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Syntax Device and Unit Disorder in Children with Mental Retardation: A Neurolinguistic Perpspective on Language Learning Innovations and Progressive Education

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Abstract

This study aimed at obtaining information from neurolinguistic perspective about how children with mental retardation experience language learning by focusing on syntax device and unit disorder. With a qualitative paradigm, this study involved three children with mental retardation aged 17, 12, and 13 years at a special school in East Jakarta. Data in the form of utterances from three children with mental retardation through communication interactions were collected and produced 12 recordings which were then analyzed by applying content analysis technique. The results of this study indicated that there were 151 errors in the form of syntax unit disorder, and the most errors were in the form of the phrase unit, amounting to 61 errors. In terms of syntax device disorder, 37 errors were found, of which the most errors were in intonation defects, amounting to 12 errors. The conclusion of the study is that children with mental retardation experience language disorders in the form of syntax defects because they are influenced by neurological disorders. However, we see that these findings should not be standard benchmarks for mental and neurological disorders, so we argue that the defects in the syntax devices and units exhibited by children with mental retardation should be seen as a *componential model of language* issue on which their language development should be more focused on the meaning they get from information. In other words, we cannot just stick to the results which state that children with mental retardation have language difficulties but we must focus more on what they can understand as meaningful language to them. Therefore, we recommend trying to approach it with the concept of componential model of language that may be applicable with some technologies as innovative teaching and learning for teachers as well as progressive education for the children with mental retardation for their language learning experiences.

Keywords: language learning innovation, mental retardation, neurolinguistics, syntax device disorder, progressive education

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1. Introduction

Language and cognition are two different things, but they are closely related because they influence each other. Apart from being a tool for communication, language is also a means for thinking and expressing thoughts. Language is a process, usage, text, capacity, and competence, so it can be said that words have properties that affect every substructure in language and are also the threshold between language and thought (Brandt, 2018). Therefore, there is a close relationship between language skills and cognitive abilities. According to Boeriswati (2016), the link between language and thought is possible because thinking is an attempt to associate words and concepts to get a conclusion through language media. In addition, our knowledge is built by our minds and language is the giver of images

and concepts or an explanation of what we think and understand (Boeriswati & Arung, 2019). Therefore, someone who is low in thinking ability will have difficulty in composing good, logical, and systematic words. Conversely, someone who is high in thinking ability will be very good at his or her language skills. This condition can be caused by neurological problems. However, this condition is still considered in relation to age levels (Etchell, Adhikari, Weinberg, Choo, Garnett, Chow, & Chang, 2018), especially among people with mild mental retardation who could be influenced by genetic factors (Hof-fenberg, 2011; Plomin, 1999); age of children, and person with mental retardation after 18 years of age; adult age.

In relation to cases of neurological language, the field of neurolinguistics sees the process of understanding, producing, and acquiring language taking place in the same space, namely in the brain. Therefore, Dargassies (1965) has suggested that there are three neurological signs that need to be considered at the birth of a baby after the first day, namely signs of maturity, pathological signs, and indicative signs of developmental level. The brain controls how the processes of language and thinking are properly interwoven through neural network mechanisms. The brain also has an important role in the language process because the brain is the controller of language activities. The brain processes how speech sounds can pass through the articulators. Likewise, on the contrary, speech sounds that come out of the articulators are processed by the brain so that they can be properly understood by the interlocutor so that a good communication process is created even though syntax problems and their roots do not depend on phonology and are even outside the realm of linguistics (Herbert, Anderson, Best, & Gregory, 2014; Amebu Seddoh, 2008). The main purpose of Neuroliguistics is to find out how language is stored and how it is processed in the brain from the beginning of language acquisition until it develops in human life.

In fact, not everyone can speak normally because language disorders may occur caused by impaired brain function, to be precise, the nerves of the brain. Several types of brain function disorders that cause language disorders in humans such as dysgraphia, namely impaired writing power; alexia, namely loss of reading power; aphasia, namely loss of language power; and dysphasia which is a developmental language disorder. One of the language disorders during mental development related to cognitive aspects is mental retardation. According to Veskarisyanti (2008), mental retardation is a condition of a person's intellectual ability which is generally below the average accompanied by deficits in adaptive behavior and occurs during development which has a major impact on the overall level of intelligence of children, for example, cognitive, motor skills, language, and social. However, mental retardation is seen more as a social construct than a pathology in individuals who even ignore ethnic, religious, cultural, and geographical differences because they are considered deficits in intellectual or cognitive function (St Claire, 2014; Gargiulo & Cerna, 2014; Detterman, 2009). A child can be classified as mentally retarded when his social and intellectual functions indicate a disturbance. Mental retardation is seen as a chronic condition that starts before 18 years of age and cannot change. If a person's intellectual function falls to a level of retardation after the age of 18, the condition is classified as dementia.

