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Pedagogical Diagnostics as Means of Studying Life Competencies' Formation of Pupils with Severe Multiple Disorders

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Abstract

The relevance of the research stems from the fact that nowadays there are changes in preschool education, the implementation of new approaches, forms and means of assistance to children with special educational needs, including children previously considered uneducable. Growing awareness makes it clear that the education of such children should be built on a competency basis; the formation of their life competencies should be playing the leading role. The aim of the article is to determine the possibilities of applying pedagogical diagnostics to study the formation of life competencies in older preschoolers with severe multiple disorders using the example of the educational field "Game". The leading method of the given issue became the experiment (asserting, forming, controlling). The experimental base of the research is represented by three preschool groups in the governmental educational institutions "Correction and development-training centre". The article reveals the peculiarities of the plot-displaying game of senior preschool children with severe multiple disorders before and after training and provide evidence of the pedagogical diagnostics possibilities of game activity to identify the formation of life competencies in this group of children. The materials presented in the article allow us to see the level of pupil's training dynamics of the game with plot-displaying, which enables teachers to include different game stories to form various life competences in leading activities in pre-school age.

Key words: life competencies, game, pedagogical diagnostics, senior preschool age, severe multiple disorders.

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Introduction

On a new conceptual basis, considering modern social requirements of society for a preschool institution, a system of education for pupils with severe multiple disorders is being built in correction and development-training centre. Growing awareness helps to understand that education of such children should be built on the competency basis. The concept of "life competence" is appearing, which is considered in the structure of education as knowledge, skills and abilities acquiring, that are already necessary for a child with developmental disabilities in everyday life. "The structure of life competence of children with severe multiple psychophysical disorders can be represented in the form of relevant activities, arising from vital needs and relevant vitagenic (life) experience that accumulates in specially modeled vital situations that train the student's ability and willingness to use these types of activities under various circumstances "

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(Lisovskaya, 2014). Game activity is the leading (relevant) in preschool age, in this regard, it is necessary to form life competencies, mainly, in the game. An important element in the education and upbringing children with severe multiple disorders is the pedagogical diagnostics of their developmental level. Even the smallest changes in knowledge, the nature of actions' performance, in communication should be identified in time, and the educational process should be built on their basis. In this work, we consider pedagogical diagnostics as a means of assessing the game, its dynamics in preschool children with severe multiple disorders, associated with assessing the effectiveness of pedagogical actions and underlying the further planning of correctional work on the formation of life competencies.

Therefore, the research problem was determined by the contradiction between the fact that the game is the leading type of activity in preschool age in the formation of life competencies, a means of implementing the correction process, and the lack of specific pedagogical tools to determine the game formation, and, consequently, the formation of life competencies in the game for preschool children with severe multiple disorders.

Purpose and objectives of the study

The purpose of the research is to determine the possibilities of using pedagogical diagnostics of gaming activities to study the formation of life competencies in older preschoolers with severe multiple disorders.

Literature review

Teaching children in this group is a complex and specific process, as they have intellectual, motor, behavioral, activity and the whole person's disabilities. This leads to special educational needs and the creation of special scientific and methodological support for the educational process. Currently, a curriculum has been created for students from correction and development-training centres (Ministry of Education of the Republic of Belarus, 2014), subject areas of training have been identified, software has been developed for all educational areas (Lemekh, 2014). However, there is no holistic concept of their education, which would be based on the definition of "life competencies formation".

Lisovskaya (2014) addressed the challenge of studying life competencies and offered the definition of life competencies of children with severe multiple disorders, as well as the content, structure of such competencies, their types, criteria and indicators of formation; issues of the state of life competencies formation of children with severe multiple disorders are considered as the basis for planning corrective work (Zabelich, 2016); the problem of collaboration with the family of a child with severe multiple disorders is raised, the role of the family in the formation of life competencies in such children is studied (Arlamova & Tsarev, 2017; Tsarev et al, 2015); analyzes of the requirements for the structure of educational programs for children with severe and multiple disorders (Golovchits & Tsarev, 2014); software and methodological materials for teaching and raising children with severe multiple disorders are offered (Bgazhnokova et al., 2012; Kravtsova & Lisovskaya, 2015). At the same time, the study of psychological and pedagogical literature allows us to state that there is no special studies on the problem of forming life competencies in preschool children with severe multiple disorders using the example of gaming activity.

