

Formation of Mental Images As an Element of Slowing the Aging Processes In the Cognitive Sphere

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Abstract

Regardless of the reasons given by the various authors, one unconditionally remains: as the age increases, the cognitive potential of a significant part of people is reduced. Imaginative thinking is one of the factors by which these negative processes can be, if not completely limited, in any case seriously delayed.

Creation of mental imagery is considered as a variant where the mental image has not only a rational but also a certain emotional character, which compensates for the impoverishment of the emotional sphere of the elderly.

Combinatorial models are considered, combining on the one hand the saturation of mental images with emotional content and the application of the hypothesis of double coding on the other hand, the proportional-conceptual hypothesis and the radical theory of images.

Situations are present where the relevant methods can be applied. In particular, the possibilities of applying these methods to the modern communication and information technology of the elderly are examined.

The article analyses the opportunities and forms that enable more elderly to be involved in the „active third age“ programs and support post-employment creativity. The main purpose is that people of this age category will not be isolated from modern technical and scientific achievements.

Keywords: Mental images, Cognitive impairment, Content impoverishment, Methods delaying ageing.

Introduction

People who are over the age of 65 are traditionally considered to be the ones whose most of their lives have already passed.

As accepted by society, it is considered that they cannot perform functions requiring a high degree of concentration, are not capable of realizing acts of creativity, cannot in full bear the responsibility for the tasks assigned to them. This view is sufficiently resilient, although in recent years, under the influence of social need, it has begun to gradually reconsidered.

On another plane, however, are the facts of reality. It is not uncommon for people in this age category to be entrusted with the most essential management functions in business, public management, science, art and a number of other areas [1]. Practice shows that the quality of work of these people is extremely high, and in many cases the solutions they find are related to innovation, finding out fundamentally different from the existing solutions in the specific areas. It is also uncommon for people in this age group to change their work cardinally, and it turns out that during this period of their lives they can successfully be realized in spheres that were beyond the scope of their immediate duties and social functions [2].

These differences between the existing sociopsychological pattern and reality can be explained not so much by the physiological differences between individuals (although these differences should not be diminished), as with the attitude of the psyche of a certain category of people, which allows for many years the consciousness to be of the necessary height, and completely natural physiological problems should not be an obstacle to human activity.

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For such an attitude to exist, however, it is necessary for the person to clearly understand the changes occurring in his organism, including in the field of physiology of supra nervous activity.

The aim of the present study is to seek methods to slow down the aging process and to create conditions for significantly longer functioning of the cognitive sphere of persons over 65 years of age.

Age changes in the cognitive and emotional sphere and methods of overcoming them

Age changes affect different areas of human consciousness, and from a neurophysiology point of view they are due to the decrease in the mass of the brain. This is caused by atrophic changes in different parts of the brain, and at the age of 70-80 the loss of neurons in some individuals may reach 48%. With age, not only does the number of neurons decrease, but there is a change in the functional properties of the remaining ones. The number of dendrites and synapses decreases between neurons, while partial whitening and decreased glycyte count are noted in the white matter. To this should be added the arteriosclerotic damage to cerebral vessels, which is found in most people aged over 65 [3].

Psychological changes that occur in people over the age of 65 are associated with increased wobbling, irritability, disturbing attention concentration, and those objects on which attention concentrates, as a rule, have a high degree of emotional charge [4].

In people over 65, the emotional sphere becomes unstable. Significantly more frequent conditions are those characterized by a decreased emotional background and the presence of pessimistic moods. It is much easier to feel anxiety and fear. There is a higher degree of irritability, and oftentimes it is inexplicable for the person himself. The dominance of social paternities that have an impact on the sociopsychological aspects of adult cognitive activity should also be noted. Thus, these paterns associate old age with weakness, illness and social exclusion. Unfortunately, in our society, active old age is perceived as a kind of deviation.