People with mental retardation have language acquisition disorders as a means of communication. However, near-normal language acquisition seems possible despite

serious intellectual impairment (Rondal, 2003). The cause of this disorder is due to impaired brain function. This disorder usually affects a person's inability to respond to external stimuli. The stimulus can be in the form of writing or speech. A person who has impaired brain function will affect his or her language skills, both in writing and orally and in conveying his or her thoughts. It may not be correct. Rondal (2006) mentions some language difficulties in children with mental retardation such as difficulty composing phrases using functional words, difficulty producing words with the right affixes, difficulty putting together phrases to form simple sentences, difficulty producing various pragmatic sentences, and difficulty composing and understanding the difference between active and passive voice. In the case of Schizophrenia, Tan & Rossell (2018) show that 'syntactic sentence processing has a significant and independent contribution to the above severity of the Formal Thought Disorder from Neurocognition, whereas semantic sentence processing and semantic single word processing do not'. Based on this, it can be seen that impaired brain function can make it difficult for a person to master grammar. The difficulties faced by people with mental retardation in language occur at the syntactic level.

The difficulties faced by people with mental retardation at the syntactic level can be said to be a form of the child's language disability. However, even if individuals with mental retardation have difficulty learning language, the reasons vary from person to person, partly due to the etiology of their backwardness (Abbeduto, Keller-Bell, Richmond, & Murphy, 2006) and no available datum will depend on associative networks for their plausible interpretation (Rondal, 2003). If the child's inability to speak language causes deviations or errors in the syntactic hierarchy relationship, there is a language disorder called a syntactic defect or syntax disorder. Syntax disorder itself is a disturbance in sentence structure, so that there is an error in the syntax devices and unit. Therefore, the understanding that this condition can be mediated in therapy must be considered separately, especially in the learning domain. Ralph, Snell, Fillingham, Conroy, & Sage (2010) show that language - especially phonological factors - and cognition are the two main predictive keys to determine the outcome of a therapy, especially anomia therapy for aphasia sufferers. Aphasia is also a form of language development disorder which is included as mental retardation.

This research focuses on the syntax device and unit disorder uttered by children with mental retardation. Practically, the results of this study are expected to facilitate the recognition of the types of syntactic defects in the form of syntactic unit defects and syn-tactic device defects experienced by these children. In addition, the results of this study can also make it easier for parents to recognize early childhood language difficulties. In the education domain, teachers in schools will find it easier to find various strategies, models, methods, and suitable media to reduce syntactic defects that occur in students with mental retardation. The author hopes that this neurolinguistic study with further development can be useful for exploring the relationship between language and the human brain.

2. Method

This research is qualitative research using content analysis techniques involving three children with mental retardation aged 12, 13, and 17 years at Dian Kahuripan Special Needs School, East Jakarta. The age classification is based on the American

Association Mental Retardation statement that mental retardation disorders occur before the age of 18 years (Schalock & Luckasson, 2005). The data in the form of utterances were collected through a communication interaction between the researchers and the participants using a voice recorder and produced as many as 12 recordings with duration of about 5 to 12 minutes per recording.

Data collection activities were carried out with the help of pictures (See Figure) such as pictures of food, activities, animals, events, and professions with the aim that the participants could describe the images displayed by the researchers in obtaining recorded utterances and because they were considered to improve the ability to speak for children with mental retardation (Afifah &Soendari, 2017). The results of the recordings were transcribed and then analyzed by focusing on utterances related to syntax device disorders which included word orders, parts of speech, intonations, and particle defects, and syntax unit disorders which included defects in phrases, clauses, and sentences. Analysis tables were used to help the data analysis process to stay focused on the main data analysis.

Figure 1 Pictures Used as Visual Aid in Interaction

Those pictures were various in content, but we just put some. The interactions were going through this method in order to initiate interactions as well as to make some field notes concerning the method application on children with mental retardation.

