# HOW THREE ELEMENTARY TEACHERS INTEGRATED LANGUAGE AND

## CONTENT USING THE KNOWLEDGE FRAMEWORK AND

## HOW THEIR LEP STUDENTS RESPONDED

by

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ABSTRACT

Researchers and teachers have been interested in how to effectively integrate language and content for the benefit of Limited English Proficient (LEP) students. One approach is the knowledge framework (Mohan, 1986) which potentially supports cooperation between teachers, helping clarify relationships between language development and content.

This qualitative study describes the type of knowledge framework (KF) based language/content tasks used by both a novice KF and an experienced KF grade seven social studies teacher, and by the KF experienced LEP teacher who serviced students from both classrooms. It identifies the ways these teachers integrated language and content: by directly observing all three classrooms several hours per week for a year, by describing each teacher's classroom planning, strategies and tasks, by noting how they were the same or different for each teacher, and by noting how students responded to these strategies.

Important questions were: (a) How did the two experienced KF teachers compare with the novice in their use of the framework? (b) In what ways did the experienced social studies' and LEP teachers collaborate using the KF? (c) Did the experienced KF social studies teacher use different framework based strategies than the LEP teacher? (d) How did the LEP students respond to this KF approach?

Analysis suggested: (a) the novice KF teacher used parts of the framework for specific short term writing tasks; the two experienced framework teachers used it in their long term organisation across the areas of reading, writing, listening and speaking. (b) The experienced KF social studies and LEP teachers were able to collaborate by sharing similar framework based approaches and methods. (c) Similar to Mohan (1986, p.39) the experienced social

studies teacher focussed on the cognitive aspects of knowledge structures in relation to the social studies curriculum; whereas the LEP teacher had a broader focus of developing LEP students' language for a variety of content area subjects. (d) The LEP students used the framework implicitly in a variety of speaking, reading and writing tasks. The two LEP students from the experienced KF classroom used the framework explicitly when writing essays, identifying knowledge structures in text, and summarizing text using student designed key visuals.

Implications arise regarding the role of experience, collaboration and student development (how to assist LEP students master knowledge structure skills).

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# Chapter 1

## I. Statement of the Problem

Integration of language and content (ILC) is concerned with addressing the language and content learning needs of limited English proficient (LEP) students who will be mainstreamed in academic, content area, courses. Language is one of the main mediums for learning in content area classrooms, and LEP students encounter several difficulties related to language needs. In a 1988 survey conducted as part of the ESL Pilot Project, 1/3 of all secondary LEP students were behind their age-peers in understanding and speaking of English. Approximately 2/5 were behind in reading and 1/2 in writing (Vancouver School Board, 1992:11). LEP students' content learning cannot be put on hold for five to eight years until they have mastered English (Collier, 1987; Cummins, 1981); rather, Crandall (1993:113) suggests that the L2 classroom should focus on meaningful content, and the English used should be modified so that it "not only facilitates language acquisition but also makes academic content accessible to second language learners."

## II. Background

One LEP language need is comprehending the technical vocabulary related to each content area. Each subject area has its own vocabulary: its own ways of making meaning and using words in a specific manner to lend precision to the content. In Australia, as part of the Disadvantaged Schools Project, several teams of researchers have identified the language demands of several content area subjects and how each is unique. Wignell, Martin and Eggins (as cited in Cope and Kalantzis, 1990:129) analyzed traditional geography texts and identified the following language features:

> First, language is used to 'observe' the experiential world, through the creation of a technical vocabulary -- a process of dividing up and naming those parts of the world which are significant to geographers. Second language is used to 'order' the experiential world through the setting up of field-specific taxonomies. And third, language is used to 'explain' the experiential world, through the positing of implicational relations between natural or man-made states. (Wignell, Martin and Eggins, 1987:26 as cited in Cope and Kalantzis, 1990:129)

In a second study, they further identified how the language of traditional history texts differs from the vernacular:

> is abstract rather than concrete, is concerned with organizing an argument through exemplification, and focuses on what classes of people or actions dressed up as things do or have done to them...This is the technology of history: the process of turning a story into history (Eggins, Wignell and Martin, 1987:80,82 as cited in Cope and Kalantzis, 1990:130).

This formal, impersonal, technical writing style is difficult for many English L1 students, and even more so for LEP students who are unfamiliar with the language of social studies.

In addition to identifying language specific to each content area, researchers in Australia have further identified and described the features of a variety of written genres. A genre is "a staged, goal-oriented social process (Rothery and Veel, forthcoming; Martin and Veel, 1998; Kamler, 1992; Christie, Martin and Rothery, 1989; Callaghan and Rothery, 1988), or more explicitly a type of text--written or spoken (Christie, 1990:3). Personal journal and narrative writing is very different from theoretical or expository writing. Currently there are twelve genres which have been identified as being common and useful in a school setting such as: report, recount, procedure, exposition, discussion, explanation, exploration, serial, anecdote, exemplum, observation, and news story (Martin, 1993, 142). The current work of Martin and Veel (1998) and Rothery (forthcoming) is focussed on identifying and describing the features of all relevant genres found in science and English content areas.

Wignell (1987:12 as cited in Cope and Kalantzis, 1990:131) tried to determine how students learn the factual writing style of history and geography. He suggests students learn the genres from parents, older siblings, or model textbooks. He interviewed several students who explained the Catch-22 of trying to copy from textbooks without the teacher catching them for plagiarism, and concludes that students:

> are taught a lot of 'what', but they aren't taught a great deal of 'how'. They tend to be explicitly given the 'facts' but left to their own devices as to how to organise (sic) those 'facts' into an acceptable text, which is a large part of what they are assessed on and it is this invisible curriculum which they learn by their own resources that can mean the difference between success and failure (Wignell 1987:18 as cited in Cope and Kalantzis, 1990:132).

Cope and Kalantzis (1990) argue that content teachers need to explicitly teach the genres and language, not just the content:

> Students disadvantaged educationally because of social background especially need this sort of explicit skill teaching for the sake of social equity. And explicit teaching in the school setting is a more efficient process for all students than picking up the language through repeated copying while pretending not to be copying (132).

All three sets of researchers (Cope and Kalantzis; Eggins, Wignell and Martin; Wignell) are operating within an Australian context of systemic functional linguistics and genre theory. The emphasis is on the form of content area language. Research to evaluate their work and confirm their belief that instruction in genre theory must be explicit, has only begun.

A second approach to addressing the content area language needs of LEP students involves identifying how knowledge is socially constructed. The knowledge framework (Mohan, 1986) examines the social function of a task and the language within the task. Whether the task involves writing, reading, listening or speaking, the content area knowledge contained within the task will emphasize one or more knowledge structures: classification, principles, evaluation,

description, sequence, or choice. Each knowledge structure can be represented graphically using a variety of key visuals which represent the shape of the content knowledge in a language reduced format (Early, 1990; Early, 1989; Early, Thew and Wakefield, 1986). Students can be taught to recognize how classifying in science and social studies are similar and that both content areas share the vocabulary of classification. Furthermore, teacher developed and student created key visuals can be used for note taking to summarize the content. Students are taught a general skill which can be applied in a range of content areas, rather than prescribing the language forms for each reading, writing, speaking and listening task within each content area subject.

To integrate language and content in a pullout program or within the context of the mainstream classroom, the teacher must have a clear understanding of how the language of the content area functions. Genre theory is beginning to provide detailed background knowledge on the variety of language forms present in Australian content areas. Knowledge structures (Mohan, 1986) have been demonstrated to be present in any social activity or task, though the current list of six knowledge structures is not seen to be exhaustive.

## III.    Purpose of the Study

The purpose of this study is to describe, in the Canadian context, how language and content could be integrated in social studies using the knowledge framework.

The central question of this study asks: **How do three teachers integrate language and content using the Knowledge Framework and how do their LEP students respond?** This study will describe three teachers in a special pilot project elementary school in a major metropolitan school district in British Columbia. At this pilot school, classroom teachers and the

support teachers (teacher librarian, collaboration specialist, learning assistance and English as a second language teachers) had worked together for three years prior to the start of this study, integrating the knowledge framework into daily teaching processes and tasks. The whole school was organized to learn about and experiment with the knowledge framework to develop a variety of ways it could be integrated into the classroom for the benefit of all students, but especially LEP students. A series of research questions can be developed based on the relationships between the three teachers primarily observed in this study:

1. How does the social studies teacher, experienced with the knowledge framework (KF), integrate it into his planning of daily lessons and tasks as well as long term planning as compared to the novice KF social studies teacher and the experienced KF LEP specialist?

2. Which aspects of the knowledge framework does each of these teachers emphasize and develop?

3. How do the two teachers experienced with the knowledge framework compare with the novice KF teacher in their use of the KF?

4. Does the experienced KF social studies teacher use different strategies than those knowledge framework strategies the LEP specialist used?

5. In what ways do the social studies teacher and the LEP specialist collaborate, using the knowledge framework for the benefit of LEP students?

6. With respect to students during the school year, what types of knowledge framework language skills do the two social studies teachers and the LEP specialist actively develop with their students, either implicitly or explicitly?

7. How do LEP students respond to a knowledge framework based approach to integrating language and content?

8. How do these LEP students apply knowledge framework skills in the LEP pullout classroom by comparison with the social studies classroom?

This study will identify and describe the strategies employed by the experienced grade seven social studies teacher who had been working with the pilot project for all three years, who integrated the knowledge framework explicitly into his social studies program, but also integrated it across the curriculum. Furthermore the study will identify and describe the strategies employed by the experienced LEP pullout teacher who had also been working with the pilot project for all three years. The LEP teacher worked to support the LEP students learning needs in mainstream classrooms by supporting the pilot project's focus on the knowledge framework and integrating it into the curriculum. Finally this study will examine how a novice to the knowledge framework, the second grade seven social studies teacher who was hired at the start of the school year was being supported by the overall school community to learn about the knowledge framework as well as describe the various ways she began to integrate the knowledge framework into her teaching processes and curriculum. The study will describe each teacher's strategies to integrate language and content specifically focussing on the ways language learning was scaffolded to build students' language skills. The study will also describe the student responses to these teaching processes.

## IV. Significance of the Study

This study provides a qualitative description of the mainstream classroom conditions integrated LEP students encountered daily at the pilot school. It provides a description of the

range of tasks these students were assigned within the grade seven social studies curriculum as well as describing the links and similarities between tasks assigned across subject areas as described in the experienced knowledge framework grade seven teacher's day plan book and as observed in the students' notebooks. It also describes the range of tasks assigned by the LEP pullout teacher who wanted to assign a range of tasks to assist the LEP students in developing the necessary skills for achieving academic success in the mainstream classroom. The novice grade seven social studies teacher was supported by the school community as a whole as she began to use the knowledge framework. The study looks at how these three teachers cooperated in developing a range of ways to use the knowledge framework in their individual classrooms to support the school's long term goal of integrating the knowledge framework across the curriculum for the benefit of all students.

## V.     Limitations of the Study

This study does not observe a significant enough range of grade seven social studies classrooms to determine what the range of tasks are in a typical classroom. Nor does this study quantitatively determine which tasks are the most important to master to determine which skills should be emphasized to benefit LEP students. Finally the teachers in the study were unaware of the work of the Australian Disadvantaged Schools Project on written genres. The genres described in this study are genres that have evolved over a period of four years from using the knowledge framework in this school, and the teachers' desire to interpret the framework to meet the students' needs for written assignment tasks in their classrooms. This study does not suggest that these teachers have found more valid genres than those described in the work of the Australian DSP, nor does it evaluate quantitatively the merits of the knowledge framework or the

Australian DSP. Rather this study describes what one school is doing as they work with the knowledge framework and suggests ways the two approaches could be combined in a complimentary fashion for the benefit of LEP students.

**VI.     Definition of Terms**

a)     language - refers to the target English language skills a teacher is teaching.

b)     content - in this paper, the subject matter or topic of a discourse.

c)     implicit - teaching students a set of skills related to a concept without making the students directly conscious of the concept itself.

d)     explicit - teaching students a concept using metalanguage so that the students learn the concept itself, not just the skills related to the concept.

e)     task - in this paper, task is a school-based activity or assignment which a student must complete. The task could be one step in an overall assignment or the final product: such as orally listing vocabulary, reading the textbook, or producing a written text (Doyle and Carter, 1984).

f)     text - refers to a specific task. Either a written product produced during a task, or a written source to be read to complete a task.

g)     key visual - more than a summary of a text, it's "a visible framework of the shape of the content" in a language reduced format (Early, Thew and Wakefield, 1986).

h)     knowledge structure - reflects the organizational pattern of a situation: both its practical or action aspect and its theoretical or background knowledge (Mohan, 1986).

i)     genre - in this paper, a type of written text that exists within a society or group. The written genres identified in this thesis are teacher created written tasks which focus on one

or two knowledge structures as the main part of its organization. Genres can also be classified by social purpose into one of 12 genres, so far identified in educational contexts: "report, recount, procedure, exposition, discussion, explanation, exploration, serial, anecdote, exemplum, observation, and news story (Martin, 1993:142)."

**Chapter 2**

**An Overview of the Problems LEP Students Face When Mainstreamed and**

**A Survey of the Responses Researchers and Educators Offer**

My particular interest is in how to help LEP students succeed in their mainstream, academic, content area classes. How do mainstream classroom teachers interpret Mohan's (1986) knowledge framework to integrate language and content for the benefit of LEP elementary students? Furthermore how can the LEP pullout teacher support LEP students' mainstream, content area, language needs using the knowledge framework to integrate language and content?

This chapter overviews the academic language learning difficulties that LEP students encounter in mainstream content courses, then surveys the responses content focussed researchers and educators have made in their attempts to integrate language learning and content. LEP students whose English is at an intermediate or advanced level, and who have developed literacy skills in English should not have their content area academic learning put on hold until they have mastered a native-like fluency in English. Yet these same LEP students upon being enrolled in mainstream classrooms need assistance to keep up with their age appropriate peers; this chapter will examine these students' special problems and the variety of responses designed to integrate language and content.

**I. Statement of the Problem**

Researchers such as Cummins (1981) and Collier (1995, 1987) have examined the length of time necessary for LEP students to attain peer-equivalent norms on content area, standardized tests. Other researchers such as Early, Thew and Wakefield (1986), Gunderson (1985), and Winningham (1990) have begun to identify the integration needs of intermediate and advanced

LEP students who are mainstreamed into content area courses.

Figure #2 - 1

LEP Student Difficulties

ESL Assistance
Usually Lasts 2 - 3 Years

↓

Success in the Mainstream
Takes 5 -10 Years

↓

Why Do LEP Students Experience
Difficulty in the Mainstream?

