2021

Adolescents' Production of Clausal Structures in Written Narrative, Expository, and Persuasive Genres

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Adolescents' production of clausal structures in written narrative, expository, and persuasive genres.

Lauren Myers, B.S.

**Thesis submitted to the College of Education and Human Services
at West Virginia University
in partial fulfillment of the requirements for the degree of
Master of Science
in Speech-Language Pathology**

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2021

Keywords: school-age, complex syntax, clausal structures, written narrative, written expository, written persuasive, typical language

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ABSTRACT

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The aim of this study was to analyze written language samples across different genres and age groups to provide information about the production of complex syntax emergence as time progresses across tasks. Complex syntax is both a socially and academically relevant language skill that is observed to advance well into later life. In order to analyze language samples as a way to identify language abilities, we must first understand syntactic emergence across genres with adolescents who are identified as having typical language development. In this study, written narrative, expository, and persuasive language samples were elicited from sixty typical adolescents in sixth, ninth, and twelfth grade. Complex syntax was measured using subordination index (SI), as well as by identifying the types of dependent clauses (i.e., adverbial, noun, and relative) that were observed in each sample. Genre had a significant impact on the use of clauses across all grade levels. Specifically, the persuasive genre elicited a greater number of clauses on average than the narrative and expository genres for sixth and twelfth graders, with the ninth graders having similar clausal density for the expository and persuasive genres. The results also indicated that the type of genre impacted the types of clauses used. The results of this study indicate that speech-language pathologists should consider the type of genre or writing task given the impact on elicitation of clauses.

Acknowledgements

I would like to express my deepest appreciation to my thesis mentor, Dr. Jayne Brandel, for her provision of invaluable guidance and persistent support throughout the entirety of this project. It has been a great privilege and honor to work as her graduate research assistant for the past two years. This experience alone has contributed an exuberant amount of knowledge and inspiration that has helped shape me into a better clinician and researcher. Without her unwavering encouragement this thesis would not have existed.

In addition, I would also like to extend my sincere gratitude to my committee members, Dr. Michelle Moore and Dr. Vishnu Nair who provided patient advice and assistance throughout the research process. I am extremely grateful for all of their contributions. It is safe to say that my thesis would not have been written successfully without their indispensable knowledge and feedback.

Lastly, I would like to thank the School-Age Language Acquisition and Disorders Laboratory team for their assistance with organization and transcription of the language samples utilized in this thesis.

Table of Contents

Chapter I: Introduction and Review of Literature	1
Development of Written Language	2
Development of Complex Syntax.....	3
Development of Clauses.....	5
Development of Dependent Clauses.....	6
Development of Language Across Genres.....	8
Oral Language Development Across Genres.....	9
Written Language Development Across Genres.....	10
Chapter II: Present Study	12
Purpose	12
Chapter III: Methods	14
Participants	14
Language Sample Procedures.....	15
Transcription and Coding.....	16
Data Analysis	17
Chapter IV: Results	17
Research Question One	17
Table 4.1.	18
Table 4.2..	19
Research Question Two	19
Table 4.3.....	21
Table 4.4.....	21
Chapter V: Discussion	22
Clause Development and Use Across Written Genres	23
Clinical Implications	24
Limitations and Future Research	26
Conclusion	28
References	29
Appendix.....	36

Chapter I: Introduction and Review of Literature

The utilization of written discourse in the public-school system has become increasingly prevalent due to the outcomes of predicted success related to the language skills required by written genres (Common Core State Standards Initiative (CCRS), 2010). With the evidenced decline in writing abilities and indication that students are entering higher education with weak verbal abilities, written discourse is of utmost importance for academic success (Carter & Harper, 2013; Jameson, 2007). As we know, different genres, or language constructs, require a child to use meta-linguistic and meta-cognitive skills to convey ideas in different ways, for different purposes. Several language genres exist with the popular ones being conversational, narrative, expository, and persuasive. Previous research has been conducted to examine constructs in written and conversational discourse with each individual genre. However, the current literature remains scarce when addressing comparative data across all three genres (i.e., narrative, expository, and persuasive).

Written language samples are useful, naturalistic assessment tools that align with the academic curriculum (Nippold, 2016; Costanza-Smith, 2010; Common Core State Standards Initiative, 2010). These samples are able to be utilized by teachers and speech-language pathologists (SLPs) alike to assist in evaluating the current language skills of school-age students (Nippold, 2014; Price, Hendricks, & Cook, 2010; Wilson, Blackmon, Hall, & Elcholtz, 1991). Written language samples can also be beneficial for SLPs when devising treatment goals, as well as monitoring client progress when participating in treatment. However, in order to have a better understanding of syntactic differences that arise among each genre, research regarding the composition of all three genres by typical language learners is warranted. Therefore, this study serves the purpose of replicating and extending previous research by evaluating the development

of complex syntax in written language samples of typical students from grades six, nine, and twelve across three school-related genres: narrative, expository, and persuasive.

Development of Written Language

In the language development literature, there is a greater emphasis placed on the emergence of language abilities in young children as compared to older children. However, language development beyond the early acquisition of linguistic structures, such as average sentence length or grammaticality, is important because these are the constructs that contribute to a student's academic and vocational success (Nippold, 2016). It is known that by the age of five, typical developing children have mastered, or nearly mastered, Brown's grammatical morphemes (e.g., regular past-tense -ed, 3rd person singular -s, copula and auxiliary *to be*). However, this "mastery" does not account for the cognitive advances that result in gradual improvements related to reasoning, logic, abstract thought, self-regulation, and judgment that continues to develop well into adolescence (Nippold, 2016). These later cognitive advances promote the development of more finite aspects of language including complex syntactic structures. Specifically, when addressing the Common Core State Standards (CCSS), writing skills require mastery of both lower-order (e.g., handwriting, spelling, vocabulary, and sentence construction) as well as higher-order components (e.g., planning, drafting, revising, and editing), thus evidencing increased linguistic and cognitive demands when compared to spoken language.

Later language development, especially in the format of writing, is noted to occur in relation to two associated aspects: the development of linguistic literacy and discursive literacy (Beers & Nagy, 2011; Blum-Kulka, 2004; Ravid & Tolchinsky, 2002). Linguistic literacy requires students to gain a deeper understanding of their own spoken and written language systems by increasing their vocabulary usage, using more advanced morphological forms, and incorporating

greater syntactic complexity (Ravid & Tolchinsky, 2002). When developing discursive literacy, students are acquiring more complex language skills that incorporate pragmatics in the interpretation and construction of genre-appropriate language forms (Blum & Kulka, 2004). These genre-specific language advances are not simply macrostructural differences, but they also occur at the word and syntactic levels as well (Berman & Nir-sargiv, 2007). Specifically, later language advancement has been shown to be a much slower, less obvious event as compared to early language development, making it hard to specifically quantify growth (Nippold, 2016). Therefore, researchers utilize tasks that are both cognitively and linguistically challenging, often times including written language samples because of the ability to elicit low-frequency syntactic structures such as appositives, post modification with nonfinite verb phrases, and modal auxiliary verbs that result in elaborated clausal structures (Nippold, 2016). Effective writers coordinate multiple metacognitive skills in order to strategically construct a sample that contains a variety of sentence structures that facilitate easy reading and comprehension (Jagaiah, Olinghouse, & Kearns, 2020). Based on the genre and writing purpose, students utilize syntactically sophisticated sentences to express complex ideas. For example, if the writing purpose is to persuade an audience, the writer must utilize logical reasoning to create clausal links to connect facts and opinions (Jagaiah, Olinghouse, & Kearns, 2020). Written language samples provide the context for recognition of some of these lower-frequency syntactic structures such as adverbial conjunctions, more diverse subordination usage, and even different clausal structures that are not always observed in spoken language.