3. Result and Discussion

It is to say that children with mental retardation must need special education and behavioural therapy. Children with mental retardation seem to be more limited to intelectual function which results in negative behoviour as well as language attitude. However, to avoid the negative behavior concern language, the teachers should create fun and conducive learning so that the students may actively engage in the learning (Prasetyarini, Hikmat, & Thoyibi, 2021). Besides, the application of creative and innovative cooperative learning models (Juliani, Mustadi, & Lisnawati, 2021) are suggested in trying to facilitate how children behave during language learning process.

The results of the research in the form of syntax disorders in the speech production of

children with mental retardation based on errors in syntax units and devices are described in the findings and discussion. Syntax unit disorders can be seen from errors in phrases, clauses, and sentences formed from utterances. Syntax device disorders can be seen from the word order, parts of speech, intonations, and particles or task words formed from utterances.

Table 1 shows that in the utterances of three children with mental retardation there were 151 errors in the form of syntax unit disorder. Most errors are found in phrase units, which amounted to 61 errors, then sentence units are 48 errors, and clause units are 42 errors.

Table 1 Syntax Unit Disorder Data Description

No	Name	Utterances	Type of Syntax Unit Disorder			Amount
			Phrase	Clause	Sentence	
1	Participant 1	54	20	17	19	**56**
2	Participant 2	41	17	12	13	**42**
3	Participant 3	49	24	13	16	**53**
	Total	**144**	**61**	**42**	**48**	**151**
	%		**40%**	**28%**	**32%**	**100%**

Phrase Errors

The results of this study find that the phrases with the most errors are prepositional phrases which are 24 errors, then nominal phrases are 20 errors, numerical phrases are 14 errors, verbal phrases are 2 errors, and an adjective phrase is 1 error, while for adverbial phrases uttered by three children with mental retardation they do not have errors. The following is an example of a prepositional phrase error that children with mental retardation utter.

R : [Kuciŋña ada di mana?]
'Where is the cat'
P : [Mobil]
'Car'

The answer is in the form of the word "car" which first participant utters as a prepositional phrase error because there is no preposition "under" before the description of the place for "car". The answer that Participant 1 should say is the prepositional phrase "under the car" with the preposition "under" functioning as a coupler and the noun "under the car" as the axis. Phrase errors that occur due to impaired brain development, especially in the cerebrum of the left hemisphere, so that Participant 1's language skills are impaired. Thus, there are errors in prepositional phrases due to the omission of prepositions before adverbs.

Clause Errors

The results of this study find that the clause that has the most error is the bound clause, namely 29 errors, then the verbal clause has 12 errors, and the adjective clause with 1 error. Meanwhile, for free clauses, nominal clauses, numerical clauses, and prepositional clauses, there are no errors. The following is an example of a bound clause error that children with mental retardation utter.

R: [Kalau ini lagi ŋapain?]
'What are they doing?'
P: [Sepak bola]
'Football'

The second participant utterance in the form of the word "football" is included in the bound clause error because there is no predicate function in the utterance.

Supposedly, if she looks at the picture displayed, there is the expression "bərmain [playing]" which functions as a predicate. Therefore, the answer that the second participant should say is the clause "playing foot ball". The clause error that occurs is due to impaired brain development, especially in the cerebrum of the left hemisphere, so that Participant 2's language skills are impaired. So, there is a bound clause error due to the absence of a predicate function in the resulting expression.

Sentence Error

The results of this study find that the sentences with the most errors are the interrogative sentences which have 13 errors, then the command sentences, exclamation sentences, and compound sentences each have 9 errors, and single sentences have 8 errors. Meanwhile, for the indirect sentence there are no errors. The following is an example of an interrogative sentence error that children with mental retardation utter. We asked her to repeat the interrogative sentence.

Sentence: [Ayahňa: bəlum pulaŋ?]
'Is his father not home yet?'
Response: [Udah]
'He is'

Based on this example, it can be said that first participant is unable to repeat the interrogative sentence we exemplify, but first participant actually answers the question. This makes the response included in the interrogative sentence error. The cause is Participant 1 cannot repeat the interrogative sentence due to impaired brain development, especially in the left hemisphere of the cerebrum. So, there are errors in the interrogative sentences due to the inability to repeat the interrogative sentence we utter.

