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Balancing the roles of Explicit Instruction of Text Form Language and Schema Theory in Student Non-Fiction Writing: Problems and Possibilities

A. Introduction

Context

I teach at Burnt Elm public school, in Brampton. Burnt Elm is a school with a population of over 900 students in the Peel Board of Education. Among the main language groups represented in my resource classroom are Punjabi, Hindi, Tamil, Estonian, Serbian, Arabic as well as 23 other language groups. I monitor over 75 students, in grades 1, 2 and 4. I am interested in exploring what strategies best promote coherence in non-fiction writing of the students referred to me by classroom teachers.

The focus of this study will be on the intersection of the following domains: SLA research on cohesion and coherence, discourse acquisition of young children, the effect of text form-focussed instruction on student non-fiction writing and the impact of **schema** theory on student decision-making during the writing process.

B. Research Question

Does explicit instruction in connective language promote coherence and cohesion in student recall and writing in non-fiction genres such as procedure writing and description writing? How might explicit instruction relate to student decision-making while writing?

C. Rationale

Hickman (2003) looks at how and when a range of linguistic functions relating to person, space and time are typically acquired by children in their first language, across linguistic groups. I'm interested to know if her findings might have implications for how and when to teach categories of cohesive language to young second language learners for purposes that extend beyond conversation and narration to reading and writing expository texts in the content areas.

In order to clarify the problems and possibilities inherent in explicit instruction in cohesion I will begin with Halliday and Hasan's work on cohesion theory (1976), summarize the main critiques of their position by various researchers, explore selected studies relating the impact of direct instruction in text form language which includes an examination of Hendrick's work on the emergence of coherence and cohesion in children's discourse across linguistic groups (2003) and outline of how cognitive or **schema theory** influences student

decision-making while writing non-fiction texts.

Both resource teachers and classroom teachers in my school experienced professional development in *First Steps*, a curriculum resource that features explicitly taught non-fiction text forms. My study will examine student acquisition of two of these text forms: in particular, *Procedure writing* and *Narrative writing*. In addition to cohesion as a linguistic property, implying one can teach “text grammars” in the same way one would teach sentence grammar.

Halliday and Hasan’s taxonomy of various types of cohesive ties include four main groups: 1) **reference**, including antecedent-anaphor relations, the definite article *the*, demonstrative pronouns; 2) **substitution**, including pronoun-like forms such as *one, do, so* and several kinds of *ellipsis*. If substitution is replacing one word with another, ellipsis is the absence of that word, “something left unsaid.” While many sentences presuppose some prior knowledge by its audience, ellipsis requires retrieving specific information from preceding information that can be found in the text; 3) **conjunction**, involves words *like, and, but, yet, and*; 4) **lexical cohesion**, which has to do with repeated occurrences of the same or related lexical items. Halliday and Hasan have provided a foundation for subsequent discussion and debate on what makes a text a text, supporting their proposals with a comprehensive list of principles, coding schemes, and sample texts.

Much subsequent research has provided a critique to Halliday and Hasan’s cohesion view of textual coherence. Feathers (1981) examines cohesion from the perspective of cohesive ties between propositional units, i.e. meaning-based connections, as opposed to simple application of cohesive language. Feathers’ criticism has emerged from **schema theory** research by Bobrow and Norman (1975) which regards cohesion in the light of interaction between text and reader or listener. Schemata are models for generalized concepts underlying objects, situations, events, sequences of events, actions, and sequences of actions. Bobrow and Norman’s research suggests that the mind processes information with the use of schema in order to determine which model best fits the incoming information.

Morgan and Sellner (1980) give the strongest critique of Halliday and Hasan’s cohesion theory, arguing that inference and not specific cohesive language may give coherence to a text. Morgan and Sellner propose that cohesion is not a linguistic property at all but merely an epiphenomenon of coherence of content. Three empirical studies back up Morgan and Sellner’s critique of Halliday and Hasan’s cohesion theory:

1. Tierney and Mosenthal (1981), examine the correlation between the proportional use of cohesive ties to holistic coherence rankings given by instructors in their 12th grade composition classes. In student biographies there was a moderate negative correlation of cohesion and coherence ranking. In students’ writing on a given theme, there was a strong negative correlation. Tierney and Mosenthal concluded that there was no causal relationship between the number of cohesive ties in a composition and coherence rankings.