Reception Classes                                          Mainstream Classes

ESL Texts Don't            Tasks are Substantially        Many Teachers are
Cover the Full Range of    Different from                 Not Modifying
Academic Thinking          the Mainstream                 Instruction
Skills

**A.      LEP Assistance Usually Lasts 2 - 3 Years.  Success in the Mainstream Takes 5 - 10**

**Years**

Cummins (1981) noted the different rates of acquisition for basic interpersonal

communicative skills (BICS) and cognitive/academic language proficiency (CALP), and

concluded that "it takes at least five years, on the average, for immigrant children who arrive in

the host country after the age of six to approach grade norms in L2 CALP (p.148)" Cummins

further noted that L2 language assistance is often only provided for the first two years.

There are three factors noted in this study which affected the rate of acquisition: age on arrival, length of residence, and the age of the student when assessed. Age on arrival would reflect whether or not the student had received formal education in his/her L1 as well as indicating the level of L1 content area knowledge. Length of residence would affect total L2 acquisition. Finally the age when assessed in L2 would reflect the cognitive maturity of the student. Cummins found that older students had learned more L2 language than younger students, yet the language gap, as measured by grade level norms on standardized tests, between themselves and their L1 peers, grew ever wider. On the one hand, older students had more fluency in CALP than younger students which reflected their cognitive maturity. On the other hand, they were less fluent in BICS language than younger L2 learners.

Like Cummins, Collier (1995, 1987) has also been examining how long it takes non-native speakers to reach academic language proficiency. After several studies, Collier has found that the most significant variable is the amount of formal schooling in the L1 the student received prior to immigrating. Collier has found that it takes non-native speakers of English who have no formal schooling in their L1 7 to 10 years to reach grade level norms on standardized tests. Those LEP immigrants who have 2 to 3 years formal schooling in their L1 need on average 5 to 7 years. Collier highlights the significance of the non-native speaker's achievement to achieve 50th percentile on these standardized tests, noting that "native speakers are not sitting around waiting for non-native speakers to catch up with them (p.5)." Rather the academic and language demands increase with each grade level making it that much harder for LEP students to reach the average of native English speakers. Collier (1987) noted that students' academic learning should not be put on hold; rather, she recommended that content instruction occur in the L1, or as soon as the students have acquired sufficient L2 to perform tasks they should receive intensive English for

specific purposes or adjunct model content courses.

**B.      Why Do LEP Students Experience Difficulty in the Mainstream?**

**1. .     ESL Texts Don't Cover the Full Range of Academic Thinking Skills**

Early, Thew and Wakefield (1986) identified a list of 38 core thinking skills commonly found in school curricula. They examined curriculum guides to identify "objectives for kindergarten, social studies, science, and commercially available E.S.L. texts (p.11)." Thirty-three of these 38 thinking skills were found in grade 1 to 11 social studies curriculum guides. Only 20 of the 38 were found in the two English as a Second Language (ESL) texts examined which were written by Mary S. Lawrence: Writing as a Thinking Process (1972) and Reading, Thinking, Writing A text for Students of English as a Second Language (1975). Fourteen of these missing skills are an integral part of the social studies curriculum. An important implication to be drawn is that ESL texts do not always cover key social studies curriculum thinking skills such as: recognize, identify, analyze, understand time and chronology, decision making, problem solving, identifying problems, draw conclusions, inquire (policy questions), and evaluate (p.12-13). These three authors conclude by stating "Efficient language instruction integrates the building up of subject matter knowledge, thinking and language skills (p.15)."

**2.      Tasks in Reception Classes--Substantially Different from Mainstream**

Shih (1992) describes the difficulties L2 students encounter when they make the transition from reception classes to mainstream content courses. In the reception class students often simulate discrete study skills using short passages of text; whereas, mainstream classrooms have dense, extensive readings and lectures where students must synthesize and evaluate the material to recall at a later date. These students are not prepared with the necessary strategies to complete

academic reading and writing tasks. Shih encourages ESL teachers to use whole, authentic content area materials and assign tasks which are comparable to mainstream tasks to ensure students acquire the necessary skills and are able to transfer them.

## 3.    Many Mainstream Teachers do not Modify Instruction

Gunderson (1985) surveyed elementary, secondary and adult content teachers and ESL teachers in British Columbia to learn which reading approaches and methods were being used with ESL students. Eighty-eight percent of secondary content teachers indicated that they did not modify instruction for ESL students. Furthermore, many of the respondents indicated that "English ability should be a prerequisite for their classes (p.49)." The twelve percent that indicated they modified instruction listed strategies such as rewording or explaining requirements. There was no indication that these teachers sought out alternative texts at the independent reading level, or taught vocabulary and language skills related to the content area.

Ratekin, Simpson, Alvermann, and Dishner (1985) observed grade 8 and 11 math, socials, science and English content area classrooms, and noted that these teachers did not modify instruction to meet the needs of English speaking students. In these classrooms teachers tended to use one text instead of obtaining a variety of texts at different reading levels; their lectures usually summarized the text, and rarely did they make use of graphic aids. Given that these teachers were not modifying instruction for English speaking students, it is doubtful that they would do so for LEP students.

Winningham (1990) examined the content area integration needs of five L2 learners in math, science and social studies. She had the students keep dialogue journals where they recorded their integration experiences with an evaluative emphasis on identifying aspects that helped them learn. The journal comments were followed up with student interviews as well as

direct observation of the content teachers. The modifying strategies Winningham noted mainly involved talking slower, rewording and using hand gestures to illustrate points; similar to the strategies teachers self-reported in Gunderson's (1985) survey. Winningham identified several needs, specifically: the need for more activity type tasks, less teacher talk since "teachers monopolized at least eighty percent of the speaking time (p.7)", and more cooperative learning strategies. Furthermore, she identified the need for consultation and collaboration between ESL and content teachers in order that "the programs could be mutually supportive. For example, reading and writing skills could be taught in ESL courses through materials that relate to content area classes" and content teachers "could learn about language acquisition in order to incorporate language skills into their content lessons (p.7)." She concludes with general recommendations for content teachers and then specific recommendations for math, science and social studies, emphasizing key visuals, teaching knowledge structures related to the subject and relating topics to other cultures.

### C.   LEP Students' Needs

What, therefore, are the fundamental needs of mainstreamed L2 students? As Cummins and Collier have identified, it takes 5 to 10 years for an L2 student to approach peer equivalent norms on content area standardized tests, yet both researchers noted that older students have cognitive maturity. Early, Thew and Wakefield demonstrate, in their comparison of some core thinking skills across curricula, that there are several core content area thinking skills which are not necessarily covered in ESL texts. Shih describes the difference between simulated content reading and writing tasks as presented in L2 reception classes with the rigorous demands of mainstream classes. Gunderson's survey has several secondary content teachers self-reporting that they do not modify instruction for L2 students and believe language ability should be a

prerequisite skill. Winningham observed that teachers did talk slower and reword to try and prevent confusion, but the lessons contained too much teacher talk for students to follow. This body of research highlights several implications. Firstly, that one or two years of English reception classes provides an insufficient background for these students who are trying to survive in content area courses. Secondly, the thinking skills and tasks covered in traditional reception classes differs from the required tasks in mainstream classes. Thirdly, once mainstreamed, both the students and content area teachers need continued support to meet these students' academic learning integration needs. Content based language teaching has been suggested as one response to meet these needs.

## II.    Content Based Language Teaching

Researchers have begun to propose several strategies for integrating language and content: thematic, sheltered and adjunct courses (Brinton, Snow and Wesche, 1989); cognitive academic language learning approach (Chamot and O'Malley, 1987); analyzing the discourse of knowledge structures as found in content material and lessons (Mohan, 1990, 1986); using key visuals to present core content (Early 1990, 1989), and teaching students how to write genre specific responses in the content areas (Rothery, Forthcoming; Martin and Veel, 1998; Martin, 1993; Disadvantaged Schools Program , 1989a, 1989b; Callaghan and Rothery, 1988).

Figure #2 - 2

Content Based Language Instruction Approaches

**Content Based Approaches**

```
                    Adjunct              CALLA            Knowledge
                    Courses                               Framework

                                                              │
                                                              ▼
                                                            Key
                                                           Visuals

                                                              │
                                                              ▼
                                                            Genre
                                                           Theory
```
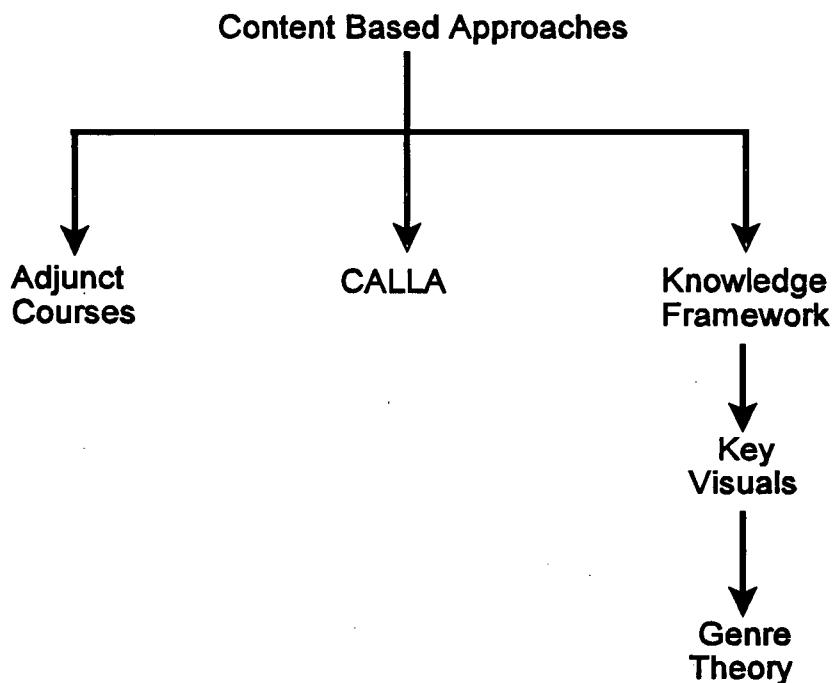
**A.    Adjunct Courses**

Brinton, Snow and Wesche (1989) identified three delivery models for content based

language teaching. Each model uses content to organize the syllabus, emphasizes content area

academic learning, and attempts "to help students process the content materials"; the models are

thematic, sheltered, and adjunct (p.17). This team of researchers identified two basic purposes of

adjunct courses: "Help students master content material" and "Introduce students to L2 academic

discourse and develop transferable academic skills (p.19)". The emphasis in the adjunct course is

language; whereas, the linked mainstream classroom focuses on content.

Snow and Brinton (1988) evaluated the adjunct model in the context of a first year

university course. They noted that the students enrolled in the adjunct classes were "lacking the

essential skills required to succeed academically, such as the ability to synthesize lecture and text material and to express this information clearly in written assignments and on examinations (p. 553)." In the first, evaluative study, students identified the usefulness of the skills taught, such as taking lecture notes and prewriting strategies, in addition to noting how the course eased adjustment to the university, increasing self-confidence and instructing students in how to use helping resources, for instance, tutoring. In the second follow-up study L2 students who scored low on a placement test, received instruction using an adjunct model. These students were then compared to L2 students who scored high on the placement; and who therefore, were not enrolled in the adjunct course. When the researchers compared the post-treatment scores they found that the lower functioning L2 students "performed as well as the [high L2] students on the exam that tested listening and reading comprehension and required the higher order thinking skills of synthesis and evaluation in the composition of the essay (p. 569)." In this instance the adjunct model at the university level was successful in explicitly teaching many requisite skills for academic learning.

## B.     CALLA

The cognitive academic language learning approach (Chamot and O'Malley, 1987) presents a sequence from activity oriented, context embedded courses to language intensive, context reduced courses. Chamot and O'Malley suggest mainstreaming LEP students first in science, math, social studies and lastly English. There are three main components to CALLA: (a) correlating curriculum "with mainstream content areas (p. 231)", (b) providing "students with practice in using English as a tool for learning academic subject matter (p. 236)", and (c) explicitly teaching students "processes and techniques that facilitate the comprehension, acquisition, and

retention of new skills and concepts (p. 239)."

### C. Knowledge Framework

When describing the knowledge framework approach, Mohan (1990, 1989, 1986), proposes identifying knowledge structures, which reflect the organizational pattern of discourse: "knowledge structures are ways of organizing experience through which we, as human beings, give a coherent structure to experience (Mohan, 1990, 119)." Mohan has identified three knowledge structures that relate to the practical or action side of an activity: description, sequence and choice. He has identified a further three knowledge structures which relate to the theoretical or background knowledge which underlies an activity: classification, principles and evaluation. After analyzing content area discourse to identify the dominant knowledge structure, a teacher instructs students in the language and strategies which relate to that knowledge structure.

Figure #2 - 3

The Knowledge Framework

| Classification | Principles | Evaluation |
|---|---|---|
| Description | Sequence | Choice |

### 1. Key Visuals

Early (1990, 1989) and Early, Thew and Wakefield (1986) have discussed key visuals, graphics, that relate to each of the six knowledge structures. A key visual is much more than an illustration or summary, rather it is "a visible framework of the shape of the content", "a display of essential information without language overload", "an explicit depiction of relationships", and "a core element in understanding content (1986, p.22)." Key visuals can assist L2 students in

comprehending content and applying related L1 background knowledge.

Figure # 2 - 4

Key Visuals That Relate to Each Box of
The Knowledge Framework

| Classification | Principles | Evaluation |
|---|---|---|
| webs<br>trees<br>tables<br>graphs<br>database | diagrams<br>graphs<br>tables<br>cycles | rating charts<br>grid<br>marks book |
| **Description** | **Sequence** | **Choice** |
| table<br>diagram<br>picture<br>plans/drawings<br>map | table with numbered steps<br>flow chart<br>cycle<br>time line<br>action strips | decision trees<br>flow chart |

(Early, 1989, 206)

## 2.    Genre

In Australia, researchers working with the Disadvantaged Schools Program (DSP) have identified several common, content area genres, and an explicit, genre writing process which they believe can meet the needs of all students including LEP. These researchers have a systemic, functional view of language. A genre is "a staged, goal-oriented social process (Rothery and Veel, forthcoming; Martin and Veel, 1998; Kamler, 1992; Christie, Martin and Rothery, 1989; DSP, 1989a; DSP, 1989b; Callaghan and Rothery, 1988)," or more explicitly a type of text--written or spoken (Christie, 1990:3). Callaghan and Rothery (1988) believe that "the language demands of different curriculum areas must be taken into account if students are to develop literacy abilities across the range of school subjects (p.105)."

