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Effects of Auditory Oral Patterns as an Intervention for Expressive Language with Students with Disabilities

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**EFFECTS OF AUDITORY ORAL PATTERNS
AS AN INTERVENTION FOR EXPRESSIVE
LANGUAGE WITH STUDENTS WITH
DISABILITIES**

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Fall, 1997

MASTERS THESIS

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Table of Contents

Abstract	
Introduction	1
Literature Review	1
Language Sample Analysis	6
Three Remediation Programs	9
Methods	14
Subjects and Setting	14
Program Intervention	15
Measurement Systems	18
Procedures	19
Results	20
Students with Learning Disabilities	20
Students with Educable Mental Impairments	21
Students with Autism	21
Students with Emotional Impairments	21
Students with Attention Deficit Hyperactivity Disorder	22
Social Validity Questionnaire	23
Discussion	23
Students with Learning Disabilities	23
Students with Educable Mental Impairments	25
Students with Autism	25
Students with Emotional Impairments	26
Students with Attention Deficit Hyperactivity Disorder	27
Social Validity Questionnaire	28
Summary of Conclusions	28
Implications	29
References	32
Appendix A: Charts of Results	
Appendix B: Student Characteristics	
Appendix C: Social Validity Questionnaire	

Abstract

The effects of using Auditory Oral Patterns to remediate expressive language in students with learning disabilities was examined in a cross categorical classroom. Ten students with special education needs were in the study. Six of the students were labeled as learning disabled, three of the students were labeled as educable mentally impaired, one student was labeled as emotionally impaired, and one student was labeled as autistically impaired. Four of the students in the study also had attention deficit hyperactivity disorder. Quantitative results of the study showed an increase in average words per sentence in oral expressive language for students with learning disabilities, educable mental impairments, autism, and attention deficit hyperactivity disorder. Qualitative data indicated improvement of expressive language with students with learning disabilities and autism. This study suggests that the use of Auditory Oral Patterns may be an effective intervention for teachers to utilize to remediate expressive language deficits.

Introduction

Think back to a student you have had in the past who would never give you the answer you wanted. Deep inside, your gut instinct was that the student had mastered the lesson, but when questioned on it, he could not tell you the correct answer. If he was able to fumble enough to produce some sort of scrambled message to you it was often partially incoherent. If you were to direct that student to the arts and crafts cabinet, he could make a project showing his mastery of the lesson. Most would agree that the student was weak in expressive language. This is a typical scenario of many students with learning disabilities. Many students with learning disabilities have difficulty with oral expression (Rooney, 1995). Deficits in oral expression not only affects these students academic performance, but also their social performance as well. Imagine having thoughts and ideas bottled inside you, without the ability to orally communicate these ideas to others. This scenario is an unfortunate reality for many students. The following manuscript will address language development. Moreover it will describe a study conducted on the effectiveness of Auditory Oral Patterns on the expressive language of students who have learning disabilities.

Literature Review

Students with learning disabilities may have difficulty mastering components of the English language. These components may include difficulty following directions and answering questions, expressing thoughts, reading, and writing (Rooney, 1995). Specific to this research is the difficulty students with learning disabilities may have with mastery of oral expressive language. The language barrier that can exist due to a deficit in oral

expression can have profound educational impacts (Cole 1979; McDonough, 1989; Paul & Smith, 1993; Rooney, 1995; Semel & Wiig, 1981). For example, the student described above would probably fail a traditional pencil paper quiz or an oral quiz because language acquisition is being tested not the content material. However, when given materials to show his mastery the student could be successful. When using materials to show mastery students are not evaluated as heavily on language acquisition (speaking or writing). Materials can be manipulated to visually represent thoughts and ideas rather than convey those thoughts and ideas through oral or written expression. To better understand why some students have difficulty with language, a review of language development is necessary.

According to Myklebust (1965), language development is hierarchical in nature. There are five levels in his language hierarchy: a) inner language, b) oral receptive language, c) oral expressive language, d) read language, and e) written language. The first level in language development is inner language. Myklebust defines inner language as associating meaning to life experiences (Myklebust, 1968). Prior to associating meaning, life experiences exist on the level of perception. For example this "thing" feels dry and it bounces. When meaning is attached in the form of words the experiences then exist in the form of imagery as well. This "thing" now is called ball. Eventually the child learns there are several kinds of balls. However, before a child can associate meaning, or words, to experiences, the child needs experience in language. This experience in language comes in the form of sounds that children hear in the womb and as infants (Carpenter, 1988; Myklebust, 1983). By mid term of pregnancy the inner ear is the only sense

organ to reach full adult configuration (Carpenter, 1988). By the fifth fetal month, the fetus can respond to external sounds (Carpenter, 1988). Evidence of this is observable in two ways. First, when an infant is born, he discriminates and responds to his mother's voice. He can also respond to other sounds while in the womb. A second example is from my wife's recent delivery. While our daughter was in the womb she constantly heard our dog's squeaky ball. When the dog squeaked the ball the baby would kick. Shortly after delivery, I brought the squeaky ball to the hospital. When the ball was squeaked, she kicked and smiled. Later in life this inner language is developed to self-talk.

The second level in language development is oral receptive language. Children learn language auditorily (Carpenter, 1984). Children need to be exposed to spoken language. Receptive language is important for children to begin to auditorily discriminate sounds (McDonald & Cornwall, 1995; Rosner, 1975) and patterns (Clearinghouse On Disabilities and Gifted Education, 1995; Rooney, 1995). Oral reception is also the stage in which "normal" learners will begin to abstract the syntax and semantics of the English language through rhymes and patterns (Carpenter, 1984; Gunning, 1992; Semel & Wiig, 1981). Students with learning disabilities may have difficulty abstracting these rules or patterns of the English language (Carpenter, 1984; Semel & Wiig, 1981; Wiig, 1990). Some students with learning disabilities will need to be directly taught the syntax and semantics of the English language through a hands on, structured intervention (Cole 1979; Gillon & Dodd, 1995; Mastropieri & Scruggs, 1987; Mercer & Mercer, 1993; Rooney, 1995; Swanson, 1994; Wiig, 1991).

Students with learning disabilities may understand a very basic question, but not know how to respond to that question. This verbal response is called oral expressive language, the third level of the language hierarchy. Children will initially repeat sounds, rhyme words, and make up their own words (Carpenter, 1984; Clearinghouse On Disabilities and Gifted Education, 1995; Rooney 1995). Until children have a firm grasp of oral reception they will not express themselves in a "formal" verbal manner. Babies and toddlers will babble, English as second language students will speak "broken English" if any at all, and many students with learning disabilities will speak using broken syntax. Verbs and verb clusters are typically the last component of the English language to develop in oral expression, illustrated by the unending errors in verb tense usage by students with learning disabilities (Carpenter, 1984; Mastropieri & Scruggs, 1987; Raver, 1988) .

Reading, or read language, is the fourth level of Myklebust's language hierarchy and consists of three elements: decoding, fluency, and comprehension. These three elements work almost simultaneously in a good reader. For most students with learning disabilities these are three difficult, seemingly impossible tasks. Direct phonics instruction for slow learners, at risk students, students with learning disabilities, and students with low intelligence quotients (IQ) (70+), is not only beneficial but often times necessary to facilitate a competent reader (Clearinghouse On Disabilities and Gifted Education, 1995; Gillon & Dodd, 1995; Hurford et al., 1994; Jenkins et al., 1994; Pressley & Rankin, 1994; Rooney, 1995; Shefelbine, 1996). The better decoder a student is the more fluently that student can read. Fluency has a direct effect on a student's ability to comprehend what they read. The

more time a student spends decoding a word, the slower they read, and the less they comprehend (Shefelbine, 1996). By the time many students finish decoding the last word in a sentence they have forgotten the first word. Comprehension can also be hindered by the sentence structure of the printed material. If the student does not use a particular sentence pattern in their oral expression, they will not fully comprehend material written in those patterns (Carpenter 1984; Gillon & Dodd, 1995; Raver, 1988). Students with learning disabilities will often have working memory deficits that may interfere with their comprehension as well (Swanson, 1994). Background knowledge, which is encoded through language, stored away, and then retrieved through language, is also vital in reading comprehension (Gillon & Dodd, 1995; Malone & Mastropieri, 1992; Pressley & Rankin, 1994; Shefelbine, 1996). Reading comprehension is the purpose for reading. Most poor readers are not active learners, which is an important ingredient for comprehension (Malone & Mastropieri, 1992; Scruggs & Mastropieri, 1992).

The fifth and final stage in Myklebust's language hierarchy is written language, often referred to as written expression. Written expression consists of spelling skills and the communication of thoughts and ideas through writing (Carpenter, 1984; MacDonald & Cornwall, 1995; Myklebust, 1968). Written expression also includes the rules of grammar, periods, commas, capitalization, as well as correct letter formation, appropriate slant of the letters, and appropriate spacing of words (Mastropieri & Scruggs, 1987; Mercer & Mercer, 1993; Rooney, 1995).

When basic language is developed in the five levels of the hierarchy, students will work up and down the hierarchy simultaneously. Students will

use oral reception to learn to spell, and use inner language (self-talk) to generate ideas for written expression (Wiig, 1990), as well as question themselves while reading to improve reading comprehension.

Researchers (Carpenter, 1984; Hsu, 1993; Myklebust, 1983; Paul & Smith, 1993; Raver, 1988; Semel & Wiig, 1981; Wiig, 1990) have found that students with learning disabilities and/or language disabilities hit the same developmental milestones and go through the same levels of language acquisition, but at a delayed rate.

Language Sample Analysis

The first step to remediate a student's expressive language is to elicit an oral language sample to determine the students needs. It is quite possible that a student with learning disabilities may not have a deficit in oral expressive language. Roth and Spekman (1989) studied 47 students with learning disabilities who had overly in tact expressive language abilities to determine if their language samples were significantly different to students without learning disabilities. The students ranged in age groups from 8 to 9.11, 10-10.11 and 12-13.11 year age levels, totaling 93 subjects (10 girls and 83 boys). The students with learning disabilities were from a private school for students with learning disabilities and demonstrated IQ scores not lower than 110 on the WISC-R. Subjects were taken to a quiet room and asked to generate a make believe story of their own. No time constraints were imposed. Their results showed a significant difference only in the area of overall correct usage of complex sentences. They also found the students with learning disabilities told stories that were shorter than those by their

normal achieving peers, and that they used fewer descriptors and less detail than their normal achieving peers.