In the case of this syntax unit disorder, we need to consider the problem of the componential model of language that the language should be seen as a component structure and not as a developmental domain (Snow & Pan, 1993). This means that people with mental retardation do difficulty in language production, particularly when displaying receptive vocabulary of unknown origin and poor expressive vocabulary (Simons & Dedroog, 2009), but in terms of componential model of language, they can actually understand the meaning of speech so, according to Snow & Pan, a componential model of language can help us to understand currently available descriptive data about the language development of children with mental retardation. In addition, according to AlHammadi (2017) and Stojanovik (2010), children's language development is strongly influenced by environmental, social, genetic, and developmental factors in other cognitive domains. So, linguistic disorders are not always only experienced by children with mental retardation but also normal people.

Based on Table 2, it can be seen that in the utterances of the three children with mental retardation, there are 37 errors in the form of a syntax device. Most errors are found in intonation error, amounting to 12 errors, then word order totaling 11 errors, then particle totaling 9 errors, and the word form totaling 5 errors.

Table 2 Syntax Device Disorder Data Description

No	Name	Utterances	Type of Syntax Device Disorder				Amount
			Word Order	Word Form	Intonation	Particle	
1	Participant 1	10	4	3	4	6	**17**
2	Participant 2	12	3	1	7	1	**12**
3	Participant 3	6	4	1	1	2	**8**
	Total		**28**	**11**	**5**	**12**	**9**
	%			**30%**	**14%**	**32%**	**24%**

Word Order Errors

The results of this study find that the errors in the form of word order errors experienced by the three participants are almost the same. Participant 1 and Participant 3 have 4 errors, while Participant 2 has 3 errors. The errors in the Word Order produced by the three participants are due to the reverse word order, causing a phrase / sentence to change its meaning. The following is an example of a word order error uttered by one of the three Participants.

R: [Jadi, ada bərapa apəl pada gambar ini?]
'So, how many apples are there in the piscture?'
P: [Apəl lima]
'The fifth Apple'

Based on the example, it can be seen that the Participant can answer the questions given, but the given answer is in the reverse order of words. The utterance "Apəl lima [The fifith Apəl]" is considered to have an order error because the word order is reversed causing a change in meaning. The meaning produced by the utterance "The fifith Apəl" is not acceptable with the questions given by us. The given question is to ask about the number of "Apəl" contained in the picture. Meanwhil, the answer "The fifith Apəl" uttered by the Participant does not mean "the number of Apəl". The phrase "Apəl lima" means the fifth Apple.

Referring to the questions given by us, the answer to the number of apples uttered by the Participant is also wrong. The Participant should have answered the question by saying "Three apples", which means there are three apples in the picture. The error in the order and number stated by the Participant occurred because of a deficit in brain development, especially in the left hemisphere of the cerebrum, so that the language ability of the Participant is impaired. So, there is a word order error because the resulting utterances are reversed.

For the listener, the reversed phrases and sentences become a semantic problem, but possibly for children with mental retardation, it is not a semantic problem for them. This means that the semantic mental process in people with mental retardation can have an understanding of information, but it becomes problematic when the meaning of the message is to be conveyed in the form of speech through articulators. It is known that 'information in the brain is not only conveyed between two neurons – sender and receiver – but by a collection of neurons' (Watson & Buzsáki, 2015). Meanwhile, people with mental retardation have experienced impaired brain function, which is certainly caused by impaired brain nerve function. In other words, 'some people are indicated as agrammatic in terms of sentence production, but they are not disturbed by sentence comprehension' (Kolk, 1998). This is where, in general, lies the principle of education that is meaningful to anyone and does not focus solely on what is currently happening to any student. However, the

concept and goal of education must be the main orientation, not on the disorders.

Word Form Error

The results of this study find that the errors in the form of word form experienced by the three participants are almost the same. Participant 2 and 3 utter 1 error, while Participant 1 utters 3 errors. Errors in the form of word form produced by the three participants are due to the absence of affixes in words or the use of inaccurate affixes so that the meaning of words does not match the context of the conversation. The following is an example of an error in the form of a word form.

