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Using Balanced and Interactive Writing Instruction to Improve the Higher-order and Lower-order Writing Skills of Deaf Students

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Abstract

The current study reports the findings of balanced and interactive writing instruction used with 16 deaf and hard of hearing students. Although the instruction has been used previously, this was the first time it had been modified to suit the specific needs of deaf children and the first time it had been implemented with this subpopulation of students. The intervention took place in two elementary classrooms (N=8) and one middle school classroom (N=8) for a total of 21 days. A comparison of pre and posttest scores on both writing and reading measures evidenced that students made significant gains with use of genre-specific traits, use of contextual language, editing/revising skills, and word identification. Students showed neither gains nor losses with conventions and total word count. In addition, a one-way MANOVA was used to detect any school-level effects. Elementary students made significantly greater gains with respect to conventions and word identification, and middle school students made significantly greater gains with editing and revising tasks.

Using Balanced and Interactive Writing Instruction to Improve the Higher-order and Lower-order Writing Skills of Deaf Students

Deaf and hard of hearing students form a unique subpopulation of writers, one that exhibits great challenges in learning to write effectively and fluently. This study examines the effectiveness of writing instruction that is both balanced (i.e., attentive to development of both lower-order and higher-order writing skills) and interactive.

Development of Writing Skills Using Balanced Instruction

Many times deaf students do not operate with automaticity of lower-order writing skills (Mayer, 1999; Powers & Wigus, 1983). Whereas there are typically no distinctions with use of conventions (Marschark, Lang & Albertini, 2002) in the writing of deaf and hearing students, there exist several lexical and syntactical differences (Gormely & Sarachan-Deily, 1987). Writing of deaf students can be characterized as having short sentences with simple verb forms, few subordinate clauses, and few conjoined independent clauses (Heider & Heider, 1941; Moores & Miller, 2001; Powers & Wigus, 1983; Yoshinaga-Itano, Snyder & Mayberry, 1996). Vocabulary levels are lower in comparison to their hearing peers (Heefner & Shaw,1996). Additionally, students experience difficulty with the use of pronouns, determiners, conjunctions, passive constructions and conditional verbs such as “could”, “should”, or “might” (Taeschner, 1988; Wilbur, 2000; Yoshinaga-Itano et al., 1996). Students with hearing loss do make progress with syntax and contextual language over the years; however, they rarely achieve a level commensurate with their hearing counterparts (Antia, Reed & Kreimeyer, 2005).

There is also a need for deaf students to develop higher-order writing skills (e.g., introduce a topic, plan, organize ideas, and address an audience). Students should have knowledge of different writing styles or text structures such as expository, narrative or descriptive (Evans, 1998; Isaacson, 1996) and have an ability to apply the associated primary traits when writing. Also, there is a need for deaf students to develop cohesiveness in their writing (Antia et al., 2005; Klecan-Aker & Blondeau, 1990; McAnally, Rose & Quigley, 1999). Students have typically relied more on associative kinds of writing techniques by introducing several topics without elaboration (Yoshinaga-Itano et al., 1996). Each idea needs to be carefully woven together instead of existing as a complete piece of information that is independent of what was previously said. Lastly, engaging in the revision process as well as monitoring one's text has been known to be challenging for deaf writers (Paul, 1998, 1990).

Teachers of the deaf may acknowledge the need for attention to both lower-order and higher-order writing skills but express difficulty in providing a balance of instruction related to content as well as form. Because deaf students typically struggle more with form (e.g., English syntactical constructions), instructional efforts in this area of writing tend to dominate (Mayer, 1999). Yet, a model incorporating both holistic writing activities and skill-based instruction offers opportunity for students to build knowledge regarding both lower-order and higher-order skills (Delpit, 1986, 1988; Evans, 1998; Schirmer & Bailey, 2000; Schirmer, Bailey & Fitzgerald, 1999). One way to achieve this is to teach writing skills and processes (Paul, 1998) in the context of real writing activities for authentic audiences (French, 1999; McNaughton, 2002).

Learning to Write as an Interactive Phenomenon

Construction of meaning and understanding additionally happens through instruction whereby students inquire and interact with others. Research by Mayer, Akamatsu, and Stewart (2002) looked extensively into the dialogue used by teachers of the deaf across grade level and subject matter. They reported that exemplary teachers used discourse strategies that encouraged students to expand on their linguistic and cognitive efforts. Teachers responded to students' comments and queries in a constructive manner and asked meaningful questions, which helped students stimulate further thought and intellectual growth. Understanding occurred when participants actively worked together, sharing or exploring problems. In this process, referred to as dialogic inquiry (Wells, 2000), the teacher becomes a co-inquirer along with students in an effort to collaboratively investigate an important question. Teachers are involved participants or facilitators in the construction of knowledge and avoid simply providing or telling information (Harris, Graham & Mason, 2003).

Teachers wonder or talk aloud, which is an effective way of modeling learning strategies and discourse for students. When modeling the inner dialogue of expert writers during guided writing activities, teachers are exposing students to the kinds of thinking desired from them as developing writers (Baker, Gersten, & Scanlon, 2002; Baker, Gersten, & Graham, 2003). The use of discourse, over time, can have profound influence on the transformation a learner undergoes (Englert & Mariage, 1996) into independent and competent writers. Students learn metacognitive strategies for self-questioning and self-monitoring during writing (Schirmer, 1994). In the case of deaf learners, they may also be exposed to the metalinguistic strategies used when expressing, translating and working with two very different languages (Erting & Pfau, 1997). During instruction, a

carefully guided and responsive dialogue can allow for links between cognitive, linguistic and communicative realms (Miller & Luckner, 1992).

A Description of Morning Message

Morning Message (Englert, Berry & Dunsmore, 2001; Englert & Dunsmore, 2002; Mariage, 1996, 2001) is an instructional activity that is both balanced and highly interactive. The activity incorporates skill-based instruction in the context of holistic and real writing experiences. Such an approach to writing instruction gives attention to higher-order and lower-order skills. Additionally, teachers using Morning Message view dialogue as a critical pedagogical tool. Writing strategies, practices and thinking are essentially made accessible through the teacher's and students' discourse, and students take over more control of the writing process as knowledge is appropriated.

Morning Message (MM) is generally a fifteen to thirty-minute, daily writing activity, during which teachers and students collaboratively construct a piece of text. When co-constructing papers of personal experience or personal narratives, one student will serve as the day's lead author by suggesting an idea or topic for the paper. Others will actively participate and work with the author in the generation and revision of text. When the group and author reach a consensus to add a phrase or a sentence to the text, the teacher writes the students' word-for-word expressions (including grammar and meaning errors as they are communicated) on a surface visible to all[1] such as an easel. Then, she opens the floor for further generation of ideas, or the beginning of a revising or editing component. The writing during MM is a recursive process, with participants

[1] The teacher writes so that students are not cognitively burdened by this task and can focus more on thinking, inquiring, suggesting and sharing.

fluidly moving back and forth between planning, idea/ text generation, revising and editing.

The students can ask the author questions (i.e., who, what, where, why, how) about his/her experience to gather more information for the paper and generate further text. These question words, in the case of personal narratives, serve as scaffolds for learning and producing the text structure. In addition to personal narratives, MM allows for the teaching and learning of a variety of other text structures such as comparison/contrast, persuasive, and expository papers. However, scaffolds for these other text structures may take the form of conceptual maps or organizing devices. In addition, the topic would be collaboratively determined, eliminating the need for a lead author.

