

Research Article

APHASIA: CHARACTERISTICS AND TEACHING METHODS

***Sandro Sehic**

MVCC Education Opportunity Center, 524 Elizabeth St., Utica, NY, 13501, United States

ARTICLE INFO

Article History:

Received 24th January, 2017
Received in revised form
17th February, 2017
Accepted 08th March, 2017
Published online 30th April, 2017

Keywords:

Aphasia,
Language disorder,
Teaching methods.

ABSTRACT

The aim of this research paper is to explain the characteristics of aphasia, how it affects human learning abilities, and the teaching methods that can help individuals with aphasia improve/regain their language skills. Aphasia is a language disorder caused by brain injury. A problem in education, especially in special education, is that many educators are unfamiliar with aphasia. In fact, many special education teachers have never even heard of aphasia. This article addresses that knowledge gap by providing some insight into useful teaching methods for working with learners/individuals with aphasia. Originally, I wrote this article during my doctoral studies at Northcentral University in Arizona. This article can be very beneficial to educators, special education teachers, and school psychologists.

Copyright©2017, Sandro Sehic. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Language disorders are common among all people regardless of their age and socioeconomic status. According to the World Health Organization, language disorders are “disorders in which normal patterns of language acquisition are disturbed from the early stages of development” (World Health Organization, 2011, para. 2). Language disorders appear in different forms and have different symptoms, such as:

complexity of speech not developing with age, little or no growth in vocabulary, consistently poor grammar with little or no improvement, difficulty remembering recently used words, below average vocabulary skills, difficulty producing complex sentences, improper use of correct tenses, [and] problems in recalling words (Sousa, 2002, p. 71). Language is the way in which people communicate and share information and the Columbia Encyclopedia, described it as “systematic communication by vocal symbols” (Language, 2008, para. 1). Scientists believe the human brain may already be set up for language learning process at birth. In the 1950s, MIT linguist Noam Chomsky theorized that young children could not possibly learn the rules of language grammar and syntax merely by imitating adults. He proposed that nature endowed humans with the ability to acquire their native language by

attaching what they hear to a language template that is prewired in the brain by birth just as baby tigers are prewired to learn how to hunt. (Sousa, 2002). However, even if the human brain is “prewired” for language learning, humans do not learn to use one universal language to communicate and may lose the ability to learn language under certain circumstances. The purpose of this paper is to research aphasia, a language disorder, and the teaching methods that help educators and learners overcome learning barriers and acquire certain language skills. This research paper is based on a limited number of valid research findings and should not be generalized but used only for informative purposes.

Aphasia and its characteristics

The scientific community identifies many different language disorders humans normally acquire at birth. However, aphasia is acquired later in life. According to the National Aphasia Association (2011), “aphasia is an acquired communication disorder that impairs a person’s ability to process language, but does not affect intelligence” (para. 2). Mosby’s Dictionary of Medicine, Nursing, and Health Professions similarly defined aphasia as “an abnormal neurologic condition in which language functionality is disordered or absent because of an injury to certain areas of the cerebral cortex” (para. 1). Instead of being a product of a fetal development problem, aphasia is caused by brain injuries that affect language skills in their own specific ways. The National Aphasia Association (2011, para.

**Corresponding author: Sandro Sehic,
MVCC Education Opportunity Center, 524 Elizabeth St., Utica, NY,
13501, United States.*

2) identified stroke as the leading cause of aphasia, with approximately 25-40% of stroke survivors developing the disorder; others acquire the disorder through "head injury, brain tumor or other neurological causes" (para. 2). In addition, approximately "one million Americans –or 1 in 250 people" suffer from the disorder, which is more prevalent than "Parkinson's Disease, cerebral palsy or muscular dystrophy," and more than 100,000 Americans develop aphasia annually. Yet few people have heard of the condition (National Aphasia Association, para. 3). Even if aphasia remains relatively unknown to the public, scientist have been studying the condition for over 130 years. Pierre Paul Broca created the first records of aphasia in 1861, when he examined a man who lost his language skills and remained mute for decades. According to Broca's findings, the language impairment resulted from damage to left side of the patient's brain. Broca's further studies confirmed that other patients who lost language abilities had similar brain damage that occurred in the left side of the brain, which subsequently became known as Broca's area (See Table 1).

In 1865 Broca presented a second paper which drew attention to the fact that he had observed eight consecutive cases of aphasia following left hemisphere damage, and he concluded that it was lesions of the left frontal lobe which produced the impairment in articulate language. (Code, 1989, p. 4) Broca's area is "an area involved in speech production situated on the inferior frontal gyrus of the brain" (Broca's area, 2009, para. 1), and patients with aphasia have suffered damage to or abnormality in this region.