Methodology

Research Methods and Techniques

In the research process the following methods were used: theoretical (analysis; synthesis; generalization); empirical (pedagogical observation, asserting, forming, controlling experiment); methods of mathematical statistics and graphic representation of the results.

Experimental base of the research

The study was based on three preschool groups in the governmental educational institutions: "Correction and development-training centre" (the Republic of Belarus). The study was conducted in 2014-2016.

Research stages

The study was carried out in five stages

The first stage consists of theoretical analysis of the existing methodological approaches in psychological, pedagogical scientific literature, dissertations; specifically tackles the problem, purpose, research methods, and maps out an empirical study plan.

During the second stage, a pilot research was carried out, which allowed us to adapt game diagnostics scheme (Baryaeva & Zarin, 2001) in order to study the formation of life competencies in senior preschoolers with severe multiple disorders during the process of plot-displaying game, the levels of game development in senior preschoolers with severe multiple disorders were determined.

During the third stage, an asserting experiment was carried out. The main task of the stage was pedagogical diagnostics of life competencies formation in senior preschool children with severe multiple disorders during the plot-displaying game on the example of the plot "Doll's breakfast" (set the table, feed the doll, wash the dishes). Diagnostics was carried out according to the adapted game diagnostics scheme (Baryaeva & Zarin, 2001).

The fourth stage consisted of a forming experiment. Its task was to teach children a plot-displaying game (game plot "Doll's breakfast").

The fifth stage consisted of a controlling experiment. The task of the stage was pedagogical diagnostics of life competencies formation in the process of plot-displaying game on the "Doll's breakfast" theme in senior preschool children with severe multiple disorders after training.

Results

Pilot study

As a result of the pilot study, 15 out of 53 game observation parameters were selected.

The adaptation of the game diagnostics scheme was to reduce the number of game parameters for diagnostics. 15 out of 53 parameters were selected. The exclusion of the diagnostic parameters for the game was carried out on the following grounds:

1. we chose those that match the potential possibilities of preschoolers with severe multiple disorders. For example: we removed the “manifestation of creativity in the game” parameter, as the intellectual capabilities of preschoolers with severe multiple disorders only enable to perform memorized actions with any one plot;
2. we eliminated parameters that didn’t correspond to the study of the plot-displaying game. For example, the parameters “Contacts with peers during the game”, “The presence of conflicts in a joint game”, “The nature of motor games”, etc. were excluded;
3. the parameter “Use of substitute items” was omitted, as in the selected plot the use of substitute items was not supposed.

In addition, we introduced an additional parameter, “Ability to associate actions into a meaningful chain”. On the one hand, the above mentioned parameter was a fundamental component for distinguishing a displaying game from a plot-displaying game. On the other hand, it showed how much the child’s life competence was formed - eating during breakfast, the sequence of the actions, and the relationship of these actions with each other.

Adaptation also affected the assessment of the severity of behavior pattern during the game. Though in the author’s version a five-point scale was used, we limited ourselves to a four-point scale, as during the pilot study there was never fixed a level of 5 points; this was understandable, as a rating of five points implied performance at the level of normally developing peers. The results of the observations were recorded in the individual protocols.

Therefore, 15 observation parameters, i.e., an assessment of the plot-displaying game of senior preschool children with severe multiple disorders, looked as follows.

1. The presence of interest in toys and actions with them:

- 1 - there is no interest (the child does not pay attention to toys, does not reach for them, does not try to perform any actions);
- 2 - the child shows a spilled (low) interest in toys (the child jumps from one toy to another without significant delay of attention to them and actions with them for a long time, creating an impression of chaotic actions);
- 3 - the child is interested in toys that stand out for their appearance (colour, size, unusual shape, sound while moving) - he is drawn to them, trying to act with them;
- 4 - the child sometimes shows selective interest in toys, regardless of their external attractiveness.

2. Emotional reactions to toys and actions with them:

1– the child shows negative reactions to toys (crying, negativism, aggressive manifestations in relation to toys and those who offering them);

2 - the child is indifferent to toys, actions with them are not accompanied by any emotional reactions;

3 - the child sometimes shows positive emotional reactions to actions with toys (smile, motor animation, etc.);

4 - the child often reacts positively emotionally to actions with toys (smile, laughter, motor animation, speech utterances, etc.).