Once any text is written on the easel, the teacher will repeatedly read it alone or in unison with the students to prompt awareness of any part that does not seem right. This serves to model the practice of self-monitoring. As the text is reread, participants offer suggestions for revising both lower-order (i.e., repairing language or convention mistakes) and higher-order constructions (e.g., organizing ideas effectively and coherently). Oftentimes, through metacognitive prompting (e.g., “How do we do that?”; “Why is that necessary?”; “When should we use such a method?”) from the teacher, students explain their ideas and externalize their thinking. This pairs thinking with language and action, and other participants have the ability to deepen their own knowledge by having access to the thinking of others. Further, dialogue about the merits of suggested changes may also result, for students comment on each other’s input by

defending or providing rationale for alternatives. In this manner, knowledge and understanding is socially constructed.

Ultimately, MM provides a space for teachers to transfer the control of the writing process and strategies over to students. When first introducing MM, the teacher may use more time for direct instruction, prompting, modeling of language and thinking, or use of guided questions. Once students begin to appropriate the writing practices, thinking, and strategies of more-knowledgeable-others, the teacher gradually releases more of the writing responsibility over to the students. S/he uses a series of "step back" and "step in" moves to facilitate this transfer; stepping back to position the students as the expert decision-makers and evaluators of the quality of text, and stepping in to provide necessary supports or instructional guidance (Englert & Dunsmore, 2002). Increasingly, more "step-back" moves are used. The transfer of control to students demonstrates greater self-regulation, confidence and automaticity with writing.

The final co-constructed piece is then published and shared with an authentic audience. This may be a newsletter that is sent home and shared with parents or may be a school bulletin distributed to peers and staff. Publication of authentic pieces for real audiences shows that the writing has purpose of conveying information or ideas to others, and it is not just an activity done in school.

Previous research on Morning Message, through qualitative and interpretive kinds of analyses, has explored students' active involvement in interactive writing and the essential role of discourse in learning. Englert, Berry & Dunsmore (2001) emphasized that children need to play an active role in their writing development, and collaborative writing in situated contexts whereby students are involved in inquiry and problem-

solving activities is a method of fostering the construction of knowledge. Further, Mariage (1996, 2001) demonstrated that students learned strategies and practices from the dialogue used during MM. In his study, students at first "borrowed the voices" of others when completing independent writing projects or editing another's work. Later, however, they increasingly internalized these voices, and their writing became more automatic.

Method

The current study takes a pre-test/post-test approach with investigating the effectiveness of MM in three classrooms for the deaf. Data was collected at both the elementary and middle school levels to determine if school level yields diverse results: particularly of interest is the middle school level since very little literacy progress is made at this age (Yoshinaga-Itano & Downey, 1996; Yoshinaga-Itano et al., 1996). Lastly, there are features of the writing activity (e.g., repetitive group readings of the text) that are suspected to also impact reading ability and, therefore, warrant investigation of student progress in this area as well. Research questions that are addressed in the study include: 1) Do students make significant gains in writing with both higher-level and lower-level skills when they receive instruction through the interactive environment of MM? Do students simultaneously make significant gains in word identification skills?; 2) Does school level (elementary vs. middle) have a differential effect on student writing achievement when students receive instruction through the interactive environment of MM?

Participants and School Context

Three female, hearing teachers and their respective students participated in the study. All teachers were certified teachers of the deaf and had been teaching in the field for four to six years. They were all enrolled in the same on-line course during the spring 2005 semester at a mid-western college. The three-credit course could be incorporated into the teachers' master's degree programs in Deaf Education. The course was optional to graduate students because it required teachers to be able and willing to implement a 21-day writing intervention with their students.

One of the women teaches middle school students at a residential school for the deaf. The other two women teach elementary students in center-based programs housed in public schools. The schools are all located in mid-size to large mid-western cities. The programs all espouse Total Communication as their method of communication with students; however, the teacher at the school for the deaf uses more productions of ASL in her daily communication with students than the other two teachers. This teacher has also received an advanced level on the Sign Communication Proficiency Interview whereas the other two did not have a current rating. Yet, all three teachers proficiently use English-based sign language and/or ASL and can carry out understandable and two-sided conversations with students. During observations of classroom interactions involving numerous interchanges, there was no indication of miscommunications or misunderstandings between teachers and students. Additionally, the few breakdowns in communication that did occur between teachers and students were quickly and easily repaired.

The student participants evidenced hearing levels ranging from mild to profound. Yet, the majority of hearing levels were at or below 65 dB in the better ear without

amplification. There were 16 total student participants: eight middle school students and eight elementary. All students received literacy instruction in a self-contained setting with one of the aforementioned deaf education teachers. There were seven girls (44%) and nine boys (56%). In addition to hearing losses, four of the students have other disabilities. Additional student information is provided in Table 1.

[Insert Table 1 about here]

Procedure

The graduate level course that teachers took was titled *Instructional Responsiveness: Writing and Students with Hearing Loss.* The course incorporated readings and discussion on the following topics: writing and the deaf student; using dialogue as an instructional tool; contingently-responsive instruction; the apprenticing and scaffolding of students. In addition, graduate students were introduced to MM (Englert & Dunsmore, 2002; Mariage, 1996, 2001). They were then expected to implement MM in their respective classrooms during the last weeks of the semester. Each teacher conducted the activity for a total of 21 times. Because of the difficulty of carrying out the activity on a daily basis at the end of the year when IEPs are generally held, the teachers were given approximately 8 weeks to complete all 21 times.

The teachers viewed two instructional videos during the fifth week of the course and then wrote their responses, questions, and ideas in an on-line threaded discussion. The first video was of Drs. Carol Sue Englert and Troy Mariage, the originators of the MM practice. In this video, the theoretical foundations and key principles that drive the activity were discussed. Teachers were also shown the basics of how MM is carried out in the classroom. The second video was of the author and the second course instructor

who were discussing the possible challenges of using the activity with deaf students. Because the MM activity had never been used with deaf students, it was important to question and anticipate any special considerations regarding this population. Both of the course instructors have previously taught deaf students and could bring that knowledge to bear in this uncharted territory. During the video, the instructors described possible adaptations that teachers could make to address three particular challenges.

The first noted challenge of using MM with deaf students was the writing of the message itself. Typically, the teacher writes a student's expression on the easel when it is offered. Many deaf students, however, communicate using ASL, which has no formal written form. It was because of this difficulty that the course instructors proposed a "two easel" approach. When students offer an idea in ASL, an additional step becomes necessary. First students collaboratively discuss if an offered expression is ASL or English-based sign (capable of being written). If the expression is ASL, the teacher may use the "ASL easel" as a holding place for the idea by writing ASL gloss, symbols, pictures, or any other convention that may help students remember what is signed and how it is expressed. The class then discusses ways to translate the ASL concept into a written form. If necessary, the teacher may need to model or think-aloud the principles of each language and possible translation techniques until students begin to take up the approaches. The translated idea is then recorded word-for-word onto the "English" easel, which may not be grammatically correct yet but is a close enough approximation of English to be written. This ASL-to-English adaptation could be considered a challenge and a benefit at the same time. Although the process undoubtedly causes the MM to take

longer than the traditional fifteen minutes, the activity may help build necessary metalinguistic awareness of both ASL and English by engaging students in the process.