Development of Complex Syntax

The development of complex syntax is an essential component in becoming a proficient speaker or writer. It is also critical for one to express complicated ideas and thoughts. The use of

complex sentences that contain one or more dependent clauses plays an essential role in academic success (Common Core State Standards Initiative, 2010). School-age children are required to be able to describe, persuade, compare, infer, predict, and report on topics in spoken and written activities. In order to do so, children need to have an understanding of these advanced syntactic structures such as embedded clauses to express ideas concisely and efficiently (Arndt & Schuele, 2013; Beers & Nagy, 2011; Scott & Balthazar, 2010; Verhoeven et al., 2002). The development of complex syntax during adolescence is gradual and subtle, and these features may not be evident in a less linguistically demanding discourse (e.g., conversational) (Nippold, 2009). Because the changes are less dramatic than early developmental stages, it may be falsely assumed there is no syntactic growth across grades in secondary school. Therefore, the more challenging or demanding the discourse, the better the likelihood of detecting the syntactic growth.

Syntactic complexity has been researched so as to understand the language growth and development that occurs from early childhood well into adulthood. A systematic review conducted by Jagaiah, Olinghouse, and Kearns (2020) explored the syntactic complexity measures (SCMs) utilized in thirty-six qualifying studies that had participants in grades K-12 spanning from 1970 to 2019. The purpose of this review was to be the first to synthesize all SCMs within the specified literature timeframe and analyze how the use of SCMs varied by genre, grade level, students' writing ability, and writing quality. Jagaiah et al. (2020) identified over 48 different syntactic complexity measures for written language across the thirty-six studies with the most common measures being mean T-unit length, mean number of words per clause, and mean number of clauses per T-unit. The authors also noted that the literature varies in terms of syntactic complexity measures. According to Hunt (1965 and 1970) the most reliable

measures of syntactic complexity across development were: clauses per T-unit (i.e., a minimal terminal unit), words per clause, and words per T-unit. Another measure of syntactic complexity that has been shown to develop beyond early elementary-aged students is clausal density, which is "the average number of clauses (main and subordinate) per T-unit" (Scott, 1988, p. 58; also see Nippold, Hesketh, Duthie, & Mansfield, 2005; Nippold, 2009). During adolescence, children are exposed to a greater variety of subordinate clauses (adverbial, noun, and relative clauses) as well as sentence structures. With age, we see an increase in types of clausal usage through differentiation of subordinators (e.g., using *when*, but also *while*, *although*, *in spite of the fact that*, etc.) (Berman & Verhoeven, 2002).

Development of Clauses

The development of clauses is a key index of complex syntax when evaluating later language growth. Clausal development can be observed as early as age two in the spoken language of preschoolers (Arndt & Schuele, 2013), and it continues to develop during adolescence and into adulthood (Berman & Verhoeven, 2002; Hunt, 1970; Nippold, Hesketh, Duthie, & Mansfield, 2005; Nippold, Mansfield, & Billow, 2007). As students progress in school, materials presented in classes incorporate longer, more complex sentences that contain embedded clauses to express subtle meanings (Nippold, 2016). The importance of students learning to effectively use clauses is observed within the Common Core State Standards for English Language Arts. Students at the end of third grade should have the ability to use linking words and phrases, such as subordinating conjunctions to connect their opinions and reasons on a topic in written form (Common Core State Standards Initiative, 2010). These Common Core Standards put an emphasis on moving students towards higher linguistic complexity in their

reading and writing skills by way of providing explicit instruction and attention to the academic language features of students' writing samples.

Development of Dependent Clauses

The development of clauses begins during the preschool years in spoken language when producing simplistic single, main-clause utterances and progresses to the production of a variety of dependent clausal structures and multi-clausal utterances as adults (Arndt & Schuele, 2013). Weiler and Schuele (2014) observed that complex syntax emerges in the context of incomplete sentence production. For example, in their study two- to three-year-old children used subordinate conjunctions in "abandoned" or incomplete dependent clauses (e.g., "because I want it") which were not embedded within the main clause. Verhoeven et al. (2002) examined clause packing in both oral and written narratives relative to coordinating (e.g., for, and, but) and subordinating conjunctions (e.g., because, until, when) that were used by children and adults. A "clause package" was defined as a text unit that is linked by syntactic, thematic, and discursive criteria (Verhoeven et al., 2002). The results of this study indicated that children utilized more coordinating conjunctions within narrative genres as compared to adults who utilized a greater number of subordinating conjunctions. These findings indicated that complex syntax with clausal embedding continued to develop across the life span with reliance on coordinating constructions decreasing with age and use of subordinating constructions (primarily relative clauses) increasing.

When discussing clausal density within the current literature, researchers primarily rely on segmenting language samples into terminal units (T-unit) as a way to analyze samples systematically. A T-unit is an utterance that must contain a subject and predicate as the main

clause (e.g., "My mother picked me up from school today") and is able to also contain one or more subordinate clauses (e.g., "My mother, who is always late, picked me up from school today") (Hunt, 1970; Loban, 1976). There are three primary types of subordinate clauses, which are being examined within the current study. The subordinate clausal types include *nominal* ("I knew *my mom was picking me up from school*"), *relative* ("My mom, *who was late*, picked me up from school today."), and *adverbial* ("I was waiting outside *when my mom arrived*").

Similar to oral language, written language also includes complex syntax. The production of complex syntax has been observed to be a strong predictor of overall writing quality (Jagaiah, Olinghouse, & Kearns, 2020; Beers & Nagy, 2009; Crowhurst, 1983; Uccelli, Dobbs, & Scott, 2013). This is not surprising because as adolescents develop, they learn to utilize different complex sentences and clausal structures that allow for fluidity, or cohesion, when writing. In a study conducted by Beers and Nagy (2009), forty-one students in seventh or eighth grade from five suburban public schools in the pacific northwest were provided two different 10-minute periods to compose two writing samples, one narrative and one persuasive. The samples were analyzed for specific syntactic features (e.g., T-units and clause boundaries) as well as holistic writing quality which included ratings on quality for (a) the writer's focus on the topic, (b) supporting details/elaborations, (c) uses of effective language and word choice, and (d) tone or voice. From their study, Beers and Nagy (2009) observed that ratings of overall writing quality were positively correlated with the number of clauses per T-unit within written narratives and words per clause was positively correlated in the persuasive essays. This contrast between clauses per T-unit and words per clause indicated that these measures of syntactic complexity provided information about two distinct aspects of syntax usage for different genres. This indication further supports the importance of continued research of syntactic variants across

genres because previous attempts to explore complex syntax may have resulted in inconsistent results due to only using one measure of syntactic complexity (e.g., words per T-unit).

Development of Language Across Genres

As children grow, so do their syntactic and linguistic literacy lexicons. Beginning early in life, children use oral expression to communicate different messages to conversational partners. Bates & Goodman (1999) observed that most children acquire the basic syntactic structures, including morphosyntax and utilization of rule-like extensions of grammatical structures that comprise oral language, by the age of four. Later on, different genres include more advanced oral and written forms of expression in which syntactic complexity can be measured (Beers & Nagy, 2011; Berman & Nir-Sagiv, 2007; Brimo & Hall-Mills, 2018; Nippold & Ward-Lonergan, 2010). According to Halliday & Hansan (1985), genres are recognized as socially constructed language practices that are meant to serve specific social purposes (e.g., description, argumentative, persuasion, etc.) which each differ in regards to micro-level aspects (linguistic features) and macro-level aspects (organization and text structures) to express meaning in different forms.

The micro and macro level language-specific development is critical for academic registers including the ability to "write arguments to support claims," "write informative/explanatory texts to examine a topic and convey ideas, concepts, and information," and "write narratives to develop real or imagined experiences or events," and requires years of schooling and development (Common Core State Standard Initiative: English Language Arts, 2010, p. 41). Organizational structures as well as the purposes of narrative, expository, and persuasive genres differ, requiring students to utilize varying metacognitive skills. Although there has been limited research to examine language use across different genres (e.g., narrative,

expository, and persuasive), we have gained knowledge about linguistic features that are observed amongst each sample type.

