LSHSS

Research Article

Grammatical Verb Errors: Differences Between English Learners With and Without Diagnosed Language-Based Learning Disabilities

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Purpose: This study examines the written language samples of fifth grade English learner (EL) students with and without diagnosed language-based learning disabilities (LLDs) in an effort to explore the utility of such supplemental materials for aiding in differential diagnosis of ELs with and without LLDs.
Method: This sample of 127 fifth grade students consisted of ELs without identified disabilities (n = 89) and ELs diagnosed with LLDs (n = 38). Written language samples from a classroom-based expository writing task were coded for grammaticality and specific verb type of errors. An analysis of variance (ANOVA) between the groups that differed by language abilities was conducted at two time points to compare the frequency of errors and the average change in grammaticality from the beginning of the school year to the end of the school year.
Results: EL students with and without LLDs performed similarly at the beginning of the school year. ELs without LLDs showed greater average change in accuracy across the school year. Significantly, higher proportions of verb tense and verb omission errors were demonstrated by ELs with LLDs when compared with their EL peers at the end of the school year. Overall grammatical accuracy was also lower for ELs with LLDs.
Conclusions: Group differences at the end of the school year were confirmed in types and rate of verb errors. Results support the potential clinical utility of monitoring verb errors in writing samples over time as a supplemental tool in diagnostic evaluations and assessments for progress monitoring.

Every year, as our nation's schools become more culturally and linguistically diverse, the likelihood of having an English learner (EL) in our classrooms or caseloads increases. According to the latest update from the National Center for Education Statistics (NCES; U.S. Department of Education, NCES, Institute of Education Sciences, 2020), 5 million students across the nation identify as ELs and the percentage of ELs in public schools may be as high as 19% for some schools across the nation. The Institute of Education Sciences (IES) refers to *English Learners* as students whose home language is not English and whose limited English proficiency hinders their ability to meet academic expectations for students in their grade level. Although the students themselves face challenges in adapting to a new language and learning environment, teachers and related personnel, such as speech-language pathologists (SLPs), are tasked the challenge of appropriately and adequately responding to the academic needs of their EL students. Among these challenges, teachers and SLPs are faced with the difficulty of differentiating the nonfluent or errorful language that is part of second language acquisition, seen as a language difference, from the nonfluent or errorful language that is indicative of language-learning disability or a language disorder. If a teacher or SLP is not familiar with differential growth of ELs as they become proficient, they may mistake typical second language learning with a language or learning disorder (Crowley & Baigorri, 2019; Gutiérrez-Clellen & Peña, 2001; Klingner et al., 2006; Ortiz & Yates, 2001; Sullivan, 2011). Correctly identifying EL students as having a language-based learning disability (LLD) or of simply presenting nonfluent or errorful language that is typical with second language acquisition continues to be a pressing challenge today (Artiles & Klingner, 2006; Wagner et al., 2005; Zhang et al., 2014).

It has been documented that there are a disproportionate number of ELs labeled as having a language disorder,

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typically attributable to their limited English proficiency or the use of inappropriate evaluations methods (Artiles et al., 2005; Dunn, 1968; Duran, 2008; Linn & Hemmer, 2011; Zhang et al., 2014). Ideally, English-proficient students with LLDs would be identified early, either before they start school due to caregiver concerns or in their preschool years as teachers note differences in their language development. However, ELs can enter the school system at any point in their education, depending on whether or not they were born in the United States or when they immigrated from their native countries. When ELs enter the school system without any prior identification, it is the responsibility of their receiving academic support team to identify and address any educational concern (Castro et al., 2011). The caveat then lies in the fact that ELs and English-proficient students with LLD often demonstrate similarities in their language abilities, creating challenges in identification (Paradis, 2005; Restrepo & Kruth, 2000). More specifically, the overlap in errors related to grammatical morphology between typically developing (TD) ELs and English-proficient students with LLDs has been found to increase the challenges of differential diagnosis of ELs who are TD and ELs with LLDs (Caesar & Kohler, 2007; Paradis et al., 2003; Paradis, 2005, 2007).