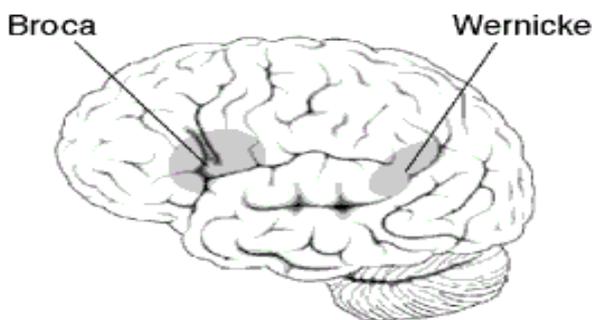


Figure 1.

This first type of aphasia discovered by Broca became known as Broca's aphasia, and it is characterized by the ability to comprehend language but not to articulate language properly: "the patient's grammatical speech is characterized by abundant nouns and verbs but few articles and prepositions, the resulting speech is economic but lacking in syntax" (Moby's Dictionary, 2009, para. 1). Lack of articulation is the main characteristic of Broca's aphasia. Further studies have revealed that aphasia appears in different forms and has different effects on the people who acquire it. Carl Wernicke, another pioneering aphasia researcher determined that aphasia appears in forms that differ from Broca's aphasia, with different effects on language skills. Wernicke concluded that aphasia might disturb language comprehension and articulation, and "proposed a model of language production and comprehension that accounted for the expressive nonfluent form of aphasia with intact comprehension described by Broca and the fluent aphasic syndrome described by Wernick" (Code, 1989, p. 5).

Wernick's model of aphasia, also known as Wernick's aphasia, occurs in a different part of the brain known as Wernick's area. Patients with this type of aphasia can neither articulate nor comprehend language at the same time. Mosby's Dictionary of Medicine, Nursing, and Health Professions (2009) described as "a form of aphasia affecting comprehension of written and spoken words, possibly caused by a lesion in Wernicke's center. The patient may articulate normally, but speech is incoherent, with malformed or substitute words and grammatical errors" (para. 1). Pierre Paul Broca and Carl Wernicke were among the first scientists who determined that language skills could be lost or completely disrupted by certain brain injuries. Subsequent studies by different scientists yielded more information about aphasia, with researchers recognizing various types of aphasia with different effects on language skills. Regardless of the type of aphasia an individual acquires, aphasia affects learners' language skills to a certain degree.

The learning needs of individuals with aphasia

To help learners with aphasia excel at their studies, teachers need to understand the basic characteristics and needs of these learners. Aphasia disrupts language skills and prevents learners to properly comprehend the spoken and the written language. Furthermore, aphasia prevents learners from properly expressing themselves through spoken and written language. Because aphasia can appear in different forms and affect language skills in different ways, it could have a minor impact on language skills or a sever impact that completely neutralizes language skills. The research studies examined, however, show that learners with aphasia lose their reading and writing skills, not in the same way as dyslexic learners who cannot decode language phonology, but because of the inability to properly compose and comprehend the meaning of the sentence. This inability to interpret spoken and written language is commonly caused by learners' inability to follow grammatical rules and to actively exchange words and expressions with people in the surrounding environment. Inability to understand grammatical rules, known as agrammatism, is the most common inability displayed by learners with aphasia and the most common problem teachers and their learners experience in education involving those suffering from aphasia. Agrammatism is a relatively new term that refers to the inability to properly understand and use the grammar of a language. The American Heritage Medical Dictionary defined agrammatism as "a form of aphasia characterized by the inability to produce a grammatical or intelligible sentence" (para. 1). Inability to properly use and understand grammar rules in spoken and written language is common among learners with aphasia and Jacobs and Thompson (2000) noted that "in addition to sentence production deficits, individuals with agrammatic aphasia also show difficulty comprehending [simple and complex] sentences" (p. 5). Therefore, when working with learners with aphasia, teachers must understand that some learners with aphasia have difficulty understanding and interpreting short sentences such as "I go to school," "Apples are red," and "Jump fast," Jacobs and Thompson's (2000) research showed that learners with aphasia who cannot interpret grammar rules properly tend to misinterpret short sentences by confusing the sequence of the words and the roles of the nouns in the sentence. For example, when hearing or reading "Sam goes to school," learners with aphasia may