Oral Language Development Across Genres

Several researchers have found that elementary-age students are able to generate oral language samples that demonstrate basic components of genre differentiation (Beers & Nagy, 2010; Duke & Kays, 1998; Pappas 1991, 1993; Purcell-Gates, 1988). Later into adolescence, we see a continuation of genre specific findings amongst oral discourse. When referring to the literature regarding genre-related effects on adolescents' spoken language, there have been studies that reported complex syntactic differences based on the genres in question. Nippold et al. (2014) collected spoken conversation and narrative tasks from forty adolescents who were an average of 14 years of age and analyzed them based upon two syntactic measures (i.e., mean length of C-unit, or communication unit, and clausal density). The findings from this study indicated that the narrative task elicited greater syntactic complexity than the conversational sample for both complex syntax measures. Similarly, Nippold et. al (2005) compared syntactic development between conversational and oral expository samples from 120 typical developing adolescents and adults (7-49 years of age) and observed that greater syntactic complexity was present in the expository genre regardless of age. The two measures which were significant in differentiating syntactic development were mean length of T-unit and relative clause production when contrasted with the additional syntactic measures of adverbial clauses, noun clauses, and clausal density. Another study that examined complex syntax within spoken language was conducted by Heilmann, Malone, & Westerveld (2020) and evaluated microstructural and macrostructural properties of oral persuasive samples obtained from 179 typical developing students in grades eight through twelve. Of significant interest was the finding that students

produced one dependent clause per C-unit on average and that the syntactic complexity results from the analysis were comparable to the written persuasive samples described in Nippold, Ward-Lonergan, and Fanning's (2005) study.

A more recent study conducted by Hill et al. (2021) evaluated oral recounts, narratives, expository, and persuasive samples from 160 adolescents (i.e., 12;0-15;11). This study examined syntactic and genre related findings across four different spoken tasks. The results indicated that type of genre had a significant relationship with adolescent discourse skills. Specifically, recounts were observed to elicit the least complex sentences, and the persuasive task had the most complex syntax. The narrative and expository genres did not differ significantly in regard to complex syntax, and they both yielded less syntactic complexity than the persuasive genre. These findings suggest a link between declarative knowledge, structure, and content. The same genre differentiation occurred in student writing samples where there were clear markers, or linguistic features, that accompanied certain genres (Brimo & Hall-Mills, 2019; Beers & Nagy, 2011).

Written Language Development Across Genres

Although the research is limited regarding genre differentiation within written language samples, there is evidence to suggest that genre continues to show significant effects on complex syntax. Specifically, written narratives necessitate an understanding of linguistic literacy, which overtime will morph into using more advanced linguistic resources (i.e., discursive literacy) in genre-appropriate ways. This genre sensitivity begins at a young age when children begin to distinguish the difference between telling a story and pretend play as well as can differentiate between fictional narratives and descriptions (Benson, 1993; Tolchinsky & Sandbank, 1994).

Brimo & Hall-Mills (2019) studied complex syntax in the spoken and written modalities of expository and persuasive genres. This study included sixty-four ninth grade students (ages 13;10 to 16 years) from a mid-sized city in the southeastern region of the United States. The results indicated that students produced more complex utterances in the persuasive genre than the expository genre (i.e., 16% more) with 7% of the utterances being more complex in the written modality. At the sentence level, findings were that the persuasive genre produced a greater clausal density which the authors attributed to the heavy reliance on complex thinking when formulating a persuasive sample. However, the results suggested that the types of clauses used depended on the genre. For instance, the expository genre included greater relative clause usage, and the persuasive genre contained greater noun complement clauses.

Beers & Nagy (2011) completed a longitudinal study of narrative, descriptive, compare/contrast, and persuasive essays for students who were in third and fifth grade and two years later in fifth and seventh grade. Due to the longitudinal nature of this study, aspects of genre-related syntactic development over time were able to be examined. Similar to Brimo and Halls-Mills (2019), the authors found that the persuasive genre elicited more complex syntax. Interestingly though, their results suggested that persuasive essays had more clauses per T-unit than the other genres and that the descriptive texts had more words per clause than the persuasive essays. The authors speculated that this was because speakers and writers had to provide details to support their opinions in a common "I think that X because of Y" pattern. Therefore, an increase in dependent clauses for the persuasive genre was likely observed because of the subordinating devices required for argumentation.

Another study conducted by Berman & Nir-sagiv (2007) compared written narrative and expository texts by analyzing the samples based on words per clause and overall use of relative

clauses. Findings from this study suggested that when considering words per clause, expository texts have a denser syntactic structure, albeit this difference was significant only for junior high school students compared to grade school, high school, and adults. Similar to Donovan & Smolkin (2006), they also found that there were more relative clauses in the expository genre than the narrative genre, with relative clause usage being a later-developing construct.

Some have argued that discourse genres vary in features of microstructure, such as syntactic constructions (Donoven & Smolkin, 2006). Persuasive genres produce greater subordinate and full propositional complement clauses in order to support the expressions of cause-effect relations (Brimo & Hall-Mills, 2019). On the other hand, the expository genre is more saturated with relative clauses to provide definitions and ideas due to its more "knowledge-driven" purpose. With that being said, we continue to have limited research to justify these genre-specific differences when comparing all genres within the same set of students, let alone across varying age groups to look at developmental differences in genre-related written language.

Chapter II: Present Study

Purpose

Although there is sufficient evidence that students' clausal density increases with age, there is little known regarding the development of complex syntax in relation to types of clausal structures in adolescents. Specifically, there is no current research available which examines the types of clausal structures utilized in written language as students develop. In addition, to our knowledge there is no literature relative to whether or not the genre type impacts clausal usage in written language. Information about the development of clauses in different written genres is

important when considering whether previous patterns observed in oral language are also present in the written modality. Given the emphasis on writing and the use of complex language structures with the CCSS, students' ability to be successful within the academic setting is impacted by the level of mastery which is expected for students at different stages of development. In addition, understanding whether certain types of clauses occur with higher frequency at different grade levels as well as in different genres would be informative in selecting targets for treatment as well as the type of genre to utilize within evaluations and treatment of those with language disorders.

To address these questions, the current study examined the clauses per T-unit, which is a measure of syntactic complexity, and analyzed the different types of clauses used to distinguish differences in the syntactic level of linguistic and discursive literacy development across the three different (i.e., narrative, expository, and persuasive) writing genres. With limited research examining non-narrative writing samples across development, there is minimal information known about how adolescents develop the genre-specific syntactic resources, such as dependent clause usage, necessary to express their ideas in writing effectively as well as concisely. Therefore, the present study aimed to assess this gap in the literature by comparing syntactic complexity across the three genres of narrative, descriptive expository, and persuasive writing samples in compositions from sixth, ninth, and twelfth grade students. In summary, the present study examined the following research questions:

- Is clausal density different across written genres for students with typical language in sixth, ninth, and twelfth grade?
- Do children with typical language from sixth, ninth, and twelfth grade use different types of clauses based on the genre?

Based on the current research, it was anticipated that the persuasive genre would have an overall higher clausal density due to the expectation of the writer having to express specific details to support their argument concisely and in an effective manner (Crowhurst & Piche, 1979; Beers and Nagy, 2011; Nippold, Ward-Lonergan, & Fanning, 2005; Nippold & Ward-Lonergan, 2010; Riley & Reedy, 2005). However, because the expository genre has had more relative clauses for provisions of definitions and ideas due to it being a more "knowledge-driven" genre, it was predicted that the expository genre would also include more relative clauses as compared to persuasive and narrative (Berman & Nir-sagiv, 2007; Donovan & Smolkin, 2006). As a result, it was hypothesized that the narrative genre would have the least differentiated syntactic complexity as observed by a lower clausal density and fewer uses of the different clause types.