If it is determined that a student does have a deficit in expressive language, there are several opinions on how to obtain a language sample and which type of language sample is most accurate (Carpenter, 1984; McDonough, 1989; Morris-Friehe & Sanger, 1992; Paul & Smith, 1993; Roth & Speckman, 1989). There is less controversy over how to obtain a language sample: discuss/retell a story, dictate a story, describe an object, story stems, tell the plot of a video, discuss a hobby, tell about something you learned (Carpenter, 1984; Morris-Friehe & Sanger, 1992; Roth & Speckman 1989). Controversy exists, however, in the method of obtaining an expressive language sample. Researchers have cited two types of expressive language samples, story telling samples and dialogue samples (Morris-Friehe & Sanger, 1992).

A story telling sample is believed to be more difficult for students because it "involves a number of higher level language and cognitive skills. These include the ability to sequence events, to create a cohesive text through the use of explicit linguistic markers, to use precise vocabulary to convey ideas without extralinguistic support, to understand cause-effect relationships..." (Paul & Smith, 1993). The use of story telling is used most commonly in younger students, when story telling is developmentally appropriate.

Morris-Friehe and Sanger (1992) researched the results of three different story elicitation's to determine if their results were significantly different. The 20 subjects (7=2nd grade, 9=3rd grade, and 4=4th grade)

subjects ranged in age from 7.8 - 11.6 years old, 15 were male and 5 female. The white, middle class subjects were asked to tell three stories. First, to generate a story using a picture, second, to generate a story from memory (fictional tale), and third, to describe a game from memory. Although the stories produced from memory were longer, they contained more errors than the other two sampling methods. Their results also concluded that when the percentage of words with error and the percentage of utterances with error were calculated, there was no significant difference between the three story telling methods. Morris-Friehe and Sanger suggest that a combination of story tasks taken over time might constitute a story sample that is more representative of an individual's story telling abilities.

McDonough (1989) argued that language is a tool for social interaction, a give and take relationship, and thus language samples were taken from a dialogue approach. McDonough hypothesized that interpersonal and academic difficulties of emotionally handicapped students are related to difficulties in expressive language skills. The study included 44 subjects from a large southwestern metropolitan school district reflecting a wide diversity of students. The subjects were non handicapped (n=22) and emotionally handicapped (n=22) students who were either 8 or 9 years old and of average intelligence. They came from homes having English the predominant language spoken. As in Morris-Friehe and Sanger (1992) and Roth and Spekman (1989), McDonough found the non nonhandicapped peers to have a higher mean length of utterance, less syntactical errors, and fewer errors overall. In the McDonough study revisions were counted as errors. McDonough also noted that the non handicapped peers were able to revise

as/before they spoke, where as the emotionally handicapped subjects were not able to revise as they spoke, rather, they corrected as they conversed.

To summarize the debate, using a dialogue sampling method (McDonough, 1989) found the similar results to a story telling method (Morris-Friehe & Sanger, 1992). Both studies had similar findings. First, that non handicapped peers typically had a higher mean length utterance. Second, that students with learning disabilities had difficulty with correct usage of complex sentence structures, and third, the students with learning disabilities had more errors or revisions as they spoke.

Three remediation programs. When an expressive language deficit is suspected in a student, the next step is to select an intervention program. Several intervention programs are available for speech and language teachers and special education teachers, to remediate oral expression for students in special education (Wiig, 1991). It is assumed that normal learners acquire language through a natural process as they interact with their environment. Children with language delays or learning disabilities may not naturally abstract the language patterns without a structured language intervention program (Blank & Milewski, 1981; Carpenter, 1988; Cole, 1979; Draizer, 1980; Raver, 1988; Wiig, 1991). Three intervention programs will be summarized: the Semel Auditory Processing Program (Semel & Wiig, 1981), a Language/Communication Curriculum for Students with Autism and other Language Impairments (Penning, 1992), and Auditory Oral Patterns (Carpenter, 1984).

The first intervention, The Semel Auditory Processing Program was primarily developed for processing and interpreting spoken language, but it

has many components to foster expressive language. It was developed for use with students with language-learning disabilities. The Semel Auditory Processing Program, or SAAP has three levels, beginning (developmental ages 3-7years), intermediate (developmental ages 7-11) and advanced (developmental ages 11years and up). The three levels of SAPP are identical in format. The levels differ in the semantic complexity of word choices and in complexity of sentence structures.

Two areas for remediation in SAPP were linguistic skills, and auditory recall. Lessons activities for increasing linguistic skills included segmentation of words into morphemes, analysis and synthesis of sentence structures, sentence completion, and oral closure. Other lesson activities included: application of morphological rules, noun plurals and possessives, verb tense agreement, and derivation of nouns, verbs, adjectives, and adverbs.

Activities for auditory recall lessons included a controlled sequence for increasing the length or number of items to be recalled. Hierarchical word classifications and repetition of sentences of increasing syllable and word length are also activities. Sentences are not controlled for syntactic complexity, however. The sentences are expanded primarily by addition of prepositional or adverbial phrases. This program was implemented by trained administrators to individual students, daily for thirty minutes. Research (Semel & Wiig, 1981) suggests that the program "...improved knowledge of morphology and syntax and increased ability in perceiving and interpreting relationships among words in consecutive sentences". Knowledge of syntax does not indicate the application of verbal syntax, implying that the SAPP was not effective in remediation of oral expression. The research also noted

similarities between the training and the testing procedures. The research suggested more studies to determine the SAPP's effectiveness in a classroom setting to determine if results can replicate those from the "pull-out" program.

The second intervention, called the Language/Communication Curriculum for Students With Autism and Other Language Impairments (Penning, 1992) was developed for children demonstrating severe to profound delays in the acquisition of language. The Language Curriculum emphasizes a developmental approach to remediation in the areas of language and cognition. The Language Curriculum's activities include a structured approach to remediation and a means of generalizing responses to more functional contexts. The Language Curriculum covers four areas, cognition, pragmatics, semantics, and syntax. Only one of the four areas of The Language Curriculum will be discussed, the area of syntax, as this is the area The Language Curriculum addressed the remediation of oral expression. The Language Curriculum's definition of syntax includes the beginning of two word verbal constructions to the verbal use of complex sentences.

The Language Curriculum's activities include using concrete objects, asking questions, and prompting a student response. Role playing with dolls, some kinesthetic activities, and several picture activities were used to elicit verb generation and noun verb agreements. For example, a student would look at a picture of a dog running. The teacher would ask the student what happened in the picture. The intended student response would be "Dog run." When students exhibit difficulty in generating a response, the teacher is instructed to repeat a question which models the correct student response, (i.e., Teacher: "What is the dog doing?" Student: "Dog run.").

The Language Curriculum was designed for use with a speech and language pathologist and one to two students. The Language Curriculum, however, has been used by classroom teachers. The original version of The Language Curriculum has been in use since June of 1976. Since 1976 the Language Curriculum has been revised several times. Empirical data has not, however, been sought on the program and users are encouraged to document their data (Penning, 1992).

The final intervention, called the Auditory Oral Patterns Program (Carpenter, 1987) was designed for use with students with hearing impairments. The Auditory Oral Patterns Program (A-O's) relies on the auditory modeling of sentence patterns. This highly structured program systematically introduces and expands the five basic sentence patterns of the English language. The five basic sentence patterns are noun-verb, direct object, predicate nominative, predicate adjective, and indirect object. A-O's has six levels. Each level of the program introduces developmentally more complex sentence patterns. The procedure for each level is the same. The activities are auditory, visual, kinesthetic, and tactile in nature. They often incorporate role playing and staging. A-O's utilizes concrete objects and student involvement. The lessons are structured the same throughout the program. A teacher verbalizes and writes a command on the board. A student follows the command. The teacher then asks and writes a question about the command on the board. A different student then answers the question and the teacher writes the statement on the board. One example from a lesson teaching a noun verb sentence might be: Teacher: "Jump." The teacher then selects Martha to jump. Teacher: "Who jumped?" Student:

"Martha jumped." The teacher would give several similar commands for the students to follow.

This program was designed to be used by the classroom teacher in groups of five to seven students. Results by Carpenter (1984) indicate success increasing oral expression (syntactic age) in student's with hearing impairments only, students with mild hearing impairments and a specific learning disability, and students with a combination of moderate to profound hearing impairments and a specific learning disability. The number of years students with only hearing impairments were exposed to Auditory Oral Patterns ranged from one year to three years. The students with only hearing impairments showed syntactical growth ranging from twelve months and eight years six months. Students who had mild to moderate hearing impairments in combination with a specific learning disability exposed to the Auditory Oral Patterns for one to two years showed syntactical growth ranging from four years and ten years. Students with moderate to profound hearing impairments in combination with a specific learning disability exposed to Auditory Oral Patterns for one to two years showed syntactical growth ranging from twelve and twenty-four months.

To summarize the three approaches, one of the three interventions, Auditory Oral Patterns, is designed for classroom teachers. The SAPP and the Language Curriculum programs are both designed primarily for speech and language pathologists. Semel and Wiig (1981) suggested initiating research using the SAPP with classroom teachers as the primary person for instruction. All three programs suggest low student teacher ratios. The Auditory Oral Patterns allows for groups of five to eight students, SAPP and

the Language Curriculum suggest individual instruction. All three interventions stress auditory modeling, often use concrete materials, and maximize student teacher interaction. Auditory Oral Patterns, however, is the only one of the three interventions with research indicating success for the remediation of oral expressive language when used by classroom teachers.

Methods

Subjects and Setting. Ten of the fourteen students in the classroom participated in the study. All fourteen students were in the same cross categorical classroom. Eight of the students were boys and six were girls. Four students were in the 2nd grade, two boys and two girls. Ten students were in 3rd grade, six boys and four girls.

Four students who participated in the study were in the 2nd grade, two boys and two girls. Six students who participated in the study were in 3rd grade, four boys and two girls. See Table 1 and 2 for individual student characteristics.

The students were serviced for their special education needs in a cross categorical classroom. At the beginning of the intervention the classroom had nine students. By the end of the intervention the classroom had fourteen students. The desks were arranged in rows for six weeks and small groups for three weeks. The room was physically small and the students were in close proximity of each other. Attached to the classroom was a small office used for elicitation of oral language samples.

The teacher was a 28 year old, white male teaching in a second and third grade, cross categorical room with 14 students, 6 girls and 8 boys. The teacher had three years of teaching experience in the same rural Michigan,

school district. The teacher taught all core subjects, reading, spelling, math, science, and enrichment classes. The teacher was trained to teach Auditory Oral Patterning. Also assigned to the room was one full time paraprofessional and one half-time paraprofessional.