Martin (1993:142) identified twelve genres which are common in educational settings: recount (to retell a story), report (to classify and describe the parts), procedure (to provide a sequence of steps), explanation (to give the sequence of how or why), exposition (to give one's point of view), discussion (to examine all sides of an issue before making a choice), exploration (to examine two points of view or to persuade someone to a specific path), serial, anecdote, exemplum, observation and news story. Students receive explicit instruction in recognizing models of each genre, identifying their purpose, and learning their related grammar structures and language. Once students are familiar with the model, teacher and students jointly construct a text. The final stage is to have students independently compose text. These teaching strategies develop students' literacy in genre specific writing for the content areas.

## 3.    The Relationship Between Knowledge Structures and Genres

Mohan (1989) outlines the relationship between knowledge structures ("a cognitive category associated with situations") and genre or text structures ("a linguistic category") (101). Mohan (1989) believes knowledge structures are "cross-modal, they are not special to text, and they lack those things which are characteristically, and uniquely textual. They aren't genres (104)." Genres are not cross-modal, they are a "detailed analysis of a discourse type within a particular language (Mohan, 1990, 131)."

Figure # 2 - 5

How Some Genres Relate to the Knowledge Framework

| Classification | Principles | Evaluation |
|---|---|---|
| Report<br>Taxonomic Report | Procedural Recount<br>Causal Explanation<br>Factorial Explanation<br>Theoretical Explanation<br>Consequential Explanation | Analytical Expositions<br>Hortatory Expositions<br>Judgement<br>Discussion<br>Exploration |
| **Description**<br>Description<br>Descriptive Report | **Sequence**<br>Recount<br>Procedure<br>Sequential Explanation<br>Serial | **Choice** |

Martin (1993) sees the role of teaching genre to all members of a society as additive and empowering: "It is the view of genre-based researchers and teacher trainers that subjectivity changes by evolution, not revolution, and that teaching powerful discourses expands a student's meaning potential; language learning is simply not a question of new discourses coming in to replace the old (161)."

The National Centre for English Language Teaching and Research in Australia has conducted one evaluation of the genre writing project packet which the Disadvantaged Schools Program (DSP) is using. The researchers collected class sets of grade 2 and 6 students' writing from six DSP schools, 1444 texts in total. A minimum of 70% of the students at each school were LEP. Three schools were using the package and three weren't. Teachers using the writing project materials were surveyed, then some were selected for follow-up interviews. The evaluation team concluded that teachers involved in the writing project saw an improvement in their students' writing abilities, specifically "'organisation of ideas', 'structure' and 'sequence' (Walshe et al, 1991:8)." The evaluation team also concluded, "that the Package made a

difference to how and what students were writing. The major impact was on the range of genres being written in Package schools in comparison to non-Package schools (8)." Teachers were not given clear directions for collecting the writing samples. They were requested, "to collect class sets of 'factual type' texts and 'narrative type' texts, one set from early in the year and one set from later in the year (15)." Texts were then sorted first by grade and then into three genres: narrative, factual and personal. Texts were then judged to be either successful or unsuccessful in terms of schematic structure, development of topic, and context independent. There were two limitations in this evaluation design. First, the texts were not identified as to early in the year or later in the year which may have influenced a student's ability to write a successful text. Secondly, not every school submitted complete class sets, and in some instances schools did not provide student samples for all three genres which the researchers identified. If the researchers were going to sort texts into three categories and draw conclusions as to the range and variety of student writing in these classrooms, then they should have communicated this information to the teachers who were collecting texts.

Mohan (1989) highlights a key issue underlying the relationship between the knowledge framework and genres, "Do you start from a text, and consider what situations it could occur in? Or do you start from a situation and consider what texts could occur in it (102)?" For most content teachers planning a year of work, or a unit, the content, topic or situation, not a specific genre or text, is the key unit of planning. The framework provides an opportunity for the teacher to develop and value a range of modes for representing knowledge about a given topic or situation. Knowledge can be represented through an action situation such as a song, drama, sculpture, painting, narrative, recount or procedural texts. On the other hand, knowledge can be represented through the theoretical background such as key visuals, news media, mathematical

formulas, chemical equations, taxonomic, procedural recount or judgement texts. Language teachers can similarly begin from a unit of content. This does not mean that teachers must ignore genre. In fact the three teachers in this thesis helped build learners' familiarity with a content topic, then helped these learners write about the topic employing an appropriate genre.

In her survey article for the twenty-fifth anniversary of TESOL, Raimes (1991) identified four traditions used in the teaching of writing to Limited English Proficient (LEP) students. These traditions are: 1) focus on form--traditional grammar pattern practice, 2) focus on the writer--the process writing approach, 3) focus on content--English for academic purposes, adjunct model and "Mohan's Content-based approach (410)", and 4) focus on the reader--"audience in an academic discipline (411)." Raimes' description is helpful in that the traditions she identifies implies four desirable components found in most approaches to writing; but the article's suggestion that these four components are alternatives to each other must be strongly rejected. A sound writing program must balance each of these four aspects to ensure that LEP students' writing skills are well developed. To meet their LEP students' writing needs, the teacher should balance the goals of enhancing progress in English grammar and vocabulary, supporting the learner's writing process, increasing the learner's grasp of content area knowledge, and promoting the learner's ability to respond to the reader. I found no reason to believe that the teachers studied in this thesis aimed at anything less than these goals.

## 4.    Cooperation between Content Teacher and Language Teacher

It is thought that the knowledge framework can be applied by both content teachers and language teachers for the benefit of LEP students. By sharing a common approach, it creates a variety of avenues for cooperation between language and content teachers. Cooperation could range from co-planning resources and materials, team teaching, building a continuity of teaching

style and task expectations, developing a core set of language and task skills to develop jointly, and/or using the same content materials to build a greater understanding of the key concepts while developing language skills. It is often assumed, incorrectly, that cooperation requires teachers to communicate and formally plan together, but cooperation can occur when teachers simply share a common approach so that their efforts reinforce each other. This was the situation studied in this thesis where a content teacher and the language teacher shared a common approach based on the knowledge framework. They worked in parallel but did not formally plan together.

Mohan (1986, p.39) outlines the complementary, but separate focuses of the content teacher versus the language teacher. Mohan suggests that the "content teacher wants students to learn detailed information in a particular lesson, but beyond that, the teacher wants to convey the 'shape' of subject matter, the structure that underlies the detailed information(p. 39)." Whereas the language teacher's focus is on students learning "the language of a given topic, but also wants students to apply their language learning across the curriculum (p.39)." He describes a modified grade seven social studies unit by Meryl Arnott (Arnott, unpublished), who had students complete a number of cooperative and group activities as well as completing a variety of charts. Mohan emphasizes his main point, that the students:

> must develop an understanding of culture in general. This means that they must see the general pattern of what they are doing; they must see the links between environment and resources, resources and need, social issues and social organization as matters which apply to any culture. The charts were designed to help these goals by bringing out this pattern clearly and simply (p.39).

He states that modified instruction must be more than key visual organizers which present information on a topic, rather, the graphics must present the "structure of the topic, and use graphics to show this structure clearly (p.39)." In other words, in a knowledge framework

approach, the content teacher relates subject matter to knowledge structures, and the language teacher relates language development to knowledge structures.

## 5.      Teacher Experience: Novice and Expert

When considering ways the language teacher and content teacher can cooperate, it is also important to raise the question of how experienced the teacher is in working with these ideas: experience with the framework itself, as well as teaching experience in general. In the cases studied in this thesis, one teacher was a novice in both respects, while the other two teachers had considerable experience in both respects. The knowledge framework helps teachers to organise large cycles of instruction, and novice teachers seem to work on short cycles rather than long cycles. Karen Johnson (1992) video taped six preservice ESL teachers while teaching, then video taped these teacher's comments regarding their instructional decisions while watching their lessons. She noted that:

> overall, these teachers utilized more student responses that were teacher elicited than student initiated. They paid more instructional attention to errors and deficient responses by implementing a cycle of instructional actions that included checking knowledge, providing an explanation, and giving feedback (p. 527).

So inexperienced ESL teachers focussed on errors and correcting the immediate concern. She quotes a study by Fogarty et al. (1983) which was a study of preservice elementary teachers who "were more likely to perceive errors as indicating a lack of student attention and, therefore, responded by providing feedback on the student's performance or by focussing the student's attention (p. 528)." She concludes that these preservice ESL teachers "tended to repeat an often ineffectual cycle of instructional actions in response to unexpected student responses until concerns over instructional management took precedence (p. 529)." Thus research on teacher

expertise suggests that novice teachers may make use of the knowledge framework for short cycles of instruction only.

## III.    Conclusion

A prime belief underlying all the above outlined research is that "by using interesting content and stressing meaning, the students will engage in some sort of form/function analysis that leads naturally to acquisition (Early, 1990, p.567)." The initial results from the research outlined above, suggests that content based language teaching may address mainstreamed L2 students' needs. The knowledge framework creates possibilities for the content teacher and the language teacher to cooperate in a variety of ways: co-planning, team teaching, or working in parallel to build the same core of academic skills, language development and content knowledge. So it is important to see how content teachers and language teachers incorporate these content based language teaching strategies into the classroom. It may be that novice knowledge framework teachers use knowledge framework strategies for short cycles of instruction while expert knowledge framework teachers extend knowledge framework strategies for longer cycles. By combining aspects of each of these strategies such as analyzing the knowledge structures found in content area material, teaching students the academic language related to these knowledge structures, providing key visuals as a front loading tool summarizing content area readings, and instructing students in the variety of formats for responding to writing tasks in the content areas, intermediate and advanced English as a Second Language students, who are mainstreamed, may be further empowered to succeed to the best of their academic abilities.

# Chapter 3

## Methodology

This qualitative, participant-observer study was designed to answer the following question: **"How do three teachers integrate language and content using the knowledge framework (Mohan, 1986) and how do their LEP students respond?**

This chapter will describe the research methods used to gather and interpret data related to the central research question by outlining the focus questions, participants, materials, procedures, and analyses of the data.

### I.     Focus Questions

The following focus questions are a central part of the analysis of this qualitative study:

1.     How does the social studies teacher, experienced with the knowledge framework (KF), integrate it into his planning of daily lessons and tasks as well as long term planning as compared to the novice KF social studies teacher and the experienced KF LEP specialist?

2.     Which aspects of the knowledge framework does each of these teachers emphasize and develop?

3.     How do the two teachers experienced with the knowledge framework compare with the novice KF teacher in their use of the KF?

4.     Does the experienced KF social studies teacher use different strategies than those knowledge framework strategies the LEP specialist used?

5.     In what ways do the social studies teacher and the LEP specialist collaborate, using the knowledge framework for the benefit of LEP students?

6. With respect to students during the school year, what types of knowledge framework language skills do the two social studies teachers and the LEP specialist actively develop with their students, either implicitly or explicitly?

7. How do LEP students respond to a knowledge framework based approach to integrating language and content?

8. How do these LEP students apply knowledge framework skills in the LEP pullout classroom by comparison with the social studies classroom?

## II. Participants

Three teachers and seven of 55 grade seven students who attended a pilot project elementary school in a large urban school district in the province of British Columbia were observed from mid-October 1992 to June 1993. All names used in this thesis are pseudonyms.

## A. The Teachers

The first teacher, Alex, was an experienced grade seven classroom teacher who had attended several workshops over the prior four years related to the pilot project and had been regularly using the services of the collaboration teacher and the teacher-librarian to create lesson plans which used the knowledge framework and key visuals to emphasize content concepts and teach language skills in the context of the content area assignment. Alex was observed predominantly while teaching social studies, but he also taught his students several other content subject areas such as language arts, science and math. For the prior three years, Alex had been regularly using the specially designed key visuals for the social studies textbook Other Places,

Other Times (Grant and Humphries, 1991) and had also been creating additional visuals to meet his specific needs.

The second teacher, Barb, was in her second year of teaching, and joined the pilot project school as a preparation time/relief teacher in October 1992. Part of her job involved teaching social studies to one of the two grade seven classes. Social studies was the only subject she taught to this grade seven class. Prior to joining the pilot school's staff, Barb had no experience with the knowledge framework or key visuals.

The third teacher observed, was an experienced LEP pullout teacher who serviced three LEP students within a mixed LEP/Learning Assistance grouping of seven students. Carol had taken two graduate level university courses which emphasized the knowledge framework and key visuals, attended the pilot project workshops related to these topics during the three prior years, and had considerable experience at adapting mainstream curricula by creating note taking key visuals to accompany textbook sources.

## B. The Students

Three grade seven LEP boys were observed. One of the students attended Barb's social studies class, two of the students attended Alex's class. Alex's two students had attended the pilot school for two or more years, and had experienced various levels of implicit and explicit instruction in reading and completing key visuals and using knowledge structure language to complete written assignments. The third LEP student was from Barb's class and had just joined the school in September after completing two months in an ESL reception class the prior school year. Carol serviced the three students as one group combined with four Language Assistance

students, for four, forty minute periods per week. The four Language Assistance students were all from Barb's class. All four spoke an additional language in the home, but had attended Canadian English based schooling most of their academic life. Their language needs centered more on skills and understanding how to complete tasks, rather than a need to understand the English used in the classroom.

## III.    Materials

*       The grade seven social studies textbook <u>Other Times, Other Peoples</u> (Neering and Grant, 1986).

*       Key visuals (Grant and Humphries, 1991) created to accompany the grade seven social studies textbook <u>Other Times, Other Peoples</u>.

*       Team created and team taught lessons, created cooperatively between the classroom teacher, pilot project resource teacher, and the teacher librarian.

*       LEP pullout program written survey of students' self-reported needs, October 19, 1992 where students identified what the first unit of study in social studies covered, what they found difficult while completing the unit, and what they thought each of the six knowledge structures meant.

*       Weekly copying of the seven students' notebooks, draft and final assignments and tests as they were completed and turned in to their teachers.

*       At the end of May 1993, I copied the entire class set of student binders for all subject areas, as well as the teacher's daybook, from the experienced knowledge framework grade seven teacher.

\*       Interviews held with each of the teachers who participated in the study, at the end of June 1993, to determine what the teacher was focussing on during each major task and to determine the role the knowledge framework played in the development, design, teaching and evaluation of each major task.  See appendices A, B and C.

\*       Interviews with the seven students, serviced by the LEP pullout teacher, at the end of June 1993 reviewing key assignments during the year, to better understand how explicit or implicit the framework was during each of these assignments and to determine what the students found helpful or useful.  See appendix D.

## IV.       Procedures

1.       To allow for mortality, I observed all seven students in their mainstream social studies classrooms, and during three out of four LEP pullout sessions per week.  Both Grade 7 classrooms were observed, and as the more experienced knowledge framework grade 7 teacher became comfortable with the researcher, several language arts lessons and science lessons were observed to see how the knowledge framework was being used across the curriculum.

2.       I took three column field notes in all three teachers' classrooms.  The first column was for time markers to get a sense of the amount of time spent developing a task.  The second column provided a description of what the teacher was doing or saying, and the third column tracked student verbal and written responses, time spent on task, concerns, or areas where students were struggling with the assigned task.