Chapter III: Methods

Approval to conduct the research was obtained from the university's Institutional Review Board (IRB) for human subject research as well as the participating school district.

Participants

The participants of this study were a total of sixty students enrolled in sixth, ninth, and twelfth grade general education English classes. Thirty-two males and twenty-eight females participated in the current study and were not currently receiving special education services based on their classroom teacher's report. Twenty students were in sixth grade ranging between 11;1 and 12;5 years old, twenty students were in ninth grade ranging between 12;5 and 15 years of age, and twenty students were in twelfth grade ranging between 16;11 and 18;3 years of age. Participants were students in a public-school district located in a rural region of West Virginia. School demographics for the 2020-2021 school year, when the writing samples were

gathered, indicated that 44.75% of the student population was categorized as low-socioeconomic status (SES) based on their eligibility for free or reduced lunch. The high school (including the ninth and twelfth grade participants) had no students who were English Language Learners (ELL) and 100% of student attendees identified as white. The gender split for the school was 47.87% (female) to 52.13% (male).

Language Sample Procedures

For the current study, individual consent by participants and families was not required because the activities were administered as part of the general education curriculum. Therefore, consent was gained from the school district who then provided caregivers the opportunity to opt out of the research activity by contacting the classroom teacher using the typical mode of communication between the school and family. The writing samples were then gathered within the students' classrooms by their teachers after they had completed either an in-person or recorded training session. Per teacher report, students were identified as either receiving special education services (i.e., speech, language, reading, math, other) or not. Only students who were not receiving special education services and who had completed each writing task (narrative, expository, and persuasive) in the selected grades were included.

All three samples were obtained within the same two weeks to minimize developmental factors when comparing abilities across genres. For each genre task, students were provided with a planning sheet and a writing sheet. The teacher then read the writing prompt which included a narrative (Sun & Nippold, 2012), expository (Sun & Nippold, 2010), and persuasive (Nippold et al., 2005) task (Appendix A). Students were given five minutes to plan and twenty minutes to write. All essays were then collected by the classroom teacher, sealed in an envelope, and returned to the researchers with each sample gathered on a different day.

Transcription and Coding

The samples were randomly assigned a participant number by research personnel who were not transcribing or coding. Each essay was transcribed by lab personnel who were blind to participant age, grade level, gender, and language ability. They were transcribed using the Systematic Analysis of Language Transcripts (SALT) software program utilizing the transcription guidelines consistent with the SALT software guidelines manual (SALT; Miller, Andriacchi, & Nockerts, 2011). Language samples were segmented into terminable units (T-units) where repetitions, abandoned utterances, reformulations, and parenthetical remarks were transcribed but excluded from analyses. Once each sample was transcribed, a second examiner reviewed the file line-by-line. Differences in transcription or coding between the first and second transcriber were discussed, and agreement was obtained or the specific T-unit in question was excluded from the final transcript. Agreement between transcribers was achieved for all differences within the samples included in the present study.

The written narrative, expository, and persuasive tasks were then coded by the author for usage of differing types of clausal structures (i.e., noun clauses, relative clauses, and adverbial clauses). This coding system accounted for all instances of dependent clause usage including relative clauses [RC], adverbial clauses [AC], and noun clauses [NC]. An example of a coded sample can be found in Appendix B.

Twenty percent of the samples (N= 12 participants which was 36 samples) were randomly selected for examining the reliability of the coding of clauses. Files were randomly identified and independently coded by two trained examiners. Of the 251 T-units across the twelve samples, coders one and two achieved agreement on 244 of the T-units, thus resulting in 97% reliability.

Data Analysis

Analysis of the coded samples was completed using SALT (2019) to obtain measures of Subordination Index (SI), Mean Length of Utterance in Words (MLU-W), Number of Total Words (NTW), Number of Different Words (NDW), and Total Number of T-Units. To account for the possibility that length of the sample might impact clausal density, a new variable, clause rate was calculated. This variable was calculated by dividing the clausal density by the total T-units for each language sample.

For the first research question, a 3x3 (grade x genre) mixed analysis of variance (ANOVA) was performed with grade being a between-subjects variable and genre being a within-subjects variable. The data relative to the second research question were analyzed using a 3x3 (grade x genre x clausal type) mixed ANOVA with genre and clausal type both serving as within-subject variables and grade being a between-subject variable. Follow up *t* tests were completed to analyze post hoc pairwise comparisons. Due to completing multiple comparisons, a Bonferroni adjustment was performed to correct for the increased possibility of a Type I error. The significance level was adjusted to 0.006, which was obtained by dividing 0.05, the typical alpha level, by nine, the number of tests run. Therefore, any reported *p* value less than .006 was deemed statistically significant.

Chapter IV: Results

Research Question One:

Descriptive statistics for the sixty participants can be found below (Table 4.1). To evaluate whether adolescents' clausal density production was affected by genre (narrative,

expository, and persuasive) and grade level (sixth, ninth, and twelfth), a 3x3 mixed ANOVA was completed with clausal density serving as the dependent variable. Although five outliers were identified via inspection of a boxplot and one significant value was identified by Shapiro-Wilk's test of normality indicating that normal distribution cannot be assumed, the analysis was continued because ANOVAs are robust to deviations of normality. The Greenhouse-Geisser correction was used to interpret significance because Mauchly's test of sphericity indicated that the assumption of sphericity was violated for the two-way interaction ($\chi^2(2) = 6.88, p = 0.032$) (Maxwell & Delaney, 2004).

Table 4.1. Descriptive data for Question 1.

Measure	Sixth Grade <i>n</i>= 20	Ninth Grade <i>n</i>= 20	Twelfth Grade <i>n</i>= 20
Age			
<i>M</i>	11.66	14.48	17.65
Range	11.08- 12.42	12.42- 15.00	16.92- 18.25
T-Units			
<i>M</i>	13.72	20.28	17.38
<i>SD</i>	7.29	9.91	8.57
MLUw			
<i>M</i>	10.01	12.25	12.08
<i>SD</i>	2.64	2.75	3.14
NTW			
<i>M</i>	128.7	228.73	199.80
<i>SD</i>	59.47	72.06	84.12
SI			
<i>M</i>	1.5	1.59	1.51
<i>SD</i>	0.33	0.29	0.28

There was a statistically significant main effect of genre ($F(1.80, 102.18) = 22.40, p < 0.001$, partial $\eta^2 = 0.28$) but no significant main effect of grade ($p = 0.18$). However, there was a statistically significant interaction between genre and grade on clausal density, $F(3.59, 102.18) =$

2.60, $p < 0.046$, partial $\eta^2 = 0.084$. Simple main effects were analyzed further with post hoc pairwise comparisons using paired-samples t tests, with a significance level of $p \leq 0.006$ after applying a Bonferroni correction due to multiple comparisons. Results showed statistically significant differences between the narrative and expository genres within each grade ($p_{6th\ grade} = 0.001$, $p_{9th\ grade} = 0.006$, $p_{12th\ grade} = 0.003$) and significant differences between the narrative and persuasive genres for grades 6 and 12 ($p_{6th\ grade} < 0.001$, $p_{12th\ grade} = 0.005$). Within each grade, on average, narratives had the least amount of clause usage when compared to the expository and persuasive genres. There were no statistically significant differences between the expository and persuasive genres at any grade level (See Table 4.2).

Table 4.2. Means and standard deviations of clausal density for genres by grade (Question 1).