understand that "school" is the one that goes to "Sam," because "school" is the last word in the sentence the learners hear. Similar complications are visible in other short words that do not specifically indicate who does what to whom. However, learners with aphasia who have difficulty interpreting short sentences may easily understand complex and longer sentences that specifically indicate the meaning and the roles of each noun in the sentence. Educators who work with learners with aphasia who cannot properly interpret short sentences have to adjust the language usage to the level learners can comprehend. Thus, the sentences, both short and long, must be modified to enable learners to properly interpret their meaning. Jacobs & Thompson (2000) mentioned a specific example where the short sentence "Quinn chased Zack" was adjusted to "It was Zack who Quinn chased." The adjusted sentence specifically indicates that Quinn is the person who chased Zack. The same learning characteristic is also seen in learners who do not comprehend long sentences. These learners need adjustments that will simplify all sentences to the level they can understand without changing the meaning. Hence, "It was Zack who Quinn chased," must be simplified to the level where it retains its meaning but sends the message to the recipient in a simple way. "Quinn chased Zack" would be more appropriate for this type of learner.

The second characteristic of learners with aphasia is that they lack the ability to communicate and exchange linguistic expressions with those around them. Hengst (2003) describes this process of group communication, also known as referencing, as "how participants make meanings within interactions" (p. 832). To identify teaching methods that can help learners with aphasia to improve their language skills, teachers must first determine learners' referencing abilities. Studies conducted by Hengst (2003) showed that learners who suffer from aphasia can become effective communicators and that "under...controlled referencing task conditions, participants with aphasia were effective communicators even though their targeted referential messages were neither as efficient nor as accurate as those of participants without aphasia" (p. 833). Hengst (2003) further concluded that learners with aphasia effectively use all resources to communicate and exchange expressions. Engaging learners with aphasia in active communication and the exchange of verbal expressions, enables these students to learn and to not only understand the meaning of the language but to become able to exchange their thoughts with those around them. According to Jacobs and Thompson (2000), "referencing, then, does not happen in isolated words or sentences, but through [an] interactional process of meaning making" (p. 832).

The third most common characteristic of learners with aphasia, which may not be present in all cases, is the absence of control over the right side of the body. Researchers at the University of Nebraska-Lincoln (2011) found that the person with aphasia will most likely have weakness or paralysis of the right side of their body. This is because the left hemisphere of the brain is usually where language is located and the left side of the brain controls the right side of the body. (University of Nebraska-Lincoln, 2011, para. 1) This type of disability is common among individuals who suffered a stroke, thus it is less common among younger learners. However, the paralysis may also affect the left side of the body if the damage occurred to the right side of the brain (University of Nebraska-Lincoln, 2001, para. 1) . In these cases, learners with aphasia cannot

develop speech abilities due to the paralysis caused by the brain injuries. Although this does not mean learners with mouth or facial paralysis cannot comprehend language, paralysis may prevent the learners from developing speech abilities and automatically disturb their communication skills.

Listing all the learning needs and learning characteristics of learners with aphasia is difficult. Each learner with aphasia may have different needs and a different learning style. Moreover, although, aphasia primarily affects individuals' language skills, the brain injuries that cause aphasia may also affect other parts of the body and nervous system. The main characteristics listed in this section are directly associated with the language skills of which teachers should be aware. Those are agrammatism (inability to understand grammar usage), inability to develop communication skills with partners, and the inability to control mouth and tongue movements due to paralysis. Teachers and the instructors who are assigned to work with learners with aphasia must focus primarily on improving learners' language skills, regardless of other disabilities the learners may have. Suitable learning activities and teaching methods, supported by learning and teaching technology, may help learners to overcome language barriers and fully, or partially, acquire language skills.

Language learning strategies for individuals with aphasia

Overcoming agrammatism

To help students with aphasia to properly interpret spoken and written language, educators have to determine whether the students are comfortable interpreting short or complex sentences. For example, if the students can properly interpret simple sentences but not complex sentences, teachers have to simplify each sentence that may appear too long and confusing for the learners. In addition, those sentences that appear to be too complex to interpret have to be simplified and adjusted so that learners can understand the meaning of the sentence. The Figure 2 below presents two methods of adjusting grammar usage in short and simple sentences that learners with aphasia can understand. Special education teachers and I used these teaching or learning methods extensively during the school year 2010-2011 while working with students who lacked certain language skills. The purpose of this teaching or learning strategy is to help students understand the language by adjusting written and spoken sentences to the level that does not confuse the learners. Teachers must carefully make grammatical adjustments to preserve the meaning of each sentence. Learners will understand the meaning of the sentence, but they will interpret the sentence only in the way that is most appropriate for their learning style.