Similarities in Grammatical Morphology

Generally, identification hazards arise due to language similarities between the two groups, such as consistent grammatical errors and vocabulary deficits. For example, TD ELs and English-proficient students with LLD typically make similar grammatical errors in their spoken and written language (Clahsen et al., 1997; Grinstead et al., 2013; Gutiérrez-Clellen & Simón-Cereijido, 2007; Paradis & Crago, 2000). Seminal studies, such as the work of Brown (1973) and Dulay and Burt (1973, 1974), examined the development of grammatical morphology in children and have highlighted morphology as an area of difficulty for learners of English. The term *grammatical morphology* includes the use of verbal and nominal suffixes such as past tense [*–ed*], plural [*–s*], third-person singular [*–s*], progressive verbal suffix [*–ing*], and BE verbs such as [*is*] and [*do*]. Historically, studies examining students with LLDs have found that the development of verbal grammatical morphology is generally more affected (Bedore & Leonard, 1998; Oetting & Rice, 1993; Rice & Wexler, 1996; Rice et al., 1995). For English-proficient students with LLD, studies have found them to be less accurate in their use of several tense-marking morphemes, which has prompted the use of incorrect tense-marking morphemes as a clinical marker of LLDs (Eisenberg & Guo, 2013; Jones-Moyle et al., 2011; Leonard 1995, 1998; Leonard et al., 1997; Rice, 2003b; Rice & Wexler, 1996; Rice et al., 1998).

Contrastingly, using tense-marking errors as a clinical marker of LLD is not as conclusive for the EL populations. Research related to grammatical morphology in ELs with LLDs has not been conducted to the extent of that of English-proficient students with LLDs, but parallels between TD ELs and English-proficient students with LLDs have been found (Crago & Paradis, 2003; Paradis et al., 2003; Paradis, 2004, 2005). Similar to English-proficient students with LLD, researchers examining TD ELs' grammatical morphology development have noted that they are more likely to use tense-marking morphemes incorrectly or omit them altogether, typically attributable to their limited language knowledge (Paradis, 2004, 2005; Restrepo, 1998). For example, using the spontaneous and elicited speech samples of young children, Paradis (2005) found TD ELs' grammatical error patterns to be similar to those demonstrated by same-age English-proficient peers with LLDs. Gutiérrez-Clellen et al. (2008) also examined tense marking in samples of 71 children between the ages of 4 and 6 years with varying levels of English proficiency and found that tense marking accuracy rates for the TD group of EL students and those of the EL students with LLD were indistinguishable.

Additionally, studies specifically examining developmental rates of grammatical morphology of ELs with LLDs are limited in number. Most of the research on grammatical morphology development in ELs consists of longitudinal case studies with TD ELs and demonstrates that ELs may eventually use certain tense morphemes more accurately after a few months of exposure, but mastery varies (Hakuta, 1978; Hakuta et al., 2000; Haznedar, 2001; Lakshmanan, 1993/1994, 1994). In a seminal study, Lakshmanan (1994) revealed that some children are able to use certain tense morphemes more than 80% of the time, but there appear to be individual differences in terms of which grammatical morphemes are acquired earlier in development. However, it is commonly accepted ELs may need 5–7 years to achieve higher level academic language skills that are at the same level as their English-proficient peers (Cummins, 2000). With regard to English-proficient students with LLDs, their growth curves are typically at lower levels of accuracy and they tend to perform at the same level as younger children (Rice, 2003a), further asserting that children with LLD have a delayed acquisition of grammatical morphology.

It is important to note that prior research has primarily focused on young children or EL students in preschool. When examining grammatical skills in the preschool years, spoken language samples are of key interest for many investigators. As a result, much less is known about later development and average change across the school year in upper elementary grades specifically, and how these errors manifest as academic tasks become more challenging, such as implementation of academic writing exercises in later elementary and beyond. Considering that as ELs may mainstream into U.S. public schools at any age or grade and how language errors may be overlooked while children are learning English, research is needed to further investigate grammatical morphology errors in school-age ELs and in writing. Research examining grammatical morphology in ELs' writing samples is limited; however, several studies have demonstrated that English-proficient students with LLDs show an increase in grammatical errors in written versus spoken language (e.g., Wilson-Fowler et al., 2020; Windsor et al., 2000). Windsor et al. (2000) found that TD 7- to 12-year-old children had mastered verb morphology in written samples, but 10- to 12-year-old children with LLDs demonstrated difficulties with regular past

tense. More specifically, the children with LLDs exhibited omissions of regular past tense errors in 26% of obligatory contexts. Additionally, Fumero and Wood (2021) examined the grammatical accuracy of fifth grade EL and English-proficient students at the beginning of the school year and found that both groups made verb tense and agreement errors. However, 41% of grammatical errors made by the group of ELs were as a result of verb omissions or tense and agreement errors, whereas only 16% of English-proficient peers' grammatical errors were related to verbs. Taken together, such burgeoning findings regarding grammatical errors suggest that additional research on verb accuracy in written language samples may be beneficial in informing differential identification of ELs with and without language-based learning disorders.