Program Intervention

For this study the Auditory Oral Patterns program was used as an intervention. Specifically, two components of the program, auditory oral patterns and patterning were implemented. These will be discussed individually.

Auditory Oral Patterns. The students were involved in a program developed primarily for the hearing impaired. The program was called Auditory-Oral Patterns (A-O's) (Carpenter, 1990). A-O's build students expressive language by starting at a basic noun-verb (NV) sentence pattern and giving the students a command, asking a question, and receiving a statement. The teacher wrote the command on the board and selected a student to do the command. As the student initiated the command, the teacher wrote the question on the board and repeated the command. As the student finished the task, the teacher asked the question. Finally, the teacher called a student to answer the question and the teacher wrote the statement on the board. For example, for of a NV sentence pattern the A-O command, question, and statement could be:

Command (teacher)- Grow.

Question (teacher)- Who grew?

Statement (student)- Winston grew.

After each statement is written on the board the teacher reads the new statement and each of the preceding statements. Once the teacher had seven to nine different commands, questions, and statements on the board, he reread the statements and asked for a volunteer to come up and point to a particular statement, (i.e. "Winston grew."). The student then read the statement, turned to face the class and repeated the statement. This used auditory, tactile, kinesthetic, and visual modes to teach sentence structure, and improve fluency in oral expression. If the student pointed to an incorrect statement, the teacher reread the statements and reduced the complexity of the task by reducing the number of sentences from which the student had to choose. The teacher continued to reduce the number of sentences until the student selected the correct statement.

Notice that in this program a teacher gives the verb, or verb cluster in higher language, as verbs are the more difficult piece of language for students to master. Auditory Oral Patterns were designed to systematically introduce the students to syntactical variations of language, while giving students the opportunity to practice and develop more complex language patterns in their oral expression (Carpenter, 1987).

Patterning. In addition to the Auditory Oral Patterns that teach students syntactical structures of language in a concrete manner, patterning was also used. Patterning was used to expand the students verbs and verb clusters.

Unlike the Auditory Oral Patterns, in Patterning the student is not provided the verb or verb cluster. Patterning focused on the students generating the verb or verb cluster to make a complete sentence (Carpenter,

1988). Higher levels of the patterning process focused on the students expanding syntactical structure. The patterning procedure had two components and two different approaches. One component, the carrier phrase, was provided by the teacher. The second component, the verb or verb cluster was provided by the student. For example, the teacher wrote the carrier phrase on the board:

I like to

A student would then provide a verb or verb cluster.

talk.

shoot my BB gun.

This first approach to patterning was done on the chalkboard as auditory oral patterns were done. That is, the teacher provided the carrier phrases, students provided the verbs or verb clusters, and the teacher read and reread each sentence. Once seven to nine sentences were on the board the teacher read a sentence and asked if someone could find it. The student then read the sentence and then turned around and said it to the class.

The second approach to patterning was for the teacher to make a pattern book using only the carrier phrases. The student then provided the verb or verb cluster. These pattern books were then made into a book for the students to read to other classrooms of younger students or made into a magazine. An example of carrier phrases used in a pattern book on insects is:

Insects like to

Ladybugs don't want to

Dragon flies need to

Ants don't like to

Butterflies want to

Mosquitoes like to

Three examples of patterning levels are: Prepositional phrase groups before the sentence (i.e.-In the winter I like to ___), conjoined verb clusters (In the fall I like to ___ and ___), and conjoined sentences (I like to ___ but I don't like to___) (Carpenter 1988). By doing patterning in conjunction with the auditory oral patterns, students learn the basic syntactical patterns of the language and to generate verbs and verb clusters which are difficult to master (Carpenter, 1988).

Measurement Systems

Words per sentence. Based on previous research using mean length of utterance/sentence as a viable measurement for language sophistication (Carpenter, 1984; Cole, 1979; McDonough, 1989; Morris-Friehe & Sanger, 1992; Paul & Smith, 1993; Roth & Spekman, 1989) the students dictated an oral language sample every three school days. This language sample was analyzed by the Language Experience Recorder (Mason, 1992) software for words per sentence. This software counts the number of words in the students dictation and divides that number by the number of total sentences. The result is the average number of words per sentence. The students words per sentences were charted to observe the students overall words per sentence average.

Social validity questionnaires. Social validity questionnaires were used to measure both the students satisfaction of the auditory oral patterning program and the paraprofessionals perception of student satisfaction during the lessons. The student and staff perception survey asked each to rank order their top three areas of instructional preference: reading, spelling, handwriting, science, AO's, math, read aloud time, and book making time. It

also asked them to rate AO's on a scale of 1-10, with 1 being low and 10 being high.

The basis for the survey is primarily to determine if the students enjoyed the intervention lessons.

Procedures.

On the first day of intervention and every third school day after, until the end of the intervention period, the teacher would elicit an oral language sample from each student. The teacher presented all lessons when all students were in the room, most days between 10:05 and 11:10. The teacher started out by doing five lessons introducing the five basic sentence patterns (level 1). One lesson on each sentence pattern. Each lesson consisted of between seven and nine commands. When level 1 lessons were completed he proceeded to level 2, which expands the five basic sentence patterns using determiners, adjectives, nouns, pronouns and verbs in both subject and object position. Again, each lesson consisted of seven to nine commands. When level 2 lessons were completed he moved to level 3 lessons. These lessons introduced the use of "Where", "How-Why", and "When" p-groups and adverbs at the end of each basic sentence pattern. The teacher presented thirty nine auditory oral pattern lessons over nine weeks.

Each Monday the teacher would pass out a pattern book for the students to complete. The pattern books were science orientated and determined by the science subject for the week. The students would complete one page each day and complete their five page book on Friday, by binding, decorating, and illustrating their book. The teacher and paraprofessionals would go to each individual student and write the student

dictated verb cluster for the student to copy into their book. Book topics included birds, fish, insects, amphibians, mammals and interesting facts. The students did nine pattern books over nine weeks.

Results

The original purpose of this study was to research Auditory Oral Patterns and its effectiveness with students who have learning disabilities to increase students expressive language. However, when the data was compiled interesting patterns were observed with students with emotional impairments, mental impairments, students who were autistically impaired, and students with attention deficit hyperactivity disorder. For this reason, results will be given for all students, not just students with learning disabilities as was initially intended.

Students with Learning Disabilities.

Results (see Figures 1 - 4.) indicate that the Auditory Oral Patterns intervention may have had a positive effect on the expressive language of students with learning disabilities. When the first two oral language samples were averaged and compared to the last two oral language samples, as a group, students with learning disabilities showed an average of 7.76 words per sentence after the intervention compared to 6.84 average words per sentence at the beginning of the intervention. This is an average increase of .94 words per sentence. Students with learning disabilities ranged from -.55 to + 2.31 average words per sentence. Individually, students 7 and 8 with learning disabilities showed an increase of average words per sentence of 2.31 and .825 respectfully. Student 8 was exposed to Auditory Oral Patterns the previous year also. Only one student, student 7 showed a consistent

increase in words per sentence with little fluctuation. Two students showed a decrease in average words per sentence of .55 and .04. This may be attributed to interest level in the first two language sample topics compared to the last two language sample topics.

Students with Educable Mental Impairments.

Results (see Figures 5 - 8.) indicate that Auditory Oral Patterns had a positive effect on the expressive language of students with educable mental impairments. When the first two oral language samples were averaged and compared to the last two oral language samples, students with educable mental impairments showed an average of 8.01 words per sentence after the intervention compared to 6.83 average words per sentence at the beginning of the intervention. This is an average increase of 1.16 words per sentence. Student average words per sentence increases ranged from .61 and 2.14. The results indicate that each of the students with mental impairments had an increase in their average words per sentence.

Student with Autistim.

Results (see Figure 9.) indicate that the Auditory Oral Patterns had a positive effect on the expressive language of the student with autism. When the first two oral language samples were averaged and compared to the last two oral language samples the student with autism showed an average of 6 words per sentence after the intervention compared to 5.63 average words per sentence before the intervention. This is an average increase of .36 words per sentence.

Student with Emotional Impairments.

Results (see Figure 10.) indicate that Auditory Oral Patterns had a negative effect on the expressive language of the student with emotional impairments. When the first two oral language samples were averaged and compared to the last two oral language samples the student with emotional impairments showed an average of 7.5 words per sentence after the intervention compared to 8.29 average words per sentence before the intervention. This is an average decrease of .78 words per sentence. Although the student averaged two increases in average words per sentence of 8.57 and 8.51, the overall samples indicate sporadic results.

Students with Attention Deficit Hyperactivity Disorder.

Results (see Figures 2 - 5, 7 and 8.) indicate that Auditory Oral Patterns had a positive effect on the expressive language of the students with attention deficit hyperactivity disorder. When the first two oral language samples were averaged and compared to the last two oral language samples the students with attention deficit hyperactivity disorder showed an average of 7.64 words per sentence after the intervention compared to 6.73 average words per sentence before the intervention. This is an average increase of .91 words per sentence. Students with attention deficit hyperactivity disorder ranged from -.55 and 2.31 average words per sentence. Five of the six students with attention deficit hyperactivity disorder showed an increase in average words per sentence ranging from .61 and 2.31. Only one student, student 10 showed a decrease in average words per sentence. This student, however, did show an increase of average words per sentence on five oral language samples ranging from 8.44 and 11.07, for an average of 9.23 average words per sentence. Given this information, it could be stated that the results

indicated improvement of expressive language for all students with attention deficit hyperactivity disorder.

Social Validity Questionnaires.

Unlike the results of the average words per sentence previously reported, all students rank ordered and rated the Auditory Oral Patterns intervention. The rationale behind all students participating in the social validity survey, is that it is not suspected that students need to be exposed to the intervention over time to enjoy the lessons. Results indicate that students did enjoy the intervention lessons. Overall, students ranked A-O's third behind math and science respectively, followed by DEAR, spelling, reading and handwriting, and finally read aloud time. The paraprofessionals ranked A-O's first, tied with math, followed by science. Students and paraprofessionals gave A-O's an overall rating of 9.5 for enjoyment of the lessons. The fourteen students rated A-O's a total of 133 points, for an average enjoyment rating of 9.5.

Discussion

Students with Learning Disabilities.

Although the results indicated that A-O's positively impacted the expressive language abilities of students with learning disabilities, four issues must be addressed. First, because of the nature of the study and the physical constraints of the classroom, A-O's lessons were done in a larger group (10 students) than suggested (4-7) by Carpenter (1990). Because the teacher student ratio is higher, and the time on task per student is lower, this may have negatively impacted the effectiveness of the program. The intervention was also short in duration. Nine weeks versus a full school year of the A-O's

intervention is suspected to improve student average words per sentence as Carpenters results indicated (1984).

