

The study of the working capacity of students from India, who have come to study in the Crimea

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Abstract. The article analyses the issues of changing the working capacity of the first-year medical students who have come from India to study in the Crimea. For this purpose, with the help of specially developed psychological tests the following was determined: speed of information processing, stability of attention and selectivity of attention, the amount of received information per second, the accuracy of fulfilling the tasks and mental productivity at the beginning and 35 days after the training start at the medical academy. Recommendations on teaching students in accordance with the obtained data are given.

Keywords: students, working capacity.

Аннотация. В статье рассматриваются вопросы изменения работоспособности у студентов-медиков I курса, приезжающих на обучение в Крым из Индии. С этой целью с помощью специально разработанных психологических тестов определяли скорость переработки информации, устойчивость, избирательность внимания, количество принятой информации за 1 секунду, точность выполнения задания, умственную продуктивность, в начале и через 45 дней после начала обучения в медицинской академии. Даны рекомендации по обучению студентов в соответствии с полученными данными.

Ключевые слова: студенты, работоспособность.

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The first-year students, who begin the course of study at educational institution, undergo adaptation processes [1]. Thus, mental capacity changes, which must be taken into consideration while distributing the academic workload during a semester. In order to determine the working capacity of students from India who come to the Crimea to study, we conducted the anonymous testing of the first-year students of the International medical faculty at the beginning of the semester and 35 days after the training start. Upon the whole, 50 students were surveyed (25 boys and 25 girls). The average age of the girls was 18.0 ± 0.1 years, boys - 18.0 ± 0.2 years.

The following indices were investigated: stability of attention was assessed using Schulte tables and the Bourdon test, selectivity of attention - the Munsterberg test [2]. Stability, the amount of information per second, accuracy of fulfilling the task, mental productivity were determined using the Bourdon test. Testing was conducted at the beginning and 35 days after the start of learning Latin.

The obtained data were processed statistically [3].

As a result of the research, it was established (Table 1) that in girls there was a statistically reliable increase

of indices of attention stability determined using Schulte tables (63.54 ± 4.41 and 45.56 ± 3.98 signs viewed per minute at the end and at the beginning of the research). The selectivity of attention determined with the help of the Munsterberg test significantly increased (8.54 ± 1.50 and 3.30 ± 0.76 points, correspondingly). The remaining indices, with the exception of the accuracy of fulfilling the task, had a tendency to increase.

The boys had statistically significant increase in stability of attention determined using Schulte tables (at the end of the survey - 83.30 ± 8.69 and 56.06 ± 4.33 at the beginning of the survey) and the Bourdon test (82.63 ± 4.87 and 62.16 ± 3.52 correspondingly).

The selectivity of attention determined using the Munsterberg test also statistically authentically increased (in April 2019 - 8.62 ± 1.19 , in February - 1.00 ± 0.44). Like in girls, other indices of mental productivity tended to increase towards the end of the research.

It should be noted that there are differences in the investigated parameters in girls and boys during all periods of research.

Table 1. Changes in indices of the working capacity of the 1-year students of medical academy

Girls		
index	February, 2019	April, 2019
stability of attention, Schulte test (amount of signs per 60 seconds)	45.56 ± 3.98	63.54 ± 4.41 $P \leq 0.05$
selectivity of attention (points)	3.30 ± 0.76	8.54 ± 1.50 $P \leq 0.01$
amount of information per second (bit/sec)	2.97 ± 0.23	3.35 ± 0.21
accuracy of fulfilling the task (relative units)	0.92 ± 0.08	0.90 ± 0.02
mental productivity (relative units)	312.69 ± 23.64	355.82 ± 22.56
stability of attention, Bourdon test (amount of signs viewed per 10 seconds)	62.1 ± 2.89	65.91 ± 4.34

boys		
index	February, 2019	April, 2019
stability of attention, Schulte test (amount of signs per 60 seconds)	56.06±4.33	83.30±8.69 P≤0.05
selectivity of attention (points)	1.00±0.44	8.62±1.19 P≤0.01
amount of information per second (bit/sec)	3.19±0.70	4.45±0.42
accuracy of fulfilling the task (relative units)	0.89±0.01	0.91±0.02
mental productivity (relative units)	330.52±16.73	453.75±44.82
stability of attention, Bourdon test (amount of signs viewed per 10 seconds)	62.16±3.52	82.63±4.87 P≤0.05