Finally, the Common Core State Standards (CCSS; National Governors Association, 2010) provide additional rationale for the need for additional descriptive research on grammatical accuracy of written samples across the school year. Specifically, according to the CCSS, students in later elementary (Grades 3–5) should demonstrate command of several verb tenses such as regular and irregular past tense verbs by Grade 3, possessive verb tenses by Grade 4, and perfect verb tenses by Grade 5. By Grade 5, students are also expected to use verb tense to convey various times, sequences, states, and conditions as well as recognize and correct inappropriate shifts in verb tense.

Writing as a Tool for Progress Monitoring and Differential Diagnosis

Given the glaring similarities between TD ELs and English-proficient students with LLD, researchers caution clinicians from making diagnostic decisions with the EL population (Castilla-Earls et al., 2020). Numerous researchers offer guidelines and recommendations on how to appropriately address assessment of EL students (e.g., Caesar & Kohler, 2007; Gutiérrez-Clellen & Kreiter, 2003; Kohnert et al., 2005; Restrepo, 1998; Saenz & Huer, 2003), and most recommendations refer to the use of alternative assessment models. In fact, SLPs are encouraged to use descriptive approaches including language samples and direct observations (Bedore & Leonard, 2000; Dunn et al., 1996; Gutiérrez-Clellen et al., 2000), dynamic assessments using the test–teach–retest procedures designed to test children's learning potential through mediated learning experiences (Gutiérrez-Clellen & Peña, 2001), and curriculum-based assessments that are designed to asses language skills using curriculum-based content (Caesar & Kohler, 2007).

Although there is strong evidence to indicate that alternative assessment approaches can accurately identify difference from disorder (Orellana et al., 2019), it is important to base such decisions on several sources of evidence. One of the advantages of examining school-age children is the ability to use classroom artifacts or curriculum-based assessments to aid in progress monitoring and making diagnostic decisions (Espinosa & García, 2012). A constellation of artifacts can be based on school assessment measures, school benchmark scores, or classroom-based performance measures. Among artifacts, clinicians can use authentic student written language samples to help further understand students' language skills (Price & Jackson, 2015). In fact, the American Speech-Language-Hearing Association (2002) emphasizes the benefits of using written language samples as authentic informal methods for assessing writing skills. Additionally, writing samples obtained over different time points and across a variety of genres and tasks can help to elucidate information about a student's language skills that a standardized test cannot (Price & Jackson, 2015; Singer, 2007). Furthermore, vocabulary, syntax, and morphology skills in written language are correlated with those in oral language and students with oral language impairments often demonstrate related deficits in their written language as well (Price & Jackson, 2015; Scott & Windsor, 2000; Shanahan, 2006). Nelson and Van Meter (2007) also indicate that writing samples are an appropriate tool for progress monitoring during and after intervention since writing samples are sensitive to developmental changes. Many scientists suggest that using language samples, oral or written, not only illuminates strengths and needs in language performance but also helps clinicians differentiate between a language disorder and a language difference (Caesar & Kohler, 2007; Gutiérrez-Clellen et al., 2000).

Writing samples, specifically, are important contexts for assessing students' language skills (Price & Jackson, 2015), particularly considering that writing skills become a crucial part of the curriculum from early elementary through secondary school years (National Governors Association, 2010). Writing tasks in the later elementary years warrant the use of a more complex syntax and vocabulary, which affords a clinician the opportunity to gather information regarding a student's language skills, such as their morphosyntactic knowledge. Since proficient writing necessitates learning the syntactic and grammatical rules of a language, a task often difficult for English-proficient students with LLDs and TD ELs, using a written language sample for evaluation purposes may provide the clinician with more insightful information regarding a student's language competence and proficiency. For example, being able to examine grammatical errors has proven useful in identifying English-proficient students with LLD (Gillam & Johnston, 1992; Mackie & Dockrell, 2004; Windsor et al., 2000).

In fact, in a study examining specific morphosyntactic errors of English-proficient students with LLDs, Windsor et al. (2000) examined the language skills of language and age-matched groups of middle- to late-elementary grade TD and LLD students using spoken and written language samples. The authors reported that of the two groups, students with LLDs made more grammatical errors in their expressive language than the TD students. More specifically, Windsor and colleagues revealed that these errors were more prominent in their written language samples than in their spoken language samples, attributable to the more complex nature of written language. Similarly, in one of the few studies focusing on written language samples, Mackie and Dockrell (2004) examined a group of school-age children with and without specific language impairment (SLI) and found that

students with SLI demonstrated more difficulties with auxiliary verbs and grammatical morphology in their written language than their language and age-matched TD peers.