Second, two of the students (students 7 and 8) showed an increase in average words per sentence. These students show results similar to Carpenters results (1984) with students who have hearing impairments and learning disabilities. One of these students was exposed to A-O's for one year prior to the intervention window. If the study had a longer intervention time it is suspected that a positive effect in students expressive language would be noticed.

Third, one student with learning disabilities, student 10, as discussed earlier, did show an average increase of 9.23 words per sentence, however, this increase was not reflected when averaging the first two and last two oral language samples.

Finally, one student, student 3, missed the first two weeks of A-O's. The researcher attributes the students fluctuating scores to a late start in the intervention, and the settling time to a new school.

Given the results of this particular study and the impact on the average words per sentence of students with learning disabilities, the research supports A-O's effectiveness on the expressive language of students with learning disabilities.

The researcher believes given a larger time frame, A-O's may have effects similar to that of Carpenters (1984). However, because the individual words per sentence averages show two students with negative effects, it is suggested that a smaller intervention group (5 - 7 students) may improve results.

Students with Educable Mental Impairments.

Although this study was small, the results indicated three things. First, the results indicated that A-O's were effective in increasing students with educable mental impairments (EMI) average words per sentence. The success of A-O's reflect the learning characteristics of students with EMI. The A-O's intervention was a concrete, hands on intervention with a high interest level by the students. The gains in average words per sentence were the largest gains of any disability group in the study and oral language samples from these students reflected consistent increases in average words per sentence throughout the study.

Second, a larger study of the effectiveness of A-O's with students with EMI would be appropriate to substantiate or refute the results of this study. Until such a study is completed, it appears appropriate to continue the A-O's intervention with students with EMI. The continued charting of average words per sentence, on a bi-weekly basis would lend itself to monitoring results. The purpose for charting on a bi-weekly basis is simply due to feasibility.

Third, the results of this research suggest that the use of A-O's to remediate expressive language with students with EMI may be effective in larger groups than Carpenter suggests (1988). Throughout the intervention period, the instructional group ranged from 8 to 14 students. Although the number of students involved in the intervention instruction fluctuated, students with EMI showed a consistent increase of average words per sentence, suggesting a larger instructional group had little effect on the students increase of expressive language.

Student with Autistim.

The student with autism had two valleys and two peaks in average words per sentence. As the intervention progressed, the distance between the peaks and valleys was narrowed. The peaks remained the same, but the valleys became elevated. The quantitative data on this student is not the swaying data on the success of the A-O's intervention. The qualitative observations this student had in nine weeks was substantial. The student went from using two to three word sentences in conversation to six and seven word sentences. When the student was asked to give a story sample, however, the abstract structure of dictating a story appeared to be overwhelming. This student would often dictate observations of his environment in short unconnected ideas. Comments from other staff in the building reflected their observations of increased oral expression and more specific communicating of ideas to others.

The results indicate that the A-O's intervention was successful for the student involved in the study who had autism. As students with autism typically have difficulty acquiring language, the A-O's intervention appears to have merit for further application with students with autism. As persons with autism are comfortable with consistency and routine, A-O's offer structure for this need while teaching language to these students.

Student with Emotional Impairments.

The student with emotional impairments showed a pattern of average words per sentence similar to that of the student with autism. This student also had a fluctuating pattern with peaks and valleys. Although the valleys elevated so did the peaks. However, this student started out with a high words per sentence average. The minimal increases in the peaks are

shadowed by the valleys which mimicked the students regressive behavior and fluctuations in control.

As interesting as the average words per sentence pattern is, it would be more interesting to use A-O's with other students with emotional impairments who initially have low expressive language words per sentence averages. The researcher predicts that not only would the expressive language increase for students with emotional impairments, but behavior problems would decrease as well. For teachers of students with emotional impairments, the structure of A-O's offer an effective language building activity while keeping negative behaviors to a minimum by keeping students active. Students learn to effectively communicate their thoughts verbally rather than out of frustration or physically. Students enjoyed being engaged with the routine of A-O's while actively involved in the lesson.

Students with Attention Deficit Hyperactivity Disorder.

Students with Attention Deficit Hyperactivity Disorder (ADHD) may have language deficits and typically lack structure. Based on the results of the study, students who had ADHD showed an increase in average words per sentence. All the students with ADHD, with the exception of Student 10, showed an increase of average words per sentence with the A-O's intervention.

Although the results generally suggest positive effects for the remediation of expressive language with students who have ADHD, this study reflects effects for students who have a combination of ADHD and other disabilities. Research with students who have only ADHD or specific combinations of disabilities may provide more specific results. According to

the results of this study, students with LD and ADHD showed significant improvements over the student with autism and similar improvements to students with EMI and ADHD. Although the results comparing students with LD and ADHD to students with EMI and ADHD were similar, results suggested larger gains for students with LD and ADHD on average words per sentence.

Social Validity Questionnaire

Results of the social validity questionnaire indicated that students did enjoy the intervention lessons. Student satisfaction with the intervention lessons indicated students had a desire to participate in the lessons. This satisfaction is important to note because students who desire to participate in a lesson tend to have higher achievement. It is assumed that gains in students expressive language are an accurate reflection of students who did not try to “sabotage” or “elevate” results, although this would be difficult for students to do. However, student interest levels in the oral language sample stimulus varied. This may be reflected in many of the fluctuations in average words per sentence throughout the study. Students who appeared to have a low interest level in a language sample stimulus gave brief, unenthusiastic descriptions of a topic, whereas, students who appeared interested about a sample stimulus used very specific, detailed information and discussed the topic at length. It may be suggested in future research to limit the number of oral language samples elicited during the intervention to prevent students from viewing the data collection process as a “chore”, and to keep student interest in sample stimulus high.

Summary of Conclusions.

The current study suggests that the Auditory Oral Patterns may be an effective intervention for increasing the average words per sentence for some students with disabilities. This study originally intended to measure Auditory Oral Patterns with students with learning disabilities, however, it was later expanded to students with other disabilities as well. The results indicated that A-O's may be an effective intervention for increasing the words per sentence average for expressive language of students with learning disabilities, educable mental impairments, autism, and attention deficit hyperactivity disorder. The observation time for the intervention was short but gains in expressive language are anticipated to be maintained as the use of expressive language is a daily activity.

The qualitative gains observed by the researcher and staff in contact with students involved in the A-O's intervention was impressive as well as the quantitative data. Three students made tremendous gains in the sophistication of their conversation skills. Gains include such qualities as diversified questioning, clarification questions, more specific responses to questions, and better communication of personal feelings with peers and adults.

Implications.

Results by Carpenter (1984) indicated marked improvements for students with hearing impairments and students with a combination of hearing impairments and learning disabilities. These results, however, were attained with a minimum of one year of instruction with the Auditory Oral Patterns program. Overall, results of the current study also indicate success for increasing students average words per sentence, although results are minimal

in comparison to Carpenter's study (1984). Nonetheless, the current research in combination with Carpenter's results (1984) could have profound educational impacts.

The first educational impact could be the use of Auditory Oral Patterns with regular education students. Because language is learned through experience and exposure, there is no better place to initiate the learning of language skills, before language deficits become apparent, than early elementary school. This researcher is suggesting that A-O's used from pre-school through first grade would improve the current level of language skills that students are currently using when entering elementary school. If students with language deficits make dramatic gains as suggested by Carpenter's research (1984), what results would A-O's have with "normal" language learning students without disabilities? Future implications of using A-O's with "regular" education students may be increased language abilities entering elementary school to include: auditory receptive language, oral expressive language, reading, reading comprehension, and written expression. These increases in linguistic skills should equate to higher reading levels at younger ages, higher reading comprehension skills, better communication of ideas through writing, and of course, better test scores.

A second unexplored option for the use of A-O's is for students who are at risk for failure or in Title 1. These students often show difficulties in oral expression and reading abilities. Students involved in at risk or Title 1 programs typically work in small groups, similar to Carpenter's suggested size for A-O's. If the "right" aide involved in an at risk or Title 1 program could be trained in the use of A-O's and carry out A-O lessons, only monitoring by a

certified teacher would be needed for expected results. Monitoring and charting of the results would substantiate the effects of the program.

Finally, students who speak English as a second language may benefit from the Auditory Oral Patterns. A-O's are designed to teach the syntactical and semantic structures of the English language, exactly what students speaking English as a second language are trying to learn. Again, results with students with disabilities suggest students without disabilities would show improvements in average words per sentence.

In conclusion, Auditory Oral Patterns should not be limited in its use to strictly a remediation intervention for students with disabilities. The effects for "normal" language learners may be profound. Research and implementation into the listed avenues should be addressed to measure the effectiveness of A-O's as a language learning tool, to increase all students linguistic abilities, not only as remediation of language deficits.