3. The adequacy of independent actions with toys:

1 - the child manipulates toys as well as any other objects. There are specific manipulations that are aimed at identifying the characteristics of an object: the child moves the car back and forth, considers wheels, makes non-specific manipulations - tapping, nibbling, throwing (pounds a doll, piles up cubes and throws, etc.);

2 - the child performs acceptable actions with individual toys (carries cubes by car, rolls a doll in a stroller, etc.), manipulates others;

3 - the child with most toys acts adequately;

4 - the child adequately uses all the familiar toys.

4. The way to perform the game action:

1 - together with an adult;

2 - together with an adult and in imitation of him;

3 - mainly in imitation and individual actions on the model;

4 - requires a sample to be shown before performing the actions on its own.

5. Accompaniment of an independent play with speech:

1 - the child does not accompany the speech with game actions;

2 - the child vocalizes, expressing a sense of pleasure from the actions performed;

3 - the child sometimes expresses separate words in connection with the actions performed (fixing character);

4 - the child often accompanies the performed actions with statements of a fixing nature.

6. Speech activity during a joint game:

1 - the child plays silently, while playing with an adult or a peer;

2 - the child sometimes makes some statements within the process of playing with an adult or a peer, most often statements have a fixing character, regarding the performed actions;

3 - during the game, the child turns to an adult or a peer with questions about the actions performed;

4 - during the game, the child turns to an adult or peer with explanations about the actions performed.

7. The duration of an independent play:

1 - up to 5 minutes;

2 - 5-10 minutes;

3 - 10-15 minutes;

4 - 15-20 minutes.

8. The duration of a play with an adult:

1 - up to 5 minutes;

2 - 5-10 minutes;

3 - 10-15 minutes;

4 - 15-20 minutes.

9. The intensity of game behavior:

1 - very low - the child plays non-intensively, low level of activity;

2 - low - the child initiate low-intensity, the absorption of the game is short, the child does not show any interest, the game is almost without emotional manifestations, low physical activity, no desire for contacts with other players;

3 - medium - the child initiate low-intensity, the preoccupation with the game is short, sometimes he is keen on the game, the game is without emotional manifestations, low physical activity, no desire for contacts with other players;

4 - high - the child plays intensively, with enthusiasm, the game is emotionally rich, high physical activity, desire for contacts with other players.

10. Contacts with adults during the game:

1 - the child plays alone, does not notice adults, does not respond to their treatment;

2 - the child plays alone, but sometimes watch an adult playing nearby, reacts to appeals;

3 - the child plays alone, but sometimes addresses an adult with a request or a question in order to attract him to the game;

4 - the child seeks to play together with an adult, actively responds to his suggestions.

11. Tools which are used to interact with a partner in a game:

1 - substantive actions;

2 - facial expressions and pantomime;

3 - single words (questions, appeals);

4 - detailed statements of real content.

12. Coordination of motor skills during the game:

1 - very weak - the child's actions are coordinated very weakly, which complicates their implementation;

2 - weak - the child has difficulty in performing actions with small toys;

3 - medium - the child has difficulty in performing actions with small toys and objects;

4 - good - the child experiences some difficulties in performing game actions that require precise movements.

13. Emotional reactions during the game:

1 - the child does not show positive emotional reactions during the game;

2 - the child sometimes expresses a feeling of pleasure from the game;

3 - the child often expresses a feeling of pleasure from the game;

4 - the child very often expresses joy and contentment during the game.

14. Adult participation in children play guide:

1 - the game arises on the initiative of an adult and takes place under his guidance;

2 - the game arises on the initiative of a child, but takes place under the guidance of an adult;

3 - the game arises on the initiative of a child and takes place with the participation of an adult as a full participant in it (indirect methods of leadership are used);

4 - the game arises on the initiative of a child and takes place with a little support from an adult (indirect leadership techniques are used).

15. Ability to connect actions in a meaningful chain:

- 1 - the child performs only one action;
- 2 - the child connects two actions in a meaningful chain;
- 3 - the child connects three actions in a meaningful chain;
- 4 - the child connects more than three actions in a meaningful chain.