The second challenge mentioned on the video was the rereading of the message. Typically, the teacher rereads the text while pointing word-by-word as she speaks. To do this while signing is difficult, if not impossible. However, it is critical that the text be repeated again and again to develop a rhythm and a pattern to the written language. Just as hearing students read along with their teacher, deaf children should also be signing (or fingerspelling if there is difficulty matching sign to the English constructions). This repetition is a vital step in teaching students to reread and monitor their texts. Thus, the instructors proposed a one-handed signing technique, where one hand is pointing at the print and the other is signing.

Thirdly, it was acknowledged that working with young deaf children to elicit experiences through language can be a daunting task. Students with language delays may encounter difficulties when taking on the role of the author and expressing their experiences. Therefore, the instructors suggested two possible adaptations. One way to counter this problem is to establish a common ground where the students and teacher can hold a discussion. It may be that the teacher has to create authentic events (e.g., a visit to the grocery store) involving all the students in the classroom and then encourage the students to use that event as the topic for their MM. Again the use of authentic events would ensure that all the children have background knowledge of the topic and have at least been exposed to some of the vocabulary. If, however, a student is given the opportunity to contribute her individual experience, it may be appropriate for the teacher, in conjunction with the parents, to devise a planning tool so MM topics can be better

understood and communicated. This may take the form of a journal or semantic map that is sent home to parents that will help guide a brief description of an event that the student recently experienced. Parents may record ideas in the journal or on the map in collaboration with their child, perhaps even reviewing vocabulary that will aid the student's expression of the message in class.

In the video, the instructors discussed these three difficulties and did offer some suggestions for possible adaptations to the activity; however, the teacher participants were mainly encouraged to make decisions in their own classrooms that would best accommodate their individual students' needs and varying profiles (i.e., form of communication used, the presence of language delays, the presence of additional disabilities, students' reading abilities, students' prior knowledge, etc.). It was expected, however, that they would remain faithful to the major underlying principles of MM (e.g., specify an authentic audience, scribe the exact ideas students offer, allow students to be active participants in the construction of the text). In order to ensure fidelity, the teachers submitted videotapes of themselves conducting the activity near the beginning, middle and end of the 21-day implementation phase—approximately 1 videotape for every 7 days of instruction. Teachers were often provided with feedback, both positive and constructive, regarding adherence to the key principles of MM[2]. There was also a bi-weekly chat session that served as an outlet for sharing successes, tribulations, ideas, and creativity.

Sources of Data

The same assessment measures were given to students prior to the intervention and after the intervention. The battery of assessments included a writing measure, a

[2] The researcher would frequently observe the classes on the day of videotaping.

reading measure and a revising/ editing measure. Teachers administered and collected the pre- and post-assessments. All students were present for both.

Writing measure. First, students were given a writing assessment. They were told to write about a personal event or experience that would be interesting to other people. They were asked to share a true life story about something that had happened to them. A few examples were provided such as going to the fair, sleeping over at a friend's house, or going someplace special. Students were reminded to think of any questions someone might have about their stories and to answer as many of those in their writing as possible. They were also told prior to writing to (a) explain the event by including as many details as possible, (b) reread their stories once they are finished to see if they make sense, (c) not worry about spelling words correctly, and (d) not be afraid of making the paper messy as they edit. Students wrote until they were satisfied, for there was no specified length or time. If students asked questions (i.e., about spelling, conventions, etc.) during the assessment, the teachers would respond by telling them to do the best they could. Typically, students completed the task in 10 to 30 minutes. When they were finished writing, students raised their hands so the teacher could pick up their papers. Illegible or non-interpretable words were dictated to the teacher so she could write the intended meaning underneath the students' attempts.

In order to detect progress with both higher-level and lower-level writing skills, an analytic rubric was designed. While developing this tool, there was consideration of other writing or language measures that have been used with deaf students such as the TOWL-3 (Hammill & Larsen, 1996) and the Test of Syntactic Abilities (Quigley, Steinkamp, Power & Jones, 1978). In addition, several articles with analytical scales

(Englert, Conway, Gover, & Dunsmore, 2000; Heefner & Shaw, 1996; Isaacson, 1996; Schirmer & Bailey, 2000; Schirmer, Bailey & Fitzgerald, 1999) were reviewed. Not one was fully suited for the current research. Some were uni-dimensional, focusing solely on story propositions or syntactical abilities. In addition, some were not sensitive to the specific writing struggles of deaf students such as accurate use of prepositions or the use of embedded clauses. Therefore, the current study's measure is based in part on some of the aforementioned assessments and rubrics; however, the tool is lengthier, multi-dimensional, and more revealing of deaf students' writing weaknesses and progress. Prior to scoring, the rubrics were reviewed by four additional researchers to assess the face validity. In Table 2, it can be seen that the measure is comprised of four main components and several sub-components. The four main categories provide overall scores for high-level writing skills such as primary traits (cf., Englert et al., 2000) and low-level writing skills such as contextual language (cf., Hammill & Larsen, 1996; Quigley, Steinkamp, Power & Jones, 1978), contextual conventions, and total words.

[Insert Table 2 about here.]

It should be noted that no students crafted statements using passive voice or perfect verb tense; therefore, these language forms were not included in the rubric. Most of the subcategories were judged on a 4-point rubric scale, 3 points indicating fluency in the skill or trait and 0 points indicating no emergence of the skill or trait at this time. A portion of the primary trait rubrics can be viewed in Appendix A and a portion of the contextual language rubrics can be viewed in Appendix B.

The students' papers were typed and given student ID's so that the rater would be blind to when the papers were written and by whom. Twenty percent of the pre- and post-

tests were randomly selected and scored by a second rater. The interrater reliability was calculated for each of the subcomponents on a cell-by-cell basis across subjects. Reliability scores ranged from 0.83 to 1, with an average overall agreement of 0.97. The raters were accurate or within one point of each other 98% of the time.

Reading measure. The SORT-R or Slosson Oral Reading Test – Revised (Slosson & Nicholson, 1990) was used to obtain students' word identification abilities prior to and immediately after the intervention phase was complete. It contains 200 words that are arranged in order of increasing difficulty. Each group of 20 words approximates one grade level. Thus, a participant's raw score can be converted into a grade-equivalent score that is indicative of reading level.

The SORT-R is a norm-referenced test that has achieved high reliability ratings (e.g., test/retest and Kuder-Richardson was 0.98) and criterion validity scores (e.g., 0.83 correlation with Peabody Individual Achievement Test). It has not, however, been administered to deaf and hard of hearing students for the purpose of determining norms associated with this subpopulation of students. The assessment evaluates word identification skills, and deaf and hearing students may use different strategies for this task. For instance, hearing students may use more phonics and sound-based efforts whereas deaf students may rely more on contextual clues and the meaning of a passage. If true, the SORT-R would indicate a lower than actual reading level for deaf and hard of hearing students using these strategies because the assessment involves reading words in isolation. Therefore, the SORT-R data reported in this article is discussed in terms of students' gains/losses with identifying words, and word identification is viewed as one reading skill that has an impact on overall reading ability. Pre-test reading levels of the

participants are provided in Table 1 so readers can get a sense of the diversity of student participants. Yet, it should be re-emphasized that this level is indicative of students' word identification skills only, and students' actual reading levels may be higher.