Genre	Sixth Grade	Ninth Grade	Twelfth Grade
Narrative <i>M(SD)</i>	1.24(0.17)	1.47(0.19)	1.37(0.23)
Expository <i>M(SD)</i>	1.52(0.24)	1.68(0.27)	1.56(0.24)
Persuasive <i>M(SD)</i>	1.73(0.36)	1.63(0.35)	1.61(0.33)

Research Question Two:

A 3x3 mixed ANOVA was completed to examine the effects of grade, genre, and clause type on clause rate. As previously stated, the clause rate was used in the analysis to control for the length of the sample and its impact on the number of clauses. Normal distribution was not achieved. However, as with question 1, analysis was continued due to the robustness of

ANOVAs. There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p > 0.05$). The sphericity assumption was met ($p > 0.05$) using Mauchly's test of sphericity for clause type but was not met for genre ($\chi^2(2) = 9.199, p = 0.01$) or genre x clause type ($\chi^2(2) = 21.697, p = 0.01$). Greenhouse-Geisser estimates were applied in the instances where the sphericity assumption was not met.

Significant main effects of the three-way comparison were observed for genre ($F(1.737, 99.002) = 19.476, p < 0.001$, partial $\eta^2 = 0.255$ with degrees of freedom corrected) and clause type ($F(2, 114) = 36.162, p < 0.001$, partial $\eta^2 = 0.388$), with no statistically significant effect of grade ($p = 0.124$). There was no statistically significant three-way interaction between genre, clause type, and grade $F(8, 228) = 1.830, p = 0.073$, partial $\eta^2 = 0.060$. However, all three two-way ANOVAs had a statistically significant interaction. The focus will be on the two interactions that pertain to the research question, clause type x genre ($F(3.400, 193.813) = 14.567, p < 0.001$, partial $\eta^2 = 0.204$ with degrees of freedom corrected) and genre x grade ($F(4, 114) = 2.605, p = 0.039$, partial $\eta^2 = 0.084$).

Effects of the two-way interactions of interest were further analyzed with post hoc pairwise comparisons using paired-samples t tests, with a significance level of $p \leq 0.006$ after applying a Bonferroni correction due to multiple comparisons. When examining clause rate across genre for each grade, sixth graders were observed to have the highest rate of clause use in the persuasive genre as compared to both narrative ($p \leq 0.001$) and expository ($p = 0.006$) genres, and a higher rate of clause use in expository as compared to narrative ($p = 0.002$) (Table 4.3). No statistically significant differences were observed for rate of clause use for ninth and twelfth grade writing samples in the three genres ($p \geq 0.009$).

Table 4.3. Genre and grade effects on rate of clause use (Question 2).

Genre	Sixth Grade	Ninth Grade	Twelfth Grade
Narrative <i>M(SD)</i>	0.083(0.053) ^{ac}	0.158(0.062)	0.128(0.071)
Expository <i>M(SD)</i>	0.164(0.074) ^{ab}	0.226(0.094)	0.177(0.072)
Persuasive <i>M(SD)</i>	0.239(0.121) ^{bc}	0.209(0.125)	0.200(0.102)

^{abc} - Means that share superscripts are statistically significant at $p \leq 0.006$

Clause type within genre was examined as well (Table 4.4). For the narrative genre, adverb ($p \leq 0.001$) and noun clauses ($p \leq 0.001$) were utilized statistically significantly more often than relative clauses, but no statistically significant difference between the use of adverb and noun clauses was observed in the narrative writing samples ($p = 0.089$). For the expository genre, adverb clauses were used significantly more often than noun clauses ($p \leq 0.001$) with no other differences observed in the types of clause use. The pattern of clause type use for the persuasive writing samples was similar to the pattern observed in the narrative samples, i.e. adverb ($p \leq 0.001$) and noun clauses ($p \leq 0.001$) were both used statistically significantly more often than relative clauses and no statistically significant difference was observed between adverb and noun clause use ($p = 0.011$).

Table 4.4. Interaction between genre and clause type usage (Question 2).

Clause Type	Narrative	Expository	Persuasive
Adverbial <i>M(SD)</i>	0.182(0.144) ^a	0.240(0.153) ^c	0.232(0.188) ^d

Relative <i>M(SD)</i>	0.043(0.054) ^{ab}	0.173(0.140)	0.088(0.081) ^{de}
Noun <i>M(SD)</i>	0.145(0.106) ^b	0.154(0.100) ^c	0.329(0.260) ^e

^{abc} - Means that share superscripts are statistically significant at $p \leq 0.006$

Chapter V: Discussion

The purpose of this study was to examine the use of clauses with age-related growth of typical developing students in sixth, ninth, and twelfth grades across written narrative, expository, and persuasive samples. Specifically, investigation of genre-related syntactic differences were examined through observation of dependent clause usage. The findings indicated that genre had a significant impact on clausal density for all grade levels. Within each grade, the narrative genre produced the fewest clauses as compared to expository and persuasive compositions, meaning that the persuasive and expository genres promoted greater dependent clause usage across the age groups. Although no statistical significance was observed between the expository and persuasive genres, the descriptive statistics indicated a higher clausal density for the persuasive genre in grade six and twelve, with ninth graders having a slightly higher clausal density within the expository genre.

When examining the interaction between grade, genre and clause type, a three-way interaction was not observed. However, two-way interactions were observed to be statistically significant for all variables. Specifically, a significant interaction between grade and genre indicated that for sixth grade students there was a higher rate of clause use observed in the persuasive and expository genres than the narrative genre. Another significant interaction between clause type and genre was also noted for the narrative and persuasive genres in that a

greater number of adverbial and noun clauses were utilized as compared to relative clauses. For the expository genre, a higher rate of adverbial clauses than noun clauses was observed. Of additional importance, the expository genre produced the greatest number of relative and adverbial clauses, while the persuasive genre produced the highest number of noun clauses.

Clause Development and Use Across Written Genres

The current study extends the research on written language samples by analyzing clausal density results across three different genres for the same subjects. The results of this study suggested that the persuasive genre elicits an overall higher production of complex syntax. These findings are similar to those of Beer and Nagy (2011) and Brimo and Hall-Mills (2019) who also observed the largest subordination index for the written persuasive genre. Because the persuasive genre requires details for supporting opinions and arguments to be made, a context is present that naturally increases the opportunity for using dependent clauses.

An additional similarity identified from the results of this study related to the clause type patterns that emerged across the narrative, expository, and persuasive written genres. From the data gathered relative to the second research question, it was noted that adolescents, regardless of age, used the greatest number of relative clauses within the expository genre and the greatest amount of noun clauses within the persuasive genre. These findings are similar to those of Brimo and Hall-Mills (2019) who compared the spoken and written expository and persuasive texts of ninth graders and Beers and Nagy (2011) who examined written samples across four genres (i.e., narrative, descriptive, compare/contrast, and persuasive) from students in grades three and five and then reassessed when the same students were in grades five and seven. Both studies, regardless of the age ranges, observed that the persuasive genre elicited more noun clauses, or “full propositional complement” clauses with fewer relative clauses. Furthermore, Nippold et. al

(2008) who examined oral conversation and expository samples of eighth graders, also found that the expository genre promoted greater use of relative clauses. These findings indicate that regardless of mode of discourse (i.e., oral versus written), similar patterns relative to the types of clauses used are present across genres. There is additional support of this hypothesis from other literature that has observed the expository genre to be more “knowledge-driven” where expectations for the use of relative clauses is reasonable due to students providing definitions of main ideas and concepts (Nippold & Ward-Lonergan, 2010). The primary contribution of the current study is that it is the first to compare narrative, expository, and persuasive written language samples from the same participants across three grade levels while specifically examining the effect of genre and age (i.e., grade) on the types of clauses used. Based on the current results, the narrative genre elicited the fewest clauses and followed a pattern that was similar to the persuasive genre where fewer relative clauses were used. For the narrative genre, the adverbial clause type was utilized the most.