The development levels of the game for senior preschool children with severe multiple disorders were determined: critical (0-15 points), very low (16-30 points), low (31-45 points), sufficient (46-60 points).

In terms of the formation of life competence - eating - we were interested to see how the child relates to the dishes; adequate or inadequate actions were carried out with it; whether a child had the skill of an independent handling of a cup, spoon; whether he turned to an adult for help if something didn't work; whether he had difficulty in performing actions with small toys (cup, spoon); whether it was possible to carry out actions consistently, linking them into a semantic chain "breakfast".

Asserting stage

The findings of the study showed the following:

in the parameter "Interest in toys and actions with them", before learning, 64% of children had the result - "no interest", 27% - "the child showed a spilled (low) interest in toys", 9% - "the child was interested in toys"; in the parameter "Emotional reactions to toys and actions with them", before learning, 36% of children had the result - "the child showed negative reactions to toys", 36% - "the child was indifferent to toys, actions with them didn't not accompanied by any emotional reactions", 28% - "the child sometimes showed positive emotional reactions to actions with toys"; in the parameter "The adequacy of independent actions with toys", before learning, 36% of children received the result - "the child manipulated toys as well as any other objects", 64% - "the child performed adequately with separate toys while manipulated others"; in the parameter "The way to perform a game action", before learning, 64% of children had the result - "together with adults", 36% - "together with an adult and in imitation of him"; in the parameter "Accompaniment of a play with speech", before learning, 100% of children had the result - "the child didn't not accompany speech with game actions"; in the parameter "Speech activity during a joint game", 100% of children - "the child was playing silently, while playing with adults or peers"; in the parameter "The duration of an independent play" as well as in the parameter "The duration of a play with adults", before learning, 100% of children showed the result "up to 5 minutes"; in the parameter "The intensity of game behaviour", 73% of children got "very low", 9% - "low", 18% - "medium"; in the parameter "Contacts with adults during the game", 64% of children showed the result "the child played alone, didn't notice adults, didn't respond to their treatment", 27% - "the child played alone, but sometimes watched an adult playing nearby, reacts to appeals", 9% - "the child played alone, but sometimes addressed an adult with a request or a question in order to attract him to the game"; in the parameter "Tools, which are used to interact with a partner in a game" the result was 91% of children - "substantive actions", 9% - "facial expressions and pantomime"; in the parameter "Coordination of motor skills during the game", before learning, 64% of children got - "very weak",

18% - “weak”, 18% - “medium”; in the parameter “Emotional reactions during the game”, before learning, 36% of children had the result “the child didn’t showed positive emotional reactions during the game”, 46% - “the child sometimes expressed a feeling of pleasure from the game”, 18% - “the child often expressed a feeling of pleasure from the game”; in the parameter “Adult participation in children play guide” the results showed that 91% of children- “the game arose on the initiative of an adult and took place under his guidance, 9% - “the game arose on the initiative of a child, but took place under the guidance of an adult”; in the parameter “Ability to connect actions in a meaningful chain”, before learning, 9% of children showed - “absence of such ability”, 55%- “the child performed only one action”, 36% - “the child connected two actions in a meaningful chain”.

The following levels of the game development for senior preschoolers with severe multiple disorders were defined: critical level - 36%; very low level - 55%; low level - 9%; sufficient level - not available.

Therefore, it was determined that senior preschoolers with severe multiple disorders suffers from the formation of such life competency as eating. In most cases, the child carried out adequate actions with a cup, spoon; had a skill of self-handling a cup; rarely turned to an adult for help if something didn’t work out; often had difficulty in performing operations with small-sized utensils; not always could consistently carry out actions, linking them into the meaning chain of "breakfast".

Forming Stage

A series of classes were tested on the formation of the plot-displaying game “Doll’s breakfast” (thesis by A.V. Galskaya, performed under our guidance).

A series of classes included the sequential development of the game actions chain:

“Let’s treat doll Anya with juice”, “Drink doll Anya with tea”, “dolls want to drink”, “Milk for Misha”, “Cookies for doll Anya”, “ Delicious gingerbread for doll Masha”, “ Buns for dolls ”,“ Treats for dolls ”,“ Feed doll Anya with porridge ”,“ Breakfast for doll Anya ”,“ Feed dolls with breakfast ”,“ Feed dolls Anya and Masha with breakfast ”,“ Breakfast for dolls ”, “ Feed Misha with cottage cheese (yogurt) ”,“ Misha has his breakfast. ”

The number of classes was varied depending on the child ability to learn a specific game action.