3.       I was a participant-observer in all three classrooms, circulating freely throughout the room during student work periods once the teacher had finished the direct instruction.  I was available

to students to answer questions, or concerns. I assisted the teachers with some marking of projects and materials.

4.     I tape recorded LEP pullout sessions three times per week in addition to making field notes. It was easy to have the recorder on in the middle of the table and be able to hear all the voices clearly, whereas it was impossible to record an entire grade seven class.

5.     I video taped portions of the Egypt unit classroom lessons in Alex's room while table groups were cooperatively developing their key visuals and lesson plans for the group presentations, as well as video taping the students' actual presentations and the classroom teacher and the collaboration/planning teacher's evaluative feedback to each group as it was given directly following each presentation. The collaboration/planning teacher was part of the pilot project funding.

## V.     Analysis

Ongoing analysis was made during the collection phase of the study, as well as once all the data was collected, to identify major assignments given by teachers, the types of underlying knowledge structures used by the teachers, as well as starting to identify which sub tasks were explained implicitly using the knowledge framework and which were explained explicitly. Attempts were made to differentiate between students' metacognitive knowledge about knowledge structures versus their intuitive internalized use of knowledge structures, and to track formal learning of knowledge structures as well as naturalistic understanding and use of knowledge structures.

## VI. Summary

A qualitative, participant-observer approach was used in all three classrooms. A majority of the lessons were directly observed, field notes were taken during all observations, and when it was possible and the teacher permitted, audio and video cassette recordings were used. At the end of the eight months of observation, the three teachers were interviewed individually using a common format (see appendices A, B and C), and the seven LEP pullout students as well as some of Alex's classroom students were interviewed in pairs using a common format to discuss key assignments in the social studies and LEP pullout classrooms (see appendix D). Photocopies were made of all available student notes, tests and assignments, as well as photocopies of one classroom teacher's daybook and the novice knowledge framework classroom teacher's marks record at the end of the year.

The preceding information describes the design and methodology for this research study.

# Chapter 4

## Analysis of Data

The following chapter examines how three teachers, two grade seven social studies teachers and one LEP pullout teacher, integrated language and content using the knowledge framework and how their LEP students responded. Both social studies teachers and the LEP pullout teacher used the knowledge framework and grade seven social studies content materials as a common medium for assisting LEP students. There were specific differences in approach between the three teachers due to differences in teaching purpose and environment, teaching experience, and working knowledge of the knowledge framework.

The chapter will be divided into two parts. The first part will examine teacher processes and the second part will explore student responses.

## I. Teacher Processes

The first part, teacher processes, will consider the following five questions while discussing the data:

1. How does the social studies teacher, experienced with the knowledge framework (KF), integrate it into his planning of daily lessons and tasks as well as long term planning as compared to the novice KF social studies teacher and the experienced KF LEP specialist.
2. Which aspects of the knowledge framework does each of these teachers emphasize and develop?
3. How do the two teachers experienced with the knowledge framework compare with the novice KF teacher in their use of the KF?
4. Does the experienced KF social studies teacher use different strategies than those knowledge framework strategies the LEP specialist used?
5. In what ways do the social studies teacher and the LEP specialist collaborate, using the knowledge framework for the benefit of LEP students?

**A.     Developing the Concept of Knowledge Framework**

**1.     Experienced KF Social Studies Teacher**

The experienced knowledge framework social studies teacher developed the overall

concept of knowledge framework explicitly.  This was done on three separate occasions:  Sept.

15, Dec. 4, 1992, and Feb. 25, 1993.  According to the teacher's day book he started

introducing the knowledge framework, on September 15th during a reading period, by

explicitly reviewing the knowledge framework, its purpose, examples of key visuals that relate

to the knowledge framework and their purpose.  At this point the school had been involved in

the pilot project for three years.  The majority of students were quite familiar with the terms:

knowledge framework, classification, principles, evaluation, description, sequence and choice.

On February 25, 1993 the daybook read 1:00 - 1:40 p.m.:

> 1.     review purpose of Knowledge Framework
> 2.     language of compare & contrast, continuation
> 3.     select a student to review t-charts
> 4.     review topic sentence for 1st comparison
> 5.     give remaining part of period to write first comparison & contrasting paragraph
> (Teacher Daybook, February 25, 1993)

He also developed the individual knowledge structures explicitly.  He had a large poster

(approximately 1 metre wide by 1.5 metres long) outlining the six boxes of the knowledge

framework on the front wall.  Each box gave the name of the knowledge structure, key ideas that

summarize the structure, and a focus question which could help students correctly identify a

knowledge structure.  He referred frequently to specific parts of the framework by name.

This experienced knowledge framework teacher expected students to learn key

terminology for describing the framework.  He had students keep a separate section in their

notebooks indexed tabbed and labeled "Knowledge Framework". To ensure that students could apply their knowledge framework skills, he had them create a separate section in their binders for their notes, just as if it were a separate subject area such as math or science. He also broke each task assigned in the classroom into separate sub tasks which were modeled before students completed them in groups or independently. "I wanted my students to grasp the knowledge framework, understand it, and apply it in a successful manner (Alex, interview, June 22, 1993)."

In summary, Alex, who had worked with the knowledge framework for more than three years, taught the overall concept of the knowledge framework explicitly following an overall goal that students would learn the framework and be able to apply it in classroom situations. Alex's overall aim for the year was to help students "organize their thoughts and write coherently with the use of the framework and its benefits (Alex, interview, June 22, 1993)."

**2.     Novice KF Social Studies Teacher**

The novice knowledge framework social studies teacher did not develop the overall concept of knowledge framework explicitly, although she did use some parts explicitly during the year. This was Barb's first full-time teaching assignment. She experimented with a variety of teaching styles and methods, one of which was the knowledge framework. At times she used specific parts of the framework: October 14 she emphasized compare/contrast of two Early Peoples, and later on March 24 she dictated notes for students using a blank knowledge framework worksheet with the six boxes labeled as an organizing tool for the students. At other times the knowledge framework was implicit within the lesson such as the descriptive diary writing task during the Mesopotamia unit where students described moving from a

hunter/gatherer existence to a rural farming existence (November - December during stations). Some of the other methods she used during the year were: cooperative group work, individual seat work, whole class direct instruction, a field trip, plaster engraving and drama.

She jointly planned with the collaboration/planning teacher and the teacher-librarian a sub-unit on Ancient Egypt. Within this subunit several knowledge framework based tasks were designed and developed with the assistance of these two experienced knowledge framework teachers. The collaboration/planning teacher and teacher librarian then demonstration taught some of the lessons in the library while Barb was present. Barb taught some of the lessons on her own in her own classroom.

In summary, Barb did work on some parts of the knowledge framework, but she did not develop the overall concept of the framework explicitly, or in a sustained way. This may have been because she was unaware of the knowledge framework prior to being hired so had not seen it used as part of a classroom routine for the benefit of students. During the year she attended a three part workshop on the knowledge framework and was beginning to learn how she could use the knowledge framework for her own use as a teaching tool.

3.      **Experienced KF LEP Language Teacher**

The experienced KF LEP teacher also developed the overall concept of the knowledge framework explicitly. At the start of the year she assessed her students' explicit understanding of the knowledge framework by having students write down their own definitions for each of the six knowledge structures (Oct. 19, 1992). To help a student new to the school, she gave a brief outline of her intentions for the year for the benefit of the student: "Eric the word key visual is

probably new to you. Key information in picture form. In time I will teach you how to write from the key visual. Eventually you will be able to draw your own key visual to make notes (Field notes, Oct. 23, 1992)."

She had a poster outlining the six boxes of the knowledge framework on the wall which was identical to the experienced social studies teacher's poster. The poster identified each knowledge structure by name, listed key ideas that summarized the structure such as "define", "label", and "identify" for classification. She introduced each knowledge structure explicitly over several days. She used the key visuals for the Mesopotamia chapter of the grade seven social studies textbook. Whenever a grouping of the key visuals focused on a particular knowledge structure, she introduced that knowledge structure's language, key visuals and written genres: principles Nov. - Jan., and description Nov. - Dec. She reviewed the 6 knowledge structures as a whole on Jan. 6 then started sequence for Jan., classification Feb. 1 - Mar. 29 and evaluation Apr. - June.

The experienced KF language teacher referred frequently to specific parts of the framework by name. She expected students to learn key terminology for describing the framework e.g. Oct. 20 the teacher asked "When separating into groups what is it called (field notes)?" A student answered "classification." Again on Oct. 21st while handing out key visual worksheets she asked students to identify the different types of key visuals and students answered "classification" and "sequence" which was correct. Jan. 20 she again asked students to identify the knowledge structure for a key visual. Her stated purpose in so doing was:

> The underlying lesson in each of the sessions, was that they would become familiar with the language of the framework, the graphics of the framework, and be able to recognize the language of the framework in their textbooks, and therefore, be able to recognize what

genre type, genre of writing it was, and be able to eventually graphically represent that and write from those graphics (Carol, interview, June 25, 1993).

In summary, Carol, like Alex, developed the overall concept of the knowledge framework explicitly, following an overall goal that students would learn the framework and be able to apply it in classroom situations. So her aim was to take the knowledge framework and make it a student tool, not just a teacher tool. "We're dealing with content that they're actually dealing with in the classroom, we're dealing with skills related to the framework, and language skills related to the framework that they can transfer to all areas of their learning in school (Carol, interview, June 25, 1993)." Her special emphasis was on identifying and naming parts of the framework and in using the knowledge structure language correctly orally and in writing. She had worked with the knowledge framework for more than 3 years, and "experienced some success last year of what kids could do, when exposed to the framework explicitly (Carol, interview, June 25, 1993)."

**B.     How did each of these three teachers teach some aspects of knowledge structures, key visuals and teacher created written genres?**

**1.     Experienced KF Social Studies Teacher**

**a)     Knowledge Structure Language Development**

When introducing each knowledge structure, Alex brain stormed examples of each knowledge structure's language as a whole class, had students record notes of the language examples and store the notes in a section of their notebooks labeled knowledge framework: description (compare) Oct. 2 (contrast) Oct. 8, sequence Oct 19th and 20 (beginning, middle,

continuation and end phrases), principles (cause and effect) Dec. 3, and choice / evaluation (options/consequences) Jan. 8, 1993.

The following is an example of the generic outline he followed when developing each knowledge structure. On October 2, during the Language Arts/Reading period, Alex and the collaboration/planning teacher worked as a team teaching unit. The school's collaboration/planning teacher worked with classroom teachers to help them develop knowledge framework based units. The lesson plan states:

> team teaching [with collaboration/planning teacher] - Knowledge Framework
> 1.      intro 'Description'    a)    brainstorm lang of Description
>                                    b)    stress COMPARE (lang)
>                                      c)    do sample sheet of Comparison para
>                                      d)    in [pairs] select 6 similarities between 2 characters
>                                      e)    write 6 separate sentences using lang of Desc
>                                      f)    intro topic sentences!
> (Teacher Daybook, Oct. 2, 1992)

Referring to student binders, the lesson plan as stated was followed. The whole class, brain stormed the language of comparison and recorded these words in the knowledge framework section of their binders (see appendix E). Students then copied an example of a comparison paragraph off the overhead where the comparison words had been deleted and blank lines inserted. The content of the paragraph was based on the class novel <u>A Wrinkle in Time</u>. The class then worked through the example inserting the appropriate comparison language for each blank.

Description (Compare) Oct. 2 the whole class worked through an example of a written paragraph, Oct. 7 Alex brain stormed on the overhead with the whole class how to complete a comparison t-chart, then students wrote up the chart comparisons in sentences comparing two

characters. The teacher collected students' paragraphs and marked them out of 12, noting incorrect use of comparison transition words. Oct. 8 and 9 he repeated the same steps when developing the language of contrast orally and in writing. He collected and marked students' cloze paragraphs for using the language of contrast, again noting incorrect language usage. Oct. 21st students worked independently on comparing two characters from their novel, and a week later did a contrast paragraph. When the teacher checked students' rough copies he noted when there was incorrect usage of comparison words.

Students practiced using each knowledge structure's vocabulary correctly by defining, using orally and in writing to make short and long examples. In addition to presenting description (comparison and contrast), the experienced KF social studies teacher also presented sequence (beginning, middle, end, continuation), and principles (cause/effect) language during the fall. On Dec. 12 he had the whole class build a model of cause/effect writing on the overhead. On Jan. 8 he reviewed the language of cause and effect (principles) before brainstorming the language of choice/evaluation (options/consequence).

In summary, Alex followed a practice of thoroughly developing the language of each knowledge structure. The language development was an integral part of most written tasks across subject areas, hence the index tabbed section which Alex had students refer to regularly. His primary language focus during social studies classes was on developing academic language skills related to social studies. His focus was on the knowledge structure transitional words that help explicitly show relationships between ideas within a single knowledge structure to strengthen oral and written descriptions of these relationships. He did not focus on verb tense, comparative or superlative adjectives or other grammar features related to the six knowledge structures.

**b)      Key Visual Development Alex**

The teacher modeled with the whole class how to complete each type of key visual.  The

modeling was usually done as a whole group on the overhead with students taking notes in their

notebooks either in the specific subject area of the binder, or in the general knowledge framework

section of their notebooks.

The first key visual modeled was the novel study character comparisons on Oct. 2 using a

T-chart and again novel study character contrasts on Oct. 9 T-chart.  A sequence time line "A

Day in the Life" chart was modeled with the whole class on Oct. 19th.  In social studies on Nov.

12 students read aloud pages 24 - 25 and as a whole class predicted then roughed in parts of the

key visuals created for those pages.  Dec. 4 students took out their page 10 key visual and turned

to page 34 of their social studies textbook.  The teacher stated, "We will read the first and second

paragraph together and then we are going to do the first two cause/effect boxes together

(research notes, Dec. 4, 1992)."  As they read the passage they completed the cause/effect boxes

on the key visual.  Alex emphasized writing point form notes in the cause/effect boxes.  Again

with the choice/evaluation (options/consequence) key visual Jan. 8 he modeled with the whole

class how to complete the visual.

Students independently completed key visuals such as reading the textbook and skimming

to make notes for future tasks (mainly written assignments and unit tests).  Nov. 12 the class

started a key visual as a whole group, then students were assigned to finish it for homework.

Dec. 12 for the Mesopotamia social studies key visual #14 students skimmed the textbook

independently, discussed in table groups possible answers for the key visual, then finished off the

key visual independently for homework

Alex regularly had the whole class review homework note taking assignments, with students marking each others' work. He then recorded their marks in his marks' record. Students were expected to note down corrections to provide an accurate study tool.