Clinical Implications

The current study offers new information relative to genre and its effects on complex syntax in written language production of school-age children. As previously mentioned, complex syntax plays an important role in written language development as students begin to develop more advanced language structures to assist with offering variety and cohesion among written samples. The results from this study are important for SLPs and educators alike when considering efficiency of collecting language samples. Written language samples are suggested to indicate greater clausal density, but from this study it is also recognized that genre type impacts the frequency with which clauses are used as well as the types of clauses used. This is important to know because speech-language pathologists (SLPs) are encouraged to utilize

language samples when evaluating students as well as when monitoring progress. To effectively utilize these contextualized activities (i.e., writing samples), SLPs need to select activities which best align with the language structures that are needing to be examined. For instance, when using language sampling as an assessment tool, clinicians should attempt to elicit the most complex syntax. To do so, it may be necessary to incorporate tasks which have more challenging genres, such as expository and persuasive. In addition, clinicians should consider utilizing written expository tasks when providing treatment or evaluating a student's use of relative clauses, which has been observed to be a linguistic skill that is significantly less developed in students with language disorders as compared to their peers with typical language.

Beyond working with students with language disorders, it is also valuable to understand the impact of the writing task (i.e., genre) when providing classroom instruction to students to improve their complex language skills as needed to achieve the relevant CCSS. Teachers often provide direct instruction to students in the classroom setting to improve the use of necessary language structures due to measures included in the state assessments. Educational professionals benefit from having a strong understanding of the types of tasks which will naturally elicit the most instances of the structure being taught. Although not yet examined directly, it is likely that instruction in genres similar to those elicited in state assessment would improve the use of appropriate complex language structures and result in better student performance on these exams.

Another integral part for SLPs relates to utilizing tasks which incorporate treatment targets. However, in order to be intentional with selection of language related treatment targets, or in this case contexts, one must understand what each context, or genre, is anticipated to produce. Although this study examined typical children, the findings suggest that the persuasive

genre may be a good treatment context for eliciting complex syntax, specifically dependent clauses. In addition, when investigating specific dependent clause types, educators and clinicians are able to identify appropriate genre contexts for promoting usage of different clause types. For example, it is recognized in the literature that typical developing peers utilize greater relative clauses than students with specific language impairment (SLI) (Nippold et al., 2008). Given that production of relative clauses is affected in students with SLI, evidence from this study indicated that utilization of a written expository as a treatment context is more likely to promote greater relative clause usage than the narrative and persuasive genres.

Limitations and Future Research

The results of this study provide practicing clinicians and educators further knowledge regarding the complexity of language used in written language samples for school-aged students. However, there are limitations of this study that would benefit from further research. First, this study relied upon others to determine the language level of participants, that is whether school teachers indicated whether or not the students were receiving any special education services. No standardized assessment or alternative testing was completed by the researchers to underlying disorders were not present that could impact their ability to complete the tasks as a student with skills that are within normal limits. An additional area of potential concern relates to the socio-economic status of the students included in this study. All participants were obtained from a single school district located in a rural, southern state. As previously stated, the SES was 44.75% of the school's total population qualified for free or reduced lunch rates. This is important to note because the results of this study may not generalize to adolescents who are of higher SES. Additionally, the sample size was limited to 20 students from each of the three grade levels (i.e., sixth, ninth, and twelfth). It is unclear if the findings of the present study would remain with an

increased participant size from a more diversified socio-economic status as well as additional inclusion criteria specificity would assist with further support that the results of this study are indicative of the written developmental skills of typically developing adolescents.

Another aspect to consider is the elicitation mode. The current study included written language samples. Additional research comparing written and spoken language samples of all three genres (i.e., narrative, expository, and persuasive) obtained from adolescents of varying ages would only add to the knowledge regarding specific clausal development. Due to the results of this study, it would be beneficial to also examine spoken samples to aid in recognition of what clause types are found in the different genres. As mentioned previously, this information will aid SLPs in making intentional decisions regarding therapy targets due to the evidence that certain genres promote different clause structures and types.

Although this study analyzed clause type usage across genres, further analysis of related to subordinating conjunction usage is warranted to examine additional clause structure analysis as students age. It would be beneficial to bring recognition to the common subordinating conjunctions noted across genre type as well as to look into when differentiation of conjunctions begins to arise for adolescents among the different genres. This would provide additional application information for speech-language pathologists and educators alike to better understand clause development among written language. An additional interest of future research may be to look into non-finite constructions as well (e.g., infinitives, gerunds, and participles) because there is support in the literature to suggest these constructions are indicative of “maturely proficient clause packing” (Berman & Verhoeven, 2002). This may account for the observation of ninth graders producing greater clausal density than the twelfth graders if the twelfth graders are utilizing more non-finite syntax constructions that were not analyzed in the current study.

Lastly, although it is important to understand clause usage by students who are typically developing, future research would benefit from comparison of these structures to children with language disorders to bring light to error patterns for treatment targets. This information would also aid in contributing to normative data for adolescent's production of complex syntax across language sampling tasks.

Conclusions

The results of this study indicated that clause usage is significantly impacted by genre across grades six, nine, and twelve. As predicted, the persuasive genre elicited a greater subordination index than the expository and narrative writing samples for sixth and twelfth graders with the ninth graders having similar SI for both the expository and persuasive genres. Upon further analysis regarding the clause type used, genre played a significant role. Adolescents were observed to include a greater number of adverbial and noun clauses in the narrative and persuasive genres with the expository genre promoting relative clause usage. Although similar findings were observed between the narrative and persuasive genres for clause type usage, the persuasive genre elicited more dependent clauses, with the highest being noun clauses. These findings support previous research indicating that clause types are impacted by genre constructs with expository being more knowledge-driven thus promoting relative clauses and persuasive requiring explanatory details of key ideas, resulting in greater noun clause usage. Further research is warranted to continue the assessment of the development of complex syntax across narrative, expository, and persuasive genres to gain more information regarding genre related impacts given the limited research completed thus far.

References

- Arndt, K. B., & Schuele, C. M. (2013). Multiclausal Utterances Aren't Just for Big Kids: A Framework for Analysis of Complex Syntax Production in Spoken Language of Preschool- and Early School-Age Children. *Topics in Language Disorders*, 33(2), 125–139. <https://doi.org/10.1097/TLD.0b013e31828f9ee8>
- Bates, E., & Goodman, J. (1999). On the emergence of language from the lexicon. *The emergence of language*, 29-79.
- Beers, S. F., & Nagy, W. E. (2011). Writing development in four genres from grades three to seven: Syntactic complexity and genre differentiation. *Reading and Writing*, 24(2), 183–202. <https://doi.org/10.1007/s11145-010-9264-9>
- Beers, S. F., & Nagy, W. E. (2009). Syntactic complexity as a predictor of adolescent writing quality: Which measures? Which genre? *Reading and Writing*, 22(2), 185–200. <https://doi.org/10.1007/s11145-007-9107-5>
- Benson, M. S. (1993). 4- and 5-year olds' narratives in pretend play and storytelling. *First Language*, 13, 203–224.
- Berman, R. A. (2004). *Language Development across Childhood and Adolescence*. John Benjamins Publishing Company. <http://ebookcentral.proquest.com/lib/wvu/detail.action?docID=622747>
- Berman, R. A., & Nir-sagiv, B. (2007). Comparing Narrative and Expository Text Construction Across Adolescence: A Developmental Paradox. *Discourse Processes*, 43(2), 79–120. <https://doi.org/10.1080/01638530709336894>