Controlling stage

At this stage of the experiment, in order to determine the level and identify the dynamics of the plot-displaying game formation in senior preschool children with severe multiple disorders during the experimental work, diagnostic sections were carried out using the same methods as at the asserting stage of the experiment. The results obtained are presented in chart 1.

According to all criteria, the control slice data showed changes in comparison with the measurements of the asserting experiment. The share of 10 indicators at the critical level has significantly decreased (by 50% or more). According to 7 indicators, children reached a sufficient level, which was not recorded at all at the asserting stage.

Chart — 1. Comparative analysis of the development indicators of the plot-displaying game in older preschoolers with severe multiple disorders before and after training

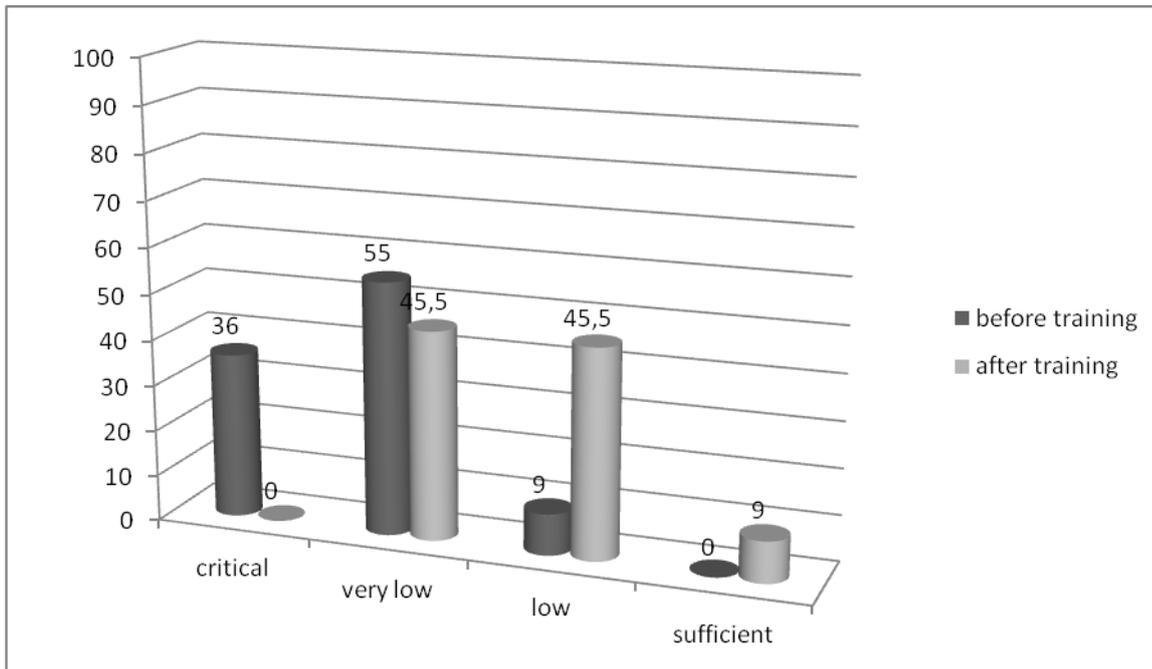
Game diagnostics parameters	The presence of an indicator (asserting experiment / controlling experiment)			
	1 point (in %)	2 points (in %)	3 points (in %)	4 points (in %)
The presence of interest in toys and actions with them	64/18	27/36	9/46	-/-
Emotional reactions towards toys and actions with them	36/18	36/18	28/36	-/28
The adequacy of independent actions with toys	36/9	64/36	-/55	-/-
They way to perform a game action	64/18	36/36	-/18	-/28
Accompaniment of an independent play with speech	100/36	-/64	-/-	-/-
Speech activity during a joint game	100/36	-/28	-/36	-/
The duration of an independent play	100/64	-/36	-/-	-/-
The duration of a play with an adult	100/55	-/45	-/-	-/-
The intensity of game behavior	73/9	9/46	18/18	-/28
Contacts with adults during the game	64/9	27/46	9/27	-/18
Tools which are used to interact with a partner in a game	91/27	9/64	-/9	-/-
Coordination of motor skills during the game	64/9	18/55	18/18	-/18
Emotional reactions during the game	36/28	46/18	18/36	-/18
Adult participation in children play guide	91/55	9/36	-/9	-/-
Ability to connect actions in a meaningful chain	9/-	55/27	36/55	-/18

The following levels of game development for senior preschoolers with severe multiple disorders after training were defined: critical level - none; very low level - 45.5%; low level - 45.5%; sufficient level - 9%.