During administration, the students were told to try and read all the words s/he can. The assessment allows hearing students to count words that are pronunciated accurately even when they do not know the associated meanings. To give deaf students the same opportunity to evidence word recognition and word expression, the test administrator accepted singed words, oral pronunciations and confident, fluid fingerspellings of the words.

Revising/ editing measure. Lastly, students were given an assessment called Shay's Newspaper Story (Mariage, 2001) which can be viewed in Appendix C. This is a fictitious MM story that is in need of revising and editing. The story contains mechanical errors[3] as well as coherence, text structure and sense-making problems. The students were given the following directions:

> This is a story written for a school newspaper. This newspaper will go home to all the parents of children who go to the school. This story was written by a student named Shay, but he doesn't know if it makes sense or if he needs to make changes. He needs an editor's help so that his story makes sense, and the errors are corrected before the newspaper is printed. Do you know what an editor does? (discuss what an editor does if necessary).
>
> You are going to be the editor for Shay. I'll read the story twice for you. Then, you will take a pencil and make your changes to the story directly on this copy. I'll compile the changes and send them to Shay.

Shay's newspaper story contained 30 possible revisions. There were a total of 22 mechanical errors; 16 were spelling mistakes and 6 were capitalization, punctuation, and

[3] The spelling mistakes were largely phonetically-based errors because this assessment was previously used with hearing students and had not been administered to deaf students. To ensure that students could make sense of the words, the administrator read Shay's story to students twice and answered any questions about what the words were. The writing samples collected for this study were later used to examine the kinds of spelling errors deaf students make to then develop a new revising/ editing measure for future research.

verb tense mishaps. There were three coherence issues. For instance, the story mentions that "Joe like cookies". This is devoid of any real explanation about who Joe is and how he is related to the overall story. Three of the story's errors were tied to the text structure. The story's first sentence begins, "Thair are many steps you must follow to mak cukies". Because the introductory sentence is an indicator of the details to follow, the next few sentences should explicate the steps involved in making cookies. Lastly, there are two sentences that do not make logical sense, one being, "you mak them outside." If the student is reading for meaning, s/he will change the statement to something more reasonable. The scoring protocol for Shay's newspaper story allots one point for each surface-level correction (i.e., mechanics and conventions) and two to four points for what are considered higher-level corrections. Two points were given for each revision of nonsensical statements, three points for remedying each of the incoherent pieces of the text, and four points for fixing the text structure in the necessary parts. The scoring rubric can be viewed in Appendix D. Interrater reliability based on a random selection of 20% of the pre- and post-assessments was 0.98.

Analyses and Findings

First, to assess whether the students made significant gains in their writing and reading scores during the intervention phases, a series of paired *t*-tests comparing pre-and post-tests were administered. There were a total of six *t*-tests, four were associated with the main categories of the writing measure (i.e., primary traits, contextual language, contextual conventions, total words) and one *t*-test each was associated with the reading measure and revising/editing measure. The descriptive data and results of these tests are presented in Table 3. Four of the six *t*-tests were considered significant having designated

an alpha level of .05. Those areas that showed significant gains from pre- to post-assessment include primary traits ($t = 8.53$, $p < 0.000$), contextual language ($t = 3.91$, $p < 0.001$), word identification ($t = 6.69$, $p < 0.000$), and Shay's newspaper story ($t = 3.89$, $p < 0.001$). Those areas that did not show significant gains (nor significant losses) during the intervention phase include contextual conventions ($t = 1.85$, $p < 0.085$), and total words ($t = -1.80$, $p < 0.093$). According to Cohen's rule of thumb (Howell, 2002), the magnitude of the experimental results were large for the primary traits comparison ($d = 0.82$) and near-medium for contextual language ($d = 0.41$) and Shay's story ($d = 0.46$).

[Insert Table 3 about here]

Next, a one-way MANOVA was conducted to detect any significant discrepancies between elementary and middle school students on five dependent variables (i.e., differences between pre- and post-tests with respect to primary trait, contextual language, conventions, word identification skill, Shay's revising/editing). Because Wilks' Lambda was significant, $F (5,10) = 22.30$, $p < .000$, the univariate statistics for each dependent variable were interpreted. These findings can be viewed in Table 4. The results indicated that there was a school-level effect for three of the five variables. The difference between pre- and post-test convention scores was significant, $F (1,14) = 8.18$, $p < .013$ as well as differences in word identification skill, $F (1,14) = 62.45$, $p < .000$ and Shay's story, $F (1, 14) = 13.49$, $p < .003$. The R^2 for convention differences was high at .611 which signifies that approximately 61.1% of its variance can be explained by school level effects. The R^2 for reading level difference and Shay's story difference were .331 and .491 respectively.

[Insert Table 4 about here]

An analysis of the means by level showed that elementary students outperformed middle students with respect to gains in conventions (μ_{el} difference = 4.125, S.D. = 2.29; μ_{ms} difference = -1, S.D. = 2) and gains in word identification skill (μ_{el} difference = 0.38, S.D. = 0.18; μ_{ms} difference = 0.19, S.D. = 0.08). On the other hand, the middle school students made greater gains with respect to Shay's story (μ_{ms} difference = 10.5, S.D. = 6.21; μ_{el} difference = 1.88, S.D. = 2.36). Primary trait differences and contextual language differences did not show any significant school-level effects, F_{pt} (1, 14) = 1.26, $p < .281$; F_{cl} (1, 14) = 0.53, $p < .479$. Average gains and losses for each of the writing subcategories are offered in Table 5.

[Insert Table 5 about here]

A combination of one's primary trait score, contextual language score and convention score yields a total score. As shown in Figure 1, all students evidenced gains in their total scores from pre- to post-test with the exception of student 9 who received a near-perfect score on both tests.

[Insert Figure 1 about here]

Student 9 did, however, show tremendous progress on the revising/editing measure by doubling her score. Her pre- and post-tests along with the scoring sheets can be found in Appendices E and F to illustrate this. On the score sheets, a check indicates that the student resolved the issue and a bullet shows errors that were not identified by the student. At pre-test, the student corrected primarily spelling and punctuation errors; whereas, at post-test, she additionally attended to the meaning of the passage, the coherence and the text structure elements.

Also, to demonstrate student performance and scoring procedures on the writing measure, the pre- and post-tests of student 3 can be viewed in Appendices G and H.

Discussion

This research was undertaken to study the potential benefits of an interactive, guided and balanced writing activity on the writing performance of students with hearing loss. The findings suggest that students do benefit from MM and do make significant gains in their writing. First, students evidenced substantial growth with higher-order skills; that is, they attended more to the primary traits of the text structure. With respect to the three- and four- point scales used to assess primary traits, the average student progressed nearly a point on six different characteristics of writing: (a) giving precise information about who, where and when; (b) text coherence; (c) ending with a clear conclusion; (d) beginning with an introductory statement; (e) applying an appropriate title to the piece; (f) including specific and rich details that develop the topic. Improvement of higher-order skills rendered the largest effect of all components.