R: [Kalau main ini bisaaña di mana sih?]
'Where do we usually play this game?'
P: [Taman]
'Park'
R: [Taman apa?]
'What park?'
P: [Taman mainan]
'Toy Park'

Based on the example, it can be seen that the Participant 3 can answer the questions given, but the answer uttered has an error in the form of the word form. It occurs in this utterance that it is due to the use of inappropriate affixes. The root word for "main [play]" should not be given a suffix -an [main-an (toy)] instead, it should be given a prefix ber- [ber-main (playing)] so that the meaning of the utterance becomes "a park where you can play activities". The error in the Word form uttered by the Participant 3 occurred because of a deficit in brain development, especially in the large brain in the left hemisphere, so that the Participant 3's language skills are impaired.

Based on what has been described, it can be concluded that word form errors uttered by children with mental retardation occur because of one thing, namely the absence of affixes in words or inaccurate use of affixes so that the meaning of words does not match the context of the conversation. In this case, children with mental retardation have difficulty applying the affixation because of weakness in morphosyntax. Janssen & Penke (2002) stated that affixes are regulated with respect to the morphosyntax features they encode, so those inflected affixes are best captured in an unspecified paradigm. In addition, the general abstractness of affix meaning is not considered a sufficient reason by itself to classify bound morphs as affixes (Carstairs-McCar, 2006). The research evidence shows that even in normal conditions, language speakers still have significant difficulties in applying affixation, especially in people with mental retardation.

Intonation Error

The results of this study find that errors in the form of intonation are a syntax device disorder that mostly occurred in three children with mental retardation. These intonation errors occur because each child is only able to utter a sentence with flat intonation; no rising or falling intonation. The error in pausing also affects the intonation error in the sentences uttered by the three children. The following is an example of an error.

Sentence: [Mari kita bərnyanyi bərsama!]
'Let's sing together'
Response: [Mari / kita / bərnyanyi / bərsama]
'Let/ us/ sing / Together'

Based on this example, it can be seen that there is an error in the intonation of the speech produced by the Participant 2 when repeating that sentence. This error is caused by improper pauses and flat intonation. This intonation error causes the message to be

conveyed not to be achieved. The intonation error uttered by the Participant 2 occurs because of a deficit in brain development, especially in the left hemisphere of the cerebrum which makes Participant 2's language skills are impaired.Look at Figure 2 to understand the intonation error in question.

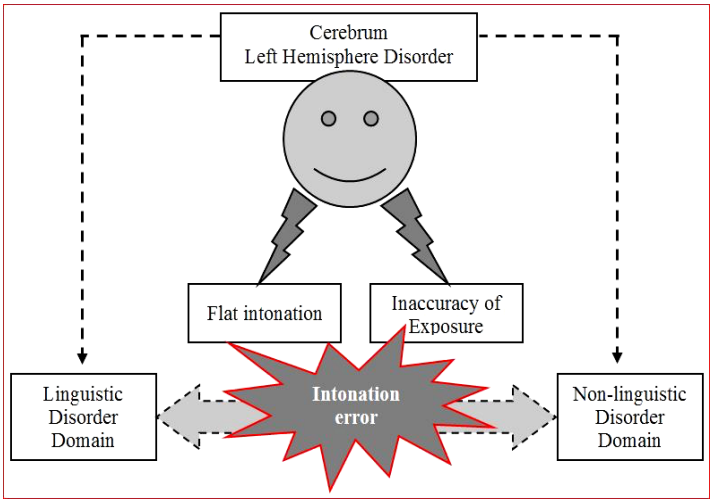

Figure 2 Intonation Error

We can conclude that the disability of intonation produced by children with mental retardation occurs due to two things, namely that each child is only able to utter a sentence with flat intonation. Second, the error in pausing also affects the intonation error in the sentence uttered by the three children. This case is generally experienced by people with dyslexia which causes them to experience difficulties in segmental phonology such as phonemes and differentiation of sound pressure patterns but not in phrase production problems (Schaadt & Männel, 2019), however, dyslexia sufferers are not included in the category of retardation because they are children who have normal intelligence but have learning disabilities and reading difficulties. In addition, research evidence on intonation errors is shown by Amebu Seddoh (2008) that the roots of acoustic deviation may lie outside the linguistic system. From these findings and the case of dyslexia, it can also show that the structure and function of the brain related to language does not only occur in people with mental retardation, so that consideration of language learning should be of great concern, especially for children with mental retardation.

Particle Error

The results of this study find that the most errors in the form of particle defects are uttered by the Participant 1, namely 6 errors. Then, third participant counted 2 errors. Finally, second participant uttered only 1 error. Particle errors in the speech of the three children with mental retardation are caused by missing a preposition in a sentence. The following is an example of an error.