Positive dynamics of the game development in older preschoolers with severe multiple disorders after training is presented in the picture 1.

Therefore, it was determined that a senior preschooler with severe multiple disorders, after learning the game plot “Doll’s breakfast”, underwent significant shifts in his ability to perform actions consistently, linking them into the meaning chain

“breakfast”, which was one of the essential components of the “eating” competency ". Thus, before learning the child most often performed one or two actions, after learning - two or three, respectively.



Picture. 1. A comparative analysis of the results of the plot-displaying game formation in senior preschool children with severe multiple disorders at the asserting and controlling stages of the experiment.

Discussions

The problem of using pedagogical diagnostics as means of studying the formation of pupil's life competencies with severe multiple disorders is multidimensional. On the one hand, it requires the study of the phenomenon - “pupil's with severe multiple disorders education” in terms of life competencies formation in preschool age within the presence of a complex pathology. On the other hand, a part of the problem is the creation of criteria-diagnostic tools for assessing the quality and monitoring the effectiveness of pupil's with severe multiple disorders education, determining the component composition and content of an integrated assessment of preschool children's quality education in the context of correction and development-training centre.

At the same time, the study of life competencies formation by means of pedagogical diagnostics using the example of the educational field “Game” allows us to experimentally investigate the possibility of creation the monitoring criteria-diagnostic tools that enable an expert to assess teacher's activities at correction and development-training centre in this area.

We have not found studies of other authors on the stated problem within the framework of preschool age.

Conclusion

It is determined that before learning the plot-displaying game for most children with severe multiple disorders, the following characteristics are identified: no interest towards toys and actions with them; the presence of negative reactions to toys or absence of any emotional reactions; the presence of nonspecific and specific manipulations instead of playing actions; playing actions fulfillment only by initiative and together with an adult; absence of speech accompaniment during game actions (children plays silently); absence of an independent game or its minimum duration; very low activity of intensive playing behavior; playing by acting alone; absence of reaction towards adults; absence of facial expressions, pantomime, appeals during the game; no ability to connect a playing chain.

Mostly critical (36%) and very low (55%) levels of plot-displaying game development in older preschool children with severe multiple disorders have been identified. Pedagogical diagnostics made it possible to reveal which skills a child lacks in order to carry out the process of eating during breakfast.

After training of the plot-displaying game "Doll's breakfast", a significant increase has been observed in the following parameters: "Emotional reactions to toys and actions with them", "The way to fulfill an action activity", "Speech activity during a joint play", "The intensity of playing behavior", "Addressing to adults during the play", "Motor coordination during the play", "Emotional reactions during the game", "Ability to connect actions into a meaningful chain". Absence of the critical level of game development is noted, mostly very low (45,5%) and low (45,5%) levels of the plot-displaying game development in senior preschoolers with severe multiple disorders has been identified. All children have shown positive dynamics in teaching the plot-displaying game "Doll's breakfast".

In the game activity, leading in senior preschool age, skills necessary for children to serve themselves during the meal, to form the necessary life competence, have been developed.

The analysis of the observation results enables the teacher to outline the program for the plot-displaying game formation taking into account the typological and individual characteristics of the children.

In addition, the proposed scheme of pedagogical diagnostics enables to see the level of pupils' training dynamics in correction and development-training centres on the plot-displaying game for each of 15 parameters, which further helps teachers to adjust individual children's learning programs and long-term work plans for the educational field "Game", include a variety of game stories for the formation of different life competencies in the leading activity in preschool age.

The research allows us to say that the pedagogical diagnostics of gaming activities can be used to study the formation of life competencies in older preschoolers with severe multiple disorders.

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