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THE USE OF VISUAL PSYCHOTECHNIQUES TO ACTUALIZE COGNITIVE ACTIONS OF PRIMARY SCHOOL CHILDREN WITH MILD MENTAL RETARDATION

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Purpose. The purpose of this article is to describe the use of visual psychotechniques to actualize cognitive actions of primary school children with mild mental retardation.

Methods. The following theoretical methods of the research were used to solve the tasks formulated in the article: a categorical method, structural and functional methods, the methods of the analysis, systematization, modeling, generalization. The experimental method was the method of organizing empirical research.

Results. We proved, that all mentally retarded children are characterized by reduced activity of mental processes and a weak regulatory role of thinking and speech. Mentally retarded children of primary school age with intellectual disorders usually perform activity without listening to instructions, without understanding the goals and tasks, without having an internal plan of actions, and their actions are always accompanied by weak self-control of cognitive activity. The perception and understanding of educational material by children of primary school age with intellectual disorders are inextricably linked with the characteristics of their memory. The main memory processes are preservation and memorization and storage. So, mentally retarded children have some of their own specific features, since they are formed under conditions of abnormal personal development.

Conclusions. Primary school children with intellectual disabilities better remember external perceived signs. It is more difficult for them to understand and remember internal logical connections and schemes. Mentally retarded children later than their normal peers, arbitrarily memorize educational material, which is still

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being formed, while the advantage of deliberate memorization in mentally retarded children is expressed as clearly as in schoolchildren with normal intelligence. The greatest problems are currently caused by the reproduction of verbal material by primary school children with intellectual disabilities. The mediated sensory memory of mentally retarded children is also poorly developed.

Key words: visual psychotechniques, cognitive actions, mild mental retardation, intellectual disabilities, internal logical connections, deliberate memorization, normal intelligence, weak self-control of cognitive activity.

Харченко Євген, Онуфрієва Ліана. Використання візуальних психотехнік з метою актуалізації пізнавальних дій дітей молодшого шкільного віку з легкою розумовою відсталістю

Метою статті є описати особливості використання візуальних психотехнік з метою актуалізації пізнавальних дій дітей молодшого шкільного віку з легкою розумовою відсталістю.

Методи. Для розв'язання поставлених у роботі завдань використовувалися такі теоретичні методи дослідження: категоріальний, структурно-функціональний, аналіз, систематизація, моделювання, узагальнення. Експериментальним методом є метод організації емпіричного дослідження.

Результати. Доведено, що усі розумово відсталі діти характеризуються зниженою активністю розумових процесів та слабкою регулюючою роллю мислення і мовлення. Розумово відсталі діти молодшого шкільного віку з інтелектуальними розладами, зазвичай, виконують роботу, не слухаючи інструкції, не розуміючи мети і завдання, не маючи внутрішнього плану дій, а їхні дії завжди супроводжуються слабким самоконтролем пізнавальної діяльності. Сприйняття та розуміння навчального матеріалу дітьми молодшого шкільного віку з інтелектуальними розладами нерозривно пов'язані з особливостями їхньої пам'яті. Основні процеси пам'яті – збереження та запам'ятовування та зберігання – у розумово відсталих дітей мають деякі свої специфічні особливості, оскільки вони формуються за умов аномального особистісного розвитку.

Висновки. Діти молодшого шкільного віку з інтелектуальними розладами краще запам'ятовують зовнішні ознаки, що сприймаються. Їм складніше зрозуміти та запам'ятати внутрішні логічні зв'язки та схеми. Розумово відсталий пізніше, ніж його нормальні однолітки, довільно запам'ятовування освітній матеріал, який все ж таки формується, тоді як перевага навмисного запам'ятовування у розумово відсталих дітей виражена так яскраво, як і у школярів із нормальним інтелектом. Найбільші проблеми наразі викликані відтворенням дітьми молодшого шкільного віку з інтелектуальними розладами словесного матеріалу. Опосередкована чуттєва пам'ять розумово відсталих дітей також є слабо розвиненою.

Ключові слова: візуальні психотехніки, когнітивні дії, легка розумова відсталість, інтелектуальні розлади, внутрішні логічні зв'язки, навмисне

запам’ятовування, сформований інтелект, слабкий самоконтроль когнітивної діяльності.