Considering these findings, similar or even more grammatical errors should be expected in written language samples. Given that grammatical morphology skills have been used as clinical markers to identify English-proficient students with LLDs, these findings underscore the potential benefits of using written language samples as a diagnostic tool when attempting to differentially diagnose TD ELs and ELs with LLDs. Therefore, further examination of grammatical aspects of written language of TD ELs and ELs with an LLD is warranted in order to better equip SLPs and educators with the tools and knowledge to accurately differentiate between a language difference and a language disorder.

Research Aims

In an effort to better inform and support the use of supplemental materials for differential diagnosis of ELs with and without LLDs, this study uses authentic classroom-based writing assessments to provide information on the written language skills of TD ELs and ELs with LLDs. More specifically, this study aims to answer the following research questions:

(a) What are the characteristics of grammatical morphology skills demonstrated in written language samples of ELs with LLDs at the start of fifth grade?

(b) To what extent do TD ELs and ELs with LLDs differ in terms of grammatical morphology errors demonstrated in their written language samples at the start and end of fifth grade?

(c) To what extent do TD ELs and ELs with LLDs differ in terms of average change in grammatical accuracy start and end of fifth grade?

Method

For this study, the investigators used data gathered as part of a larger study examining writing skills of students in fifth grade. The project was approved by the university human subjects committee (HCS #2018.25857). Because of the purpose of this study and the time-intensive nature of transcribing and coding written samples, this study included writing samples for a subset of randomly selected ELs.

Participants

This sample of 127 fifth grade students consisted of 62 girls and 59 boys from 46 inclusive classrooms in 28 elementary schools in a large school district. Participants were all part of inclusive classroom settings that included children with a range of abilities. District data were used to determine student English to Speakers of Other Languages (ESOL) levels and if the student was identified of having LLD. On the basis of the district's classification system, there were participants with two designations that were considered LLDs in this study, including language or communication impairment and language learning disability. The term *language impairment* is used by the district to describe students with communication disorders that adversely affects the students' educational performance, such as expressive or receptive language impairment. A language learning disability is used by the district to refer to a disorder in one or more of the basic learning processes involved in understanding or using spoken or written language (e.g., dyslexia, dysgraphia, or developmental aphasia). Descriptive information on participants, including race and eligibility for free and reduced lunch status, is provided in Table 1. This study focused on the EL students from varied linguistic backgrounds.

Of 662 students from the larger sample who spoke another language at home and had proficiency data, 335 (51%) were classified as current ELs and were currently enrolled in ESOL support services. In order to be included in this study, participants had to speak Spanish as their home language and be receiving ESOL support services. Students who spoke a language other than Spanish or English at home were absent on either day that the writing sample was completed or completed the writing sample in their home language were excluded from the study. Among the 122 participants who met the inclusion criteria, 83 students were classified as TD ELs and 38 students were identified with language-based disabilities at the beginning of the school year. A high proportion of students in both groups were eligible for free or reduced lunch. Specifically, 83% of TD ELs and 89% of ELs students with LLDs were eligible for free or reduced lunch.

Data Collection

Language and literacy skills were assessed during the first 8 weeks of the school year as part of the district assessment procedures. Among these measures, the reading comprehension task of the Florida Assessments for Instruction in Reading–Florida Standards (Foorman et al., 2015) was administered to both groups. The TD ELs performed below average with a mean percentile rank of 22.55 (SD = 23.25), whereas ELs with LLDs performed substantially below normal limits with an average percentile rank of 10.55 (SD = 10.68). Classroom teachers administered the computer-adapted standardized assessment in the computer center or media center of their school. English Language Arts instructors administered the expository writing task classroom-wide as part of the district's mandatory curriculum-based assessment measure. For the writing task used in this study, classroom teachers distributed a packet in October of the school year containing two written passages about the benefits of exercise, directions for the task, a planning sheet, and lined paper. Students were given 120 min to read the passages and write a response in English. Because the task of writing in response to a passage is common practice in district and statewide assessments (e.g., Florida's B.E.S.T. Standards: English Language Arts, n.d.), the use of such a measure (as opposed to a researcher-created measure) offers the advantage of being readily recognizable and interpretable by general

Table 1. Participant demographics.