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Appendix A

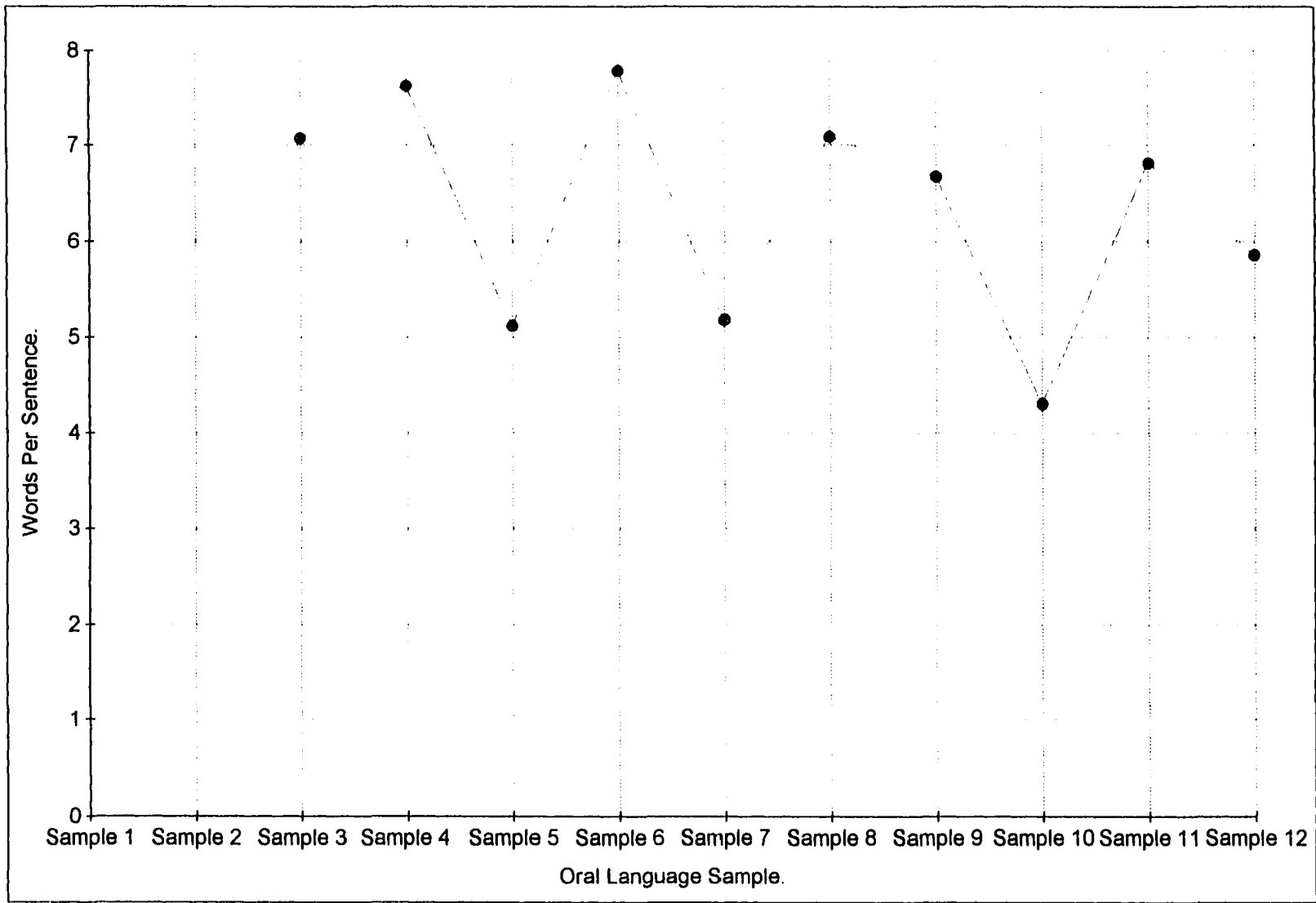


Figure 1. Average number of words per sentence for Student 3 who has LD.

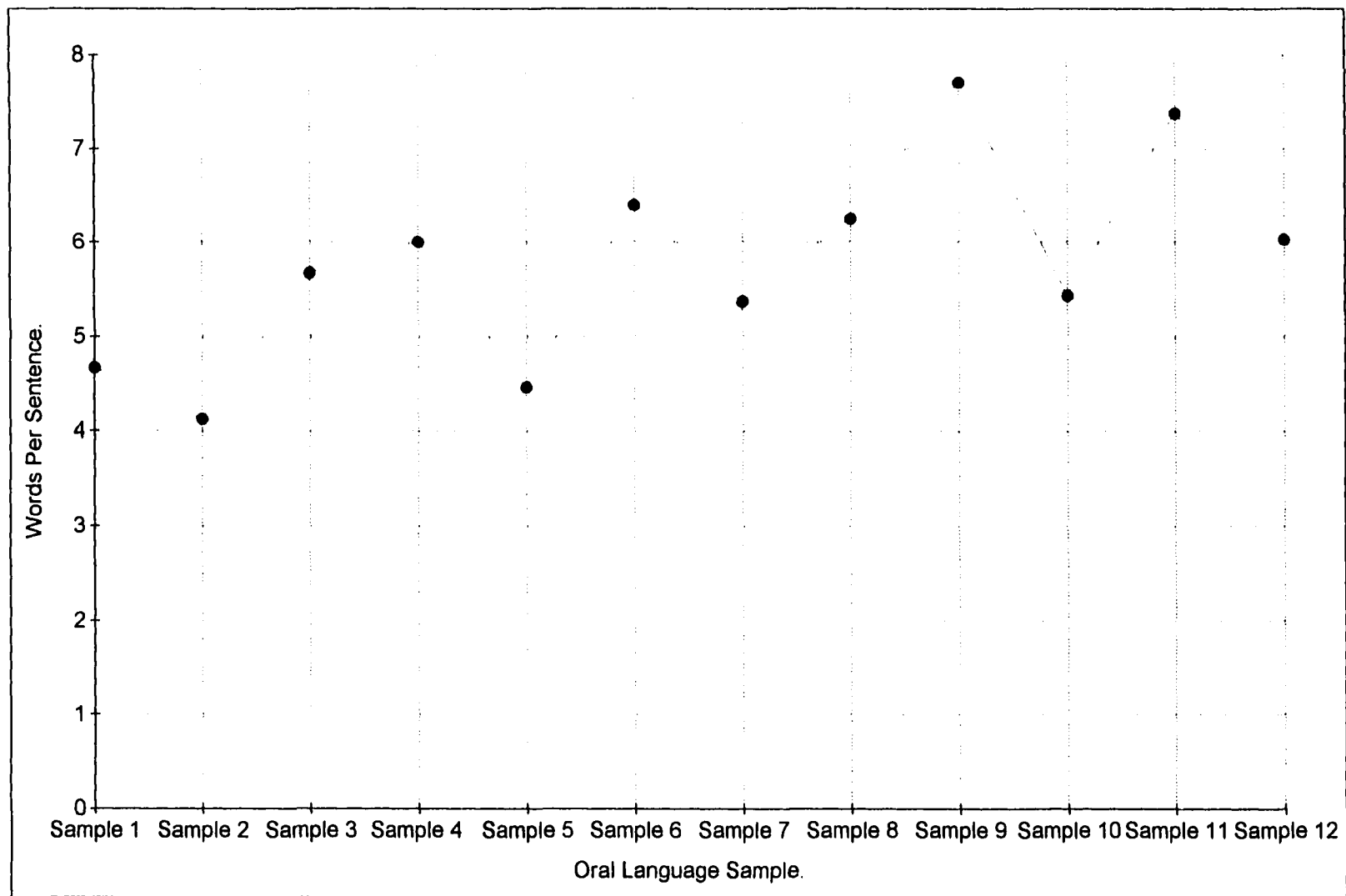


Figure 2. Average number of words per sentence for Student 7 who has LD and ADHD.

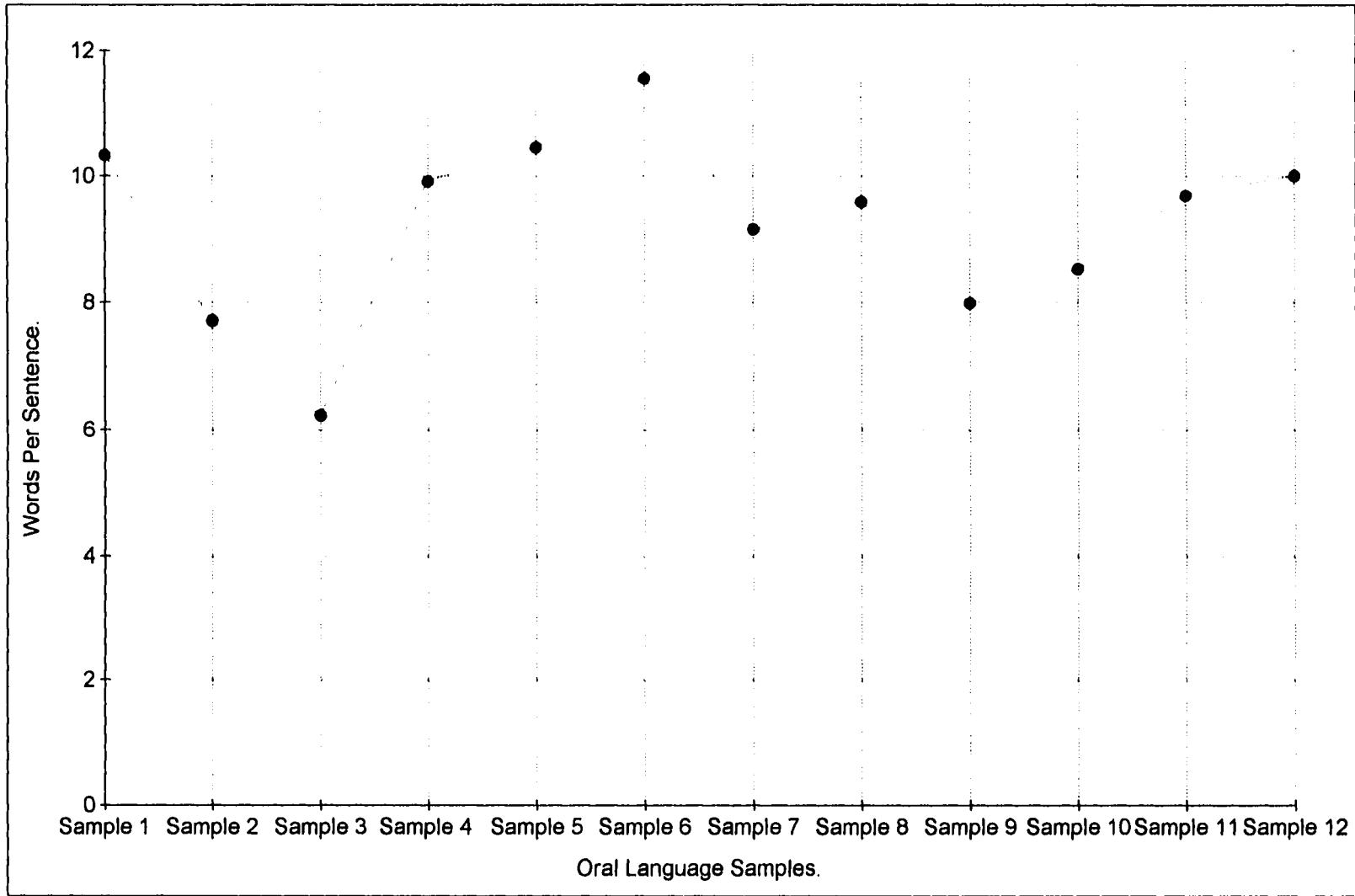


Figure 3. Average number of words per sentence for Student 8 who has LD and ADHD.