2. Freebody and Anderson (1981) found that poverty of vocabulary, and not lack of cohesive devices was the biggest barrier to reading comprehension and, subsequently, writing cohesion.

3. Steffensen (1981) studied the interactive effects of both cohesive ties and cultural background knowledge on readers’ processing of short prose texts. Adult subjects were asked to read two texts, one based on

their own backgrounds, one based on another culture's. Not surprisingly, she found that when readers could access their cultural background knowledge and apply it to their reading, writing responses to the text were far more coherent.

4. Carrell (1982) reviewed Halliday and Hasan's (1976) cohesion concept as a linguistic property contributing to coherence. She related the criticism of cohesion as a measure of coherence to the teaching of reading and writing in a second language, specifically to English as an Additional Language learners. She emphasized that teaching cohesive ties to promote coherence in ESL student writing has limited value and warned that teachers and researchers should not assume that teaching cohesive ties will be a panacea for writing problems encountered by second language students-problems that are illuminated by schema-theoretical critiques of Halliday and Hasan's cohesion theory.

5. In a later study, Carrell (1985) explored the relationship between explicit teaching on top-level rhetorical organization of texts and college-level ESL students' reading comprehension as measured by quantity of information recalled. Her findings suggested explicit training in text forms facilitates recall of supporting detail as well as of major topics and subtopics. Carrell's (1994) work on awareness of text structure and its impact on recalling information in the text show a relationship between ESL learners' awareness of text structure, measured in two ways (as use and as recognition) and their recall performance with two different types of expository text structures: compare and contrast and descriptions. Her study found differences between two ways of measuring awareness, with the conscious meta-cognitive process of recognition presupposing the subconscious process of use, but not vice-versa. Results also showed that participants in the research who demonstrated awareness of structural aspects of the text through use recalled significantly more about texts they had read, particularly more top-level and high-level idea units, than participants who did not demonstrate such awareness. She concludes that reader-based formal schemata; i.e. awareness of text structure and how it is measured, interact in complex ways with text-based formal schemata i.e. text structures and organization in second language reading.

6. Jacobs (1990) examines how students aged 10-13 acquire language in the science domain. She argued that unless students make a connection between personal, embedded, familiar language to the disembedded, academic language of scientific argumentation, they will be less likely to acquire the academic language required in the science classroom. She examines how pupils of differing abilities remember and use the structure of hypothesis, materials, procedures, observations and conclusions in their writing.

The difference between students appeared to be their ability to remember top level words (science vocabulary) and to use highly expressive, personalized language to bridge the gap between their own world and the concepts, vocabulary and structures of the world of science. She made a claim that Brinton et al's' (1975) view of the value of the first, personalized language indicates that academic language and the hierarchical structure of expository prose resemble a second language for children in the elementary years. In other words, Jacobs stresses that academic language is different enough from children's personalized language that learning it poses the same challenge to a child as learning a new language, such as French.

Jacobs' (1990) findings suggest that while learning the vocabulary and textual organization of science is important in schools, it requires the use of personalized language and the familiar world as a prerequisite.

In other words, children must embed meaning before dis-embedding can occur. In combination with using familiar language, seeing and touching the object of study makes the topic more real and familiar to the learner; the language provided a holding place for information that the learner can attach to newly introduced science topics and vocabulary. She warns that all too often teachers hurry to teach and measure the second before giving enough time for the first. This hurry hurts ESL students who need more time to make those connections.

Both the Jacobs study and the Carrell study examine how content-based language is acquired by slightly older language learners, touching upon two important and related issues; First, the issue of direct instruction of text form language and its role in connecting “social” language to the more “disembedded” language of science, math, social studies, for greater coherence in second language writing in the content area of science.

Hendrickson’s (2003) comprehensive, longitudinal study of children’s discourse acquisition across four linguistic groups examines both the discourse-structural aspects of narratives and discourse-cohesive aspects. Discourse structural elements of narratives are the time elements of narration. A child, demonstrating mastery over this level of cohesion, can narrate a story using all the tenses required to clearly relate each event in time. Discourse-cohesive elements in the same narration relate to the words that place each event in a sequence--for example: *so, but, and, first, then, next, after, finally*.