Another noteworthy finding is that students made significant gains with many lower-order writing skills in the contextual language component. There were marked improvements with respect to verb tense consistency, appropriate use of prepositions, subject/ verb agreement and run-on sentences. In fact, each of these areas showed improvement of nearly one point or more than one point. Three subcomponents showed, on average, growth of approximately a half point between pre- and post-tests: less use of fragmentary sentences; greater use of unique and non-frequent vocabulary; more correct use of the infinite verb form. Nominal gains or losses were also noted – the same amount or less of the following constructions were utilized in student post-test writing as in the

pre-test writing: introductory phrases, various kinds of pronominalization, complex sentences, compound sentences, prepositional phrases, and negation. Furthermore, there were no differences detected relative to students' correct use of determiners. Although results of subcomponents within the contextual language category did vary, there was an overall significant difference between pre- and post-testing and a moderate effect size.

There is one plausible explanation that might account for the wide range of results within the contextual language category. First, the intervention period was relatively short (21 days) when considering the extensive list of language constructions that were being measured. Those subcomponents in which students showed the most growth were likely at the foreground of instruction and given more "floor time", as evidenced in the following example.

It is often a struggle for deaf students to select the proper preposition for a phrase because, for instance, "at" has a dictionary definition of "on", "in", "near", "by", or "through"; it is defined by other prepositions. Since usage of prepositions is typically governed by what sounds most contextually appropriate, there are oftentimes no clear-cut rules that a teacher can offer her deaf students. Two weeks into the intervention, participating teachers expressed their frustrations during a class chat session with teaching prepositions, and considerable time was given to sharing individuals' tribulations, experiences and insights. From that point, teachers made a concerted effort to model the use of prepositions in their writing, think-aloud any helpful explanations or reasons, create visual patterns in the text (i.e., repetition of similar sentence constructions) and encourage inquiry and discussion around prepositions during MM. It

is logical that students made gains with prepositions because teachers gave extensive thought to this topic, and prepositions were given instructional time during MM.

Students as a group showed little or no sizeable gain in the area of contextual conventions; however, there were differential school-level effects worth noting. Elementary students showed five times more growth with capitalization, punctuation, and spelling than middle school students. This may be attributed to middle school students already having a firm grasp of writing conventions at the time of the pre-test and having very few ways to show growth in this category. One area that middle school students did show substantial improvements was with the capitalization of proper nouns; scores, given on a four-point rubric scale, increased 1.38 points during the intervention phase.

Also at the elementary level, students made greater jumps in word identification skills as compared to students at the middle school level during the 8-week intervention period; however, both groups did evidence significant progress in this area. These results highlight the importance of the reading/writing connection. During MM, reading is an integral part of the writing process in that students are continually rereading for self-monitoring and revising purposes. Students, especially the younger ones, were continually being exposed to new words through MM and then practicing the words within authentic contexts. And, with improvements in word recognition, students' overall reading abilities likely improved.

One last finding is that students significantly improved their ability to revise and edit a piece of writing. On Shay's editing/revising task, there was an approximate gain of 6 points and a moderate effect size. Upon deeper analysis, it was found that elementary and middle school students differed significantly. The younger students made a greater

number of necessary corrections on their post-tests than they did on their pre-tests; however, all revisions/edits were surface-level changes. That is, the elementary students focused primarily on fixing capitalization, spelling and punctuation errors. The middle school students, in contrast, made greater advances from pre- to post-tests. At pre-test, students were making surface-level changes, but at post-test, they were additionally making decisions about the text structure, coherence and overall meaning of the passage. This is illustrated using the post-test example of student 9 in Appendix F. The student is clearly reading for the intended purpose of communicating meaning. Because it says that there are many steps to follow, the student adds text that explains the steps for making cookies. She also adds text to explain the ways cookies are different from cakes. She further deletes or revises any information that is not important, is not accurate, or would not make sense to a reader (e.g., changes "make them outside" to "make them in the kitchen", deletes mention of eating cake before dinner). The different kinds of gains shown by elementary and middle school students demonstrates the wide-range of advantages offered by MM to younger and more mature writers.

Educational Implications

These findings suggest that educators of the deaf should thoughtfully integrate guided-writing activities, such as MM, into the classroom. According to French (1999), guided writing should happen daily.

> "In these activities, students talk, think, question their way through text as readers or writers with the teacher's support. Students use written language themselves to extend inquiry. During these activities, an increasing amount of responsibility is placed on the student for what he or she learns, both in kind and amount." (p. 17)

Furthermore, guided writing can be a highly interactive, collaborative experience for students. The teacher's multidimensional role in successfully achieving this is crucial. For instance, MM requires an extraordinary amount from teachers. They should be skillful and responsive users of discourse by (a) revoicing or reformulating student comments (Mariage, 2001), (b) modeling thinking and writing strategies through think-alouds, (c) providing verbal scaffolds as needed, (d) allowing a gradual transfer of control to students, (e) facilitating the active participation of all members, and (f) knowing when to inquire, explain, offer an opinion, confirm or listen. Indeed, using discourse as a pedagogical tool is a masterful art. Teachers, over time and with practice, grow in their ability to adeptly use a variety of discourse moves that can support learning (Englert and Dunsmore, 2002).

In addition, the adapted version of MM creates a space where conversation and inquiry about translation of ASL to English can take place; this can be particularly beneficial for deaf students and their metalinguistic development. One practice that is currently widespread in classrooms for the deaf is the Language Experience Approach (LaSasso & Mobley, 1997; McAnally et al., 1999; Schirmer, 1994). This approach typically entails having the child dictate, in his/her own language, an idea or recent experience. Oftentimes, students will also complete a drawing of the experience to support their telling of events. The teacher then records the child's expressed concepts in English. These records may be made into a book that is revisited by the student frequently for practice and rereading. This widely-used practice does give students exposure to their ideas in printed English which can improve reading and writing skills (Johnson & Roberson, 1988; Schirmer, 1994); however, it does not involve the student as

a participant in the decision-making or translating processes. Furthermore, it does not provide any guidance or support to the student in acquiring this skill. In order for deaf students' writing skills to emerge, they need access to the strategies or rules one uses in linking visual communication to written text (Evans, 1998). When there is no classroom dialogue, no inquiry, no thinking aloud or no discussion about the strategies one uses to bridge the linguistic gap between two distinct ways of expression, we cannot expect our students to develop this skill. Therefore, students need to be actively thinking and actively involved in this work.

Lastly, a balanced approach to writing instruction as offered in MM cannot be underestimated. Teachers of the deaf have expressed difficulty in providing a balance of instruction related to the writing content as well as the form (e.g., English syntactical constructions, mechanics). Form continues to dominate the instructional time spent on writing (Mayer, 1999), likely because deaf students tend to struggle more with form or because teachers are unable to see past grammatical errors. During MM, the end objectives (i.e., co-constructing and publishing a piece of text for an authentic audience) require that attention be given to all writing skills and processes including text structure traits, language and conventional usage, and editing and revising tasks.

