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## **The Fading Cues Method in Logopedic Diagnosis and Therapy of Dementia Patients**

### SUMMARY

In this article, various ways of applying the Fading Cues Method in the logopedic treatment of dementia, at the diagnosis and therapy stages are discussed. My proposed logopedic treatment, lexis related, adopts the following steps during the preparation stage:

1/ The choice of lexical material for the exercises most appropriate for the disease stage and the individual needs of the patient. This is based on an up-to-date evaluation of the patient's lexical capability;

2/ The choice of optimal support for the recall of lexical material on the basis of suggestions in reference books and verified through contact with the patient. This support is in the form of guidance given to the patient and how to act on it during therapy;

3/ The structural preparation of the semantic material in agreement with the principle of cue minimalization and word construction rules.

At the stage of working with the patient, the logopedist's activities are governed by the following rules:

1/ The exercise difficulty level (increasing over the logopedist's planned program, but from the patient's viewpoint, decreasing as a consequence of the Fading Cues Method) controlled so as to minimize the number of incorrect associations triggered during the exercises, which can later interfere with the correct answers;

2/ Lexical exercises are carried out in a chosen area of the lexical and semantic field so as to direct a patient's efforts into recalling the specified lexical material and activate deep processing through activities related to the earlier identified semantic category. I will explain the proposed logopedic treatment, by means of an example, with reference to a selected patient with dementia.

**Key words:** lexical, diagnosis, therapy, dementia, Alzheimer's disease

## INTRODUCTION

Lexical and semantic disorders are seen as one of the most dominant symptoms of language disorders in Alzheimer's dementia. Anomia/dysnomia is considered to be the prominent feature in speech for dementia patients in the initial phase of the disease. Despite much information devoted to lexical and semantic disorders in the subject literature, there are still only a few concurrences relating to therapy methods in this area (A. Domagała 2007b). The problem relates to patients with various kinds of dementia. As mentioned by M. Newhart and his research collaborators, lexical disorders may originate due to different deficits capable of interfering with the naming process. This is the reason why it is often difficult to establish the appropriate way to work with patients (M. Newhart et al. 2009). It is interesting that these researchers, having a selection of methods for patients with different types of primary progressive aphasia, were driven by empirical evidence and not by theoretical assumptions.

In the case of dementia, logopedists (and other specialists) are warned against activities, during the diagnosis and therapy stages, which can trigger negative emotions in their patients when faced with experiencing failures, inability to complete tasks, and exposing their shortfalls ("don't test", "don't demand impossible things", "protect against frustration"). Thus, methods of dealing with patients have to be planned carefully. The key is to determine the severity of a patient's lexical disorders, an appraisal of the ability to recall forgotten names, and to recognize the patient's potential, so as to plan relevant therapeutic treatment.

## THE AIM OF THIS ARTICLE

The aim of this article is to discuss the different ways of using the Fading Cues Method in logopedic procedures of dementia, during the diagnosis and therapy stages, based on my own professional experience.

The Fading Cues Method (also referred to as the Vanishing Signs Method or the Vanishing Indicators Technique in Polish reference books – N. Gawron 2008, T. Sobów 2011) is recommended as a method to improve the functioning of patients with dementia. Gawron (2008) referring to the research carried out in the West, points to its application in the case of Alzheimer's disease. Sobów (2011), however, sees the method as a non-pharmacological method of influencing cognitive functions, recommended for practically all patients regardless of the type of their dementia. According to Sobów, in the majority of dementia patients it is possible to adopt techniques based on semantic and non-verbal clues given by a therapist, including the Fading Cues Method, which has gained great popularity in the United States