Introduction. Cognitive educational actions and cognitive activity in general are necessary and elementary components of the educational process, the formation of which ensures mastery of the content part of education for students with intellectual disabilities (Choi, Chau, Tsang, Tso, Chiu, Tong, Lee Po, Ng Tak, Wai Fu, Lee Kam, Lam, Yu Wai, Lai Jak, & Sik, 2003). Cognitive educational actions are formed and implemented in a case of children with intellectual disabilities only in the joint activity of a special education of a teacher with schoolchildren (Kraus, 2015).

The functions of cognitive educational processes include: 1) highlighting some essential, general and individual characteristics of well-known objects; 2) establishing species-generic relationships between objects and subjects; 3) making the simplest generalizations, being able to compare, classify objects, relying on visual material; 4) learning to read, write, perform the simplest arithmetic operations; 5) observing objects and phenomena of the surrounding reality under the guidance of a teacher (Mykhalchuk, Pelekh, Kharchenko, Ivashkevych Ed., Ivashkevych Er., Prymachok L., Hupavtseva N., & Zukow, 2020).

The relevance of the research on the use of the latest psychotechniques in rehabilitation activity with children of primary school with intellectual disabilities is due to the fact that the changes, which are taking place in our country, especially now, in the conditions of war, have created the need to develop and implement educational standards for a new generation of education (Kharchenko, & Onufriieva, 2023). We mean those children who have intellectual disabilities (Grunebaum, Oquendo, Burke, Ellis, Echavarria, Brodsky, Malone & Mann, 2003). The priority of teaching and educating students with mental retardation (intellectual disabilities) is the implementation of the state program on the use of the latest psychotechniques in rehabilitation activity with children with intellectual disabilities (Mykhalchuk, Zlyvkov, Lukomska, Nabochuk, & Khrystych, 2022).

The most important problems in rehabilitation activity are the problems associated with mental retardation (Murphy, Hall & Hall, 2003). This is due, first of all, to the fact that the number of people with this type of anomaly is not decreasing, but rather increasing (Onufriieva, &

Ivashkevych Ed., 2021). This is evidenced by 88% of the data that exist today in Western European countries and throughout the world (Huang, Oquendo, Friedman, Greenhill, Brodsky, Malone, Khait, & Mann, 2003). 90% of scientific studies provide evidence that mental disorders should also determine such conditions, which include various types of inadequate performance of cognitive activity, which can be the cause of organic damage in the cerebral cortex (Chan, Ng, & Chan, 2003). Such conditions in the scientific literature are considered, as: stability, irreversibility of the defect and organic damage to certain organs, which will also have a great impact on the diagnosis of mental retardation (Brodsky, Oquendo, Ellis, Haas, Malone, & Mann, 2001).

So, **the purpose** of this article is to describe the use of visual psychotechniques to actualize cognitive actions of primary school children with mild mental retardation.

Methods of the research. The following theoretical methods of the research were used to solve the tasks formulated in the article: a categorical method, structural and functional methods, the methods of the analysis, systematization, modeling, generalization. The experimental method was the method of organizing empirical research. In our research we used two Methodologies: Pair Association Methodology "Remember the Pairs" (2022) and O. Luria's long-term memory research method "Pictograms" (2024).

Results and their discussion. Mental retardation is not just a condition characterized by so-called "small amount of intelligence", but, above all, it is a certain changes of the person's mental processes. For example, changes in perception, imagination, attention in 76-79% of cases are explained in the scientific literature by certain specific organic lesions of the central nervous system. According to children, in particular, with mental retardation, gross changes in conditioned reflex activity are imbalanced in a case, when the processes of excitation and inhibition are diagnosed. All this constitutes the physiological basis of the paradigm of inadequate mental development, in particular the processes of cognition, emotions, will, personality as a whole (Onufriieva, Chaikovska, Kobets, Pavelkiv, & Melnychuk, 2020).