In order to study the distribution of indices within the variation range, the median value, mode, and p25 and p75 quantile values (Table 2) were determined for each investigated index.

Table 2. Characteristics of distribution of working capacity indices of Indian students

girls								
index	February, 2019				April, 2019			
	me- dian	mode	p25	P75	me- dian	mode	p25	P75
stability of attention, Schulte test (amount of signs per 60 seconds)	46	43	34	56	68	70	36	81
selectivity of attention (points)	3	2	3	7	8.45	10	3	11
amount of information per second (bit/sec)	3.00	2.45	2.83	3.55	3.30	2.9	2.68	3.46
accuracy of fulfilling the task (relative units)	0.90	0.8	0.9	1.8	0.90	0.86	0.84	0.97
mental productivity (relative units)	320	310	297	400	348	340	289	372
stability of attention, Bourdon test (amount of signs viewed per 10 seconds)	60	54	53	71	66	62	54	69

boys								
index	February, 2019				April, 2019			
	me- dian	mode	p25	p75	me- dian	mode	p25	p75
stability of attention, Schulte test (amount of signs per 60 seconds)	54	50	37	68	88	100	50	110
selectivity of attention (points)	1.0	0	0	1	9	11	5	12
amount of information per second (bit/sec)	3.0	2.9	2.69	3.34	4.54	3.39	3.40	4.30
accuracy of fulfilling the task (relative units)	0.89	0.88	0.84	0.96	0.89	0.92	0.89	0.95
mental productivity (relative units)	333	330	286	432	460	360	363	428
stability of attention, Bourdon test (amount of signs viewed per 10 seconds)	63	65	52	69	89	92	65	90

In girls, the April index of mode of attention stability has doubled as compared to February while using Schulte test (70 signs per 60 seconds in April and 43 in February).

The selectivity of attention also increased significantly in April, (mode = 10 points) as compared to February (mode = 2 points). Modes of attention selectivity, volume of information per second, accuracy of fulfilling, mental productivity also increased in April, but not so significantly as stability and selectivity of attention. In all other quantile ranks, all the studied parameters in April were higher than the February data.

In boys, the stability of attention also significantly increased in April as compared to February. The values

of mode of this index in April were equal to 100, against 50 in February. The selectivity of attention increased 11 times as compared to February data (11 points and 0 points). In other quantile ranks, the increase in indices of mental productivity was also noted. In fact, it was found that there were significant differences in distribution of the investigated parameters at the beginning and at the end of the experiment in boys and girls.

In relation to the above, we can make the conclusion:

1. Mental productivity of students from India who come to the Crimea to study changes. It authentically increases in 30-35 days after the training start.

2. These features should be taken into consideration during practical classes. In particular, it is advisable

to study the most difficult material in 30-35 days from the training start.

3. A month after the training start, the stability and selectivity of attention in girls and boys increased significantly.

References:

1. Рахимов Г. Р. Особенности организации обучения иностранных студентов в вузе и направление его развития. Язык и культура, 2010; 4 (12):123-126.
2. Мельников В. А. Практикум по основам психологии: Тесты и хрестоматия. Учебное пособие /В. А. Мельников. – Симферополь, «Сонат», 1997. 254 с.
3. Голева О. П. Медицинская статистика: учебное пособие для студентов / О. П. Голева, Г. В. Федорова, Д. В. Щербаков. - Омск: Изд-во ОмГМА, 2013. 306 с.