The essence and aim of the Fading Cues Method is seen, in neuropsychology, as an enhancement to the process of retrieving information from memory – a method “consisting of many attempts at recalling information by patients, during which the therapist provides them with a number of clues which are gradually reduced” (N. Gawron 2008, p. 132). To illustrate this procedure, Gawron cites a description of a training session, directed towards building associations between the sound presented to a patient and the required behavior in a given situation (M. Bird 2001, after: N. Gawron 2008) Thus, for a patient to use a notebook, clues were used to remind him of it. Firstly, a direct request (“please look inside your notebook”), followed by indirect hints (the word NOTEBOOK written on a card), a verbal clue (“what should you do when you hear a bell?”), a visual clue showing the patient a notebook), until the expected reaction from the patient was triggered by the sound of the bell itself. From the point of view of logopedics, the important fact is that the Fading Cues Method interactions can relate to all kinds of information, including linguistic. This is evident, for example, in a procedure where a patient is shown a word, which is later recalled by the patient when shown the same word with the end letter missing, followed by successive end letters missing. This emphasizes the fact that the type of clue applied can be freely adapted to the type of exercise material (in this case: forenames, addresses, telephone numbers) and the severity of the patient’s memory disorders (N. Gawron 2008).

## METHOD

My proposed therapeutic procedure involves the following steps at the preparation stage:

1/ The choice of lexical material for the exercises most appropriate for the disease stage and the individual needs of the patient. This is based on an up-to-date evaluation of the patient’s lexical capability;

2/ The choice of optimal support for the recall of lexical material on the basis of suggestions in reference books and verified through contact with the patient. This support is in the form of guidance given to patient and how to act on it during therapy;

3/ The structural preparation of the semantic material in agreement with the principle of cue minimalization and word construction rules.

During the therapy stage, whilst working with the patient, I follow the rules below which govern the logopedist’s work:

1/ The exercise difficulty level (increasing over the logopedist’s planned program, but from the patient’s viewpoint, decreasing as a consequence of the Fading Cues Method) controlled so as to minimize the number of incorrect associations triggered during the exercises, which can later interfere with the correct answers;

2/ Lexical exercises are carried out in a chosen area of the lexical and semantic field so as to direct a patient's efforts into recalling the specified lexical material and activate deep processing through activities related to the earlier identified semantic category.

I will later explain the above-mentioned logopedic treatment, using as an example, a patient with moderate Alzheimer dementia.

The patient K. Z., aged 68, with primary education, used to be a housewife, worked seasonally as a blue-collar worker in a fruit and vegetable processing company and on farms. Currently, her husband is looking after her, the children live abroad. The family's standard of living is modest.

The patient has undergone logopedic therapy (as well as other forms of non-pharmacological therapy) as an out-patient at a day center for patients with Alzheimer's and other related diseases, run by the Alzheimer's Association in Lublin. She benefited from The Ministry of Health and Social Welfare's competition projects ("Social support for people with mental disorders" 2007, 2008), which concentrated on language communication, both direct and indirect (A. Domagała 2007a, A. Domagała, E. Długosz-Mazur 2007, A. Domagała – typescript). She also attended my therapeutic classes on a one-to-one basis in the framework of activities/schemes run by the Local Self-help Centre – a continuous rehabilitation centre - PFRON 2009.

The application of the Fading Cues Method during logopedic therapy to patient K. Z. resulted from recognizing lexical deficiencies (and wider deficiencies in language and mental functioning) whilst she was completing the prepared notebook exercises for patients with dementia (A. Domagała 2007c; A. Domagała, E. Długosz-Mazur 2007; A. Domagała, 2008). Stimulating a patient's communication proficiency is primarily related to the evaluation of the actual capabilities and deficiencies concerning:

1/ the range of thematic utterances, created independently and collaboratively whilst conversing with another person (knowledge of reality retained in the patient's memory, the possibility to update information from a specified thematic area),

2/ the level of linguistic systemic proficiency (linguistic resources available, experienced talking difficulties and the prospect of benefiting from a logopedist's help when problems occur whilst talking),

3/ the skill level in reading and writing (retained fulfilled activities and the ability to communicate in writing).