Some children classified as students with mental disabilities have severe musculoskeletal disorders, which are designated by scientists as having a neurological genesis (various, both simple and more complex forms of cerebral palsy, tetraparesis, hyperkinesis, etc.), as a result of

which they are completely or almost completely dependent on the help of other people in the movements of self-service, subject activity and communication (Edwards, Lee & Esposito, 2019). 90% of children belonging to this group cannot even sit. Hyperkinesis, in turn, in 95% of cases is the result of spasticity of the limbs. The process of speaking in these children also occurs with many difficulties, and the reason for this is paresis of the speech organs (Chen, Zhou, & Dong, 2020).

It is very important in our study to pay attention to the cognitive sphere of children with mental retardation. Such children are characterized by insufficient development of the cognitive sphere of the personality (Corbitt, Malone, Haas & Mann, 1996). Children do not show any interest in learning. They do not want to go to school, refuse to do homework. Also, these children often perceive the world around them inadequately. These children also cannot have developed mechanisms for the formation of a whole system of experience (Mykhalchuk, Levchuk, Ivashkevych Er., Yasnohurska, & Cherniakova, 2021). The perception of the surrounding world for such children is also extremely distorted. All this is the result of the fact that these children see poorly, do not hear well, cannot express their point of view clearly, and even if they say a certain phrase the people around them do not understand them. However, their analyzers are still well preserved, and this is a feature of such children (Mandell, & Pherwani, 2003).

The main disadvantage is impaired perception, that is a slower pace is observed compared to normal children. The slowness of perception is exacerbated by the fact that due to the underdevelopment of the mind, these children hardly distinguish the main thing, they do not understand the internal connections between parts, characters, etc. Therefore, their perception is also less differentiated. During learning, these functions are manifested in a slow pace of recognition, social space and these students often confuse graphically similar letters, numbers, objects, sounds, similar in sound, words, etc. (Tabachnikov, Mishyiev, Drevitskaya, Kharchenko, Osukhovskaya, Mykhalchuk, Salden, & Aymedov, 2021)

As for primary school children with intellectual disabilities, a low volume of perception is also noted. Children with intellectual disabilities, when they listen to a certain text, understand only elementary material, for example, names of objects, names of people, exclamations. On the other hand, primary school children with intellectual disabilities are characterized by indiscriminate perception. So, when children are

presented with a picture depicting some absurd situations (the absurdity of the depicted is not completely clear to such children), primary school children do not observe noticeable emotional manifestations similar to those ones that are presented in a case of children with normal, highly developed or simply developed intelligence (Mykhalchuk, Pelekh, Kharchenko, Ivashkevych Ed., Zukow, Ivashkevych Er., & Yatsjuryk, 2023).

This state of affairs is often associated not only with differences in the emotional reactions of primary school children, but also with the passivity of their perception process. Such children often do not know how to look closely, do not know how to independently investigate, having seen a certain absurdity, they do not seek help from others, they need constant impetus. In the process of educational activities, this leads to the fact that children often cannot complete a task that is accessible to their understanding without stimulating questions from the teacher (Epstein, Blake, & González, 2017).

Mentally retarded younger schoolchildren experience provides considerable difficulties in perceiving space and time, which does not allow them to navigate well in the world around them. At the age of 6-7 years old, these children often do not distinguish between their right and left hands, they cannot find their classroom, dining room, toilet in the school premises. They are often mistaken in determining time by clock, days of the week, seasons, etc. Much later than their peers with normal intelligence, mentally retarded younger schoolchildren with intellectual disorders begin to distinguish colors. A particular difficulty is that they distinguish shades of color. Thus, according to many scientists, in 25-30% of cases, younger schoolchildren selected a dark green or even black object for a dark blue sample and vice versa (Tabachnikov, Mishyiev, Kharchenko, Osukhovskaya, Mykhalchuk, Zdoryk, Komplienko, & Salden, 2021).

Perception is connected with thinking. If a student perceives only the external aspects of the educational material, does not catch the main, internal dependencies, then understanding, mastering and completing the task will be difficult. Thinking is the main source of knowledge. It takes the form of various operations, such as synthesis, analysis, comparison, synthesis, abstraction, specification. As many studies show, all these operations of mentally retarded children are insufficiently formed and have their own distinctive features. Thus, younger school-age children with

intellectual disabilities perform the analysis of objects as if by chance, they often miss a number of important characteristics, highlighting only their most noticeable parts. As a result of this analysis, it is quite difficult for children to determine the relationships between different parts of one specific subject. Thus, usually only visual characteristics of objects, such as size, color, and they were established. Analyzing different objects, younger schoolchildren highlight their general characteristics, also their individual characteristics. Due to the imperfection of such detailed analysis, it is quite difficult to synthesize different objects. By dividing parts of certain different objects, where they establish connections with other objects, it is quite difficult to form an idea of a certain object as a whole.