Characteristic	Variable	Typically developing English learners (n = 83)		English learners with language-based learning disorders (n = 38)	
		n	%	*n*	%
Free/reduced lunch (FRL)	Eligible	69	83	34	89
	Not eligible	14	17	4	11
Race/ethnicity	Hispanic	80	96.4	36	94.7
	Black	1	1.2	1	2.6
	Multiracial	2	2.4	1	2.6

educators familiar with this common practice. Researchers collected students' written language samples from classroom teachers and received administrative data from the district regarding students' performance on a standardized computer-adapted test. The same procedures were conducted in May using a different writing topic and passage.

Writing Instrument

The investigators used a curriculum-based measure of writing used and administered to all students by the partnering school district. In October, the writing instructions asked students to "write an informative essay explaining how fitness can contribute to unexpected outcomes," and in May, the directions asked students to "write and informative essay explaining the benefits of farmers markets." The directions also instructed students to read two passages, plan, write, and revise their response. The reading passages for October and May were different for each time point but the same for all participants. The October reading passages' total word count was 998 words with an average sentence length of 13.49 morphemes. The May reading passages' total word count was 849 with an average sentence length of 15.72 morphemes. The directions and passages were about seven paragraphs long, and students were given 120 min to compose a written response after reading the directions and passages. The passages intended to build content knowledge related to fitness and farmers' markets. Comprehension of the passage was not a prerequisite for completion of the writing task, because the writing prompt could have been addressed by writing on the general topic (benefits of fitness and farmers markets) without having read the passage. Although comprehension of the passages may have impacted the quality of content in the written responses, considering that the research questions of this study focused explicitly on verb errors, students' verb accuracy was not likely impacted by the degree of integration of facts or information from the passages. All students were administered the same passage and directions at both time points.

Grammatical Accuracy

Grammatical accuracy was calculated by adding the total number of grammatical errors and dividing by the number of sentences in the written response. The decision to code for grammatical accuracy broadly was based on a number of previous findings suggesting that measures of correct writing sequences were sensitive to student achievement and progress over time (Dockrell et al., 2015). As such, a broad measure of accuracy based on the proportion of errors was included in this study. This is consistent with other sources that have reported grammaticality as a proportion of utterances with grammatical errors (Eisenberg & Guo, 2013).

Verb Errors

To describe and examine grammatical morphology accuracy, a set of codes were established based on theory and previous research to describe features of verb errors. Central to the focus of this study were three grammatical error patterns: verb omissions, verb tense errors, and verb agreement errors. All errors were coded related to obligatory context. To illustrate, instances where students omitted a verb from their sentences, such as "*he overweight*," were coded as a verb omission (VE:O). Tense errors occurred when the student used a verb but did not use the correct tense. For example, "*yesterday he run fast*" instead of "*yesterday he ran fast*," would be coded as a tense error (VE:T). Finally, agreement occurred when sentences did not follow the subject–verb agreement rules. For example, if a written response included "*he like running*" instead of "*he likes running*," the sentence was coded with an agreement error (VE:A). Spelling errors were disregarded.

Procedure

All writing samples were transcribed verbatim (maintaining errors) by the investigators and trained research assistants (RAs). The Systematic Analysis of Language Transcripts (SALT) software was used to code and analyze the writing samples. Each sample underwent two rounds of error coding. For the first round, the samples were divided among five undergraduate students who had completed training on the codes of interest and demonstrated proficiency in how to code each sample for errors. For the second round of error coding, each transcript was coded by the first author and an RA. During this round, the samples were checked for coding accuracy and any missing or incorrect codes were adjusted. SALT was then used to provide descriptive measures for the

frequency of each error code, total number of errors per student, and total number of T-units and words per writing sample. To ensure coding reliability, 25% of the final coded writing samples were randomly selected and double coded by the first author and the RA. Interclass correlations (ICC) estimates for each error code, and their 95% CIs were calculated using SPSS Statistics software. For the individual verb error codes, omission, tense, and agreement, interrater agreement was 89%, 88%, and 91%, respectively. As reported by Koo and Li (2016), ICC values between 0.75 and 0.9 indicate good reliability.

Results

To address the first research question that examined grammatical morphology patterns of fifth grade ELs with LLD, we report descriptive statistics on students' rate of verb errors specifically. Table 2 shows descriptive statistics on the types of verb error patterns made by EL students with LLD and TD ELs. The verb errors are presented in terms of the ratio of errors per T-units to account for the different sample lengths. As displayed in Table 2, of the verb errors examined, ELs with LLD showed a numerically larger number of tense-related verb errors compared with agreement or omission errors.

