

## RELATION BETWEEN PROFESSIONAL ABILITY OF LINOTYPISTS AND SOME PSYCHOPHYSIOLOGICAL FEATURES OF THEIR ORGANISMS

A. Manolova

The presence of various qualificative groups among the so called "common professions" in the investigations of numerous authors indicate the necessity of working out a criterion for the professional ability with any profession.

One of these professions is that of the linotypist. The analysis of the latter determines special requirements to his organism. Based on the data of this analysis certain physiological functions are considered: strength, mobility, balanced processes, interrelations between the cortical and subcortical brain structures, motor and visual analysators, stable and reactive attention, operative memory.

Thus, during the education of linotypists their professional-adaptive process finishes at the end of the second year; therefore, we presume that in the third year of their professional education, specially those who have already professional habits, they reach already the level of the aforementioned physiological functions as it is in the older linotypists.

In our present study we investigated graduates from the Professional School, who are able or disable to work in the field of linotyping, as well as professional linotypists with various duration of practice and different level of qualification. The used methods are applied in the everyday practice of the Institute of Hygiene of Children and Young People, Moscow, USSR; the methods are reliable, easy to perform and can be applied in wider scales for similar massive investigations.

### Results and discussion

**Mobility of nervous processes:** The evaluation of the base nervous processes according to the frequency of rhythm gradient studied after the modified method of R. L. Rabinovich shows certain differences between the different groups of investigated objects. Rhythm of 1.0 Hz is accepted by all of them. If it is 1.5 Hz only the group of disable for that profession objects shows a definite impossibility to perform, whereas the rest groups accept it readily; however, there is a statistical difference ( $p=0.02$ ) only between able and disable for the profession objects. Signals of 1.75 Hz require a proper response only in the group of high-qualified workers and greater part of able for the profession pupils; statistical reliability ( $p=0.02$ ) between same groups as above. Light signals with a frequency more than 1.75 Hz can not be accepted by any of the objects of all groups.

The analysis of the mobility of irritative and depressive processes according to the speed of interchange of both (EEG) also shows certain differences between the studied groups, respectively, various level of professional ability. Due to the index of mobility of the irritative process, the group of disable

objects reacts averagely 36.376 msec ( $p=0.001$ ) later than those of the group of qualified linotypists. As for the graduates from the Professional School the delay was 51.567 msec ( $p=0.001$ ). According to the index of mobility of depressive process in all groups of professionally disable objects the time duration between the stimulation and muscular response was greater than that in the professionally able objects: qualified workers — 28.445 msec ( $p=0.01$ ), graduates — 59.934 msec ( $p=0.001$ ). Therefore, the mobility of both processes is considerably higher in the qualified workers than those who were disable for linotypist's profession.

**Motor analysator:** By using the "tapping-test" we established considerable differences in the activity of the motor analysator. This index in both groups professionally able objects (qualified workers and graduates) is reliably high ( $p=0.001$ ). However, the graduates according to this index almost reach the level of the qualified workers.

**Visual analysator:** The function of ophthalmometer is one of the most suitable out of all functions of the visual analysator. On table 2 can be seen that the slightest mistake was established in the group of qualified linotypists and very near to them come the graduates who are professionally able. As for the disable for their profession, both — workers and graduates, their mistake was considerably bigger than that of the former group, at  $p=0.001$ .

**Attention:** Most important complex for proper professional ability of the linotypists is the stability and rapid interchange of reactions which was proved by our study too. The qualified workers and professionally able graduates provided more stable and rapid interchange of attention when compared to that of the group of disable workers and graduates ( $p=0.001$ ); however, the level of this index is almost equal for both, qualified workers and graduates who were able for their profession.

The investigated indexes for a balance of the nervous processes, interrelations between cortical and subcortical brain structures, operative memory, etc. did not show reliable differences between the various representatives of the studied groups with various professional ability.

## Conclusions

1) The present study proves that the linotypist's profession requires an exact professional selection, based on the individual psychophysiological differences.

2) Statistically reliable differences between the psychophysiological indexes of qualified workers, disable workers, professionally able and disable graduates from the Professional School were established. Thus, functions of physiological reactivity of able, compared to the disable objects, were considerably higher and more expressed.

3) The professionally able graduates in their third year of education in the school almost reach the level of reactivity of qualified linotypists, which contributes to their readiness for labour activity in this age.

4) The success of professional ability of linotypists is related also to the high mobility of both, irritative and depressive, processes of the nervous system, well expressed ophthalmometer, high labour-ability of the motor analysator, stability, balance and rapid interchange of attention.

**ЗАВИСИМОСТЬ МЕЖДУ УСПЕШНЫМ ОВЛАДЕНИЕМ  
ПРОФЕССИЕЙ ЛИНОТИПИСТА И НЕКОТОРЫМИ  
ПСИХОФИЗИОЛОГИЧЕСКИМИ ОСОБЕННОСТЯМИ ОРГАНИЗМА**

*А. Манолова*

**Р Е З Ю М Е**

Исследована зависимость между успешным овладением профессией линотиписта и некоторыми психофизиологическими особенностями организма. Указывается на необходимость в правильной профессиональной ориентации, основанной на теории индивидуальных психофизиологических различий. Анализируются основные параметры профессиональной ориентации на группе исследованных лиц.