Her main interest is in examining available evidence concerning children’s acquisition of the devices necessary for marking information status in discourse, especially the acquisition of spatio-temporal devices. She suggests that discourse-cohesive forms of language occur rather late in a child’s development, in a natural progression from earlier deictic uses anchored in the immediate situation. Furthermore, she has found that the complex interplay of syntactic, semantic, and pragmatic functions of these forms is not mastered until much later during the course of development, usually between the ages of 7 to 10 years. This research has implications for when it is possible for young second language learners to acquire specific linguistic devices necessary for the development of coherence and cohesion in certain types of discourse and it underlines the need for makers of standardized tests, such as the EQAO test, to be aware of what spatio-temporal forms are appropriate for the grade 3 test. This research also has implications for whether or not more complex discourse-cohesive forms of language must be taught (and retaught) explicitly, and that many students may not be able to demonstrate them on the grade 6 or grade 9 EQAO test because they are still acquiring those linguistic forms.

D. Summary of Findings and Proposals for Further Study

The body of research on cohesion and coherence in second language learner’s reading and writing suggest many factors contribute to the development of and interplay between cohesion and coherence; inference, schemata, meaning-based ties between idea units, cultural background and vocabulary all have a role to play in the complex and overlapping relationship between cohesion and coherence.

Almost all of the studies cited here examine the issues of coherence and cohesion in older native or second language learner’s reading and writing, with the exception of Hendrick’s work on discourse development in young children. Hendricks’ research on discourse acquisition of children would suggest that native-speaking children across linguistic groups acquire specific linguistic competencies that lead to discourse coherence between the ages of 7 and 10.

Although Carrell suggest that connective language alone is not enough to promote coherence.. In a later study Carrell (1985) explored the relationship between explicit teaching on top-level rhetorical organization of texts and college-level ESL students' reading comprehension as measured by quantity of information recalled. Her findings suggested explicit training in text forms facilitates recall of supporting detail as well as of major topics and subtopics. Carrell's (1994) work on awareness of text structure and its impact on recalling information in the text show a relationship between ESL learners' awareness of text structure, measured in two ways (as use and as recognition) and their recall performance with two different types of expository text structures: *compare and contrast* and *descriptions*. Her study found differences between two ways of measuring awareness, with the conscious meta-cognitive process of recognition presupposing the subconscious process of use, but not vice-versa. Results also showed that participants in the research who demonstrated awareness of structural aspects of the text through use recalled significantly more about texts they had read, particularly more top-level and high-level idea units, than participants who did not demonstrate such awareness. She concludes that reader-based formal schemata; i.e. awareness of text structure and how it is measured, interact in complex ways with text-based formal schemata i.e. text structures and organization in second language reading.

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Both the Jacobs study and the Carrell study examine how content-based language is acquired by slightly older language learners, touching upon two important and related issues: *First*, the issue of direct instruction of text form language and its role in coherent recall of reading of material by second language learners, and *second*, the role of connecting "social" language to the more "disembedded" language of science, math, social studies for greater coherence in second language writing in the content area of science.

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Building on Carrell's 1985 and 1994 studies on explicit instruction on expository text language and its effects on recall, I'd like to design a similar study on the relationship between explicit teaching of expository text form language, reading comprehension in the content areas and coherence in written responses, such as procedure writing responses to math word problems.

E. Research Plan

Participants and Materials

This study was conducted with a group of over 70 resource students between the ages of 7 and 10. Over 30 language groups are represented in the school population. In January the board sent a professional development team to our staff of almost 30 teachers to deliver a document and a workshop on using text form structure and language across the writing curriculum. This document was based on *First Steps*, a Western Australian Professional Development resource written in 1995 that outlines explicit teaching of text forms in the writing curriculum. As a team of teachers we decided to implement recall and procedure writing before the EQAO's in May.

room. First and second stage English learners were given sentence stems in their notebooks to help prompt them in their writing. In the normal course of my duties, I planned and assessed activities in the resource room. The recall task and identification of text vocabulary and form were part of a normal learning cycle in the resource portable.

Procedures

Recalls: The students were given test booklets containing two passages. Immediately after reading each passage, the students were asked to write down as much as they could remember from the passage, without referring to the passage. The students were also encouraged to use complete sentences, and to use the words in the passage or their own words.