To answer the second research question, we conducted an analysis of variance (ANOVA) between the groups that differed by language abilities (e.g., TD ELs and ELs with LLDs) to compare the frequency of verb errors in their writing samples. The ANOVA was performed with Welch's corrections to account for the unequal group sizes. The frequency of the overall grammatical errors did not significantly differ between the two groups at the start of the school year, $F(1, 116.68) = 1.262$, $p = .263$. Although not statistically significant, EL students with LLDs appeared to produce a numerically larger number of grammatical errors per T-units in their writing than did TD EL peers.

Next, we examined group differences at both time points using students' written language samples administered in October and May. There was not a significant difference between the groups with regard to overall grammaticality or the rate of specific verb errors using the beginning of the year language samples (refer to Table 3). Contrastingly, there were significant group differences between groups in three measures at the end of the school year. Specifically, the frequency of overall grammatical errors at the end of the school year differed between the two groups, $F(1, 47.20) = 14.919$, $p = .0001$, $d = 0.82$. There were also significant differences between the two groups in the proportion of verb tense errors, $F(1, 59.67) = 7.022$, $p = .01$, and verb omissions, $F(1, 41.62) = 27.652$, $p = .0001$, per sentence. Verb omissions and tense errors occurred more frequently in the written responses of EL students with LLDs. There was not a significant difference between groups with regard to verb agreement errors at the end of the school year, as displayed by Table 4.

Finally, in order to answer the third question related to differences in average changes in grammaticality and specific verb errors between the two groups, across the school year, we used Welch's ANOVA to compare the difference score (May compared with October performance) between groups. As displayed by Figure 1, TD ELs demonstrated overall decreases in verb agreement–related errors ($M = -0.001$, $SD = 0.19$), tense-related errors ($M = -0.15$, $SD = 0.33$), verb omission errors ($M = -0.09$, $SD = 0.22$), and overall grammaticality ($M = 0.18$, $SD = 0.99$). Contrastingly, ELs with LLDs demonstrated a decrease in verb tense errors ($M = -0.03$, $SD = 0.16$), but the proportion of other errors and overall grammatical errors did not decrease. The group differences in average rate of change in occurrences of verb tense and verb omissions errors were significant, as displayed in Table 5. There were no significant group differences in average rate of change in agreement errors.

Discussion

Key Findings

The purpose of this study was to examine and describe verb errors in fifth grade EL students' written responses. Additionally, the study aimed to explore the utility of writing samples for progress monitoring and differential diagnosis whether writing samples would be useful tools in the differential diagnosis of ELs with and without LLD through the comparison of verb errors across the school year. Data analyses revealed two key findings. EL students with LLD made verb errors in their written responses more often than their TD EL peers. Specifically, they had significantly higher verb

Table 2. Descriptive statistics of verb error patterns by group at the start and end of fifth grade.

	ELs with LLDs				TD ELs			
	Oct (n = 38)		May (n = 38)		Oct (n = 83)		May (n = 83)	
Grammatical error	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Verb agreement errors	0.07	0.10	0.12	0.18	0.10	0.13	0.09	0.11
Verb tense errors	0.14	0.14	0.11	0.11	0.21	0.33	0.06	0.09
Verb omission errors	0.12	0.15	0.25	0.23	0.13	0.20	0.04	0.07
Overall grammaticality	0.81	0.52	1.43	0.97	0.98	0.96	0.78	0.55

Note. All ratios were calculated by number of T-units per sample. ELs = English learners; LLDs = language-based learning disabilities; TD = typically developing.

Table 3. TD EL and EL with LLD error comparisons—start of fifth grade.

Grammatical error	Mean difference	*F*	*df*	*p*
Verb agreement errors	0.03	1.660	1, 92.66	.201
Verb tense errors	0.07	2.880	1, 118.80	.092
Verb omission errors	0.01	0.169	1, 95.55	.682
Overall grammaticality	0.17	1.447	1, 115.90	.231

Note. ANOVA (analysis of variance) was performed with Welch's corrections. TD = typically developing; EL = English learner; LLD = language-based learning disability.

tense errors when compared with their peers and, overall, grammatical accuracy was also lower for ELs with LLDs. Additionally, when comparing the two groups at the end of the school year, there appears to be more prominent and significant differences in rate of verb errors and overall grammaticality demonstrated in their written language samples.