Limitations and Future Directions

There are features of this research that warrant deeper investigation. One unexpected and surprising finding relates to length of student writing. Students wrote pre-test pieces that were 43% longer than the post-tests. Even though the loss in total words was not found to be significant, it does raise some intriguing questions. Are the shorter pieces at post-test due to the fact that students are giving more thought to organization,

coherence and written form? This could be one credible explanation because crafting a polished piece of writing does require extensive rereading and revisions as opposed to freely writing a message. Or, is the loss of words associated with the fact that the writing models constructed in class are also typically short? With only 15 to 30 minutes of time allotted to MM, teachers may unintentionally constrain ideas to a paragraph in order to complete the text in one day. Thus, it may be purposeful to reexamine student outcomes when the instructional model occurs for a lengthier time period or across two class periods.

There is a second limitation to the current research that relates to students' expressions and offerings during MM. During the activity, the teacher typically scribes those expressions offered by students onto an easel as a starting ground for further conversation and construction. If students are not making complex contributions independently and are only providing simple sentences, it can be difficult to capitalize on what is not offered. Rather a teacher must create opportunities for teaching about constructions like compound sentences, complex sentences or embedded clauses. In this study, it was found that students made no gains in these areas. At the same time, the author and the participating teachers did not foresee these needs. There is future potential for students to be exposed to more complex constructions if the teacher is cognizant of what student offerings are missing, and therefore, can create the occasion for suggesting or modeling the usage at opportune times. Additionally, it should be noted that MM is only one component of a writing curriculum. Explicit instruction on combining sentences, for example, could nicely support student growth in this area.

Lastly, there are limitations in the current research design that provide opportunities for future investigations. Causal claims regarding the ability of MM to produce gains in student writing and reading achievement (and also sustain them) cannot be made on the basis of this study. Student growth was a measure of pre- and post-test differences and, therefore, may be attributed to other confounding factors. Future studies should be quasi-experimental or experimental designs and include a maintenance probe in order to eliminate these questions. Furthermore, future directions might consider investigations of other types of writing besides the personal narrative. For instance, what is the effect of using the MM space--a space that is interactive, balanced and collaborative--for the teaching of expository or informational kinds of writing?

Conclusion

In closing, the importance of involving students as active participants in writing instruction cannot be overemphasized. It is through repeated collaboration and participation in dialogue about writing that students appropriate the thoughts, words and actions of more knowledgeable others. Deaf students involved in these opportunities can build on an internal repertoire of writing strategies and an internal representation of English that will increasingly support their transition into independent and competent writers. In this study, over a short 21-day intervention, students evidenced substantial growth in higher-level and lower-level writing skills, reading, and revising/editing skills. The results indicate a need for further research in this area and also point to Morning Message as a promising future practice in classrooms for the deaf.

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Table 1

Demographics of Participants

Stud. ID	Ethn	Male /Fem	Age	Grade	Hearing Loss	Additional Disabilities	Comm. Method	Read[4]
Elementary								
1EL	C/W	F	8	2nd	Sev-Prof	Achondroplasia	ASL,EBS,Speech	2.8
2EL	C/W	M	9	2nd	Mod-Sev	None	EBS, Speech	2.3
3EL	C/W	M	7	1st	Mod-Sev	None	EBS, Speech	2.0
4EL	PR	M	11	5th	Mod-Sev	Seizures, DMS	Speech, EBS	5.6
5EL	HIS	F	11	4th	Profound	VI, CI, DMS	ASL, EBS	1.3
6EL	C/W	M	9	4th	Profound	None	ASL,EBS,Speech	1.4
7EL	AA/HIS	M	10	5th	Mild	None	Speech, EBS	3.0
8EL	HIS/PR	F	11	4th	Profound	Goldenhar Syn.	Some ASL	0.7
μ			9.5	3.4				2.4
S.D.			1.51	1.51				1.51
Middle School								
9M	C/W	F	13	7th	Sev-Prof	None	ASL, Speech	6.0
10M	C/W	F	14	8th	Sev-Prof	None	ASL,EBS,Speech	5.0
11M	C/W	M	13	8th	Profound	None	ASL, EBS	6.8
12M	C/W	M	14	8th	Sev-Prof	None	ASL, Speech	5.6
13M	C/W	M	14	8th	Mod-Prof	None	ASL, Speech	4.7
14M	C/W	F	14	8th	Profound	None	ASL	4.3
15M	C/W	F	13	7th	Profound	None	ASL	3.4
16M	AA	M	14	8th	Profound	None	ASL	3.8
μ			13.6	7.75				5.0
S.D.			.52	.46				1.14

Note: AA = African American, C/W = Caucasian/White, HIS = Hispanic, PR = Puerto Rican, VI = visual impairment, CI = cognitive impairment, EBS = English-based sign, DMS = delayed motor skills; Pre-read score is a grade-level equivalency.

[4] Reading level is indicative of students' word identification skills only, and students' grade-equivalent levels for reading comprehension may be higher.

Table 2

Categories and Subcategories of Writing Measure Rubric

Four Main Categories	Subcategories
1. Primary Traits	Introduction to the topic
	Title
	Setting the stage, answering who, when and where
	Details about what or what happened
	Conclusion
	Cohesiveness
	Newsworthiness or communication of importance to audience
2. Contextual Language	# of fragmentary sentences (high score = no fragments)
	# of run-on sentences
	# of compound sentences
	# of complex sentences
	# of introductory phrases or clauses
	# of unique prepositional phrases
	Use and correctness of negation
	Subject and verb agreement
	Verb consistency
	Use and correctness of infinitives
	Use and correctness of conjunctions, excluding "and"
	Use and correctness of determiners
	Appropriateness of prepositions
	Use of pronominalization
	Use of unique vocabulary words[5]
3. Contextual Conventions	Use and correctness of contractions
	Using capital letters to begin sentences
	Using punctuation at the ends of sentences
	Using capitalization appropriately for proper nouns
	# of unique and correct punctuation marks (e.g., comma for listing purposes, comma that offsets an introductory clause, quotations, semi-colon, apostrophe)
	Spelling (# of misspelled/total # of words)
4. Total Word Count	# of total words
	# of interpretable words (not including dictated words)

[5] See Singleton, Morgan, DiGello, Wiles & Rivers (2004) for the list of words considered basic or common. All other words were considered unique, counted and then divided by the total number of words in the paper. This number was then evaluated on a 4-point rubric scale.