Sentence: [Adik sədang mənulis cərita pendek di kamar]
'Younger brother is writing ashort story in the room'
Response: [Adik / mənuis / pən/dək / kamar]
'Younger brother / writes /short / room'

Based on the example, it can be seen that the particle error that occurs in this utterance is due to the loss of the preposition di [in] in the utterance. The utterance produced by the Participant 1 when repeating the preposition 'in' was missing, even though the preposition is to connect the phrase "short story" and the word "room". The preposition "in" is used to tell that the short story writing activity is done in the room. The particle error uttered by the Participant 1 occurs because of a deficit in brain development, especially in the cerebrum of the left hemisphere so that Participant 1's language skills are impaired.

Based on what has been described, it can be concluded that the particle error uttered by children with mental retardation occurs because of one thing, namely the loss of a preposition in a sentence. This is because children with mental retardation have difficulty using functional words, which in this case are prepositions. In connection with difficulties in particle production, research by Christou, Guerra, Coloma, Andreu Barrachina, Araya, Rodriguez-Ferreiro,… Sanz-Torrent (2020) shows that there are different developmental trajectories in groups of people with language development disorders, however, regardless of the group of sufferers mental disorders in producing particles, it seems that they can understand the particles in the current experimental conditions. That is, there is still hope to mediate how children with mental retardation can understand the use of functional language such as particles, prepositions, articles, conjunctions, and interjections, and this - understanding the use of functional language - must be continuously experienced by the children. Children with mental retardation need to be immersed in language learning experiences, and therefore, Andrade & Santos (2012) suggested that the foundation is the experiential attitude of the educator, based on attention and respect to children's internal experience, and on trust on children's competences and intrinsic value. Progressive education proposes an experiential learning that are further developing instructional, curricular, and evaluative methods (Kridel, 2020), may be more applicable for the language learning experiences for children with mental retardation especially in motivating their active language learning. Thambu, Prayitno, & Zakaria (2021) showed that active learning can develop students' verbal linguistic intelligence, and what a person wishes will come true if it is reached through working hard and intelligence (Yamin, Saputra, Deswila, 2021).

In the case of this syntax device disorder, we see that all devices such as word orders, word forms, intonations, and particles again cannot be understood as a developmental domain, but they must be seen as a component structure (Snow & Pan, 1993). Herbert, Anderson, Best, & Gregory (2014) also stated that syntax is independent of phonology; as a syntactic tool, and its activation flexibly operates depending on the demands of the task and the integrity of other processing routines. This implies that, both syntax unit and device, are not seen as a domain of linguistic development but as a component structure where meaning is the very main thing in mediating the real language development. Meaning can be emphasized in language experiences so teachers are encouraged to design some innovative learning applications. Teachers may design educational robotics for children with neurodevelopmental disorders, hypermedia application to help children with learning and communication difficulties, web-based application to address individual interests of children with Autism Spectrum

Disorders, or educational computer games in developing psychomotor ability in children with mild mental impairment, (Pivetti, Di Battista, Agatolio, Simaku, Moro, & Menegatti, 2020; Morfidi, Mikropoulos, & Bellou, 2012; Da Silva, Gonçalves, Guerreiro, & Silva, 2012; Karal, Kokoç, & Ayyıldız, 2010). Note Figure 3 below.

