079x + 2.9863$	6.277 ± 0.122
4	Distribution and re-switching of attention	$y = 0.2726x + 6.1775$	7.268 ± 0.106
5	Stability of attention	$y = 0.3938x + 5.316$	6.891 ± 0.133
6	Coordination of movements	$y = -0.345x^2 + 2.2401x + 3.21$	6.650 ± 0.093
7	Emotional stability	$y = -0.481x^2 + 2.7194x + 2.979$	6.161 ± 0.098
8	Quickness of psycho-motor skills' mastering	$y = 0.6731x + 3.257$	5.949 ± 0.105

The found fact of PIQ structure's change in the process of study permits to specify influence of increase of professional loads on cadets' functional state [2, 12, 13, 15].

Conclusions

In the process of the researches we determined influence of specificity of professional functioning on development of some individual psychic, physical qualities and functional state of cadets. By the end of studying period temp of the following qualities noticeably increase: quickness of psycho-motor skills' mastering, ability to operate with space images, distribution and re-switching of attention ($p \leq 0.05-0.001$). Indicators of emotional stability, reconstruction of psycho-motor skills, resistance to obstacles significantly reduce ($p \leq 0.05-0.001$). Scope of attention, reproductive thinking, operative memory, coordination of movements, ability to work in forced temp change insignificantly ($p \geq 0.05$). In such conditions training's continuation it is envisaged to stabilize the most of PIQ development that is connected with over-tension of organism's reserves, resulted from increase of professional loads.

The prospects of our research imply determination of influence of professional functioning's specificity on cadets-pilots' functional state.

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Conflict of interests

The author declares that there is no conflict of interests.

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