Oct. 29th students used their Early Peoples database chart to study for an in-class oral review (boys against the girls) to prepare them for the unit test. Nov. 13 the teacher spent 30 minutes as a whole class going over and marking the key visuals which had been assigned for homework. Dec. 11 he had the whole class mark key visual #14, and again on Jan. 7 and 8 there was whole class marking of key visuals. The teacher marked the Mesopotamia database chart (appendix J) in four parts: Jan. 8, 19, 28, and Feb. 11.

In summary, Alex followed a pattern of modeling the various key visuals with the students, showing them how to read, understand, and fill them in. Each key visual usually became an integral part of a larger task such as a note taking/study tool, or a written outline.

c)      **Written Language Alex**

Alex formally instructed students in several knowledge framework based, written language genres. He developed these genres explicitly across content areas.

Thus he worked with classification of foods Sept. 17 and 18 during language arts for a classification genre. He developed a sequence genre in the assignment "A Day in the Life" Oct. 19 - Oct. 29. The description compare and contrast genres were developed in several compare/contrast essays October through March for language arts, social studies and science. A principles genre based on cause/effect chains was developed Dec. 3 through January for social

studies. Choice and evaluation genres based on options/consequences were started on Jan. 8 for the language arts novel study, and an evaluation report card on a novel study character was written in November.

Each step for any written task was modeled. First the teacher developed the knowledge structure language as outlined above. The second step was note taking. Note taking for specific tasks was usually marked by students as a whole class and/or marked by the teacher. On Nov. 13 the teacher spent 30 minutes as a whole class going over and marking the key visuals which had been assigned for homework. Then students had to practice writing up the key visuals in complete sentences for homework. On Dec. 11 the whole class exchanged key visual #14 and marked their answers. Jan. 7 and 8 it was the same again, students marked the key visuals then wrote up the cause/effect and sequence key visuals in complete sentences.

The experienced knowledge framework teacher marked the Mesopotamia database chart in four parts: Jan. 8, 19, 28, and Feb. 11 with each part marked out of seven marks. Students then used this database as the source for their T-charts for the comparison/contrast essay. The teacher recorded all marks in his marks record.

The outline tool was almost always a key visual which the teacher modeled as the task was assigned or which had been previously modeled.

Jan. 8 Alex reviewed the language of cause and effect, brain stormed with the whole class the language of choice, worked through a specific problem the main character was having in the novel, then modeled how to write a structured paragraph using an options/consequences key visual. The day book lesson plan outlines the structure for the written paragraph:

1. topic sentence (intro problem)

2.      how to write cause/effect sets from options & consequences using [sequence] language of continuation.

3.      conclude with <u>your</u> choice     (Alex, Daybook, Novel Study, Jan. 8/93)

The completed outline tool for the options/consequence paragraph was checked by the teacher and fellow students.

Sample paragraphs were frequently modeled with the whole class. Sometimes the teacher built an entire group model for the specific written task.

**Description** (Compare) was first introduced as part of the novel study: Oct. 2 the whole class worked through an example of a written paragraph; Oct. 7 he did an oral brain storm with students then they wrote up sentences comparing two characters. Oct. 8 and 9 he did the same for contrast. Students did independent construction of compare Oct. 21 and contrast Oct. 28. Rough copies were submitted to the teacher for marking. The process was repeated again for the social studies essay with the teacher modeling each step. On March 5th he modeled on the overhead projector introduction and conclusion paragraphs.

**Sequence** language was developed using a writing assignment entitled: "A Day in the Life". There was whole class modeling of the assignment on the overhead on Oct.19. Students were then required to completed their own compositions independently, peer edit them, then hand in the good copies on Oct. 28.

**Choice/Evaluation** language was modeled on Jan. 8 when the teacher modeled a written paragraph based on an options/consequences key visual.

Introduction and conclusion sentences and paragraphs were usually modeled for each assignment. Students wrote down a definition of a topic sentence Oct. 21 during their sequence genre "A Day in the Life" and the teacher modeled sample introduction and conclusion sentences.

Topic sentences were modeled for the Jan. 8 options/consequences genre. Again the teacher modeled introductions and conclusions for the social studies comparison/contrast essay on March 5.

Rough copies were usually reviewed by the teacher and/or fellow students. During the week of Oct 21 - 28 the teacher noted on Daryck's novel study comparison rough draft to see him regarding use of comparison language. On Feb. 25 students peer edited each others T-charts per teacher daybook, then on March 5 the teacher checked students' introductions and conclusions.

In summary, Alex ensured that his students did a wide range of social studies written genres, based on knowledge structures such as cause/effect and comparison/contrast. In other subject areas he had students complete classification, sequence, evaluation (report card) and options/consequences written genres. Alex also linked genres across subject areas such as completing identical genre comparison/contrast essays in science and social studies as well as several shorter comparison/contrast paragraphs describing characters in classroom novels. He had students complete several longer written assignments such as the "Day in a Life" sequence task, Mesopotamia compare/contrast essay, and science animal/plant cell compare/contrast essay. The final product for each new type of assignment was thoroughly modeled.

Throughout each of these examples, this experienced knowledge framework social studies teacher provided considerable modeling, orally and in writing, as well as direct teacher and table group support for all students.

2.      Novice KF Social Studies Teacher

a)      Knowledge Structure Language Development

The novice teacher initially did a small amount of work with the language of knowledge

structures, but did not follow this work through the school year as a consistent strategy.

The novice teacher supplied a list of compare/contrast language on the overhead (Oct. 14) which came from one of Dr. Mohan's and the Vancouver School Board's Summer Institute's handouts on the knowledge framework. The list was similar to the one Alex's class developed (see appendix E). She modeled orally a couple of sample sentences using the description language. During the rest of the class time on Oct. 14 and again during the work period on Oct. 15 Barb circulated and gave examples of how to use the comparison and contrast language for individual students.

Oct. 14 Barb suggested to students that they may want to copy down a few of the compare and contrast words off the overhead projector which they could use when they wrote up their paragraphs. Gary, one of the learning assistance students, copied down a few examples, approximately 8 to 10 words. A second learning assistance student copied down most of the list. A week later when the key visual outlines were returned to the class, students were reminded to use the comparison and contrast language.

A few words were reviewed at the time of explaining the assignment criteria Oct. 14, then one on one with students Oct 14 and 15, but the knowledge structure language words were not reviewed again as a whole class between the assignment explication on Oct. 14 and assignment due date. These words were not required or part of any future assignments.

In summary, the only time Barb explicitly developed knowledge structure language was right at the end of the Early Peoples unit when she had just been hired. She was finishing off a unit someone else had started and had been given examples of the language a few days earlier, so she was using it for the first time and was unaware of the different ways it could be used in other

assignments. She had been told that students were familiar with the knowledge framework. The framework was new to her. Many of the students were familiar with the framework from their studies with previous teachers, but familiarity does not mean mastery of all aspects of the framework such as knowledge structure language skills.

**b)    Key Visual Development Barb**

The novice teacher did make some use of key visuals, but did not use them regularly or as a central learning tool.

Barb introduced how to read and use some key visuals during the year. On October 14, the first directly observed lesson, Barb referred to the key visuals in the text, pointing out the content contained therein. When answering teacher questions during this class, students referred to the classification/description database summary chart (see appendix I) which they had completed to summarize the chapter information. Barb referred to the chart on page 20, and the time line of Early Peoples, page 3, in the textbook (Neering and Grant, 1986), she had students read from it, and asked students to postulate possible reasons and principles behind the organization of the chart and time line. She used a key visual outline tool (Parks and Black, 1992, p. 11) for the compare/contrast writing assignment for the Early Peoples chapter on Oct. 14. The key visual was a common one used in the school by several teachers when assigning this type of writing task. Barb modeled how to complete the outline tool on the overhead, asking students to give three examples regarding how tools were the same, and three examples how tools were different for Homo Habilis and Homo Erectus. Barb also used some of the teacher created Egypt chapter key visuals (Grant and Humphries, 1991). For the Pharaoh report, she

planned collaboratively with the teacher librarian and collaboration/planning teacher. The team planned lessons had modeling of note taking skills, as well as modeling of a research note taking tool which had been developed at the school.

Note taking skills were part of each unit and some were key visual based, but this skill was not systematically developed over the year. During the Early Peoples unit the class used note taking webs and a database chart (Sept. 92), but another teacher had taught most of the unit, prior to Barb being hired. Barb did have students hand in the compare/contrast outline tool for marking, and handed it back to students on Oct. 20. For the Mesopotamia unit stations, the students had two full page charts with cloze blanks to fill in data. The teacher marked the charts at the end of unit as part of the unit project. For the Egypt unit the teacher used some of the key visuals (Grant and Humphries, 1991) developed for the textbook. Some of these key visuals were marked or reviewed with the class. She dictated notes for the Nile report Feb. 17 and had students use key visuals and the textbook to make their own notes. There was whole class review and marking of these key visual notes later that week. Again on March 24 students were assigned a key visual and textbook pages to do note taking for homework. The collaboration/planning teacher reviewed the students' answers as a whole group on March 25. On March 31 the teacher librarian and collaboration/planning teacher previewed a key visual note taking sheet and frequently paused the filmstrip so students could take notes. The key visual answers were reviewed as a whole class on April 1.

Unlike the other grade seven teacher and the LEP pullout teacher, Barb specifically chose not to review the Early Peoples chapter content using the key visual classification/description database chart with the students, but she did give an outline of what would be on the test and

directed students to review notes. For the Mesopotamia unit, again the students were told the types of tasks they needed to complete for the test, but there wasn't a whole class review session on the overall key concepts using the key visuals.

Barb did have students make their own key visuals. During the Mesopotamia unit students made five time lines on a teacher provided time line tool. They completed maps for the Mesopotamia and Egypt units following teacher provided criteria on blank outline maps. Barb reviewed the tool and criteria. The students did not make their own original key visuals to summarize text, but did take a cut up key visual for the mummification process (Grant and Humphries, 1991) and had to predict the correct sequence in table groups.

In summary, Barb did not make a practice of regularly previewing key visuals to ensure students understood the visual's organizational structure (how to read and understand it). She did use some of the Grant and Humphries (1991) cloze format key visuals as worksheets. Some were marked by the teacher, but they weren't a central note taking or study tool throughout the year. She was using them to help students learn and understand parts of the text (Neering and Grant, 1986).

c)      **Written Language Barb**

The novice social studies teacher assigned students several written genre tasks, and did some modeling of parts of these genres, but she did not relate genres and knowledge structures.

Several written language genres were expected of students: compare/contrast (Early Peoples unit), diary (Mesopotamia unit), self evaluation (Mesopotamia unit), principles (short answers with supporting reasons), report (two during the Egypt Unit).

Barb modeled parts of written tasks. For the compare/contrast (Early Peoples) assignment on Oct. 14 and 15 she modeled an outline key visual tool (Parks and Black, 1992, p.11). When describing the key visual outline tool during her year end interview, Barb described why she gave students a copy of the outline tool, "if I [the student] filled out the sheet like this, I know that I am following the right format, and therefore, I should at least get a decent mark." "I think it's good for them to have a structure that they follow (Barb, interview, June 23, 1993)." One week later (Oct. 21) when she handed back the key visual outline tool, Barb reminded the students to have an introductory sentence. A student asked if the ideas should be mixed up all together. Barb suggested that the student write the first paragraph stating how the two Early Peoples were the same, and the second paragraph could state how they were different.

An outline was provided for the Nile report with an example of how not to write an introduction sentence--Feb 24. On Mar. 3 and 4 the collaboration/planning teacher outlined and modeled how to take notes for the pharaoh report. Mar. 10 the teacher-librarian demonstrated how to use a CD-ROM encyclopedia to research on a specific pharaoh. The teacher-librarian had created a specific sequence chart for the CD-ROM research steps with room for some notes, as well as students were expected to take notes on their note taking tool. Mar. 25 the teacher librarian explained how to write up notes into a report and how to do a bibliography. Mar. 29 students handed in their rough drafts to Barb for checking. The final copy was due April 5.

In her year end interview, Barb mentioned how she and the collaboration/planning teacher discussed "trying to teach them more the skills, like the note taking and the researching and using notes from that to write (Barb, interview, June 23, 1993)."

In summary, Barb required students to represent their knowledge and understanding using

a variety of written genre formats. While she did some modeling, she mainly relied upon the students to complete the written task as a means for students to improve in their use of the genre. Unlike the two teachers who were very familiar with knowledge structures, she did not develop the knowledge structure aspects of a genre.

**3.      Experienced KF LEP Language Teacher**

**a)      Knowledge Structure Language Development Carol**

The experienced KF LEP teacher systematically developed the language of each knowledge structure in ways similar to the experienced social studies teacher.

Carol directed students to scan passages of the textbook looking for examples of a specific knowledge structure language in the textbook and shared them: cause/effect Nov. 4, classification Feb. 1, 8, 22, and 24, sequence during December and March. Students gave examples from the text and the teacher wrote them on the blackboard. She brain stormed the language orally on several occasions: cause/effect Jan. 6 and 13, and sequence Jan. 8. Sometimes she wrote the language on the blackboard or on flip chart paper.

For classification on Feb. 1st she had students brain storm several introductory sentence openers. Carol wrote the best one on the board and asked students to identify the classification words in the sentence. She then had them brain storm orally a variety of synonyms for the verb "organize". She had the students take written notes of classification verbs on Feb. 1. For homework, students were to skim pages 69 - 73 of the text looking for examples of classification language. Feb. 12 students skimmed the text looking for more examples of classification words in sentences. Students could refer to the classification word list on the flip chart stand.

Carol photocopied Alex's two LEP students' knowledge structure language notes and gave copies to all students in the group Jan 18; prior to this brain storming had been oral, with several reviews or words written up on a group flip chart rather than the individual note taking format used by Alex. She also had a sequence language poster, and a classification language poster on the flip chart stand. Feb. 17 students made notes defining classification as well as listing classification vocabulary with columns for verbs, nouns, and quantifiers. Feb. 19 she reviewed the language and added to the flip chart notes.

Students practiced using the knowledge structure vocabulary correctly by defining, using orally and in writing to make short and long examples. Students practiced principles language (cause/effect) on Nov. 4. She had students use cause/effect words to restate a key visual orally. On Nov. 10 she brain stormed cause/effect vocabulary and had students use the words in oral sentences. On Nov. 24, 25, and Jan. 13 she reviewed cause/effect language orally. Sequence (beginning, middle, end, continuation) language was developed on Jan. 8. For description (comparison/contrast) Jan. 4 she had students orally compare Canadian New Year's and Chinese New Year's celebrations. Classification vocabulary was developed as part of the Mesopotamia word classification task from Feb. 1 - 19. This same knowledge structure vocabulary was reinforced as part of the Ancient Egypt word classification task and writing assignment Mar. 1 to Apr. 23. For the Mar. 10 window on the world journal, students had to insert the correct classification nouns, verbs and quantifiers to complete a teacher created cloze introductory sentence. Evaluation language was developed from Apr. 16 to June as part of the unit on the good and bad of t.v. This topic was a follow up to the Apr. 14 t.v. debate presentation at a school wide assembly. The topic was worked into individual student letters addressed to the chair

of the C.R.T.C. (Canadian Radio and Telecommunications Commission) on the subject of t.v. violence.