Specific features of thinking of mentally retarded children of primary school age with intellectual disorders are observed according to the operation of comparison, during which it is necessary to conduct a comparative analysis and synthesis of objects, and these features are very clearly manifested in the objective world. Children of primary school age with intellectual disorders are often unable to identify the most important things in different objects and phenomena, they make comparisons on insignificant landmarks, grounds and often on incompatible ones. These children also find it difficult to establish great differences in similar objects and most often in different ways. It is also especially difficult for them to establish similarities of objects and things, also of subjects (Peseschkian, 2003).

So, comparing a pen and a pencil, primary school children with intellectual disabilities note: “They look as if they are long and have the same skin”. A distinctive feature of thinking of mentally retarded children is uncriticality, the inability to evaluate their cognitive activity independently. They often do not notice their mistakes. This is especially clearly manifested in accordance with mentally ill children, when there are children with damage to the frontal lobes of the brain, and in a case of mentally retarded persons. These children do not understand their failures and are satisfied with themselves, their cognitive activity.

Let us describe the results obtained in our empirical study. An experimental study with children of primary school age with intellectual disabilities was conducted by us in the Rivne Regional Boarding School during September-December 2024. 23 children of primary school age with intellectual disabilities participated in the research. Among these 23

children, there were 10 girls and 13 boys. All children were in age 7-12 years old, and all of them studied in the lower forms.

We'll consider the results we obtained using the above methods and psychodiagnostic techniques. Let us describe the results we obtained using Pair Association Methodology "Remember the Pairs" (2022). The following evaluation criteria were used in the research, which we use for this "Remember the Pairs" method: from 7 to 10 words – it is a high level; from 4 to 6 words is medium level; less than 3 words is a low level. The results we obtained are presented in Table 1.

Table 1

Distribution of respondents in groups E1, C1 according to the indicators of verbal-logical memory development (in %, ascertainment study)

The level of the development of verbal and logical memory of children with intellectual disabilities at primary school	**Percentage of respondents**
High	0
Middle	13,66
Low	86,34

At the ascertaining stage of the experiment, the results of children in groups E1 and C1 were identical, so we will describe them together.

So, as the results of Table 2.1 show, the majority of primary school children with intellectual disabilities (86,34%) have a low level of verbal-logical memory development. Let us present the associative series of schoolchildren for certain stimuli. Required material: a series of words between which there are semantic connections, for example:

A doll – to play
A chicken – an egg
Scissors – to cut
A horse – to sled
A book – a teacher
A butterfly – to fly
A brush – teeth
A drum – a musician
Snow – winter
A cow – milk

Associative series of respondent Oleksiy V., who studies at the 3rd form of the Rivne Regional Boarding Lyceum, is 12 years old. He has a diagnosis according to the International Classification of Mental Disorders ICD-10 code F-70: mild mental retardation:

A doll – I don't see – I don't want to play – Big – Small – A doll – A doll – I said I didn't want to play – I said – said.

A chicken – Sitting – There is an egg here – There is an egg – She has one – I want to take it – An egg – Give it to me – An egg – I want an egg – I say I want an egg – I really want it – I said I want an egg.

Scissors – Red – I see them – They are red – I must say they are red – I see them – You can cut – Always cut – With scissors – I want to cut – Scissors – I want to cut – I want scissors.

A horse – White – It is white – Big – Yes, big – I want to ride – Ride – I say I want to – I really want to – to ride – Fast – A horse.

A book – Read – I don't want to read – A book – Big – Read – I always read – Black – I don't understand – I don't want to read – I say I don't want to read – I don't want to read – I don't want to read at all.

A butterfly – Flying – Flying – A butterfly flies – Flies – Like a fly – A fly in the room – In this room – I see it – I see it well – I see a fly – A fly flies.