Table 3

Paired Sample t-Tests

	μ	S.D.	μ diff.	df	*t*	Sig. (2-tailed)	Effect Size
Pretest Traits	7.69	4.81	5.75	15	8.53	.000**	.82
Posttest Traits	13.44	5.05					
Pretest Language	14.00	8.53	4.63	15	3.91	.001**	.41
Posttest Language	18.63	7.46					
Pretest Conventions	10.19	5.31	1.563	15	1.85	.085	--
Posttest Convention	11.75	3.11					
Pretest Total Words	117.75	118.05	-50.56	15	-1.80	.093	--
Posttest Total Word	67.19	47.20					
Pretest Reading	3.67	1.85	.281	15	6.69	.000**	.11
Posttest Reading	3.95	1.84					
Pretest Shay	11.00	6.67	6.19	15	3.90	.001**	.46
Posttest Shay	17.19	11.71					

*ρ < .05, **ρ < .01

Table 4

Univariate Statistics

Effects of Between-Subjects Variable (School Level)

Dependent Variables	Mean Sq.	F	Signif.	R^2
Trait Difference	9.00	1.26	.281	--
Language Difference	12.25	0.53	.479	--
Conventions Difference	105.06	21.99	.000**	.611
Reading Difference	0.14	6.94	.020*	.331
Shay's Difference	297.56	13.48	.003**	.491

*$\rho < .05$, **$\rho < .01$

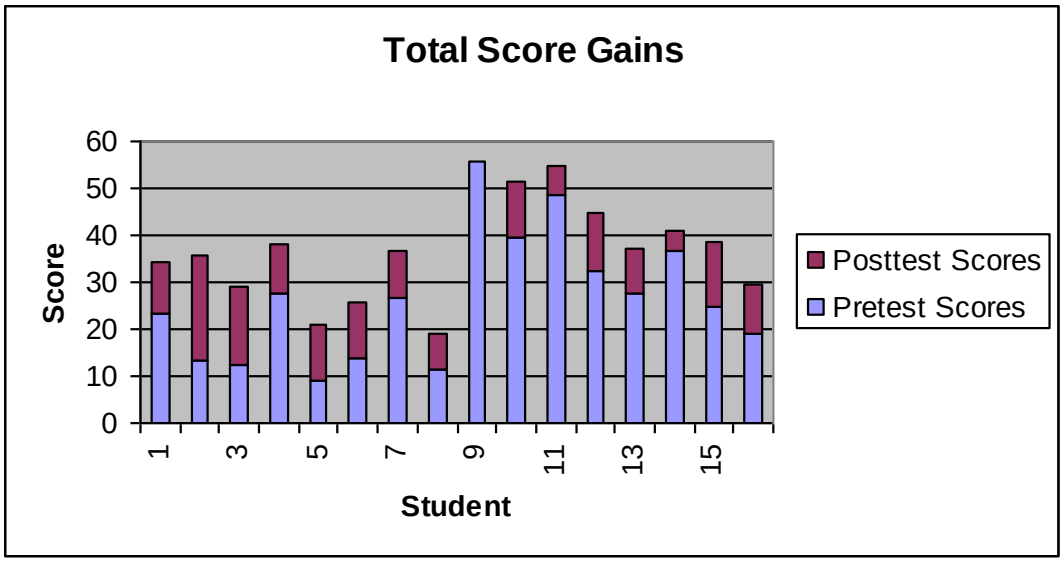
Table 5

Average Gains/ Losses by Category

Primary Traits		+/-
1	Who, Where, When	+1.00
2	Coherence	+0.94
3	Conclusion	+0.94
4	Introduction	+0.88
5	Title	+0.88
6	Details	+0.75
7	Newsworthy &Voice	+0.38
Conventions (Elementary)		**+/-**
1	Punctuating End of Sent.	+1.25
2	Spelling	+1.13
3	Capitalizing Beg. of Sent.	+0.50
4	Other Punctuation	+0.50
5	Other Capitalization	+0.38
6	Contractions	+0.38
Conventions (Middle School)		**+/-**
1	Other Capitalization	+1.38
2	Spelling	+0.25
3	Punctuating End of Sent.	+0.13
4	Capitalizing Beg. of Sent.	-0.50
5	Other Punctuation	-0.63
6	Contractions	-1.63

Contextual Language		+/-
1	Verb Consistency	+1.13
2	Correct use of Prep.	+1.06
3	Subj/Verb Agreement	+0.94
4	No Run-ons	+0.75
5	No Fragments	+0.50
6	Unique Vocabulary	+0.50
7	Infinitives	+0.44
8	Introductory Phrases	+0.19
9	Pronominalization	+0.13
10	Conjunctions (not “and”)	+0.06
11	Complex Sentences	0
12	Determiners	0
13	Compound Sentences	-0.25
14	Number of Prep Phrases	-0.25
15	Negation	-0.56
Other Gains/ Losses (%)		**+/-**
1	Total Interpretable Words	+0.2%
2	Total Words	-43%

Figure 1. Individual Student Gains.



Appendix A

Conclusion

3 – Clear, general conclusion to paper. • *Now you know all about my trip to Alligator World.* • *I can't wait to go back to Sea World next year!* • *I will never forget those moments we had. [Returns back to the topic but with a more general statement]*
2 – Concludes paper, but doesn't necessarily go back to topic • *It was a fun day.* • *My hip is ok now. [Has a final tone, but does not refer back to the topic of operation.]*
1 – Signal that paper ends, often abrupt and disconnected. • *That's all.* • *Bye!*
0 – No conclusion, paper ends on detail (or rambling) • *She has black hair.*

Coherence

3 – **Sticks to the topic.** Highly coherent. No extraneous or unrelated information. All details are tied to an event. There is fluidity and connectedness between sentences. - All parts of the paper (intro, details and conclusion) work together to fully develop the topic or event. • *We went to the Magic Kingdom. We saw many different characters and we also saw the Cinderella's castle. When the sky got dark, we watched the parade with full lights on the costume. After that, we watched the fireworks, it was beautiful. [Connected and coherent information.]*
2 – **Somewhat sticks to the topic.** Information is mostly coherent. Little extraneous or unrelated information. May have one or two disconnections. - The author may be missing a part of the paper (intro, details, or conclusion) and is less able to fully develop the topic or event. • *My birthday is August 19, 1997 my cousins are going to have a great time with me. In last summer cherokee cierra and carlos whent to my birthday part the afternoon or tonigh we grild my dad gave me a present and my dad cuted the cake and icecream. [The author changes his story about this year's birthday to last year's in the middle of the paragraph.]*
1 – **Does not stick to the topic.** Jumps around. Ideas are associative in nature. There is no evidence of thoughtful planning or organization. One idea leads to the next. The author may begin with one focus but be easily led in a direction away from the original intent of the paper. - The author is unable to develop an event s/he experienced. May be a list of events. - Major parts (intro, details, conclusion) of the paper are missing. • *Yesterday we went to my friends house we were riding bikes. We were rollerblading. His name is Allen. [list of events, unable to develop any one event]*
0 – Has no topic. No connectedness from one sentence to another OR there is only one sentence. The paper consists of irrelevant information.

Appendix B

Primary Trait: Total Score for Contextual Language

Fragmentary Sentences (If no verb in sentence, count as fragment.)

3 Zero fragmentary sentences
2 One
1 Two
0 Three or more

Run-on Sentences

3 Zero run-on sentences
2 One
1 Two
0 Three or more

Compound Sentences Two independent clauses joined *appropriately*. Do not count run-on sentences. Commonly used conjunctions include: and, but, or, nor, for, so, yet. Count the number of sentences that are correctly crafted.

- I studied all night, but the test was still a struggle.
- Should I go to the office myself, or will the principal call me down?

3 Three or more
2 Two
1 One
0 Zero compound sentences

Complex Sentences One independent clause and at least one subordinate clause are joined appropriately. Subordinate clauses cannot stand alone as sentences. The following are examples of complex sentences. The subordinate clauses are italicized. Count the number of sentences that are correctly crafted.