Continuous and stop sounds

This teaching strategy can help learners with aphasia, and dyslexic learners, to better pronounce and understand the sounds of the language. The objective of this teaching strategy is to help students with aphasia develop their verbal skills by pronouncing different sounds that make the language. Although this strategy is used mostly when working with students with dyslexia to develop their reading skills, in this case teachers use the strategy to help learners develop their verbal skills. Learners with aphasia usually cannot pronounce certain sounds due paralysis of the mouth caused by the brain injuries. Practicing and repeating continuous and stop sounds

help learners to improve their verbal skills and to become able to pronounce sounds and words in the correct way. Continuous sounds can be made without interruption and the speaker can hold on to that particular sound for a certain time. Examples of continuous sounds are o, e, and a, sounds. Unlike continuous sounds, stop sounds can be made only briefly, and speakers cannot hold onto them for a long time. Examples of stop sounds are k, l, and t, sounds. The objective of this strategy is to help learners learn to pronounce the sounds they normally cannot pronounce. For example, if learners cannot properly pronounce the a sound, which is a continuous sound, then the learners have to practice verbal skills by pronouncing words that start with the a sound, such as "amber," "apple," and "America," while emphasizing the sound being practiced. The same method is used with the stop sounds. For example, when learning to pronounce m, the learners may pronounce this sound as a single sound or by pronouncing the words that start with that particular sound, such as "Mike," "milk," etc.. The point is to emphasis the sound being practiced to learn to pronounce that particular sound correctly.

The following rules can help the speakers, those who are verbally expressing themselves, to improve their ability to express themselves:

- Take your time!
- Take a deep breath before speaking and wait until your had is clear.
- Let your communication partner know:
- you need more time to think
- they should not interrupt
- If they cannot think of the word, try pointing or questioning, provide descriptions of the word, writing or drawing.
- If all else fails, stop and come back to it later. (University of Nebraska-Lincoln, 2011, para. 2)

These strategies and tips can help learners (the speakers in this case) to manage their time while communicating, properly select the correct words and expressions, and use different methods of communication if they fail to pronounce some of

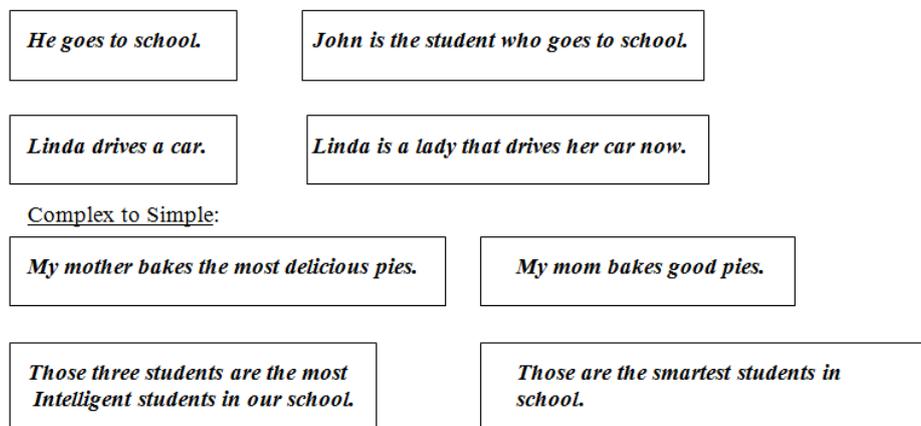


Figure 2.

Collaborative communication skills

Teaching learners with aphasia to properly communicate with their partners may be one of the most challenging tasks for both teachers and the learners. Collaborative communication helps students to learn to verbally express their thoughts and verbally exchange their ideas with their partners. It is important to bear in mind that aphasia affects speech abilities in different ways. In mild cases, learners with aphasia can properly communicate with their partners and focus on the communication activity. However, learners with severe cases of aphasia may completely lose their ability to properly communicate, and verbal expression may disappear completely. To help their students develop collaborative communication skills, teachers have to create teaching and the learning strategies that will help students to develop both communication and listening skills. Therefore, students will have to learn to properly express themselves and to monitor somebody else's speech. The aphasia researchers at the University of Nebraska-Lincoln provide two strategies, which they divided into two categories that may help students with aphasia to develop communication skills. The first strategies is designed for speakers and the second for listeners, as all the participants in a conversation have to learn to understand their roles.