Verb error patterns of ELs with LLDs. The current findings align with previous studies that highlight the persistent verb tense errors demonstrated by ELs and English-proficient students with LLDs (e.g., Crago & Paradis, 2003; Eisenberg & Guo, 2013; Jones-Moyle et al., 2011; Paradis, 2005; Paradis et al., 2003; Rice, 2003b; Rice & Wexler, 1996). Specifically, this study confirms that ELs with LLDs make similar tense-marking errors as English-proficient students with LLDs. Additionally, ELs with LLDs were also found to make frequent verb omission errors in their written language samples. For example, sentences with verb omission errors, such as "*Ben unhappy because he fat*," were a recurrent type of sentence that the EL students with LLDs demonstrated in their written samples. Similarly, previous studies examining grammatical morphology development for ELs who are TD have noted that they are also more likely to omit verbs altogether when compared with their English-proficient peers (Gutiérrez-Clellen et al., 2008; Paradis, 2004, 2005; Restrepo, 1998). As such, the frequency in verb tense errors and verb omission errors could be explained not only by language-based LLDs but also by the student's language proficiency status.

Differences in grammatical verb morphology gains. When comparing the rate of grammatical verb errors in the written samples of ELs with LLDs with those of the TD ELs, this study revealed that the groups presented with similar errors, a finding prevalent in the literature (Gutiérrez-Clellen et al., 2008; Paradis et al., 2003; Paradis, 2004, 2005). Central to this study and a noteworthy finding is the difference in grammatical errors at the end of the school year. When comparing the samples at the beginning of the school year, prior to fifth grade English Language Arts instruction, there were no significant differences between the two groups, but when comparing them at the end of the school year, after instruction, the groups were significantly different in overall grammaticality and in verb tense and omission errors. This finding aligns with the notion that TD ELs may eventually use certain tense morphemes accurately after a few months of robust exposure (Hakuta, 1978; Hakuta et al., 2000; Lakshmanan, 1993/1994), which lends support for the use of informal progress monitoring tools. With regard to students with LLD, Rice (2003a) found that they tend to follow developmental trends similar to younger students (e.g., fifth grade students with LLD perform at the same level as TD early elementary students) and their growth curves are typically in the lower levels when it comes to grammatical accuracy. Monitoring performance of ELs using writing samples across the school year, therefore, proves to be sensitive to developmental changes useful in differentiating TD ELs and ELs with LLDs, as TD ELs may be expected to have more developmental gains with robust exposure to different grammatical forms.

Clinical Implications

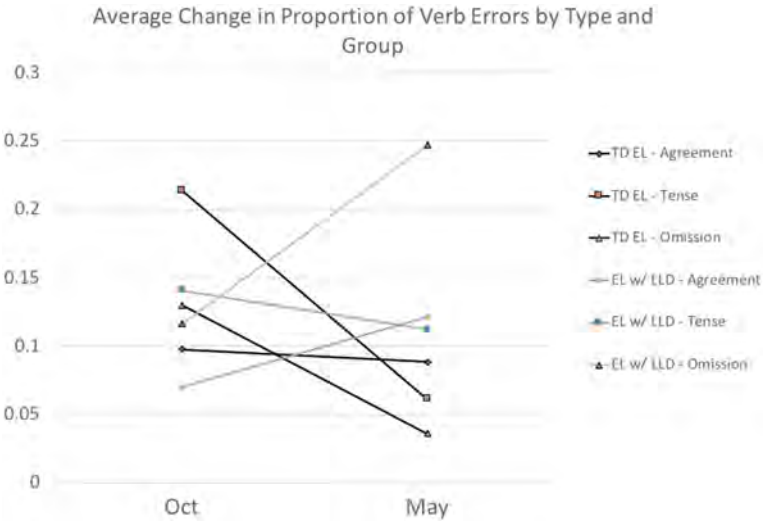
The current findings have implications for educational personnel and SLPs involved in the differential diagnosis of ELs. More specifically, the current results suggest that monitoring verb accuracy in written samples may be useful to inform areas to target for intensive instructional supports and explicit instruction of grammatical markers related to verb tenses and subject–verb–agreement rules. As mentioned previously, writing tasks afford upper elementary students and above the opportunity to demonstrate use of various grammatical forms. Therefore, the use of writing samples as a supplemental tool in diagnostic evaluations and assessments for progress monitoring may supply the clinician the chance to examine and monitor grammatical

Table 4. TD EL and EL with LLD error comparisons—end of fifth grade.

Grammatical error	Mean difference	*F*	*df*	*p*
Verb agreement errors	0.03	1.100	1, 50.50	.299
Verb tense errors	0.05	6.721	1, 60.25	.012
Verb omission errors	0.21	29.594	1, 40.51	< .0001
Overall grammaticality	0.65	14.790	1, 47.86	< .0001

Note. ANOVA (analysis of variance) was performed with Welch's corrections. TD = typically developing; EL = English learner; LLD = language-based learning disability.