- *Unless Bob earns one hundred dollars tonight*, his car will be repossessed.
- She practices *whenever she has time.* [Subordinate clause is used as an adverb.]
- *Whoever wins the election* will have many problems.
- We learned *that she is a physicist*. [Subordinate clause is used as a noun.]
- She is someone *who has shown remarkable courage.* [Subordinate clause is used as an adjective].

Commonly, subordinate clauses begin with the following conjunctions or relative pronouns: after, although, as, as if, as long as, because, before, if, in order that, provided that, since, so that, than, that, though, unless, until, when, whenever, where, wherever, whether, while, who, whom, whose.

3 Three or more
2 Two
1 One
0 Zero complex sentences

Appendix C

Shay's Newspaper Story

Thair are many steps you must follow to mak cukies you mak them outside. Joe like cukies

Making cukies is diffrent in many ways from makeng caks I like choklit cak best. Do you?

When I mak cukies I sumtimes have a problem. I ask my big brother. Then everything is ok. We eat our cak befor dinner.

Appendix D

Shay's Scoring Rubric

Type of Error	Examples	Weight	Total Edits	Total Possible
Mechanical	Spelling There, make (3), cookies (3), different, making, cakes, chocolate, cake (2), sometimes, okay, before Capitals, Punctuation, & Miscellaneous • period at end of sentence (3) • "You" capitalized • subject-verb agreement [likes] • comma following phrase [cookies]	X1 X1		16 6
Prior Knowledge	• "make them outside" vs. inside • "eat our cake before dinner" vs. after	X2		4
Coherence	• Who is Joe? • About cake or cookies? • Who is big brother? Why is everything okay?	X3		9
Text Structure	Explanation • What are the steps to making cookies? Compare/Contrast • How is making cookies different from making cakes? Problem/solution • "…sometimes I have a problem." What is the problem and what is the solution?	X4		12
Total		Total Possible: 47	%	

Appendix E

Student 9: Shay's Pre-test and Score Sheet

There are many steps you must follow to make cookies. You make them at outside.

Making cookies are different in many ways from making cakes. When I make cookies, I sometimes have a problem. I asked my big brother. Then everything is ok. We eat our cake before dinner. Joe like cookies. I like chocolate cake best. Do you?

Type of Error	Examples	Weight	Total Edits	Total Points
Mechanical	Spelling ✓ there, make (3), cookies (3), different, making, cakes, chocolate, cake (2), sometimes, before • okay Capitals, Punctuation, & Miscellaneous ✓ period at end of sentence (3) ✓ "You" capitalized • subject-verb agreement [likes] ✓ comma following phrase [cookies]	X1 X1	15 5	15 5
Prior Knowledge	• "make them outside" vs. inside • "eat our cake before dinner" vs. after	X2	0	0
Coherence	• Who is Joe? • About cake or cookies? • Who is big brother? Why is everything okay?	X3	0	0
Text Structure	Explanation • What are the steps to making cookies? Compare/Contrast • How is making cookies different from making cakes? Problem/solution • "…sometimes I have a problem." What is the problem and what is the solution?	X4	0	0
Total	20 Total Possible: 47	% 43		

Appendix F

Student 9: Shay's Post-test and Score Sheet

There are many steps you must to follow to make cookies. You make them in the kitchen. You need a mix bowl to put milk, flour, sugar and egg. Stir the ingredient until it is smooth. Make the dough into balls and put them in the cookie sheet. Bake the cookies in 10 minutes to 15 minutes.

Making cookies is different in many ways from making cakes. Cookies are made from dough and you put them on the cookie sheet. Cakes are made from batter and you put them in a pan.

When I make cookies, I sometimes have a problem. I ask my big brother. Then everything is okay.

Type of Error	Examples	Weight	Total Edits	Total Points
Mechanical	Spelling ✓ There, make (3), cookies (3), different, making, cakes, chocolate, cake (2), sometimes, okay, before	X1	16	16
	Capitals, Punctuation, & Miscellaneous ✓ period at end of sentence (3) ✓ "You" capitalized ✓ subject-verb agreement [likes] ✓ comma following phrase [cookies]	X1	6	6
Prior Knowledge	✓ "make them outside" vs. inside ✓ "eat our cake before dinner" vs. after	X2	2	4
Coherence	✓ Who is Joe? ✓ About cake or cookies? • Who is big brother? Why is everything okay?	X3	2	6

Text Structure	Explanation ✓ What are the steps to making cookies? Compare/Contrast ✓ How is making cookies different from making cakes? Problem/solution • "…sometimes I have a problem." What is the problem and what is the solution?		X4	2	8
Total	40	Total Possible: 47	% 85		

Appendix G

Student 3: Writing Measure Pre-test and Score Sheet

I see a Sperit (Spirit) hockey gameredhe win. can a go fastr shaot (shoot). a winr. Play hockey. Sper it get rikie (puck) grandqa, grandma, riley. I seea hefoit (fight). Roiley too

Student ID: SMH3P Rater Initials: kw

Primary Traits		Contextual Language	
1	Introduction to paper/topic	0	Fragmentary sentences
0	Title	2	Run-on sentences
0	Setting the stage: who, when, where	0	Compound sentences
1	Details: what happened	0	Complex sentences
0	Conclusion	0	Introductory phrases
1	Coherence	0	Prepositional phrases
2	Newsworthiness	0	Negation
5	*Total Primary Trait*	0	Subject-verb agreement
Conventions		0	Verb consistency
0	Contractions	0	Infinitives
1	Making sentences – capitalization	0	Conjunctions (except "and")
2	Making sentences – punctuation	1	Determiners
2	Capitalization – proper nouns	0	Prepositions
0	Punctuation (comma, quote, semicolon, colon)	0	Pronominalization
0	Spelling	0	Vocabulary
5	*Total Conventions*	*3*	*Total Contextual Language*

__28_ Total words __21_ Total interpretable words

Appendix H

Student 3: Writing Measure Post-test and Score Sheet

Stephen, Daniel, Riley get on Bus. Stephen, Daniel, Riley go to Dafff peren (Deaf Pride) game. Stepen, Daniel, Riley went Fil taip (field trip). Stephen, Daniel, Riley Then pereier (picture). Stephen, Daiele, Riley go to sinm (swim). Mrs. Micelig Mrs. Spess not to sinm. I saw Austin. Stephen, Daniel, Riley eat louch (lunch). Stephen, Daniel, Riley went home. Filt iap (field trip) is finished.

Student ID: SMH3 Rater Initials: kw

Primary Traits		Contextual Language	
1	Introduction to paper/topic	2	Fragmentary sentences
0	Title	3	Run-on sentences
2	Setting the stage: who, when, where	0	Compound sentences
2	Details: what happened	0	Complex sentences
3	Conclusion	0	Introductory phrases
2	Coherence	1	Prepositional phrases
2	Newsworthiness	1	Negation
12	*Total Primary Trait*	1	Subject-verb agreement
Conventions		0	Verb consistency
0	Contractions	3	Infinitives
3	Making sentences – capitalization	0	Conjunctions (except "and")
3	Making sentences – punctuation	0	Determiners
0	Capitalization – proper nouns	3	Prepositions
1	Punctuation (comma, quote, semicolon, colon)	0	Pronominalization
2	Spelling	0	Vocabulary
9	*Total Conventions*	*14*	*Total Contextual Language*

__55_ Total words __45_ Total interpretable words