Due to experienced lexical difficulties, K.Z. avoided situations when they could be revealed and limited her verbal contacts with the community. To some extent she was aware of her lexical deficiencies, and her failure to express herself was accompanied by negative emotions ("words escape me", "I forget

everything”, “I don’t know how to say it”). The Fading Cues Method was applied to improve the word recollection process, whilst at the same time, to help the patient to overcome communication difficulties and encourage her to keep up the language contact with her community.

From the diagnostics perspective, the Fading Cues Method is used to evaluate the depth of lexical disorders. During selected tests to determine the level of lexical proficiency, cues were used to help the patient in remembering words (trying to gradually limit the help from the examiner, in agreement with the adopted method, modeled on for example, during forename recollection, the name “Franciszek” is shortened to Francisz... Fran... Fra... F... in subsequent tests). It is worth emphasizing that this course of action (opposite to a logopedist’s usual prompting, who most often starts with a small cue such as the first vowel or word syllable) has therapeutic benefits; it initially allows the patient to increase the number of correct answers and consequently protects the patient from frustration in situations of lexical deficiencies and failures. It has been indicatively tested as to what cues the patient should be given for her to find the right word, and also how effective the cues (partially exposed to the patient who reads them unassisted or with the logopedist’s help) are regarding the use of written words. The therapeutic session then follows.

#### 1) The choice of lexical material for the exercises

The lexical material for the exercises was appropriately selected for the disease stage and the individual needs of the patient, on the basis of an up-to-date evaluation of the patient’s lexical capability.

In a moderate case the symptoms of anomy are already clear. Whilst diagnosing the patient, it was taken into account that she is aware of the missing names, but with a good retained knowledge to the meaning of the words. Problems with word definitions (even for the clarification needs of which word the speaker means, what name she is searching for in a particular situation) are in this case insufficient to diagnose semantic disorders. According to T. A. Harley and his collaborators’ research (T. A. Harley et al., 2008), patients with Alzheimer’s dementia may have difficulties with defining words, not because of a breakdown of semantic knowledge as some Western researchers earlier claimed, but because of deficiencies in meta-linguistic knowledge (this condition is rendered by the statement “I don’t know what I know”). The authors emphasize, that the people they diagnosed were unable to construct a definition in the way the researchers expected, and obtained worse results than healthy people. However, they were able to provide the missing information with the help of auxiliary questions. Although they did not have a feel for what constitutes a good definition, they recalled a lot of autobiographical information; it was their semantic knowledge that was retained. The researchers’ opinion is that the meta-linguistic processes are special kinds of

executive functions, associated with language use and the control of linguistic behavior. In Alzheimer's dementia, meta-linguistic deficiencies can already be observed at an early stage of the disease due to damage in the frontal lobes.

In this case it was decided that the scope of the lexical material would be tailored primarily to the patient's actual needs and interests. Taking into account each patient's individual circumstances and motivations is important, though in the moderate state, the emphasis should be placed on basic vocabulary. It has been confirmed in reference literature that in spite of an increase in lexical disorders in Alzheimer's dementia, the patients are capable of naming certain objects until the later stages of the disease (F. Cuetos et al., 2005). According to the findings of F. Cuetos and his collaborators, the acquisition time is the key, the best retained phrases are those acquired the earliest. The researchers point out, amongst others, that there is a tendency to answer "I don't know" at the stage when word recollection is still possible, though a patient requires encouragement and more time to think. In this example, I took this into consideration when evaluating the patient's potential.

## 2/ The choice of optimal support for the recall of lexical material

The kind of clues given to the patient and their implementation during therapy was described on the basis of suggestions included in reference literature, and verified through contact with the patient.

It was decided that during the patient's therapy both verbal and nonverbal cues would be applied.