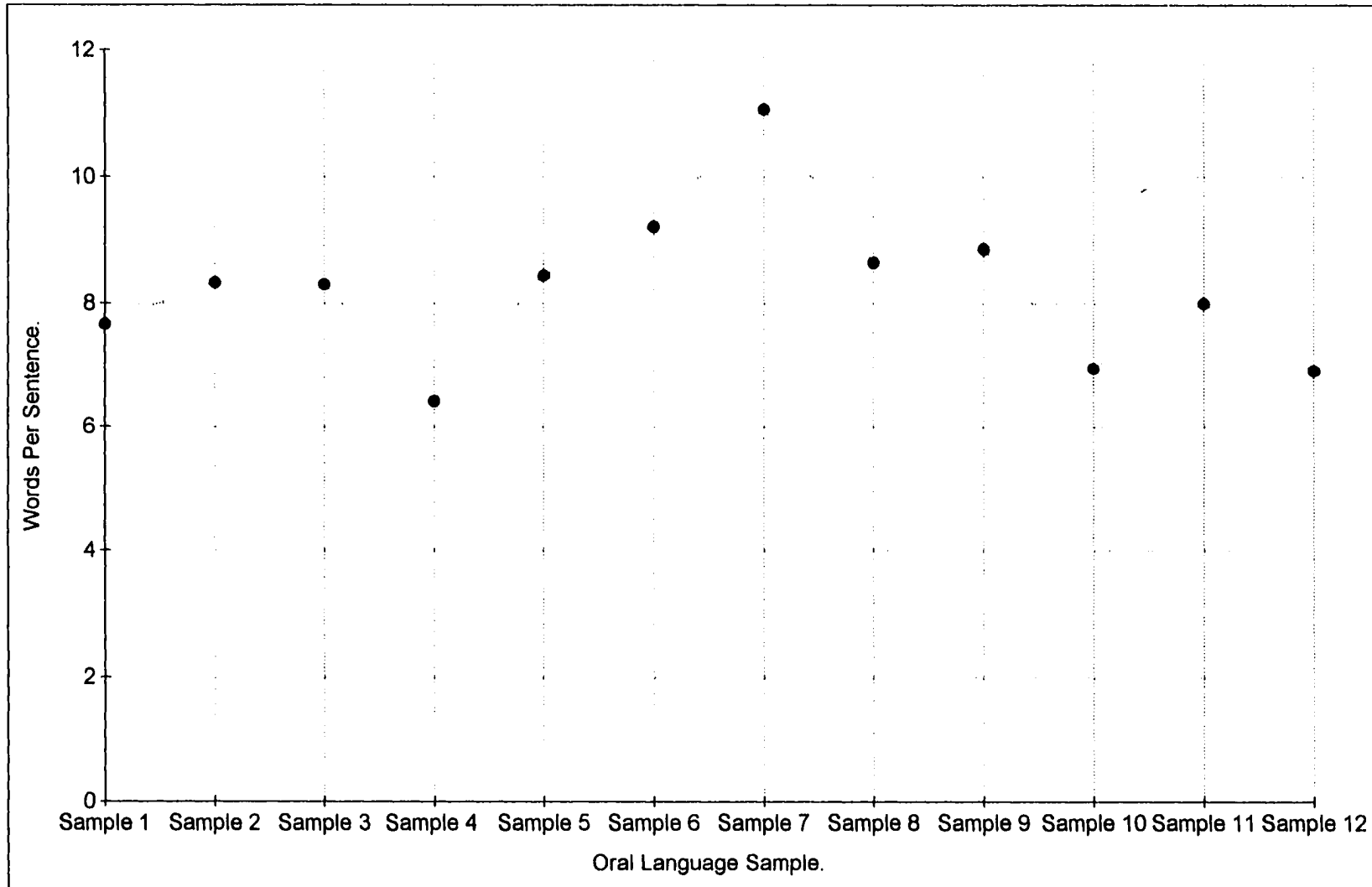


Figure 4. Average number of words per sentence for Student 10 who has LD and ADHD.

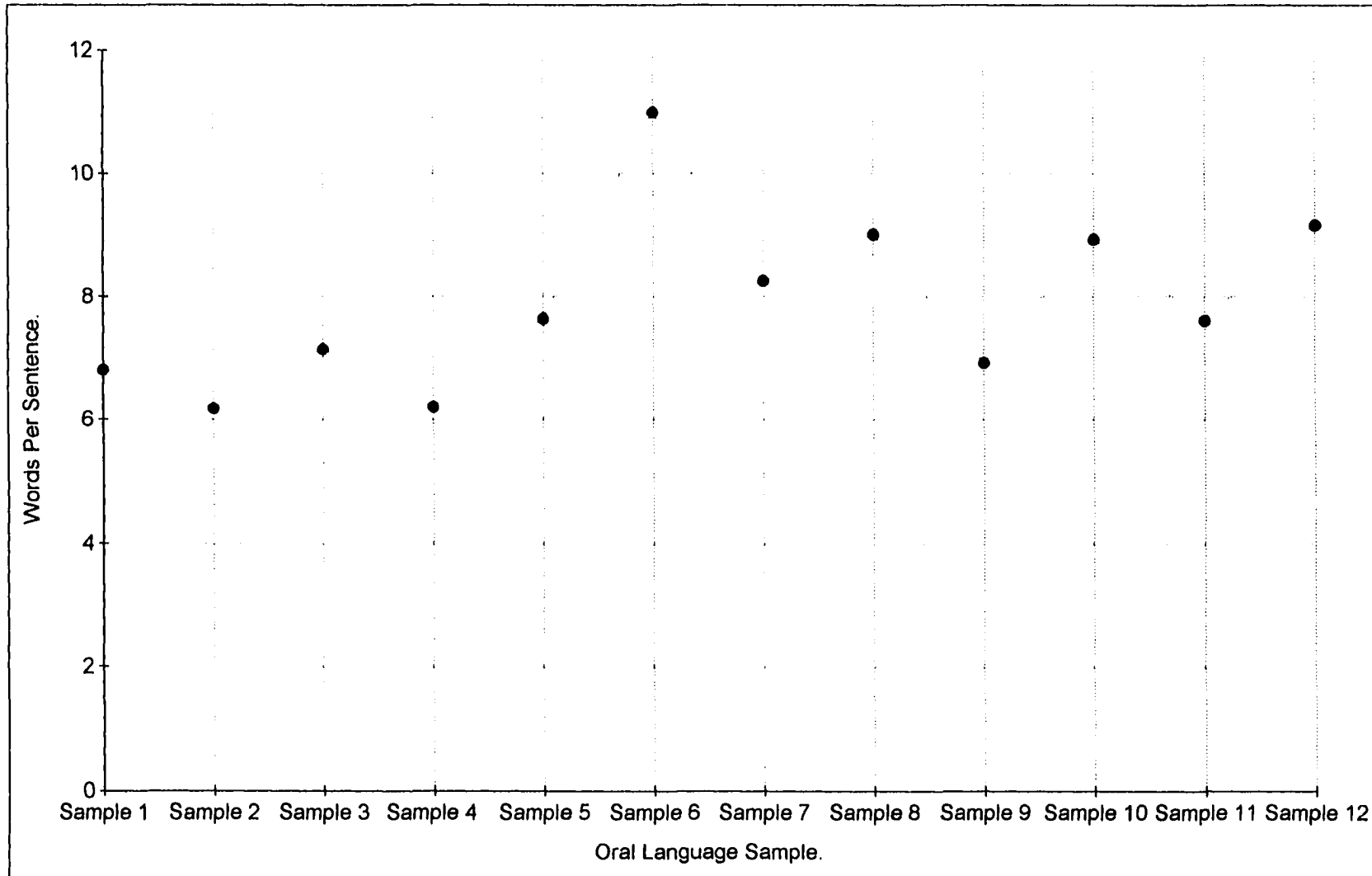


Figure 5. Average number of words per sentence for Student 1 who has EMI and ADHD.

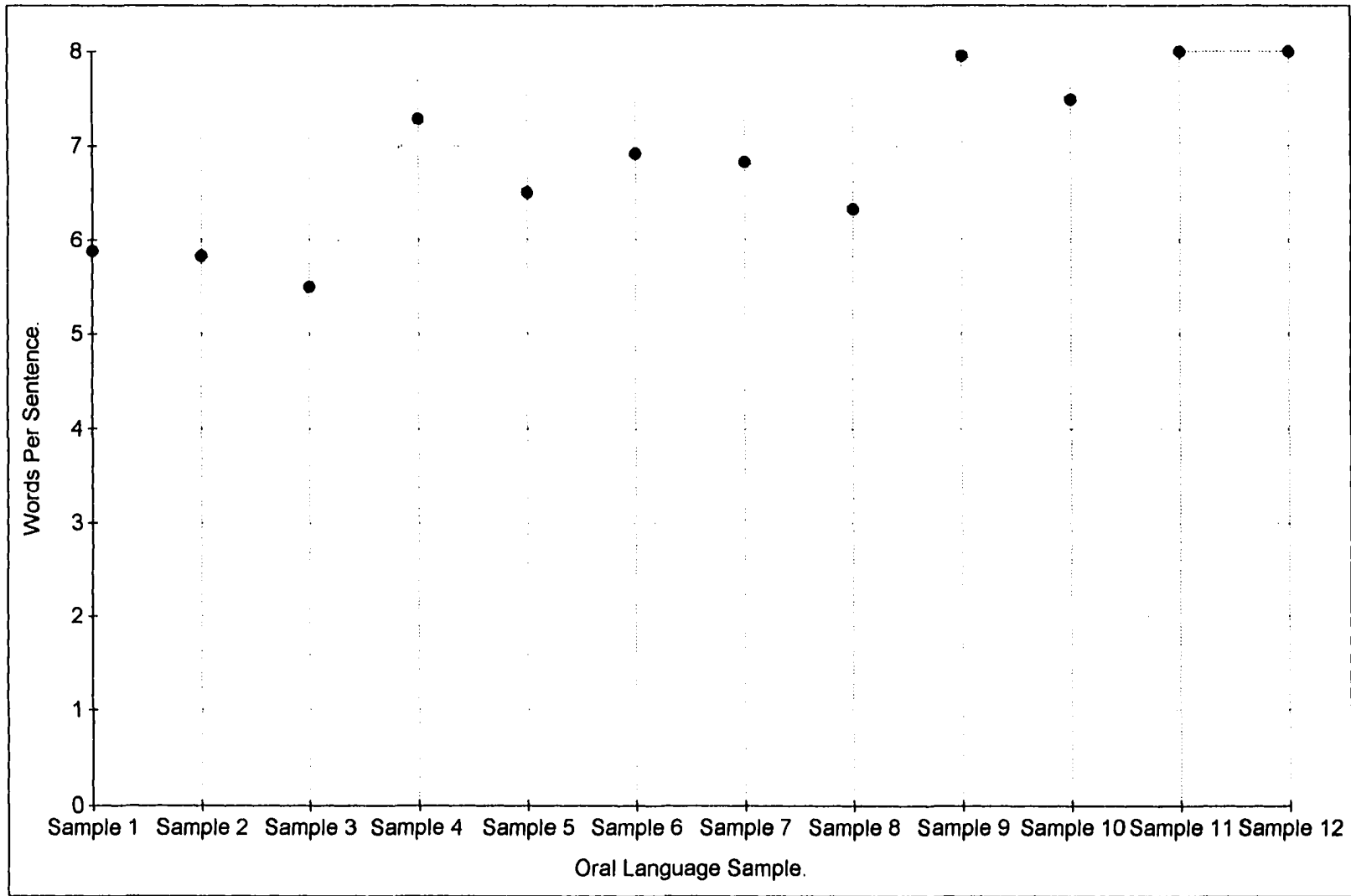


Figure 6. Average number of words per sentence for Student 5 who has EMI.