If we summarize, age-related cognitive disorders affect the whole set of components involved in this area, namely:

- Memory - i.e. the ability of the brain to assimilate, store and reproduce certain information necessary for the individual's current activity;
- Gnosis - representing the ability to perceive information through different preceptors, and the ability to process that information on the basis of an applicable algorithm;
- Praxis - the ability to acquire, store and use different motor skills;
- The intellect, i.e. the ability to match different masses of information, making different conclusions on this basis.

Some people, particularly older (over 75 years old), also have speech disorders that have no physiological causes but are based on cognitive deficits [5].

Practice shows that the use of a certain prophylaxis can slow down cognitive deficits in the age group considered, with each of the prophylactic methods having different levels of effectiveness

depending on the individual's specificity. The following prophylactic methods are validated:

- Medication methods involve the intake of various substances (mostly of a natural nature) that are natural antioxidants for the body, which slow down the atherosclerotic manifestations, have a positive effect in delaying the process of cognitive disorders.

In some cases, when cognitive disorders are accompanied by somatic diseases, highly active chemically synthesized agents are also prescribed, but have too wide a range of side effects;

- non-medication methods imply the use of various mnemonic means by which memory should be maintained, the use of logical tasks to train the intellect, as well as actions related to the maintenance of a good physical form, taking into account the physical capabilities of individual and do not pose a risk to him/her;

- social methods that involve going beyond the existing patterns defined by the relevant culture and actively involving people in the age range in social activities that allow them to be included in society-wide or micro social group processes [6].

The use of these methods has a definite positive effect on people aged over 65, along with most modern researchers suggesting that they are not enough to realize the potential of this age group.

It has been found that people engaged in practical intellectual activity, which are crucial for society or a particular social group, are later subjected to age-related cognitive disturbances. These people are also among the group that is significantly less likely to suffer from purely somatic diseases.

There are also a number of ancient practices related to cognitive slowdowns in people over 65 who, despite the content of a number of religious and esoteric "layouts", still contain a number of fully rational approaches.

Moreover, over the centuries, these models have proven their effectiveness, and above all, that this efficiency is less dependent on individual characteristics of the person.

The creation of mental images and thought forms as a factor in delaying cognitive impairment in 65 years of age

The creation of mental images and thought forms is well known by various healing and evolving practices of the Far East.

To a certain extent, something close to these practices can be found in the practice developed by Peter Danov in Bulgaria, which is a "variation" of the famous pan eurhythmy complex of exercises. The use of these practices has had a positive effect, in different cultures and in terms of people, having a different subject of previous activity.

From these practices, the concentration principle based on perceptual limitation and focusing on certain internal experiences can be taken rather than external influences. Such an approach is fully available even to elderly people who have a disturbance of focus and concentration [7].

Often, in adults, there is a lack of sufficient concentration, which can be both physiological (for example unpleasant feelings associated with locomotory disorders) and purely psychological

reasons (for example increased anxiety caused by the inability to certain functions that were previously available to the person were performed).

Concentration should therefore initially pass through the "chopping" of negative emotions and reduce the overall anxiety of the individuals involved in the process.

For people in the age group of over 65, it is the building of the concepts of a particular subject on the basis of the synthetic models they have built during their lives. This allows them to form mental images for different objects from reality, interpersonal relationships, material objects and many others.

The main task of the image that is created by the consciousness is to be complete, complete, not fragmentary. This process involves virtually all cognitive functions, allowing to overcome the deficiencies of individual cognitive elements.

The quality of integrity is acquired when one is able to verbalize the created image by giving it the corresponding pure physical characteristics - shape, colour, and other perceptual signs that characterize the subject, object or relationship.

Physical characteristics may be sufficiently abstract in the initial stage of work, with the progressive mental image beginning to acquire an increasing number of these characteristics.