- Berman, R., & Verhoeven, L. (2002). Cross-Linguistic Perspectives on the Development of Text-Production Abilities: Speech and Writing. *Written Language & Literacy*, 5, 1–43. <https://doi.org/10.1075/wll.5.1.02ber>
- Blum-Kulka, S. (2004). The role of peer interaction in later pragmatic development. *Language development across childhood and adolescence*, 191-210.
- Brimo, D., & Hall-Mills, S. (2019). Adolescents’ production of complex syntax in spoken and written expository and persuasive genres. *Clinical Linguistics & Phonetics*, 33(3), 237–255. <https://doi.org/10.1080/02699206.2018.1504987>
- Carter, M. J., & Harper, H. (2013). Student writing: Strategies to reverse ongoing decline. *Academic Questions*, 26(3), 285-295.
- Crowhurst, M. (1983). Syntactic complexity and writing quality: A review. *Canadian Journal of Education/Revue canadienne de l'education*, 1-16.
- Crowhurst, M., & Piche, G. L. (1979). Audience and Mode of Discourse Effects on Syntactic Complexity in Writing at Two Grade Levels. *Research in the Teaching of English*, 13(2), 101–109. JSTOR.
- Donovan, C. A., & Smolkin, L. B. (2006). Children’s Understanding of Genre and Writing Development. In *Handbook of writing research* (pp. 131–143). The Guilford Press.
- Duke, N. K., & Kays, J. (1998). Can I say ‘Once upon a time?’: Kindergarten children’s developing knowledge of information book language. *Early Childhood Research Quarterly*, 13, 295–318.
- Halliday, M. A. K., & Hasan, R. (1985). *Language, context and text: Aspects of language in socialsemiotic perspective*. Geelong, VIC, Australia: Deakin University Press.

- Hill, E., Whitworth, A., Boyes, M., Ziegelaar, M., & Claessen, M. (2021). The influence of genre on adolescent discourse skills: Do narratives tell the whole story? *International Journal of Speech-Language Pathology*, 1–11. <https://doi.org/10.1080/17549507.2020.1864016>
- Hunt, K. W. (1970). Syntactic maturity in schoolchildren and adults /.
[Chicago : <http://hdl.handle.net/2027/pst.000000844109>
- Hunt, K. W. (1965). Grammatical Structures Written at Three Grade Levels. NCTE Research Report No. 3.
- Jameson, D. A. (2007). Literacy in decline: Untangling the evidence. *Business Communication Quarterly*, 70(1), 16-33.
- Jagaiah, T., Olinghouse, N. G., & Kearns, D. M. (2020). Syntactic complexity measures: Variation by genre, grade-level, students' writing abilities, and writing quality. *Reading and Writing*, 33(10), 2577–2638. <https://doi.org/10.1007/s11145-020-10057-x>
- Lenneberg, E. H. (1967). The biological foundations of language. *Hospital Practice*, 2(12), 59-67.
- Loban, W. (1976). Language Development: Kindergarten through Grade Twelve. NCTE Committee on Research Report No. 18.
- Maxwell, S. E. & Delaney, H. D. (2004) Designing Experiments and Analyzing Data: A model comparison perspective, Second Edition, Lawrence Erlbaum Associates.
- Miller, J. F., Andriacchi, K., & Nockerts, A. (2011). Assessing language production using SALT software: A clinician's guide to language sample analysis. Middleton, WI: SALT Software, LLC.

- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects*. Washington, DC: Authors
- Nippold, M. A. (2014). *Language sampling with adolescents: Implications for intervention*. Plural publishing.
- Nippold, M. A. (2016). *Later language development: School-age children, adolescents, and young adults*. PRO-ED, Inc. 8700 Shoal Creek Boulevard, Austin, TX 78757-6897.
- Nippold Marilyn A. (2009). School-Age Children Talk About Chess: Does Knowledge Drive Syntactic Complexity? *Journal of Speech, Language, and Hearing Research*, 52(4), 856–871. [https://doi.org/10.1044/1092-4388\(2009/08-0094\)](https://doi.org/10.1044/1092-4388(2009/08-0094))
- Nippold Marilyn A., Hesketh Linda J., Duthie Jill K., & Mansfield Tracy C. (2005). Conversational Versus Expository Discourse. *Journal of Speech, Language, and Hearing Research*, 48(5), 1048–1064. [https://doi.org/10.1044/1092-4388\(2005/073\)](https://doi.org/10.1044/1092-4388(2005/073))
- Nippold Marilyn A., Mansfield Tracy C., & Billow Jesse L. (2007). Peer Conflict Explanations in Children, Adolescents, and Adults: Examining the Development of Complex Syntax. *American Journal of Speech Language Pathology*, 16(2), 179–188. [https://doi.org/10.1044/1058-0360\(2007/022\)](https://doi.org/10.1044/1058-0360(2007/022))
- Nippold Marilyn A., Mansfield Tracy C., Billow Jesse L., & Tomblin J. Bruce. (2008). Expository Discourse in Adolescents With Language Impairments: Examining Syntactic Development. *American Journal of Speech-Language Pathology*, 17(4), 356–366. [https://doi.org/10.1044/1058-0360\(2008/07-0049\)](https://doi.org/10.1044/1058-0360(2008/07-0049))

- Nippold, M. A., & Sun, L. (2010). Expository writing in children and adolescents: A classroom assessment tool. *Perspectives on Language Learning and Education*, 17(3), 100-107.
- Nippold MA, & Ward-Lonergan JM. (2010). Argumentative writing in pre-adolescents: The role of verbal reasoning. *Child Language Teaching & Therapy*, 26(3), 238–248. <https://doi.org/10.1177/0265659009349979>
- Nippold MA, Ward-Lonergan JM, & Fanning JL. (2005). Persuasive writing in children, adolescents, and adults: A study of syntactic, semantic, and pragmatic development. *Language, Speech & Hearing Services in Schools*, 36(2), 125–138.
- Pappas, C. C. (1991). Young children’s strategies in learning the ‘‘book language’’ of information books. *Discourse Processes*, 14, 203–225.
- Pappas, C. C. (1993). Is narrative ‘‘primary’’? Some insights from kindergarteners’ pretend readings of stories and information books. *Journal of Reading Behavior*, 25, 97–129.
- Price LH, Hendricks S, & Cook C. (2010). Incorporating computer-aided language sample analysis into clinical practice. *Language, Speech & Hearing Services in Schools*, 41(2), 206–222.
- Purcell-Gates, V. (1988). Lexical and syntactic knowledge of written narrative held by well-read-to kindergartners and second graders. *Research in the Teaching of English*, 22, 128–157.
- Ravid, D., & Tolchinsky, L. (2002). Developing linguistic literacy: A comprehensive model. *Journal of child language*, 29(2), 417-447.
- Riley, J., & Reedy, D. (2005). Developing young children’s thinking through learning to write argument. *Journal of Early Childhood Literacy*, 5(1), 29–51.
doi:10.1177/1468798405050593

- Scott, C. M., & Balthazar, C. H. (2010). The grammar of information: Challenges for older students with language impairments. *Topics in Language Disorders*, 30(4), 288.
- Scott, C. M. (1988). Spoken and written syntax. *Later language development: Ages nine through nineteen, 1*, 49-55.
- Sun, L., & Nippold, M. A. (2012). Narrative Writing in Children and Adolescents: Examining the Literate Lexicon. *Language, Speech, and Hearing Services in Schools*, 43(1), 2–13.
- Scott, C. M., & Windsor, J. (2000). General language performance measures in spoken and written narrative and expository discourse of school-age children with language learning disabilities. *Journal of Speech, Language, and Hearing Research*, 43(2), 324-339.
- Tolchinsky, L., & Sandbank, A. (1994). Text production and text differentiation: Developmental changes and educational influences. In S. Strauss (Ed.), *Learning environments and psychological development*. Norwood, NJ: Ablex.
- Verhoeven, L., Aparici, M., Cahana-Amitay, D., van Hell, J., Kriz, S., & Viguié-Simon, A. (2002). Clause packaging in writing and speech: A cross-linguistic developmental analysis. *Written Language and Literacy*, 5(2), 135–161. <https://doi.org/10.1075/wll.5.2.02ver>
- Uccelli, P., Dobbs, C. L., & Scott, J. (2013). Mastering academic language: Organization and stance in the persuasive writing of high school students. *Written Communication*, 30(1), 36-62.
- Weiler, B. K., & Schuele, C. M. (2014). Joining clauses with subordinate conjunctions: One type of complex syntax. *Perspectives on Language Learning and Education*, 21(4), 182-191.