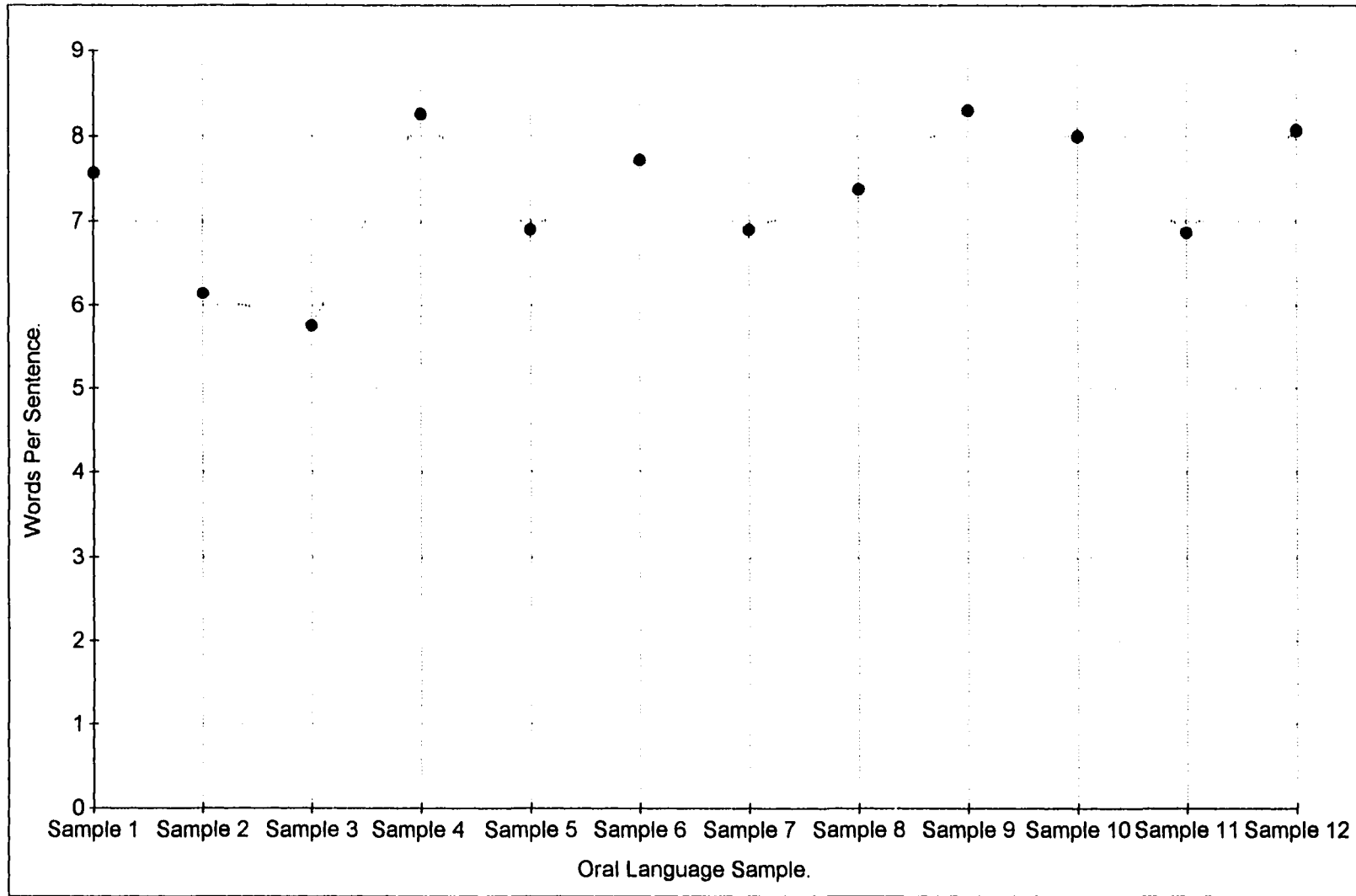


Figure 7. Average number of words per sentence for Student 4 who has EMI and ADHD.

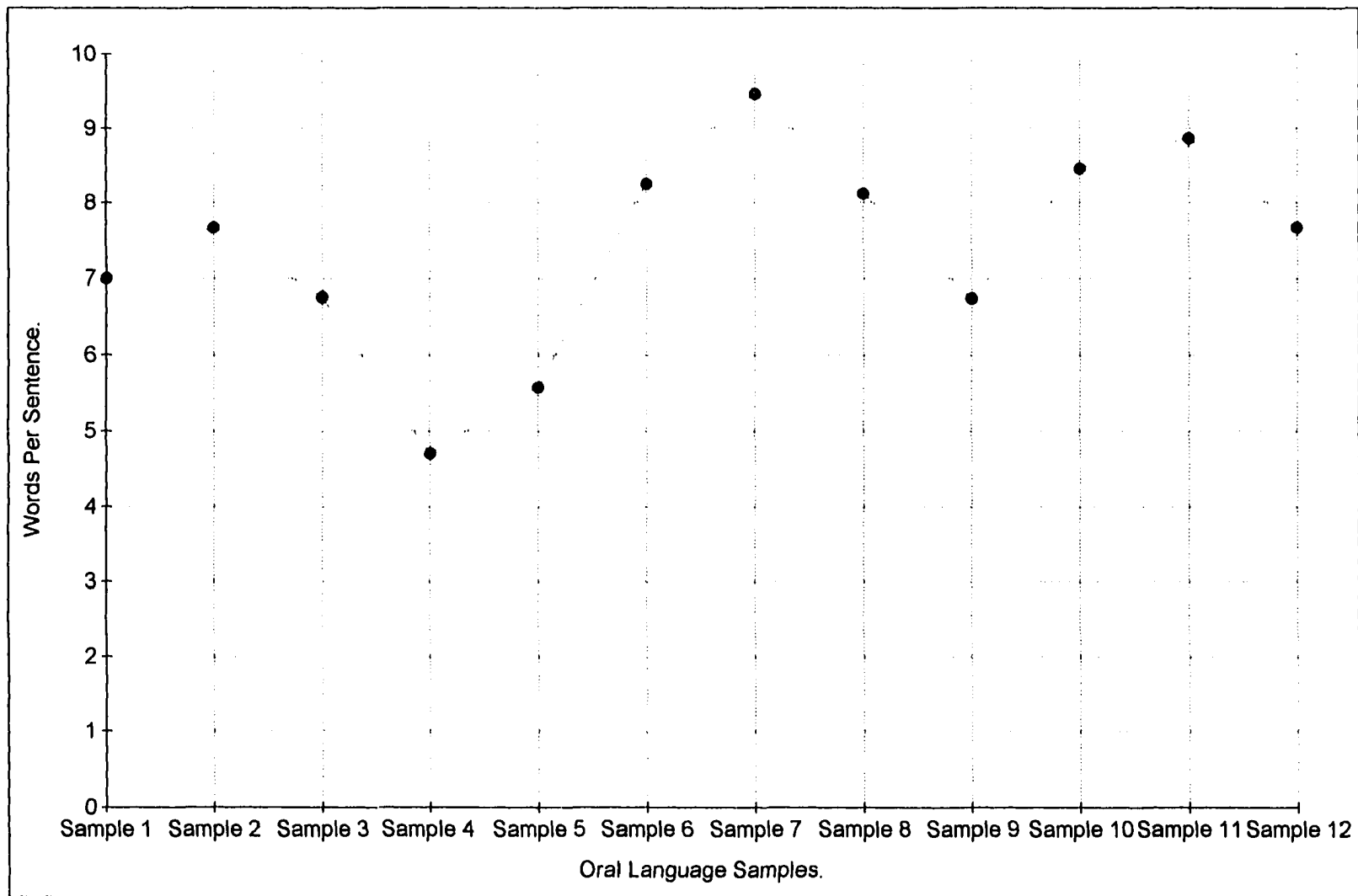


Figure 8. Average number of words per sentence for Student 6 who has EMI.