The task that should be put before the people practicing the practice of creating mental forms is to achieve the completeness of the image, to obey a certain algorithm that they can determine independently. This process has not always been successful since the beginning of the training, but gradually, with increasing levels of concentration and reducing anxiety, this process has become more and more successful. Algorithmization of the construction of the mental image can begin with the formation of a "framework" that gradually undergoes changes, completing and refining in the process of work.

Acquiring quality integrity can be a long enough process that should not be limited in time. Achievements in integrity quality should be noted when the time for building the corresponding mental image begins to decrease.

Therefore, older people should be employed in relatively small groups consisting of people who have approximately the same level of cognitive elements.

The resulting image as a result of the work must also acquire a clear emotional "coloring". Any such object, subject or attitude should be able to provide the corresponding mental image of a binomial emotional attitude. This means that both the subject, the subject or the attitude should be given both positive and negative emotional characteristics. In doing so, it is necessary to strike a balance in the emotional "coloring".

In the initial stage of work, this process is complex enough because the corresponding mental image is characterized by the dominance of positive or negative emotional characteristics.

The task facing the moderators of the classes is to stimulate participants to look for opposite emotional characteristics. Of course, the search for this emotional binomial should be done only at the request of the participants themselves without a serious "intervention" on the part of the moderator.

An obligatory element in the emotional "coloring" of the

corresponding mental image must be the observance of the principle of integrity. Thus the emotional burden will not go beyond the "limits" of rationality, as the destructive tendencies characteristic of the changes in cognitive abilities will be reduced to the maximum. The basic principle to be observed in this activity is to consider the corresponding mental image based on the experience accumulated by the person concerned, using the person's overall "life luggage".

Using the "emotional coloring" method of the mental image enables people to "integrate" the rational approach into their emotions.

From the field of practice, this rational approach gradually becomes more realistic over time and dominates the perception of the peculiarities of the surrounding human reality, which in turn reduces the negative evaluation of the events and relationships in which the adult man participates.

Thoughtful images are united in what some call "mental forms." The difference between the two categories of intellectual activity products lies in the fact that in the mental forms, a defined, human-made, mental image is subject to the expected transformation. This transformation can be arbitrary and depend only on the desire of the individual. But there is an obligatory element - transformation of the image must be positive. This concerns the change of the created image, in which case it is again expected that the newly acquired image will have the characteristics of the previous - integrity and emotional "coloring".

The next characteristic of the mental form must be the expansion of its psychological context. Thus, if the mental image includes an object or a group of them, then in the mental form one should imagine the context in which the objects will be included. It is encouraged that the extension of the context has a qualitative characteristic, i.e. when it comes to certain objects, to add to them relations that arise on the subject or a group of them, the objects to be included in a certain historical context, etc. The requirement that the extension of the context has a positive direction remains only unchanged.

The next important characteristic, which is also applied in the design of thought forms, is the continuous process of dynamics of their development. This in particular means that the mental transformation at the moment when it acquires its completeness and expanded context must again be subjected to a further transformation that further develops the concrete form and further "deepens" the context of its presentation.

This dynamism of the mental forms as well as the positive direction allow to overcome a number of cognitive problems related to age as well as to substantially improve the emotional focus of the elderly.

The construction of mental images and forms can also be applied in solving specific problems faced by people. This is the way in which the construction of mental forms and images in other age categories is used [8].

Organization of work with persons over age of 65, connected with the construction of mental images and forms

The organization of work is a separate element in the application of this method. The design of mental images and forms can be realized both within group activities and on the basis of individual sessions

with individual personalities. Which of the two forms to be chosen depends first of all on the format in which the participants will feel the most comfortable. This is particularly important in "third age" people, because at this age the tendencies towards individualism are increasing, and the feeling of comfort is conditioned by a considerably larger number of factors.

In principle, the two work programs differ only in the organization of the details, as in the case of the group form of work after a rather longer work in the process, a discussion of the mental formation between its participants can be included.