The results of research on the effectiveness of lexical therapy, conducted by Ousset and his collaborators, prove that it is helpful for patients with Alzheimer's dementia, when recalling a specified word, be specifically shown an illustration and given the first syllable of a word (P. J. Ousset et al., 2002). In this case, lexical therapy was conducted in the form of a computer application and the patients' task was to guess words on the basis of their definitions (the words appeared in narrative texts shown to the patients earlier). The following types of cues were used: 1/ semantic category; 2/ the first syllable (computer synthesized); 3/ the first letter of a word; 4/a color picture; 5/ a characteristic sound associated with the object. The usefulness of the cues was 62.7% when a picture was shown, and 57.6% when the first syllable was provided. The characteristic sound was useful slightly less often (56%), when remembering the required word. However, there is a need for appropriate recordings to be available during logopedic therapy.

Using visual stimuli is justified from the perspective of established symptoms of anomia for patients with dementia. In Alzheimer's dementia, cases of undistorted picture naming can be observed with simultaneous serious disorders related to other lexical capabilities. This state is described by J. Shuren and his collaborators (J. Shuren et al., 1993) and they classify it as a particular type of aphasia –

“nonoptic aphasia”, which is differentiated by a selective retention naming ability in situations using visual stimuli. In such a situation, well retained picture naming can contrast not only with both poor results in word fluency evaluations, but also with numerous symptoms of decreased lexical capabilities in spontaneous utterances.

In the prepared exercises verbal clues were received by the patient visually (word spelling, structurally shortened according to the principle of cue minimalization) and aurally (the therapist reads written words, matched to the structural shortening). It was decided that verbal clues will be multisensory, so as to encourage additional routes of association during word recollection. This approach often turned out useful in cases of aphasia with localized brain injuries (J. Hickin et al., 2002). Use of phonological and orthographic clues helped in finding words, but the effects’ duration were not always satisfactory (an improvement in lexical proficiency for a possibly long time or, ideally, permanently was expected). Such good results are not to be expected in cases of dementia. Besides, with some elderly people, due to their education level and professional activity, one cannot assume a good command of graphical word patterns.

The treatment established for the patient described above involved:

1. Use of word spelling clues in the form of pictures for the patient (with a slightly shortened construction) with vocal accompaniment.
2. Use of word spelling clues in the form of pictures for the patient (with a markedly shortened construction) with vocal accompaniment.
3. Use of clues in the form of images with vocal accompaniment (with respect to the spelling of words with a significantly slim construction).

The aim of the exercises was to recall the names of the images without further hints from the therapist. Subsequently, a greater proficiency in recalling names from a selected semantic category was expected (in the prepared and exercise language materials).

### 3) The preparation of lexical material in the constructional aspect

The preparation of lexical material for the needs of those taking the classes was in accordance with the principle of cue minimalization and word construction rules. Words taken from the lexical and semantic field “fruit” /Polish names/ serve as an example.

For each individual word in the chosen semantic category „fruit” (the subjects covered with the patient in the exercise books were “My favorite places – garden, orchard”, “What I like to eat and drink”) the plural form was used, due to higher frequency of usage of this grammatical form in every day language (lubię /I like/: *truskawki, maliny, czereśnie...*/strawberries, raspberries, cherries/; kupimy /we will buy/: *truskawki, maliny, czereśnie...*/strawberries, raspberries, cherries/; jedliśmy/we ate/: *truskawki, maliny, czereśnie.....*/strawberries, raspberries,

cherries/ etc.). The questions posed by the therapist were directed towards retrieving the basic form of a word (nominative or possibly accusative when both are identical): “What fruit is this?”, “What can we see?” etc.