Figure 1. Average change in proportion of verb errors by type and group. TD = typically developing; EL = English learner; LLD = language-based learning disability.



morphology development in ELs and to better differentiate between errors that are due to language proficiency and those due to language-based learning disorders. The group differences found in this study support the potential utility of verb error analysis of written samples across time points for providing converging evidence, which, when used alongside multiple pieces of assessment data, can support differential diagnosis (Castilla-Earls et al., 2020).

Additionally, the relatively small amounts of average change observed across the school year would suggest that we cannot assume that all students have sufficient supports to acquire the grammatical rules of English and construct grammatically correct sentences in academic writing. As such, the use of explicit instructional activities addressing verb tenses and subject–verb agreement may be necessary in the contexts of academic writing and to further support effective use of written English in the classroom and real-life settings, although further empirical study is needed.

Limitations

Results should be interpreted cautiously. The authors acknowledge that ELs' heritage language proficiency should be included as part of the diagnostic process (de Villiers, 2015). Ideally, students' heritage language skills would be considered alongside written samples in both languages; however, due to the use of extant data, it was not possible to administer or acquire data on students' performance in their native language. Furthermore, it is possible that although the students were exposed to a language other than English at home, it is likely that many were not biliterate in written language (Proctor et al., 2010), which would have influenced the utility of written measures in their native language. Although comparisons between TD ELs and ELs with LLD were conducted, it is important to note that we could not rule out that some of the students in the TD EL group may be struggling with undiagnosed language learning disabilities, as is common in this population. Additionally, this study had limited access to supporting details regarding the exceptionalities of the affected students (e.g., severity, secondary diagnoses, and support services). It cannot be presumed that students in the ELs with LLDs were similar in severity or that all students in the TD EL group had intelligence scores that were within normal limits. It should also be noted that there are several unmeasured factors that may have contributed to the variability in grammatical skills demonstrated in student writing samples.

Table 5. TD EL and EL with LLD average change comparisons by group.

Grammatical error	TD ELs average change	ELs with LLDs average change	Mean difference	*F*	*df*	*p*
Verb agreement errors	–0.009	0.05	–0.04	1.768	1, 63.75	.131
Verb tense errors	–0.15	–0.03	–0.12	8.425	1, 118.94	.007
Verb omission errors	–0.09	0.13	–0.22	27.437	1, 71.702	< .0001
Overall grammaticality	–0.20	0.62	–0.82	17.299	1, 73.432	< .0001

Note. ANOVA (analysis of variance) was performed with Welch's corrections. TD = typically developing; EL = English learner; LLD = language-based learning disability.

These variables may include first language knowledge and skills, previous schooling experience in the first and second languages, and general exposure to print in either language. Furthermore, because the instructions asked students to read a passage before writing, it is possible that difficulties comprehending the passages or instructions may have impacted the students' overall performance. Although building background knowledge would facilitate the writing process and improve the quality of the writing sample, it is not entirely relevant to this study due to the narrow focus of this study on microstructural aspects of written responses. As such, comprehension of the passage would most likely not have impacted the rate of verb errors in writing, but additional information related to student reading comprehension skills would serve as an interesting variable to consider in future studies. Finally, due to the limited information related to EL students' English language skills at the time of the writing assessment, these findings should be interpreted cautiously. Additional information related to length of English exposure for each student as well as current English speaking, writing, and reading skills would strengthen the research design and allow for further consideration of individual differences.

It should be noted that although this study focused on three verb error types, the measures used in this study were not intended to serve as a proxy for all types of errors or grammatical knowledge broadly. We recognize that other types of grammatical errors, not categorized in this study, may have been present and/or prevalent. Although the measures selected may account for only a portion of the grammatical errors demonstrated, it was not feasible in this exploratory study to categorize every potential type of grammatical error. As such, further study is planned to examine other types of errors within the students' responses.

Further Research

Further studies are needed to expand on this research and to consider examining and describing a fuller range of grammatical errors. It would also be interesting to compare writing samples at several time points throughout the school year, not just the start and end of the year. It is also important to further consider different cultural-linguistic factors that may influence certain manifestations of different errors in writing, for example, the omission of BE verbs could be attributable to a dialect. Additionally, the use of different writing tasks could elicit a better depiction of writing capabilities and it may be beneficial to understand student abilities across tasks. Furthermore, future studies that compare written and oral language errors across students of diverse ability and proficiency backgrounds are needed to better illuminate language development differences by proficiency and ability in order to facilitate the evaluation of converging evidence during the assessment process in schools that serve large and growing numbers of students from linguistically diverse homes.

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