The presentation of mental images and forms can be realized in both oral and written form. However, the main goal is to use the oral form. The reason for this is that the written form can make it more difficult for some of the participants in the group. However, if they prefer this form, this cannot be considered as a significant violation of the methodology.

The duration of a meeting can be from 2 to 4 hours. But it should not be rushed at the end of the activity. In this case, it must be borne in mind that in every person, especially at a later age, the thought process proceeds in a different way. Setting a certain time limit can be a stressful factor for the participants, and this may interfere with the normal course of work.

The classes should be conducted by professional psychologists or medics who have undergone additional specialization in the field of gerontology and non-medical methods of working with clients from the third age. With the involvement of additional staff in working with the group participants, he / she must be prepared for possible failures in the course. The need for a particular image or mental form to be given "emotional coloring" can lead to conflict situations between the participants in the work. In this case, a member of the group should be transferred to another group or be denied participation in such a group. Otherwise, the phenomenon of emotional contamination may be observed, resulting in a significant impairment of the normal activity of the group.

Empirical study related to the approbation of the method "creating mental images and forms".

In order to establish to what extent the method of creating mental images and forms has a positive influence on the abilities of the persons above the age of 65 for the complete realization of the cognitive processes, an empirical study was conducted on the interview method in which they were included as an experimental group 64 people in the 65-80 age group and a control group of 64 people in the same age category. Respondents are residents of the cities of Sofia, Plovdiv, Haskovo and Yambol. The distribution in both experimental and control groups by gender is 30 men and 30 women. The distribution by age and control and experimental groups is shown in (Table 1). Two interviews were conducted with the experimental group, one at the beginning of the study, before conducting the exercises related to the construction of mental images and forms, and the second - at the end of the sessions or after their long duration within 45 days.

The results observed after the practice of creating imaging images affect the overall area of cognitive processes. The overall improvement in the cognitive abilities of the respondents in the experimental group is presented in (Figure 1).

Within the general improvement of the components of the cognitive abilities of the persons above the age of 65, the percentage changes in the individual components of the indicated elements of the cognitive activity can also be established.

Below are the individual components (the percentage of components to the total change of the individual element of the cogency process):

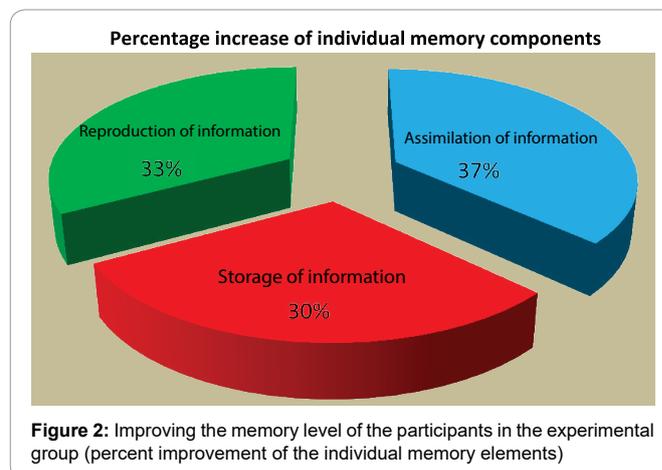
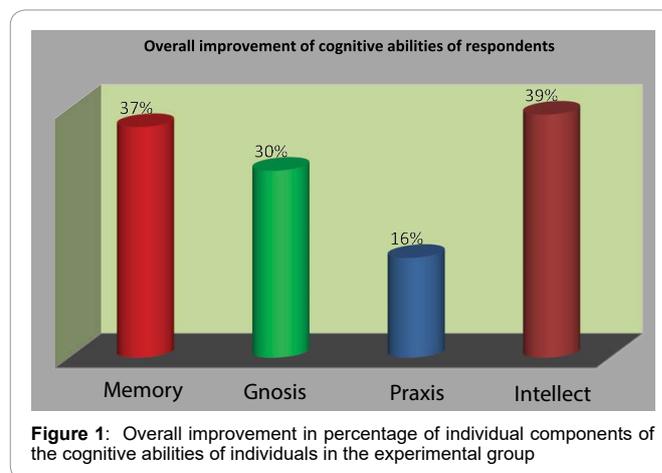
- improving the level of memory;

When comparing the data from the first and the second interviews conducted with the persons participating in the experimental group, the following data presented in (Figure 2) were found. The percentage improvement is noted by the level of data shown during the first interview.