On the other hand, recipients in the collaborative communication process who suffer from aphasia have to develop communication skills that help them to follow and comprehend the conversation. The following strategies and tips can help students with aphasia to become successful participants and recipients in conversations:

- Don't interrupt-allow time for the person to get his message across.
- Don't overload the person with a lot of questions.
- Offer choices instead of lot of a lot of yes/no questions.
- Try to establish the topic by asking twenty questions ("Are you taking about the car or the house?")
- Speak slowly but naturally. Insert pause between sentences and at appropriate points within the sentences.
- Use short, simple sentences.
- Use visual cues (objects, gestures, writing) to help the person understand.
- Encourage the use of social greetings and simple greetings.
- If the person is trying to express something and you know the word, allow the person to continue but if after several attempts, supply the word to minimize frustration. (University of Nebraska-Lincoln, 2011, para. 3)

The main objective of the strategies set out above is to teach students with aphasia to properly engage in the communication process and to control the flow of that process. The benefit of these strategies is that all learners with aphasia, regardless of their language skills can use them. This teaches the learners with aphasia to manage their time and to rely on their partners' support.

Conclusion

Aphasia is a learning disability that affects language skills. Unlike many other language disorders, aphasia is caused by brain injuries; thus, people who acquire aphasia do so because of a certain brain injury. The brain injuries that cause aphasia may disturb other brain functions in addition to language skills. Therefore, it is common that individuals with aphasia suffer from multiple disabilities such as paralysis or hearing and visual impairments. Nevertheless, language impairments are the major characteristic of aphasia with cases ranging from mild to severe. The scientific community has studied aphasia for many years it is not recently discovered disorder with unknown treatments and causes. Individuals with aphasia may fully or partially lose their language skills, but they can develop new language skills and improve their existing language skills with the proper therapies and learning activities. Numerous learning and teaching strategies help students with aphasia acquire language skills, but educators must carefully select and implement those strategies. Moreover, because aphasia appears in various forms that differently affect language skills, each case of aphasia requires a specific approach and a tailored teaching method. Although aphasia is an incurable condition that cannot be eliminated, its effects can be minimized and controlled. With the proper learning and teaching methods, we can help learners with aphasia to achieve their academic goals and master grammar rules, take control of their communication skills, and comprehend the language. This process may last for months, or even years, depending on the severity of their condition, yet with modern technology and teaching methods, individuals with aphasia can successfully acquire language skills that will help them to properly communicate and survive in their environment. With further research and discoveries, we will be able to better understand the effects of aphasia and minimize its influence on learners.

In addition, with progress in medical science, we might be able to eliminate this disorder. Until then, we will continue to rely on teaching methods that help learners achieve academic goals.

REFERENCES

- Agrammatism, 2007. In The American Heritage Medical Dictionary. Retrieved from <http://www.credoreference.com/entry/hmmedicaldict/agrammatism>
- Aphasia. 2009. In Mosby's Dictionary of Medicine, Nursing, & Health Professions. Retrieved from <http://www.credoreference.com/entry/ehsmosbymed/aphasia>
- Aphasia. 2011. In The National Aphasia Association. Retrieved from http://www.aphasia.org/Aphasia%20Facts/aphasia_faq.html
- Aphasia. 2011. In University of Nebraska-Lincoln. Retrieved from <http://www.unl.edu/aphasia/index.html>
- Broca's area. 2009. In Mosby's Dictionary of Medicine, Nursing, & Health Professions. Retrieved from http://www.credoreference.com/entry/ehsmosbymed/brocas_area
- Code, C. 1989. Characteristics of aphasia. London, GBR: Taylor & Francis.
- Hengst, J. A. 2003. Collaborative referencing between individuals with aphasia and routine communication partners. *Journal of Speech, Language, and Hearing Research*, 46(4), 831-848.
- Jacobs, B. J., & Thompson, C. K. 2000. Cross-model generalization effects of training noncanonical sentence comprehension and production in agrammatic aphasia. *Journal of Speech, Language, and Hearing Research*, 53(1), 5-20.
- Language. 2008. In The Columbia Encyclopedia. Retrieved from <http://www.credoreference.com/entry/columency/language>
- Sousa, D. A. 2001. How the special needs brain learns. Thousand Oaks, CA: Corwin Press, Inc.
- World Health Organization 2011. Chapter V: Mental and Behavioural Disorders (F00-F99). Retrieved from <http://apps.who.int/classifications/apps/icd/icd10online/?gf80.htm+f80>