Awareness Measures: Two measures will be taken of participants' awareness of text structure. The first, and most widely used measure (Heibert, Engliert and Brennan, 1983); (Richgels, McGee, Lomax and Sheard, 1987), will be a measure of the organization used in the recall. In the second task, demanding greater metacognitive awareness of text structure, grade 2 students were asked to respond to an open-ended question asking, "What

plan did the writer use?” For the purposes of making the task more concrete I added the sentences: “Circle the vocabulary words you remember. Tell me what kind of Information text was used.” This measure corresponds to the third of Richgels, McGee, Lomax and Sheard’s measure of awareness.

Scoring and Reliabilities, Data Analysis:

Quantity and Quality of Idea Units Recalled: Each passage will be analyzed into a set of idea units. Each idea unit will consist of a single clause. These will be determined to be a top, high, mid or low level idea unit, according to the following criteria:

A1. Top-level: represents a student recall of the main

4 Kinds of Information Text

<p>How to Books (<i>Recount and Procedure</i>)</p> <p><i>first, then, next, after, finally</i></p> <p>For example: <i>Describing the life cycle of a Butterfly</i></p>	<p>Same and Different Chart: (<i>compare and contrast</i>) <i>the same as, different than, and, or</i></p> <p><i>How are Dogs and Wolves the same or different?</i></p>
<p>Reports (<i>Descriptive</i>)</p> <p><i>in, out, beside, above, below, next to, in front, behind</i></p> <p><i>Draw a cartoon, make a report</i></p>	<p>Opinion Letters (<i>Persuasion</i>)</p> <p><i>agree, disagree, for example, in conclusion</i></p> <p><i>Should we be able to chew Bubble Gum?</i></p>

The Recall Passage:

This is how you make a peanut butter and jelly sandwich. You need a knife, a container of a jar of peanut butter, a jar of jelly and a cutting board. First, you take two slices of bread from the bag. Second, you open the jar of peanut butter. Take your knife and dip it into the jar. Spread the peanut butter. Then, open the jar of jelly. Dip your knife into the jar and spread it onto the slices of bread. After that, take both slices and put them together. Finally, eat the sandwich! (11 photos accompany this recall).

Should we be able to wear hats in school every day? Yes! My friends agree with me. Hats keep our heads warm. Wearing hats make us feel special. My teachers disagree with me. They say students don't pay attention when they wear hats. Hats are distracting. In conclusion, I think we should wear hats on special days, only. (8 photos accompany this recall)

The results of the recall and the text vocabulary tasks were as follows:

Profile of the resource ESL student sample:

Stage 1	Stage 2	Stage 3	Stage 4
4 out of 30 students	11 out of 30 students	15 out of 30 students	
oral and listening skills in English developing reading or writing skills are minimal	oral, listening skills are at the basic level, reading and writing skills emerging	oral, listening skills in English are nearing fluency and reading and writing skills are developing	

Top	High	Mid	Low
7 out of 30 students	8 out of 30 students	10 out of 30 students	5 out of 30 students
could identify vocabulary and text form accurately	could identify vocabulary and text form in most cases	could identify vocabulary and text forms moderately well	could identify little vocabulary

Assessment

I saw my grade 2 resource students 2 times per 6 day cycle, for a 40 minute period each. As an ESL resource teacher, it was my role to support students in their vocabulary development and assist them with their classroom reading and writing assignments. My role was to be a resource and a support to my students' language development and to develop awareness amongst classroom teachers about the 4 stages of language acquisition they would see in the English language learners in the classroom. I advised classroom teachers on the stages the ESL student was speaking, listening, reading and writing in English.

My findings point to the difficulty that stage 1 students experience in acquiring basic, functional English. For stage 1 students, the challenge of learning text form vocabulary is extremely challenging. To support this task I used diagrams, pictures and sentence stems to prompt writing tasks. Teaching all text form vocabulary and structures each year does benefit students in their writing tasks in the long run, especially when students feel welcomed and comfortable in the classroom and have mastered basic oral and listening skills in English.

My study concludes with data from the EQAO scores for grade 2 students in 2003 who took the EQAO the following year in 2004 because the test required both procedural and descriptive writing forms in the **reading** (descriptive), **writing** (descriptive) and **math** (procedural) sections of the test. Burnt Elm Public School Grade 2 students' EQAO scores in the grade 3 EQAO test, 2004 were: **Reading: 83% Writing: 73% Math: 83%**

reaching level 3 or 4. These results speak to the success of long-term development in writing using a curriculum that emphasizes text form-focussed writing. These results also speak to a successful team effort on the part of administration, resource staff and classroom teachers.

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