During January to April the LEP teacher used a variety of Window on the World Journal topics (appendix K) to focus students' writing with short paragraph answers which related to a variety of knowledge structures.

In summary, Carol worked explicitly on the language of each knowledge structure and had students complete tasks similar to Alex's. From Nov. to Jan. there was considerable focus on cause and effect, since most of the key visuals for the Mesopotamia chapter (Grant and Humphries, 1991) focused on this knowledge structure. Carol practiced knowledge structure language skills as thoroughly as Alex, and sometimes listed the language on the blackboard or flip chart, but she did not initially have students do formal note taking of the knowledge structure vocabulary. As an LEP teacher, Carol's primary focus was language development, so learning the meanings of the knowledge structure language and being able to use it correctly in context was a natural part of her program. Like Alex, she tried to spend some time helping students learn the language for each of the six knowledge structures.

**b)** **Key Visual Development Carol**

Carol worked to develop her students' understanding of how to read and use each type of key visual. She had students describe orally what was happening in a cloze format, teacher created key visual, and predict what they thought would go in the blanks. Students were often called upon to name or identify a key visual-- on Oct. 21, 23, 27, Nov. 4, and Nov. 25. Again on Feb. 17 and 19 she explicitly reviewed the key visual concept. Similar to the

experienced KF social studies teacher, she had whole group skimming of the social studies textbook to complete key visual such as on Oct. 21 and Nov. 24. In additional to modeling the skill as a whole group, she also assigned students the task of independently reading the textbook and skimming to make notes on the cloze key visuals--Oct.21, 23, 27, Nov. 3, 4, 6, Dec. 11, and Jan. 13.

Usually the teacher would review answers to key visuals as a whole group, and often encouraged students to circulate around the table to see what others had done. Oct. 23 she reviewed with students their answers to the prior day's task. Nov. 3, Jan. 18 and 20 students handed in key visuals to the teacher for checking.

Carol had students use key visuals in a variety of ways. On Nov. 4 and Dec. 3 students were asked to summarize a section of text and make a key visual. On Jan.11 she asked students to answer a textbook question using a specific type of key visual. Sometimes she would identify the knowledge structure and suggest the possible shapes of key visuals for the structure, then students would make their own key visuals.

Feb. 12 students skimmed the text looking for examples of classification writing. Carol asked "How would you draw a key visual of that? What are the groups? Where would the division of the groups be (field notes, Feb. 12)?" She then brain stormed on the blackboard with student input, three different key visual outlines to present the same classification information: web, tree, and classification /description chart. Again on Feb. 17 she reviewed the same three types of classification key visual formats. Students made notes on classification, then constructed their own classification key visual example in their note books. A final review was done on Feb. 19 when she had students draw the main types of classification key visuals on the board.

In addition to making key visuals to organize text information, she had students, alone or in pairs, make an outline or data bank type of key visual for future writing tasks: time lines (Christmas and Spring break), and classification webs (food groupings, Ancient Egypt vocabulary). On Apr. 16 she had each student make a comparison table showing the pros and cons regarding t.v. This topic was further developed on April 27 when students made a choice/evaluation decision tree: to watch t.v. or not to watch t.v.? Students where then to write a paragraph outlining their choice: "I have decided to _____ because _____ (Field notes)." This writing was then worked into letters to the C.R.T.C.

In summary, in her work with her students, Carol's focus was twofold: using key visuals as a study/note taking aid to better understand the content material, and learning how to understand and construct a variety of common key visuals so that they could be read and understood. Hopefully students would achieve a good mastery of key visuals so that they could make their own original key visuals for note taking and study purposes. It appeared that Carol as the LEP specialist aimed to develop her students' social and academic language skills across a wide range of topic areas.

c)      **Written Language Carol**

The experienced LEP teacher worked with a number of written genres across a wide range of content areas, carefully developing the knowledge structure aspects of each genre.

Carol developed several knowledge framework based, written language genres across content areas: principles (cause/effect sequence chains from social studies key visuals, and persuasive letter writing C.R.T.C. letter), description (comparison/contrast of the ways Sumer

and Vancouver are the same/different Dec. 11, 92), classification (grouping/sorting of foods, Mesopotamia Vocabulary Feb. 1 - 19, Ancient Egypt vocabulary Mar. 1 - Apr 23), sequence (Christmas/Spring Break time lines Mar. 22 - 24), and evaluation (self-evaluation of how students did on tests, Window on the World topics, evaluation of the pros/cons of t.v. Apr. 16, and evaluation decision tree which became the letter to the C.R.T.C. Apr. 27).

Each step for a written task was thoroughly modeled: the knowledge structure language for the specific genre was developed. For more detail refer to the section on knowledge structure language development I. B. 3. a) above. The LEP teacher led the students through note taking using a cloze key visual or a student created key visual. This key visual, which was to become the outline or database source for the written genre, was usually reviewed by the teacher and/or the whole group: Feb. 1 - 19, Mar 3, 10, and 12. The key visual was marked to determine if the information was correct and complete.

Some examples of the key visual being used as an outline tool for writing in the LEP classroom were: the Mesopotamia word classification (Feb. 1 - 19), the Ancient Egypt classification (March 1 - Apr. 23), the sequence time line (Christmas/Spring Break), and the evaluation decision tree (Apr. 16 - 27).

The experienced LEP teacher modeled sample paragraphs orally. Some examples she wrote out partially on the blackboard, or students wrote their work in pairs on large flip chart paper (Feb. 8) so that all could read it when the teacher led the group through a review. Sometimes students were encouraged to circulate around the table or room to get ideas on how to write up their visuals: Mar. 3, 10, 22, 24, Apr. 2, and 14.

On March 24 the LEP teacher had students read their paragraphs out loud to the group.

She then encouraged each member of the group to give the reader feed back. Finally, she orally modeled the introductory paragraph.

Not only did she model introductory paragraphs, but she also worked with students and modeled topic sentences. She had students share out loud their topic sentences Feb. 10 and 12. She again directly encouraged students to talk to each other and share their ideas for topic sentences on Feb. 15.

For the Jan. 8 journal the LEP teacher went over how to reword a question into an introductory sentence. Again for the Jan. 20 journal writing, she orally asked students how they would start the opening sentence. On Feb. 1 when the Mesopotamia words were sorted, Carol said, "If I was going to ask you how to write this as a paragraph, how would you start?" Students brain stormed several oral examples. Feb. 8 Carol: "I want you to write up the charts you did a week ago into classification writing." Students looked blank when teacher spoke about topic sentences so she had each student write a topic sentence on flip chart paper. Feb. 10 she had a student read out loud his introduction sentence for his Mesopotamia word classification paragraph. The teacher asked how many students used the word "grouped": three students did. She referred to the classification word poster the group had brain stormed previously. She then brain stormed 5 or 6 oral examples of an opening sentence for this genre. Dual focus: 1) "Next day in your books you will rewrite it as if writing for an essay or a textbook." 2) "Next day we'll go through each category and look at the different ways of saying things." On Feb. 12 Carol explicitly stated her focus: "What we're going to work on is various ways you could start a classification paragraph." Feb. 15 she continued working on introduction sentences; Carol stated: "Come and get your chart. I want you to write the first sentence of a paragraph that would

describe your chart." Mar. 24 she reviewed the Ancient Egypt word classification introduction sentences as a whole group. Mar. 31 she reviewed orally with the whole group the students' introduction sentences for their journal topic.

Students peer edited their rough copies using the "COPS" strategy (Capitals, Order, Punctuation, Spelling) before handing in most Window on the World journal entries as well as most rough drafts of paragraphs: Jan 4, 8, 13, 18, 20, 22, 25, 27, Feb. 1, 8, 10, 12, 15, 17, 19 etc. On Mar. 26 students handed in their rough copies of the Ancient Egypt multi-paragraph classification so that the LEP teacher could review their work. Mar. 29 she had in class peer editing with two students to peer edit each piece of writing. Apr. 7 there was another chance for students to peer edit their second draft.

In summary, Carol had students complete a wide range of written genres dealing with a range of topics (not just social studies). It was clear that as an LEP teacher she aimed to prepare her students for all mainstream content areas. The written assignments tended to be shorter than Alex's, only 1 or 2 paragraphs, but the overall writing development process was similar, focusing on many of the same written genres as Alex such as classification, sequence, comparison/contrast, cause/effect, and options/consequences.

**C.** **How do the two teachers experienced with the KF compare with the novice KF teacher in their use of the KF?**

The two experienced teachers differed from the novice teacher in that they presented and developed the knowledge framework explicitly as a central part of a year long, school wide strategy. They used a variety of key visuals and linked their understanding and use to the

knowledge framework. They developed oral language, and they built in recurrence of tasks to develop students' skills in oral and written academic language. We will now look in detail at the work of the teachers in each of these areas.

### 1. Experienced KF Social Studies Teacher -- Oral Language

As outlined above, Alex developed knowledge structure language explicitly as part of his overall development of the knowledge framework, and written genres. Not only was the knowledge structure vocabulary practiced orally, but he worked towards developing students' oral language through oral presentations for Ancient Egypt and Ancient Greece sub-chapters of the grade 7 social studies textbook.

### a) Modeling and Outlining Sample Lesson Plans

On April 22, Alex team taught with the collaboration/planning teacher. The focus of this lesson was how to prepare a lesson plan for the presentation. As usual notes were built on the overhead during the class session.

During this session the class discussed the various ways to present the text: have students read silently or have readers read out sections to the whole class. The two teachers shared with the students how to preview a key visual to a class before assigning it to be completed. The two teachers had a sample key visual on the overhead as they demonstrated. The collaboration/planning teacher explained the purpose of previewing the text, to build "background knowledge...before the reading", and explained the importance of reviewing vocabulary, "You have to make sure people can understand the words." Again, as during prior periods, it was emphasized that, "Your big goal is not to trick the class. You're only

really successful when everyone can do it (Field notes, April 22, 1993)."

Students presented their key visuals in the library during the week of April 26.
May 6 the teacher assigned Ancient Greece sub-chapters in pairs, for students to prepare the same type of presentation as Ancient Egypt, but May 6 was also the last day of school before a three and a half week teacher's strike, so students completed most of the assignment at home independently. The final presentation was the Ancient Greece key visuals which were presented in pairs June 7 - 10, just a few days after classes resumed.

**b)      Textbook Vocabulary Development**

Alex also used a classification word web key visual as a student tool for defining difficult and new terminology and vocabulary from the textbook. Students completed these classification webs then handed them in to their teacher for marking. These vocabulary classification webs were an ongoing task throughout year, in all subject areas in Alex's classroom.

Alex emphasized orally defining key vocabulary terms with the whole class and reviewing the terminology on a daily basis as part of the opening of the lesson or as part of closure. On Oct. 29 students used their Early Peoples database chart to study for an in-class oral review (boys against the girls) to prepare them for the unit test. The teacher asked oral comprehension questions and vocabulary definition questions and awarded points to determine the winner. On Nov. 10 Alex developed the concept of civilization with the whole class.
Dec. 4 the teacher checked students comprehension of vocabulary terms while reading a textbook passage with vocabulary questions such as, "What is silt (field notes, Dec. 4, 1992)?" On Apr. 22 the teacher asked comprehension questions to ensure key vocabulary and terminology were understood. Alex rephrased when students weren't able to follow along.

In summary, oral language development played an important role in Alex's classroom. In the view of the researcher, it seemed that the language development helped. When the researcher was observing, it appeared that students could restate information reasonably clearly and correctly in their own words showing the logical connections and relationships between the ideas.

**2.      Experienced LEP Language Teacher–Oral Language**

**a)      Oral Development of Knowledge Structure Language**

As outlined above, Carol explicitly developed knowledge structure language orally and in written genres. One emphasis in Carol's LEP classroom was for students to use knowledge structure language correctly in complete oral sentences. This was directly observed on Nov. 10 and Nov. 24 for classification and cause/effect language, and again on Nov. 25 for cause/effect only.

**b)      Textbook Vocabulary Development**

Carol introduced on Oct. 23 the same classification key visual word defining webs that Alex used in his grade 7 classroom. Carol instructed students in how to read and complete the key visual, and had students use the webs to define unfamiliar terminology from the grade 7 social studies textbook. On Nov. 3, 10, 24, Dec. 3, and Jan. 20 students were directed to find vocabulary in the text and fill out the sheets. Usually students were to self-select terms and hand in sheets weekly for checking by the teacher.

Not only did she have students self-select difficult terminology, she also orally defined teacher selected key vocabulary terms with the whole group and reviewed the terminology on a regular basis as part of the opening of a lesson or as part of closure. One example of this is on Oct. 26.

As a further stage of vocabulary development she had students search the Mesopotamia chapter of the text on Jan. 29 and Feb. 1. Students took the Mesopotamia words they had selected and classified them (grouped them) on flip chart paper and discussed the groupings orally. Students made their own categories and groupings and shared them with the whole group. With this task, the teacher was having the students find their own relations between the different vocabulary terms.

In summary, oral language development followed a very similar approach in both Alex and Carol's classrooms, with the crucial difference being that Alex's focus was to prepare his students for their needs in his own classroom, whereas Carol was anticipating her students' needs in the mainstream. As an LEP teacher, Carol recognized students would have difficulty with both subject area vocabulary, and in learning knowledge structure vocabulary which was general across topics. She believed that by practicing both types of language students would learn the correct usage and meaning, but also by practicing the knowledge structure language regularly, it would hopefully become part of their active academic vocabulary.

### 3.      Novice KF Social Studies Teacher–Oral Language

Barb did not explicitly develop oral language skills. During the year there were no oral presentations, or oral reports. On May 5, 6 June 2, 3, and 9 there was oral role playing as part of the legal studies unit where each student took on a role within the mock trial. Barb asked students to orally define key terminology from the text, but it was not an integral, daily classroom practice. In summary, oral language development was not a key goal for Barb within the social studies curriculum.

**D.**   **Recurrence**

How does the social studies teacher, experienced with the knowledge framework integrate it into his planning of daily lessons and tasks as well as long term planning as compared to the novice knowledge framework social studies teacher and the experienced knowledge framework LEP specialist?

**1.**   **Experienced KF Social Studies Teacher -- Recurrence**

There are several examples of recurrence in Alex's classroom. Recurrence is when information, a task or a skill is revisited and sometimes extended further. Over the year long cycle of instruction, Alex built in several repetitions of information, skills and tasks working towards mastery.