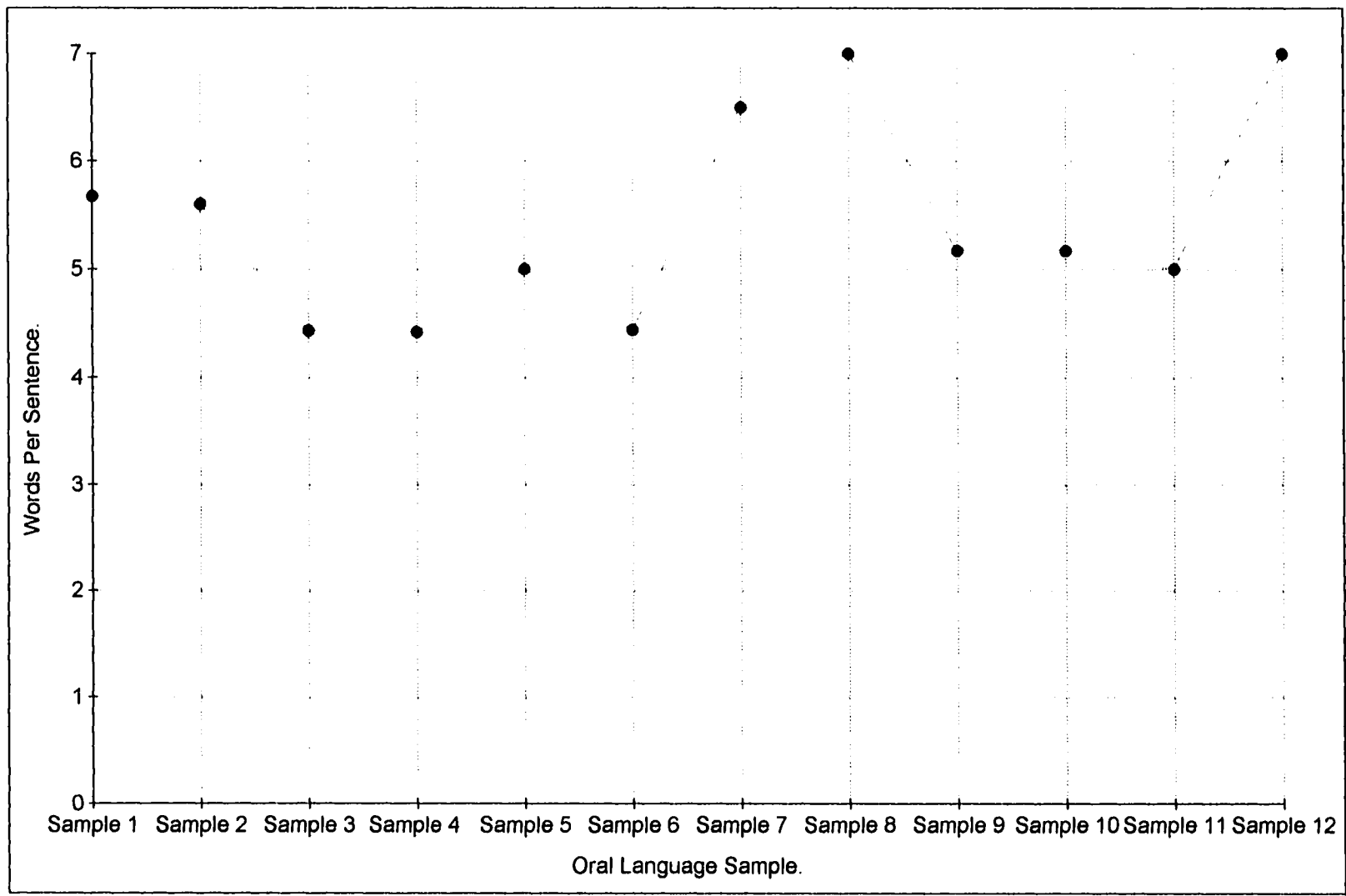


Figure 9. Average number of words per sentence for Student 9 who has Autism.

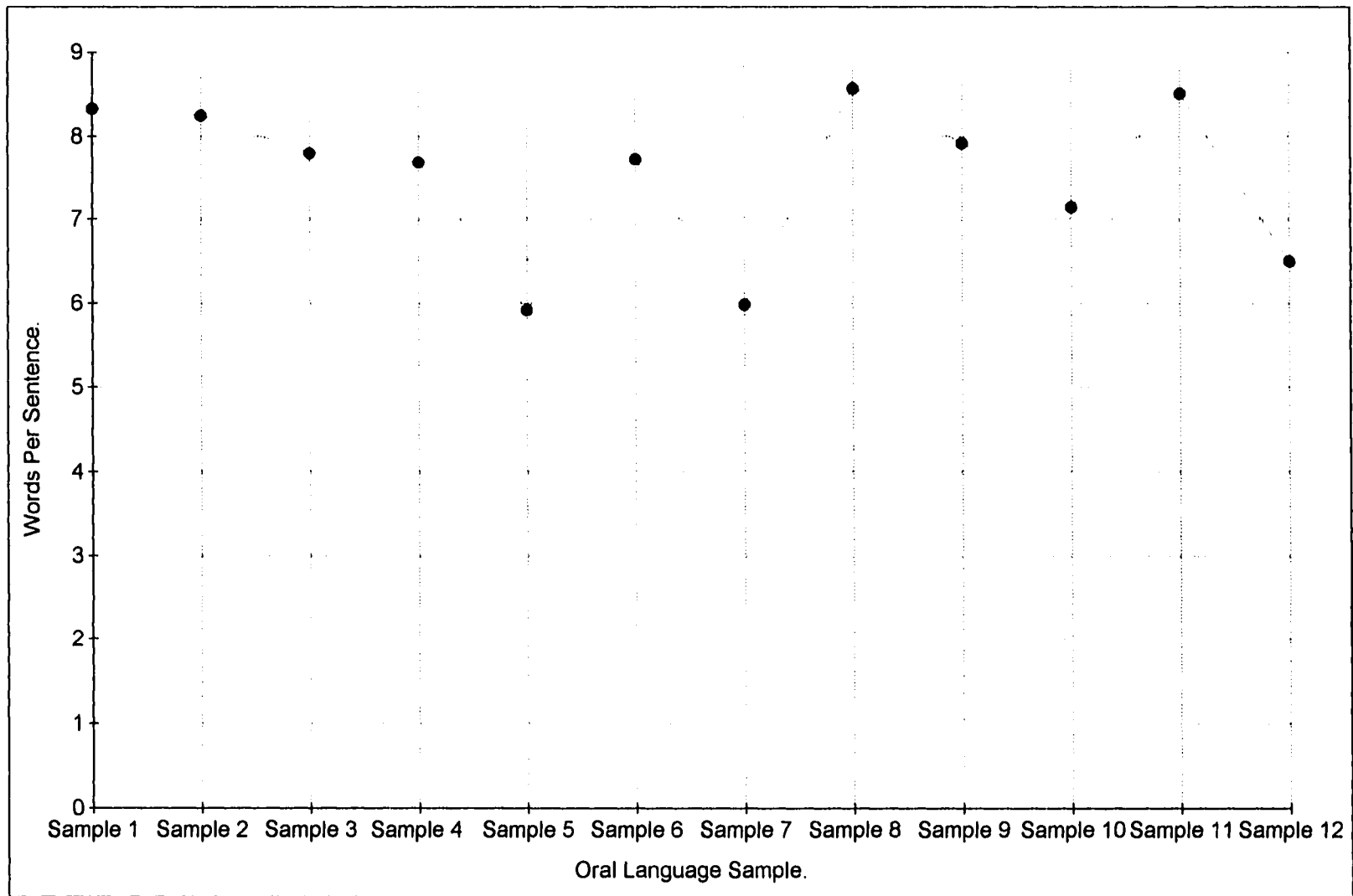


Figure 10. Average number of words per sentence for Student 2 who has EI.

Appendix B

	Student 1	Student 2	Student 3	Student 4	Student 5	Student 6	Student 7	Student 8	Student 9	Student 10
Age	8	9	7	8	9	8	7	9	9	9
Gender	Male	Female	Female	Male	Male	Male	Female	Male	Male	Female
Grade	3rd	3rd	2nd	2nd	3rd	2nd	2nd	3rd	3rd	3rd
Ethnicity	White	White	White	White	White	White	White	Hispanic	White	White
Disability	EMI/ADHD	EI	LD	EMI/ADHD	EMI	EMI	LD/ADHD	LD/ADHD	AI/ADHD	LD/ADHD
I.Q.	FSIQ=69	FSIQ=75	FSIQ=81	FSIQ=65	FSIQ=68	FSIQ=71	FSIQ=63	FSIQ=99	FSIQ=53	FSIQ=85
Medication for ADHD	Yes	N/A	N/A	No	N/A	N/A	NO	Yes	Yes	No
SES	Reduced	Reduced	Free	Free	Full	Free	Free	Free	Full	Free
Days Absent	3	4	3	5	9	6	2	0	3	2

EMI = Educatably Mentally Impaired
EI = Emotionally Impaired
LD = Learning Disabled
AI = Autistically Impaired
ADHD = Attention Deficit Hyperactivity Disorder

Mediation = Prescription medication for ADHD

SES is based on qualification for free lunch, reduced lunch, or full price for school hot lunch.

Table 1. Characteristics of students who participated in the study.

	Student 1	Student 2	Student 3	Student 4				
Age	9	9	9	9				
Gender	Male	Female	Female	Male				
Grade	3rd	3rd	3rd	3rd				
Ethnicity	White	White	White	White				
Disability	EI/ADHD	LD/ADHD	POHI/ADHD	LD				
I.Q.	Unavailable	Unavailable	Unavailable	Unavailable				
Medication for ADHD	No	No	Yes	No				
SES	Reduced	Reduced	Reduced	Free				
Days Absent								

EMI = Educatably Mentally Impaired
 EI = Emotionally Impaired
 LD = Learning Disabled
 AI = Autistically Impaired
 ADHD = Attention Deficit Hyperactivity Disorder

Mediation = Prescription medication for ADHD

SES is based on qualification for free lunch, reduced lunch, or full price for school hot lunch.

Table 2. Characteristics of students present for part of the intervention but not in study.

Appendix C

Please mark your three favorite subjects.

_____Math

_____Reading

_____A-O's

_____Spelling

_____DEAR

_____Handwriting

_____Science

_____Read Aloud

On a scale of 1 - 10, rate your enjoyment of A-O's.

One being lowest and ten being highest.

1 2 3 4 5 6 7 8 9 10

GRAND VALLEY STATE UNIVERSITY

ED 695 DATA FORM

NAME: Scott Riley Swinehart

MAJOR: (Choose only 1)

<input type="checkbox"/>	Ed Tech	<input type="checkbox"/>	Ed Leadership	<input type="checkbox"/>	Sec/Adult
<input type="checkbox"/>	Elem Ed	<input type="checkbox"/>	G/T Ed	<input type="checkbox"/>	Early Child
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<input type="checkbox"/>		<input type="checkbox"/>	Read/Lang Arts	<input type="checkbox"/>	

TITLE: Effects of Auditory Oral Patterns as an Intervention for Expressive Language with Students with Disabilities.

PAPER TYPE: (Choose only 1)

<input type="checkbox"/>	Project
<input checked="" type="checkbox"/>	Thesis

SUPERVISOR'S SIGNATURE OF APPROVAL



Using the ERIC thesaurus, choose as many descriptors (5-7 minimum) to describe the contents of your paper.

- | | |
|------------------------------------|--------------------------------|
| 1. Auditory Oral Patterns | 6. Learning Disabilities |
| 2. Expressive Language Remediation | 7. Educable Mental Impairments |
| 3. Syntax Remediation | 8. Autism |
| 4. Language Development | 9. |
| 5. Special Education | 10. |

ABSTRACT: The effects of using Auditory Oral Patterns to remediate the expressive language in students with disabilities was examined. Results indicate that students labeled as learning disabled, educable mentally impaired, autistic, and students with attention deficit hyperactivity disorder appeared to benefit from the intervention.