A brush – Wash – Clean – Not at all – Don't want to – Don't always want to – Wash – A brush – Always wash – Don't want to wash – Don't always want to wash – Usually don't want to wash – Don't want to wash at all – Don't want to wash.

A drum – Beat – A drum – Beat – Loud – Beat – Very loud – Sounds – A drum – Beat – A drum – Beat – Loud – Beat – Very loud – Sounds – A drum – A drum – Beat – Loud – Beat – Very loud – Sounds – A drum – A drum – Beat – Loud – Beat – Very loud – Sounds – A drum.

Snow – Goes – Falls – Falls – Flys – Falls – Falls – Falls – Flys – Winter – Snow – It flies hard – I don't want snow – I don't want it to fall – It flies again.

A cow – Milk – Moo – Moo-moo-moo – Big – The cow is big – The cow wants milk – She wants it too – Really wants it – Milk wants it – A cow – Always – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk – The cow wants milk.

Also, primary school children with intellectual disabilities have a rather low level of long-term memory (studied by us using O. Luria's

long-term memory research method "Pictograms"). These results are presented in Table 2.

Table 2

Distribution of respondents in groups E1, C1 according to indicators of long-term memory development (in %, ascertainment study)

The level of the development of long-term memory of primary school children with intellectual disabilities	Percentage of respondents
High	0
Middle	10,24
Low	89,76

Also, all mentally retarded children are characterized by reduced activity of mental processes and a weak regulatory role of thinking and speech. Mentally retarded children of primary school age with intellectual disorders usually perform activity without listening to instructions, without understanding the goals and tasks, without having an internal plan of actions, and their actions are always accompanied by weak self-control of cognitive activity. The perception and understanding of educational material by children of primary school age with intellectual disorders are inextricably linked with the characteristics of their memory. The main memory processes are preservation and memorization and storage. So, mentally retarded children have some of their own specific features, since they are formed under conditions of abnormal personal development.

It is also necessary to pay attention to such a feature of the memory of primary school children with intellectual disorders as episodic forgetfulness. It is closely related to the overfatigue of the child's nervous system due to its general weakness. Mentally retarded students more often than their normal peers experience a state of protective inhibition. Those who study in classes for children with mental retardation have significant difficulties in reproducing images of perception – ideas.

In order for the learning process of younger schoolchildren to be successful and have a purely creative nature. Such children need to have a fairly developed imagination. Those children who have intellectual disorders, imagination is fragmentary, inaccurate and schematic. Mentally retarded children have more pronounced attention deficiencies than their normal peers: insufficient stability of attention, difficulties in distributing attention, slow switching. With oligophrenia, involuntary attention of

younger school-age children with intellectual disorders suffers greatly, but its voluntary side is mainly underdeveloped. At the same time, mentally retarded children try to overcome certain difficulties in a case of them. They usually refuse to perform cognitive activities when they encounter certain difficulties.

Mental retardation of primary school children with intellectual disabilities is manifested not in the formation of cognitive activity, but also in the violation of the emotional-volitional sphere, which has a number of features. We emphasize the underdevelopment of emotions, children have no shades of experiences. A characteristic feature of primary school children with intellectual disabilities is the instability of emotions. A state of joy without any special reasons is often replaced by sadness, laughter – by tears, etc. Their experiences are shallow, superficial. In some mentally retarded primary school children, emotional reactions are also often inadequate.

In the activity of a physiotherapist and a psychologist with children of primary school age with intellectual disorders, it is necessary, first of all, to take into account the state of the volitional sphere of mentally retarded children. Such children are characterized by a clear weakness of such children regarding their own intentions, motivations and a high level of suggestibility, which are so-called distinctive or characteristic features of the motor-volitional processes of younger schoolchildren. As researchers note, mentally retarded children prefer to find an easier way in the activity that does not require significant volitional efforts. That is why psychological mechanisms of imitation and largely impulsive actions are often observed in the activities of children of primary school age with intellectual disorders. Due to the unbearability, complexity and high level of such requirements for some such children, negativism, stubbornness and disobedience develop in them, which, in turn, leads to the irreversibility of many mental processes.