Each knowledge structure's vocabulary was brain stormed as a whole class, copied down into student note books for future reference, and was practiced orally and in writing over several days, and reviewed at later dates in the year when the language was needed for an assignment or task. In section B. 1. a) of Chapter 4 there is a description of how Alex developed comparison and contrast language skills from October to March, beginning with whole class brain storming of the language in October and culminating with two formal comparison/contrast essays–one in science, the other in social studies.

Alex followed a  similar pattern of knowledge structure language development for each knowledge structure. The language of principles (cause and effect) was developed in a similar way to the language of description. Alex had the whole class brain storm cause and effect language (Appendix G) on Dec. 3 and 4th. He wrote the language on the overhead and instructed

students to record the language in the knowledge framework section of their binders. On December 11th he had students complete key visual #14 (Grant and Humphries, 1991) in small groups. On December 12th the students marked the key visual as a whole group. The key visual had a cause/effect chain. Alex reviewed the language of cause and effect. He then modeled on the overhead how to write up the boxes using cause/effect language. Alex assigned students the task of writing up the cause/effect boxes on key visuals #12 and #14 in complete sentences using cause/effect knowledge structure language. Again on January 7th Alex reviewed how to use the language of cause/effect when writing. On January 12th students had to have two cause/effect sentences written based on key visual #15. Again on January 21st and 22nd Alex stressed cause/effect language.

When assigning written tasks that required a certain knowledge structure, Alex reviewed the basic vocabulary of the knowledge structure to ensure students could use the language correctly. For the Mesopotamia comparison/contrast essay, Alex wanted students to not only use comparison/contrast language in their descriptions, but he also wanted students to use sequence language throughout to provide the appropriate transition between ideas. He reviewed the language of continuation which is part of sequence, on February 25th prior to students writing up their rough copies.

Not only was recurrence to assist development of knowledge structure language skills, there was recurrence of tasks within an assignment as well as recurrence of assignments to build students' skills. When the students first learned the language of comparison and contrast they completed two very similar cloze paragraphs where they needed to insert the appropriate language correctly. The general structure of the comparison/contrast task was repeated soon

thereafter when students were assigned the task of comparing two characters in their novel study using this same language. After Christmas, the students used the language of comparison and contrast as part of their Mesopotamia social studies' essay, and again as part of their science essay comparing plant and animal cells. These two essays were developed from January to March with each step modeled on the overhead by the teacher, then the students' work was reviewed by the teacher: note taking on classification/description database charts, separate T-charts for each aspect of the essays e.g. comparing Babylonia and Assyria for use of armies, rough copy paragraphs for each T-chart, introduction and conclusion paragraphs, rough copy of completed essay. Not only was there repetition of task across subject areas, the same task in science and social studies, Alex had also structured repetition of task within the essays, since for the social studies essay they needed to build 6 T-charts, and for the science essay they had to build several T-charts.

Often the recurrence involved whole class modeling of a task or assignment, then usually small group completion of a task. Almost every written task had peer review and editing, as well there was teacher review of most tasks such as cloze key visual worksheets, note taking key visuals, outlines, and rough copies or teacher recording of the marks assigned to a whole class corrected assignment. Sometimes there was also whole class review of a step in the process towards the final task. For instance on Feb. 25th Alex not only reviewed the knowledge framework as a whole and the language for comparison/contrast as well as sequence, he also chose a student and went over the student's note taking T-charts with the whole class. After whole class modeling and small group or pair construction, the last stage usually involved students' independently constructing the task, but still with peer and teacher review of the rough

copies and notes.

Not only was knowledge structure vocabulary and writing skills stressed, Alex also built in recurrence of tasks based on students creating their own key visuals to summarize text or answer questions. Students were required to answer some textbook questions using student created key visuals. January 12th students handed in key visuals they had made independently to answer textbook questions from page 49 of Other Places, Other Times (Neering and Grant, 1986). On January 21st Alex had students summarize the Babylonian money system, as explained in the textbook, in key visual form. This task was completed in table groups, then each group's key visual was reviewed the next day as a whole class. For the Egypt and Greece chapters, Alex assigned students the task of summarizing sub-chapters of the textbook in key visual format, then making formal oral presentations to the class. For the Egypt chapter, Alex assigned the task to table groups, approximately 4 to 6 students per table group. For the Greece chapter, students were assigned sub-chapters in pairs.

Alex summarized his overall strategy in his year-end interview:

When I was teaching before I got into all of this, science was a subject, language arts was a separate subject, and social studies was a separate subject. Now I worked very hard as a teacher to do my absolute best, and the students in return I think, worked very hard for me and produced some wonderful work, but when I finished my social studies, and say we put the books away...it was time for science. Now it's like it's a continuation. Now it's like everything is meshed together, and the kids see okay sure we're learning some science facts today about maybe what makes up an animal cell or a plant cell, but the method in which we teach it using key visuals and how we get the writing from that is similar, very similar. The students have to use the same skills that we teach in language arts in order to express their thoughts and opinions in the social sciences, or in science and math. I think the kids see a connection in the use of language in writing with the knowledge framework as their common thread. I think the kids can gain a deeper appreciation, and I certainly did, for how subjects aren't just separate entities, but are truly linked by language and the expression, using language (interview, June 22, 1993).

In summary, Alex provided for recurrence in knowledge framework development and in development within a subject area. The recurrence was also very similar across subject areas within Alex's class. Alex was able to build recurrence in across a range of subject areas, several times per week.

**2.      Novice KF Social Studies Teacher -- Recurrence**

In the novice KF social studies' teacher's class a range of skills and tasks were covered. There was recurrence of some tasks and skills within a unit, but there was no overall year long recurrence of specific language based tasks. The fact that there was no recurrence of knowledge structure based language skills is due to several reasons. The most important one was the fact that the knowledge framework was a new concept for the teacher. Also, unlike Alex, she only taught the class the one subject area, so could not build links between content areas and the language skills that are needed.

In the Mesopotamia stations unit the time line task required that students complete five time lines. Students did not receive feedback between time lines with a teacher goal of improving the students' skills. The time lines were handed in all together with all unit station tasks at the end of the unit. This time line task was not part of any future units of study.

Note taking and report writing were skills emphasized as part of the Egypt unit which was jointly planned with the teacher-librarian and collaboration/planning teacher. Students were required to write formal reports on two topics: the Nile river and an Egyptian pharaoh. Different note taking and research formats were used for the two reports. The Nile river report was based

on teacher dictated notes and teacher supplied cloze key visuals. The pharaoh report used a note taking tool designed by the teacher-librarian where students were guided to form their own questions then copy down point form notes from a variety of library sources to answer their questions. The students handed in their notes to be checked by Barb. Then they were guided by the three teachers, who were team-teaching, to number and organize their notes in order of importance. Therefore there was repetition of the overall skill of note taking and repetition of the written report genre, but there was not guided, explicit recurrence of language sub-tasks within the Egypt unit or year with the intended goal of mastery of a social studies related language skill.

**3.     Experienced KF LEP Teacher -- Recurrence**

There are several examples of recurrence in the LEP teacher's classroom. Knowledge structure language was frequently reviewed orally and in writing. Key visuals were an integral part of the learning program, and students were taught how to identify, complete and create these visuals. There was repetition of sub-tasks as well as repetition of tasks within a subject area, and across subject areas.

Each knowledge structure's language was practiced over several days and reviewed frequently. This repetition of knowledge structure language was outlined in section I. 3. a) of chapter 4. The language was practiced over several days such as the cause/effect language of principles. Students started practicing the language orally on Nov. 4, and again on Nov. 10, 24, 25 and Jan. 13.

Students were required to complete several key visuals for the Mesopotamia chapter of the social studies textbook which had cause/effect chains--Nov. 3, 4, 6, 24, Jan. 13, and 18. On

Jan. 13th students skimmed the textbook for effects to complete three key visual cause/effect chains. On Jan. 18th again the focus was on cause/effect key visuals reviewing pages 63 and 64 of the text.

Students were regularly asked to make key visuals as an outline for writing, as an answer to a Window on the World topic, or to answer a question in the textbook. Some of these key visuals focused on principles–cause/effect chains. On Nov. 4th students were required to find two cause and effect sentences on page 36 and make a key visual for homework. Again on Dec. 4th students were required to make a rough cause/effect chart based on pages 50 and 51 of the text. The last example of where a student was required to design a cause/effect key visual was on Jan. 11th. Each student was given a different question from page 58 and assigned the task of answering the question in the form of a key visual. Frank's question required him to identify the effects of irrigation:

Figure # 4 - 1

| Cause | Effect |
|---|---|
| 2) Irrigation harmed the agriculture of southern Mesopotamia | Because water used for irrigation carried fertile silt the fields got salty. |
| The silt have salt and too much salt kill plants. | Then the soil became saltier and saltier and the land can't grew anything leading to no food. |

(Frank, January 11, 1993)

There were several Window on the World (Appendix K) topics which emphasized the knowledge structure of principles, but these topics emphasized the use of supporting reasons–not cause/effect chains. Carol did require her students to insert cause/effect language correctly into the cause/effect key visuals from the Mesopotamia chapter, as well as writing up some of these

key visuals in complete sentences. On Nov. 10th students used cause/effect language for joining a chain into sentences. There was a 20 minute pop quiz on Dec. 7th, and two of the questions required students to write answers in a cause/effect format.

In summary, Carol had students complete similar tasks within a subject area: completing cause/effect key visuals for notes on Mesopotamia (several pages of key visuals), and orally restating these key visuals using cause and effect language as well as writing up these key visuals in complete sentences. She had her students make their own key visuals on several occasions such as time lines, classification trees, comparison/contrast charts, and cause/effect chains. She also had students complete similar tasks across a range of subject areas for instance the language of description (comparing): comparing Sumer and Vancouver (Dec. 11 and 14), comparing Canadian New Year and Chinese New Year celebrations (Jan. 4), and comparing Ancient Egypt and Modern Egypt (Feb. 17).

In summary, recurrence was very similar in both Alex's and Carol's classrooms. Carol structured repetition of skills and tasks that were very similar to Alex's. Carol's main disadvantage was that she only saw her students four times per week so time was limited. She needed to prepare her students for a variety of teachers and classrooms, so assigned topics that stressed a range of content areas. Carol structured the recurrence of skills over time, possibly she had worked with the knowledge framework for three years and had found recurrence of skills important for students to acquire the knowledge framework

Each of these teachers, novice and experienced, emphasized knowledge structure language, key visual development, and written language skills. Only the two experienced knowledge framework teachers emphasized oral language development and recurrence of tasks to build these skills.

## II.    Student Responses

This second part, student responses, will consider the following three questions while discussing the data.

1.  With respect to students during the school year, what types of knowledge framework language skills do the two social studies teachers and the LEP specialist actively develop with their students, either implicitly or explicitly?
2.  How do LEP students respond to a knowledge framework based approach to integrating language and content?
3.  How do these LEP students apply knowledge framework skills in the LEP pullout classroom by comparison with the social studies classroom?

Two LEP students will be presented, one from each social studies class, to discover their responses to the various knowledge framework teaching processes. Both of these LEP students received direct support from the LEP teacher for the duration of the school year. The selection of these two students is intended to illustrate part of the range of student responses, from Eric, a novice LEP and framework student enrolled with the novice framework social studies teacher, to Daryck, an experienced framework student enrolled with the experienced framework social studies teacher.

The first, Eric, was a new student who joined the school in September, straight from a reception class. He was in the novice framework social studies teacher's class. The second student, Daryck, had experienced direct instruction of the knowledge framework the prior year as part of the ESL support provided by the LEP teacher. Daryck was a student in the experienced knowledge framework social studies teacher's class.

Both students' use of the language for the six knowledge structures will be presented: classification, description, principles, sequence, evaluation and choice. Analysis of the two

students' work will concentrate on their use of the language and how they develop in their understanding of how to use the language. During the year the two social studies teachers and the LEP pullout program did not emphasize grammar and syntax as a central learning goal, rather the emphasis was on learning how to use the knowledge structure language. By the end of the year, the two students had used a variety of knowledge structure language in several written tasks for both the LEP and mainstream classroom programs. They did not achieve complete mastery of the semantic use of the knowledge structure language, but they did show growth in their use and understanding. Analysis of the two students' work will focus on their use and growth in their understanding of the knowledge structure language.

**A.      Eric – New to the Knowledge Framework**

**1.      Types of KF Language Skills Developed --Novice KF Social Studies Classroom Assignments**

Eric, one of the seven students in the LEP pullout program, was a new student. He had come to Canada the prior school year and had attended a different school for two months before the summer holidays. He was not only new to the country and school, but new to the knowledge framework.

His first experience with the knowledge framework was with the comparison/contrast of two Early Peoples which was assigned October 13th in his grade 7 social studies class. With this assignment Barb may not have known that she was developing the description knowledge structure, but the basic outline of the assignment, and its intent to produce a description genre piece of writing had been presented to her by someone on staff at the school. She specifically

presented the language of comparison and contrast, and she used an outline key visual to assist students in organizing their writing.  On October 21st, Barb handed back the students' key visual outlines for the compare/contrast assignment.  She gave students time in class to start writing their rough draft.  She orally directed students to use the knowledge structure language and she gave the class an introductory sentence.  When questioned she told the class to group the similarities for the first paragraph and the differences for the second.  Within 10 minutes Eric had 2/3rds of a page drafted, but he needed a thesis statement and had not separated his ideas into two paragraphs.  Again after 20 minutes it was noted that Eric was doing fine, but was not using the compare/contrast outline.  Instead he was using the Early Peoples classification/description database chart (see appendix I).  His good copy consisted of two paragraphs with the introduction and similarities in the first paragraph and the differences in the second.  Eric did use some of the comparison/contrast knowledge structure language in his good copy: "quite same", "also", "the other thing that they were the same", "is similar to", "although", "what they did to the food is very different", "but...different", "but...didn't", "on the other hand", "also...didn't" "little different between this", "are smaller than", "this different", as well as using the comparative adjective sentence structure three times.  Some of the knowledge structure language is overused, such as two types of comparison language used in the same sentence "The other thing that they were the same is that Homo Habilis ate wild berries, and that is similar to the Cro-Magnon Man ate plants."  The final copy of the written assignment follows the general outline of the key visual, but the essay includes several concrete examples that did not exist on his outline.  Therefore it appears that he completed the outline as a task, but did not use it to organize his writing as evidenced by the direct observation during the in class work period on October 21st, or when

comparing the final copy of the assignment to the key visual outline. He did make use of the knowledge structure language, and was quite successful for a first attempt at using the language when explicitly directed to, achieving a mark of 21/25.