As can be seen from the figure, the most serious positive changes occur in the absorption of the information. Obviously the reason for this is triggering the combinational functions of consciousness. However, as you can see, the other two components of memory also show significant improvement.

Table 1: Distribution of respondents by age

	Age 65-70	Age 71-75	Age 76-80
Esperimental group	22	21	21
Control group	22	21	21



Positive changes that can be identified in the experimental group and which are related to improvement of the respondent's level of gnososis are presented in (Figure 3). The percentage improvement is noted by the level of data shown during the first interview.

As the graph shows, the changes affect both the substantial improvement of algorithm (one of the essential components of gnososis) and the processing and adaptation of information. In the quality of receiving perceptual information, the improvement is not so sensitive, which is obviously due to the fact that it is more dependent on physiological functions. However, it also saw a significant improvement, probably due to a better concentration of respondents.

Although positive changes in the field of pacing are on a much modest scale, positive changes can also be found in this area. The data for improving the response rate of the respondents are shown in (Figure 4).

As can be seen on the chart despite some progress, acquiring new driving habits is difficult enough. This is largely due not to cognitive problems but to problems related to the reduction of the locomotory system of people in this age group. However, it should be noted that most of the driving habits remain preserved, and the habits used can be used to carry out mental imagery and shaping. However, the level of use is weaker.

The most significant are improvements in data related to respondents' intelligence. This applies not only to the intellect as a whole but also to its individual components. The data is presented in (Figure 5). The most significant increase is taken into account in the process of making deductions. This is probably due to the process in which the mental image allows for the "unlocking" of intellectual capabilities supported by sufficient practice. Since we are talking about people of an age category who have not only a professional but also a purely life experience, to a certain extent we can also talk about activating intuition.

Interestingly, it is also interesting that the study group also shows a serious increase in the ability to compare data sets. Obviously, the use of accumulated experience and the lack of "barriers" to its use is of great importance here. Although, in this context, the data for improving creative capabilities appear to be more modest, but they also show a significant increase. The weaker increase in creativity-related data is due to the need for a longer and purposeful thinking process that will lead to new solutions to emerging issues in principle.

It should be noted that positive changes in the emotional sphere of the respondents from the control group were also found in the course of the study. In particular, this is related to improving the overall emotional background, as well as a more positive "color" assessment of past and future events in respondents' lives. Improving the level of emotional attitudes is presented in (Figure 6).

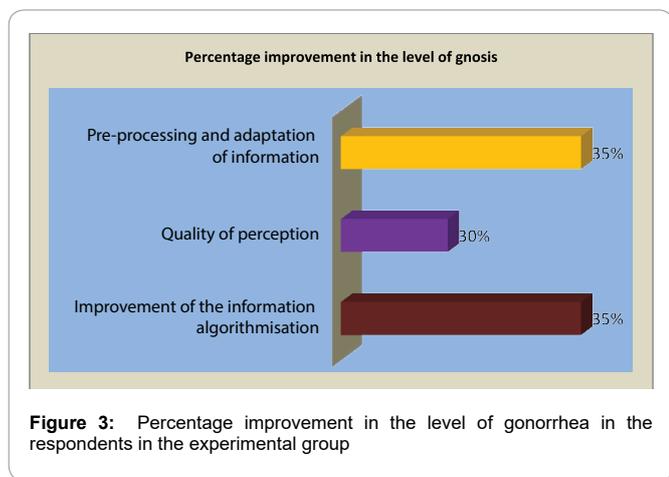


Figure 3: Percentage improvement in the level of gonorrrhea in the respondents in the experimental group