Also, both the physiotherapist and the psychologist, when working with primary school children with intellectual disabilities, should pay close attention to the special educational needs of mentally retarded children. The special educational needs of children with mental retardation should be understood as a set of so-called “special needs” that are arisen as a result of so-called “primary defect”. Taking into account such needs it makes people appropriate and necessary to create positive prerequisites that contribute into the development of primary school children with

intellectual disabilities of abilities to solve urgent life tasks. In our research we consider it appropriate to reveal briefly these aspects in relation to primary school children with intellectual disabilities.

Special attention should be paid to the time when such children should be started to study, to provide educational activities, etc. The psychiatrist, the psychotherapist and the psychologist should take into account the need to start comprehensive correction of intellectual disorders of such children as soon as it is possible. In fact, correction of cognitive processes of primary school children with intellectual disorders should be started from birth, when these disorders become apparent. Also, as in the case of healthy children, the basic general education of the child should be preceded by a period of preschool education and primary education (although early psychiatric care is necessary for such children with intellectual disorders).

A necessary prerequisite for the optimal development of abilities to perform educational activities of primary school children with intellectual disabilities is *the content of educational activities*. We also take into account the need to introduce special educational subjects and psycho-correctional courses, which are not mandatory in the content of educational activities of any child, including primary school children.

We attach particular importance to the creation of special methods and means of learning. It is necessary to create so-called "workarounds" that will allow the use of special tools and methods of problem-based learning in the paradigm of a more differentiated "step-by-step" learning system than is usually required for a given specific child. Also important is *the special organization of learning*. It largely takes into account the need for high-quality individualization and subject-centered education, a special spatio-temporal and semantic organization of the educational environment.

The next important component of the content of education is the definition of the boundaries of the holistic paradigm of the educational space. The latter involves considering the need for the maximum expansion of the educational space beyond the boundaries of a given educational institution. *The duration of educational activity* is also important. Guided by the principle of normalization of life, the general educational activity of primary school children with intellectual disabilities does not take place for 11 years, but, as a rule, for 12-14 years old, usually at the age of 7 to 21 years old. Thus, the learning process can take place both in 1-11 forms (one year of study in each grade), and in different age

classes, designed for 2-3 years of study, as it is organized in special educational institutions.

The next point is to define the circle of many people having been involved into the educational activities of primary school children with intellectual disabilities, and the features of their interaction. It is necessary to take into account the need to use and implement into the paradigm of educational activities well-coordinated requirements that are imposed on the child by all the people around him/her; the need for joint activity of specialists of different professions (special psychologists and teachers, social workers, doctors of various specialties, neuro- and psychophysiologists, etc.) and the child's parents with him/her in the process of his/her education and upbringing. In addition, in the process of organizing the education of primary school children with intellectual disabilities, it is necessary to take into account the entire range of contacts of this particular child, which may include the accompanying organization of educational activities, the involvement of volunteers, relatives, family friends, etc. in the process of education and upbringing of primary school children with intellectual disabilities. To meet the special educational needs of a child with mental retardation, a special organization of the entire life of schoolchildren, their living space, is required, which ensures the development of life competencies of primary school children with intellectual disabilities in the educational institution, in a certain organization, and also at home.

We have listed the most characteristic features of cognitive and emotional-volitional processes of mentally retarded children. Thus, in a case of those children of primary school age with intellectual disorders who study at secondary educational institutions, a characteristic underdevelopment of cognitive interests is diagnosed, which is expressed in the fact that they are smaller than their peers, completely unadapted to life activities. All of the above-mentioned features of mental activity of children of primary school age with intellectual disorders are unstable, since they are the so-called result of organic personality disorders at different stages of the child's development (genetic, intrauterine, during childbirth, in the postpartum period, etc.).

Conclusions. Primary school children with intellectual disabilities better remember external perceived signs. It is more difficult for them to understand and remember internal logical connections and schemes. Mentally retarded children later than their normal peers, arbitrarily

memorize educational material, which is still being formed, while the advantage of deliberate memorization in mentally retarded children is expressed as clearly as in schoolchildren with normal intelligence. The greatest problems are currently caused by the reproduction of verbal material by primary school children with intellectual disabilities. The mediated sensory memory of mentally retarded children is also poorly developed.

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