Wilson, K. S., Blackmon, R. C., Hall, R. E., & Elcholtz, G. E. (1991). Methods of language assessment: A survey of California public school clinicians. *Language, Speech, and Hearing Services in Schools*, 22(4), 236-241.

Appendix A – Writing Prompts

“What Happened One Day?” -Narrative Writing Prompt

Time: 5 minutes of planning after instructions; 20 minutes of writing after planning

Materials: Students are provided a set of the instructions below in writing which includes the 7-point outline (bullets below) as well as lined paper.

General Instructions: You should read the prompt (what is in bold) to the students. Please do not modify the instructions.

At this time, I would like you to write a story. Please write a story about something funny, sad, or scary that happened to you and a friend. You get to decide what to write about. It can be anything that was funny, sad, or scary. If you can’t think of something that really happened, you can make it up. It doesn’t have to be a true story. You can use your imagination, if you want. It’s up to you. The title of your story is “What Happened One Day.”

The outline will help you organize your thoughts and write a good story. In your story, be sure to do the following:

1. **Tell where the events took place (setting).**
2. **Tell who the main people are (characters).**
3. **Tell everything that happened in the story (plot).**
4. **Tell about the problems that came up (problems).**
5. **Explain what the characters tried to do (attempts).**
6. **Explain how things turned out (outcome).**
7. **Tell how everyone felt during the events (thoughts).**

You will have 5 minutes to plan your story. Try to include each of the points in your story. As you write, try to write a full paragraph of your own ideas. You will have 20 minutes to complete your writing after you plan. I have given you paper to use in writing your story. Please complete the top portion.

As you do this work, please use your best writing style with complete sentences and correct grammar, spelling, and punctuation. If you are aren’t sure how to spell a word, make your best guess. Try to write neatly, using a pen or pencil. If you make a mistake, just cross it out or use an eraser. Keep going until I ask you to stop writing.

Do you have any questions? Remember, the title of your story is “What Happened One Day.” You may start planning.

Wait 5 minutes

Now you will write your story. You may use your planning sheet. You have 20 minutes to complete your story. You may begin.

Wait 20 minutes

Gather up the writings and place them back in the envelope. Please make sure they have completed the top portion of the writing paper.

“The Nature of Friendship” - Expository Writing Prompt

Time: 5 minutes of planning after instructions

20 minutes of writing after planning

Materials: Students are provided a set of the instructions below in writing which includes the 7-point outline (bullets below) as well as lined paper.

General Instructions: You should read the prompt (what is in bold) to the students. Please do not modify the instructions.

At this time, I would like you to write an essay. Please write an essay on the topic of *friendship*. Friendship is very important to people of all ages – children, adolescents, and adults. Most people say they enjoy spending time with their friends. They like to talk with their friends in person or on the phone and spend time together.

The following outline will help you organize your thoughts and write a strong essay. In your essay, be sure to *explain* the following:

- **What is friendship?**
- **Why is it important to people?**
- **How can friendship make life more enjoyable?**
- **What kinds of things do friends like to do together?**
- **How can people become good friends?**
- **What kinds of actions can damage friendships?**
- **How can people remain good friends over time?**

Keep this list of questions in front of you as you write your essay. As you answer each question, try to write a full paragraph of your own ideas. You will have 20 minutes to complete your work. I have given you paper to use in writing your essay. Please complete the top portion.

As you do this work, use your best writing style with complete sentences and correct grammar, spelling, and punctuation. If you aren’t sure how to spell a word, make your best guess. Try to write neatly, using a pen or pencil. If you make a mistake, just cross it out or use an eraser. Keep going until I ask you to stop writing.

Do you have any questions? Remember, the title of your writing is “The Nature of Friendship.” You may start planning.

Wait 5 minutes

Now you will write. You may use your planning sheet. You have 20 minutes to complete your story. You may begin.

Wait 20 minutes

Gather up the writings and place them back in the envelope.

“The Circus Controversy” – Persuasive Writing Prompt

Time: 5 minutes of planning after instructions

20 minutes of writing after planning

Materials: Students are provided a set of the instructions below and can make notes on the sheet prior to beginning the essay.

General Instructions: You should read the prompt (what is in bold) to the students. Please do not modify the instructions.

People have different views on animals performing in circuses. For example, some people think it is a great idea because it provides lots of entertainment for the public. Also, it gives parents and children something to do together, and the people who train the animals can make some money. However, other people think having animals in circuses is a bad idea because the animals are often locked in small cages and are not fed well. They also believe it is cruel to force a dog, tiger, or elephant to perform certain tricks that might be dangerous.

I am interested in learning what you think about this controversy and whether or not you think circuses with trained animals should be allowed to perform for the public. You have 5 minutes to write some notes on the instructions to help you plan your paper.

Wait 5 minutes

Now, I would like you to spend the next 20 minutes writing an essay. Tell me exactly what you think about the controversy. You may use your notes that you just wrote. Give me lots of good reasons for your opinion.

Please do your own work and don’t share ideas with your neighbors. Be sure to double space your essay. Also, please use your best writing style, with correct grammar and spelling, and good handwriting. If you aren’t sure how to spell a word, just take a guess. Do you have any questions?

Wait 20 minutes

Gather up the writings and place them back in the envelope.

Appendix B: Coded Sample

- + Type of Sample: Written Narrative
- + [AC]: Adverbial Clause
- + [RC]: Relative Clause
- + [NC]: Noun Clause
- + [SI-0]: subordination index- 0 clauses
- + [SI-1]: subordination index- 1 clause
- + [SI-2]: subordination index- 2 clauses
- + [SI-3]: subordination index- 3 clauses
- + [SI-X]: subordination index- excluded from set

C One regular Friday, or so I thought[AC], my family and I were head/ing to my grandparent/s house to see them and some of my other relative/s [SI-2].

C Once we got there[AC], my mother and aunt said they had a surprise for all of us[NC] [SI-3].

C I could/n't wait to know what the surprise was[NC] [SI-2]!

C Then my mom said we were all invited to our aunt and uncle/z house in Maryland[NC] [SI-2].

C Everyone was thrilled [SI-1].

C But my aunt stop/*ed us in the middle of our excitement to also tell us that our bag/s and suitcase/s were already packed[NC] [SI-2].

C So with everything packed we hit the road [SI-1].

C It take[EW:took] about 6_and_a_half hour/s to get to their house [SI-1].

C So we play game/s, sing to the radio, and watch movie/s to pass the time [SI-1].

C With only about 45 minute/s left, one of the car/s start/ed to break down [SI-1].

C All of the kid/s were surprisingly happy because they knew[AC] we would all have to stay an extra day[NC] until the car was fixed[AC] [SI-4].

C Luckily everyone knew what road we were on[NC] [SI-2].

C So we call a mechanic [SI-1].

C The mechanic end/ed up having to take the car to his shop to fix it but gave us a rental car to use [SI-1].

C Now that the car was in the shop[AC] and we had another car[AC], we were back on the road [SI-3].

C The bad news was that in all of the panic of the car breaking down, we miss/ed the exit[NC] we need/ed to take[RC] [SI-3].

C We end/ed up 30 mile/s past the exit [SI-1].

C So with a little help with[EW:from] our GPS, we got back on the correct route [SI-1].

C Finally, we arrive/ed *with everyone thankful to be safe and not having to drive anymore [SI-1].

C Even though it was a crazy drive there[AC], it turn/ed out to be a wonderful day [SI-2].

C We went shopping and ate dinner at a fancy restaurant [SI-1].

C And to end the day was[EW:were] firework/s [SI-1].

C I don't think we will ever forget that adventure[NC] [SI-2].