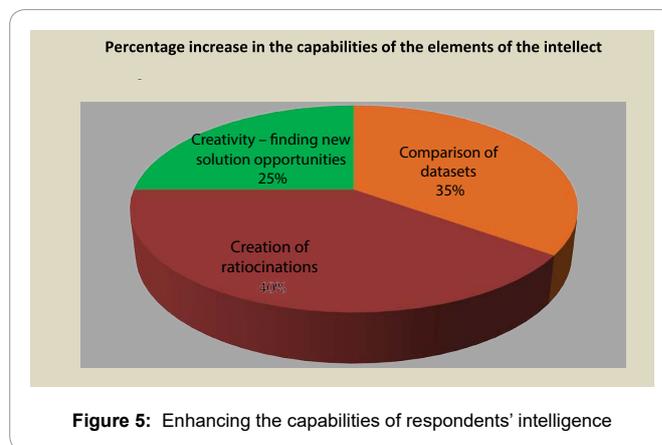


Figure 5: Enhancing the capabilities of respondents' intelligence

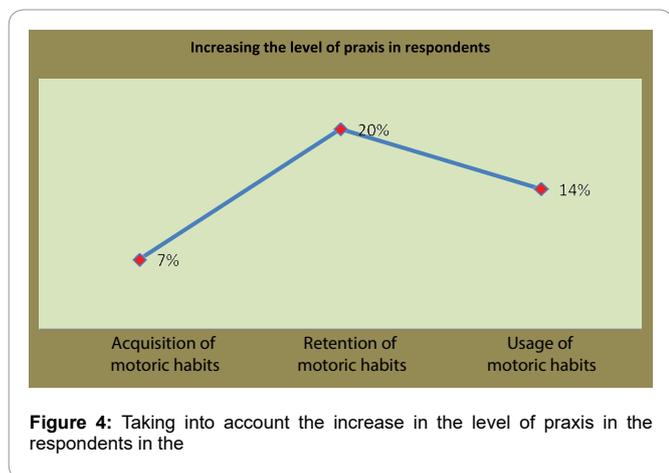


Figure 4: Taking into account the increase in the level of praxis in the respondents in the

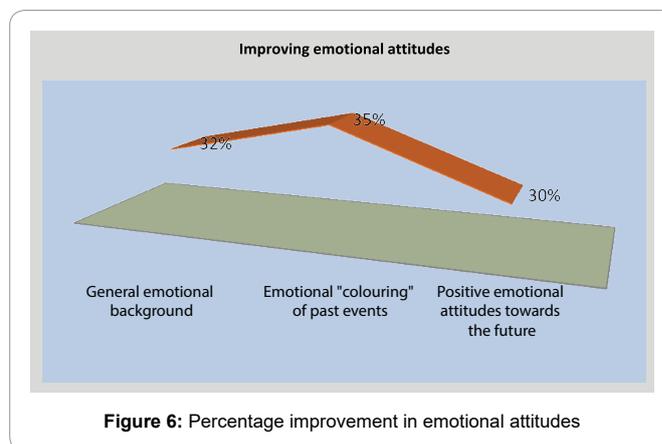


Figure 6: Percentage improvement in emotional attitudes

Obviously, the high values of improving emotional attitudes towards past events are due to the experimental group that the use of past experience (even when it was negative) gives them serious opportunities for realization despite the fact that they no longer are able to fully fulfill their past obligations. On this basis, a positive attitude toward the future is built.

The conducted study showed that the application of the mental images and forms also positively affects the social contacts of the persons of this age group. Most of them state that they have begun to better understand their relatives from other generations, and about 38% of respondents indicate that conducting classes also positively influenced their communication with strangers.

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