Words for exercises were prepared in the following way:

1. Word spelling of slightly shortened construction, e.g. *truskaw...*; *poziom...*; *jago...*; *mali...*; *porzecz...*; *czereś...*; *śliw...*; *wiś...*/ *shortened forms for respectively: .../strawberries, wild strawberries, blueberries, raspberries, currants, cherries, plums, sour cherries/*

2. Word spelling with a markedly shortened construction, e.g. *tru...*; *po...*; *ja...*; *ma...*; *po...*; *cze...*; *śli...*; *wi...*/ *very shortened forms for respectively: .../strawberries, wild strawberries, blueberries, raspberries, currants, cherries, plums, sour cherries/*

The words spelt in such a way, displayed beneath a picture are perceived as a caption with missing information to be completed. A logopedist relies on the syllable structure, the most natural in this situation. During a partial display of the words, in the case of visual and aural cues, the logopedist reads the entry a little slower, prolonging the pronunciation of the last written syllable (i.e. a vowel being the center of the syllable, or possibly a fricative following it; prolonging other consonants as well as semi-vowels is not desired as it is related to a change in the sound) and waits for the patient’s reaction. In the material above, a vowel and consonant can be prolonged in examples such as *czereś...* [*czereeeśś...*], *truskaw...* [*truskaaaff...*], however, in examples like: *poziom...*; *porzecz...* the sound of the final consonants could be misleading.

Thus, the lexical material should be prepared cautiously, partial display of the various parts of a word, irrespective of their morphological structure (e.g. a word with the last letter missing, then with subsequent letters missing, as in the case of reference literature mentioned in the beginning of this article) is justified only when we primarily refer to the patterns that a patient acquired earlier. Such stimuli will not be effective with patients who are not well acquainted with the written language. A vision defect, not corrected properly, or eyesight disorders can be additional obstacle to the use of spelling as a clue.

Care should be taken when preparing lexical material, so that in the first part of the exercise displaying the shortened words to the patient does not provoke the recollection of vulgar words, random words of high frequency usage, or mistakes typical for patients with anomy (like *tele...* telephone/television).

In the described example, the patient watched the entries during the exercises, the therapist started pronouncing the word and prolonged the final syllable, in anticipation of the correct answer from the patient. Illustrations from books and newspapers as well as charts showing fruit were of additional help.

It should be emphasized that the lexical exercises, during logopedic therapy, were conducted in combination with other ways of improving the patient’s

language functioning as recommended in the exercise books for dementia patients (A. Domagała, E. Długosz-Mazur 2007).

The patient was interested in the exercise topics, she reacted to the knowledge areas which are worth retrieving and consolidating, even to a limited extent, in spite of progressive mental deterioration. The topics related to the most important issue for the patient – “about herself” vital for her functioning in everyday life. Lexical exercises based on exercise books “Now and then” can be used in two stages: I. The exercise books are completed gradually by the patient unaided or with the help of another person – step by step, in the framework of the cycle of classes activating various types of proficiencies (e.g. lexical related to the prepared class topic). II. Exercise books are used upon completion, the information gathered in them becomes the basis of stimulating classes (e.g. a block of classes related to vocabulary in a thematic group, also with the help of pictures, charts etc.)

## CONCLUSIONS

Logopedic treatment of dementia is aimed at retaining a patient’s communications capability in so far as is possible at a given stage of the disease (related to the cognitive and interactive functions of the language – Grabias 2007). In terms of vocabulary one should not expect measurable results from the treatment as L. Nickels (2002) points out. For people with aphasia, naming disorders, in cases of localized brain damage are sometimes also difficult to evaluate, especially if an improvement in the transfer of results from the exercise environment into the real-life environment is intended. It is most important for me that in the proposed treatment, the Fading Cues Method faces the difficulties of the patient with dementia, supports the process of word retrieval, increases the number of correct answers and through this gives the patient the satisfaction and incentive to exercise, it helps to eliminate escapism. This kind of treatment can be satisfactory for a patient, even if its effects are ad-hoc.

Use of the Fading Cues Method helps to identify a patient’s problems in a detailed way and suggest relevant therapeutic treatment. This method is an example of logopedic therapy for dementia patients should be regarded as diagnostic and therapeutic process.

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