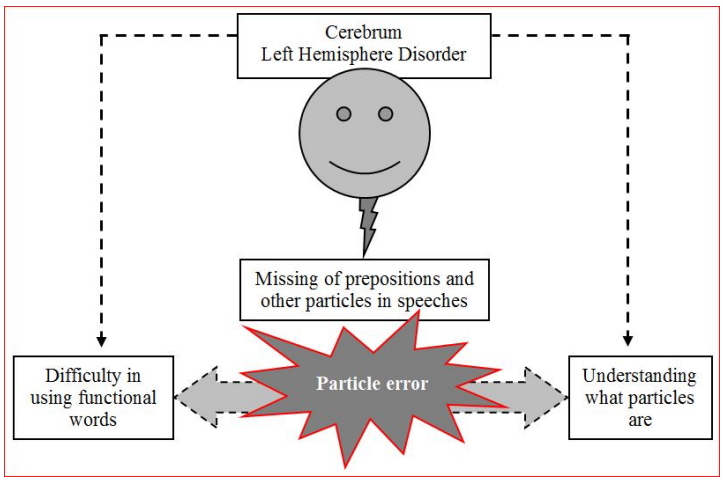

Figure 3 Particle Error

In the context of learning, we see the expectation of language development for children with mental retardation by providing appropriate therapy while carrying out a learning process – language intervention (Brady & Warren, 2003; Prayitno, H. J., Kusmanto, H., Nasucha, Y., Rahmawati, L. E., Jamaluddin, N., Samsuddin, S., & Ilma, A. A., 2019). Seeing language development in children with mental retardation, teachers should be more innovative revisiting pedagogical methods that have been conventional in nature towards methods that are more concerned with developing creative and innovative ways of thinking (Ismail & Buang, 2019). For example, learning uses visual and audio-visual media which are considered capable of stimulating the brain with concrete things. In addition, recent findings in the domain of neurolinguistics show changes in brain structure and function in terms of how language acquisition is a natural experience and learning as an active skill and knowledge acquisition process (Luk, Pliatsikas, & Rossi, 2020). Here, we may consider an active learning to provide learners with 'time and assistance to realize their potential' (Thambu, Prayitno, & Zakaria, 2020) as well as the teachers as professional should be in active learning in which they can have a group project in communicating and discussing their own experiences with other teachers (Fitriansyah, Fatinah, & Syahril, 2020). That is, the process of acquisition and language learning; bilingual recommended (Wu, Yang, Chen, Li, Zhang, Kang, … Guo, 2019; Legault, Grant, Fang, & Li, 2019) can at least facilitate changes in brain structure and function for people with mental retardation so that when they do 'language learning' for the first time in adulthood, it will have a striking effect on language processing in the brain (Mayberry, Davenport, Roth, & Halgren, 2018). In fact, according to Asaridou, Demir-Lira, Goldin-Meadow, Levine, & Small (2020), a 14-year-old child who is born without the left hemisphere of his brain can still experience changes in brain structure and function caused by the result of compensatory brain plasticity manifested in a very large right dorsal tract

and an outstanding performance in phonology, speech repetition, and decoding.

Finally, we also saw that the effect of our presence as researchers in their midst was actually very helpful to their language development. We consider this to be a social effect for people with mental retardation and this is in line with research conducted by Hinchcliffe, Jiménez-Ortega, Muñoz, Hernández-Gutiérrez, Casado, Sánchez-García, & Martín-Loeches (2020) that to understand language comprehension, it is incomplete without considering the impact of the inherent effects of social presence on the most natural and basic communicative scenario. If we relate to the Lifelong learning concept, the presence of people as a social principle in a learning process, especially the learning of children with mental retardation, really helps their educational development, both for now and throughout their lives. Children with mental retardation need to be immersed in language learning experiences, and therefore, Andrade & Santos (2012) suggested that the foundation is the experiential attitude of the educator, based on attention and respect to children's internal experience, and on trust on children's competences and intrinsic value. The principle of social presence is the main asset for a learning process, especially for the progressive education that focuses on language learning experiences for children with mental retardation. Besides, the componential language learning may become teachers' learning innovation in order to facilitate the children's language learning experiences with mental retardation. A Lifelong Learning which is the concept of the 21st century has covered and as well mediate both learners and educators as individual in involving them to gain their intelectual and social intelligence as what progressive education proposed in the end of 19th century.

4. Conclusion

Based on the results of the analysis, it can be concluded that children with mental retardation experience language disorders in the form of syntax disorder because they are influenced by neurological disorders. The syntax unit disorder experienced by children with mental retardation is in the form of a phrase, clause, and sentence errors. In addition, there is syntax disorder in the form of word order, word form, intonation, and particle errors. In this study, there are implications between the language skills of children with mental retardation and the models and methods, strategies, and media used by teachers in teaching in schools, where language learning for children with mental retardation needs to be strengthened with visual learning media such as pictures. In addition, social function is also determining how children with mental retardation can use language. Finally, neurolinguistically, language learning for children with mental retardation should not be seen as a developmental domain but rather as a component model of language for this is related to the concept of progressive education or experiential learning that the traditional education should be going on to the concept of Lifelong learning where individual can learn and acquire knowledge and skills they want by nvolving his/her intelectual and social intelligence.

5. References

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