During the Mesopotamia stations' unit, Eric made a comparison chart showing the imagined diary differences between a boy who was a hunter who then became a farmer. The chart had complete sentences, but each sentence was a separate idea. The ideas were not connected in flowing prose as the assignment had required. The teacher noted in her written comments to Eric that he had made "a comparison chart of 2 different lifestyles...." He received part marks for his ideas, but the assignment had not asked for a chart, it had asked for a written diary, so he received a mark of 9 out of 20. With this assignment Barb was implicitly developing the knowledge structures of description and sequence. She was not aware of how the unit task linked to the knowledge framework so did not use framework based resources to support the LEP students in developing the diary genre.

For his introduction to the Mesopotamia unit, Eric used classification and sequence language, "We can divided Mesopotamia into three big groups: Sumerians, Babylonians, and Assyrias. Mesopotamian were the first group of people to use many skills and inventions that we are using today (Eric, Mesopotamia Unit Stations, Nov. - Dec. 1992)." This part of the Mesopotamia unit implies the classification knowledge structure, for the purpose of the task was to introduce and define Mesopotamia. Again, Barb did not use any specific framework based resources to assist students with this task.

For the Nile river report, the first of two report assignments Barb jointly designed with the collaboration/planning teacher and the teacher librarian, the task expectations were explicitly

outlined with students taking notes. She gave the students a six paragraph outline. For the introduction and the conclusion no specific guidelines were given, so no knowledge structure language was emphasized. For the four body paragraphs of the report, the teacher provided focus questions for the first three paragraphs. The focus questions suggested certain types of knowledge structure language, but this language is implicit within the task, and was not formally developed as part of the assignment. The first paragraph's two focus questions suggested description: "Where n [Nile] orginate(sic)? What 2 rivers combine (Eric, notebook)?" For the second paragraph the focus questions prompted for reasons why the river overflows as well as asking students to explain "When?" The focus question for the third paragraph asked students "How did the AE's [Ancient Egyptians] plan for and adjust to their flooding (Eric, classroom notes)?" Again for the fourth paragraph the teacher provided point form criteria requesting students to explain five benefits of the Nile, giving brief explanations for each benefit.

Eric followed the outline fairly closely except he did not do a separate introduction and conclusion as the teacher requested. He did the four main paragraphs as outlined. What he wrote for the first three paragraphs appears to be taken from a single source and reworded. The wording contains details which were not in the teacher dictated notes on the Nile river, such as the river originating in the "Ethiopian Highlands (Eric, Nile Report)." There are grammar and syntax errors so he appears to have not copied directly from the source but put the ideas into his own words. The first paragraph provides a definition and description of the Nile. The focus questions imply these knowledge structures. The paragraph fits the knowledge structure but no explicit description and classification language, as presented in the LEP or social studies classroom, is evident in the paragraph. The second, third and fourth paragraphs do show

evidence of some knowledge structure language which had been presented and developed in the LEP pullout classroom. In the second paragraph Eric uses some sequence language "Every year at the same time", "about one month", and "After" (Eric, Nile Report). The teacher prompt for the outline did suggest sequence language "Why does river overflows banks? When (Eric, classroom notes)?" In the third paragraph there is examples of cause and effect language, "While the Akhet began, all the fields were covered with water and thousand of farmers did not have to farm. So, they were freed....(Eric, Nile Report)." The fourth paragraph asked for an explanation of benefits, so the teacher implied the knowledge structures of evaluation and principles. Eric uses the word "advantage" throughout the paragraph which fits in with the language of evaluation as well as opening the fourth paragraph with the statement "The Nile river was very important to the Egyptian civilization (Eric, Nile Report)." He also used the words "reason"and "because" repeatedly for the five benefits. Eric did very well on this assignment achieving a mark of 27/30, losing a mark for format, possibly due to the absence of a formal introduction or conclusion, and two marks for spelling and grammar.

For the pharaoh report the collaboration/planning teacher and the teacher librarian gave the students a research note taking guide which helped students make questions, gather notes and keep track of bibliographic references. When Eric's notes and written report are compared there are some details that exist in the report that are not on any of his note taking worksheets. The two teachers asked the students to number their notes from most important to least, which Eric did. His write up of his notes does follow the number order loosely, though he does provide three sentences of details concerning the pharaoh's mother, which never existed on his rough copy notes. There is no way to tell if the notes and numbering were done before or after the report was

written. The report is very well organized with mature language wording, though the wording is often word for word from his note sheet which would explain the use of words such as enlarged, expanded, erected, capable, and extended (Eric, pharaoh research notes). There are some examples of sequence language "at the beginning of the New Kingdom" "When" "After twenty years" "In twenty years" "also" "finally" (Eric, pharaoh report). These sequence words do not exist on his note taking sheets. He had worked on sequence language assignments in the LEP pullout program before this social studies assignment was assigned. Eric achieved a mark of 28/30 on this report.

2.    **Types of KF Language Skills Developed --LEP Pullout Program Assignments**

Most of the assignments and tasks in the LEP pullout program required students to understand and use the knowledge framework explicitly--to make key visuals based on each knowledge structure, to use language specific to each knowledge structure, and to identify correctly the types of knowledge structures present in a piece of text. The knowledge framework concept was new to Eric, he was the only one of the seven students in the LEP pullout program who had not been taught the framework explicitly in prior years. Eric was able to complete most knowledge framework based tasks as readily as the other seven students, which suggests the level of explicit, framework-based teacher instruction provided during the year was clear enough for a novice student to follow. He was able to complete the cloze note taking key visuals based on the grade 7 social studies textbook, and answered most with appropriate details.

For the following comparison chart in figure #4 - 2 Carol directed the LEP students to relate the ideas in the textbook to their own experience. Students were taught how to read and

complete this type of key visual. For the comparison chart (Grant and Humphries, 1991), which required students to provide the similarities and differences between Sumer and Vancouver, Eric supplied considerable detail, needing to print in very small letters, filling the two boxes with his own ideas:

Figure # 4 - 2

Student Sample of Completing a Comparison/Contrast Key Visual

| Same | Different |
|---|---|
| - located on a river<br>- have irrigation<br>- have government<br>- have farms<br>- import/export<br>- both are cities<br>- both near mountains<br>- both have boats<br>- they are both cities<br>- high populated<br>- both have economy<br>- transportation<br>- religions<br>- temples<br>- stores<br>- school<br>- neighborhoods<br>- manufacturing | - hot there, mild here<br>- there are desert, non-desert here<br>- we have greater variety of religions, they have fewer<br>- different clothing; cool, warm<br>- Van. is multicultural.<br>- desert plants, northern costal(sic) rain-forest foliage<br>- no snow, snow<br>- hot climate, mild climate<br>- same heat, lots of heat<br>- Sumerian, Many languages<br>- old civilization, young civilization<br>- less varitey (sic) of food, more varitey (sic) of food |

(Grant and Humphries, 1991, key visual for Sumer: pages 47 - 78 )

With the following cause and effect key visual (figure #4-3), and the several other cause/effect key visuals assigned in the LEP program, Carol was explicitly emphasizing the principles knowledge structure. She had students read the textbook and identify cause and effect language in the text as well as assigning students to summarize the effects to complete the key visual. The following is a sample of Eric's answers on a cause/effect chain (Grant and Humphries,

1991) for pages 50 - 57 of the text (Neering and Grant, 1986). Eric's answers are in *italics*.

Figure # 4 - 3
Student Sample of Completing a Cause/Effect Key Visual

| Cause | Effect |
| --- | --- |
| Various kings were often at war with each other. | *There wars were harmful to the economy of Babylonia.* |
| Hammurabi's Code | *He can enforce his rule.* |
| Hammurabi extended his power throughout Babylon. | *He tried to limit the power of the kings in the cities.* |

On this cloze key visual, the causes were supplied, and the students were required to fill in the effects. Eric answered in complete sentences, and supplied the correct answers.

When adding cause and effect language to his key visuals, or when writing up the cause and effect key visuals into complete sentences, Eric uses very simple cause/effect language such as "and", "so" and "because". When asked to add in the cause/effect language for the key visual that summarized pages 34 to 36 of the social studies textbook Eric used the following language "When", "and" "as" "that" "and" "so". Students were required to write their cause/effect chains in complete sentences several times. One sample of Eric's work is as follows: "Silt sinks to the bottom of the rivers and build the river beds and river banks. Because the bed and the banks eventually build so high, so there was a flood (Photocopy, Eric's LEP Binder)." In both the key visual and written example, Eric used mainly sequence language which can fit with a cause/effect

chain because the chain of events usually happens in a certain order or sequence. "Because",

"and" and "so" are also cause/effect language because they show links or connections between

events. In the last sentence Eric used two cause/effect words, "because" and "so" together-- one

for each phrase. In standard English only one is required. When referring to Appendix G, there is

a wide range of cause and effect language possible. Eric may have chosen to use the coordinating

and subordinate conjunctions because they were easier to understand, and fairly straightforward.

He had only been in Canada less than a year at this point.

When looking at Eric's rough copy of his Egypt vocabulary classification, it is evident that

he is attempting to use classification language:

> There are a lot of vocabularies when we study Egypt. That can be introduce some
> of them by classified them into nine groups: Officials, Gods and their symbol, Places,
> People, Egyptian writing, Mummies, A measure of time, Gifts from other lands and
> Seasons.
> ....
> There were three main seasons in ancient Egypt. They called it Akhet, the flood
> season, Shemu, the season of harvest, and Peret, the sowing season. Drought was a very
> terrible season. It didn't happen annually. When drought came, it would have no rain or
> little rain for a long time.
> (Eric, Egypt Vocabulary Classification, Rough Copy, March 29, 1993)

One aspect of classification which Eric does well is providing clear definitions. Often he has

interjected the definition right after the term, surrounding the definition with commas.

For the good copy of his letter to the C.R.T.C. Eric uses a few examples of opinion and

evaluation language: "a better form of entertainment", "In my opinion", "a very good form of

entertainment", "I enjoyed watching", "Although there are so many positive points...also many

minor points", "The major point", "Other minor points", and "the most terrible thing" (Eric, CRTC

letter good copy, Apr. 27, 1993). He does rely on a few key phrases which he repeats several

times such as "form of entertainment" and major and minor "points".

### 3. How did Eric Respond to a KF Based Approach?

At the end of the school year, during his interview, Eric commented that the textbooks used in Hong Kong didn't use charts and diagrams. When he was asked about writing, "Which did you find easier?" Eric answered, "The charts. Because is sometime is hard to find the information from the paragraph, the textbook, because there were a lot of words. You have to read the whole paragraph and find the information (Eric, interview, June 18, 1993)." When commenting on the types of things his teacher did to help him, Eric noted, "Sometimes she look at our paragraph. On the draft." "She walk around to see us how we are doing."

When asked to identify the knowledge structure of the comparison contrast key visual, Eric said, "Classification and description." "It group all the notes in one paragraph and how they are alike and the other paragraph is talk about how they different." "It describe what the two, what two group people different. And like in a specific topic (Eric, interview, June 18, 1993)."

Again for the Nile River, he was asked to identify the main knowledge structure for the written report: "Description. It describe the Nile river. How, where is located or how it help the Egyptian civilization (Eric, interview, June 18, 1993)."

For the pharaoh report, Eric and Gary (one of the Learning Assistance students from Eric's class who was also studied) remembered that they started by making their own questions before gathering notes from the encyclopedias. Eric said, "To give us idea, what we have to write in the paragraph." The boys commented that the teachers' looked over the notes and Eric said, "They teach us to organize the notes (Eric, interview, June 18, 1993)." The students had been directed

by the teachers to number the notes within each section from either most important to least, or least to most, to help them organize their information before writing it up.

When asked about the knowledge structure word lists, Eric commented that he used them a lot for his Window on the World journal writing in the LEP pullout program, and "I always use them in spelling, because our teacher, we have to choose our ten words. We have to group them then each group we have to write it in a paragraph (Eric, interview, June 18,1993)." But when asked if he ever used the knowledge structure words lists for his grade 7 social studies' teacher, Eric said, "Not really because we mostly write about description (Eric, interview, June 18, 1993)."

4.    **Comparing Eric's Response to the KF Approach in the LEP and Social Studies Classrooms**

How did Eric apply knowledge framework skills in the LEP pullout classroom by comparison with the social studies classroom? In the LEP pullout classroom the key visuals, knowledge structure language, and written tasks were modeled and discussed with similar tasks repeated with new content. At times Eric overused knowledge structure language by using two examples of the structure in the same sentence. He also tended to rely on a few examples of language for each knowledge structure, using those words over and over in the same paragraph, such as his use of the word "advantage" five times in his Nile report. The recurrence of task, as well as modeling of tasks in the LEP pullout program appeared to assist Eric in completing LEP tasks successfully. In the social studies classroom, Eric appeared to not fully understand the use of outline tools for the Early Peoples comparison/contrast, and the pharaoh report resulting in a final product which was not completely written from the outline tool. There is much more correlation

between the pharaoh report tool and the final report than the Early Peoples' assignment, but it cannot be determined if the tool was an integral part of Eric's writing process. Again for the diary assignment, Eric may not have understood what a diary was so did not write in the prose, diary format the teacher expected. It was exciting to see Eric use a self made chart to organize the contrast of hunter-gatherer vs. farmer. The chart was not an assignment criteria, though he had been doing some comparison/contrast charts in the LEP pullout program. For the Nile river and pharaoh reports, Eric completed most aspects of the note taking and report writing tasks as outlined by the teachers, though he never included a separate introduction or conclusion paragraph for the Nile report.

5.      **Conclusions Concerning Eric's Response to KF Based Approach**

Eric had begun to use knowledge structure language for written tasks and key visuals for note taking when explicitly directed to do so by a teacher. When a knowledge structure was implied in a social studies task there was evidence of some knowledge structure language. Eric had not fully mastered how to read and make key visuals, but he had begun to use them on his own initiative and he self-reported in his year-end interview that he found charts and visuals easier to read than text.

B.      **Daryck – Prior Experience of the Knowledge Framework being Taught Explicitly**

1.      **Types of KF Language Skills Developed -- Experienced KF Social Studies Classroom Assignments**

Daryck had lived in Canada for three years at the start of this study. He had attended the

school the year before and was familiar with the knowledge framework.

When looking at the knowledge structure based tasks in his mainstream grade seven classroom, there were several assignments based on the knowledge structure of description. The first main task was description (compare). Oct. 2 the whole class worked through an example of a written paragraph. On Oct. 7 the teacher orally brain stormed with the whole class how to complete a comparison t-chart, then students wrote up the comparison chart in sentences comparing two characters. Daryck received a mark of 3/12 with some of the errors related to incorrect use of comparison transition words. On Oct. 8 and 9 the teacher repeated the task but this time for contrast language--orally and in writing. Again Daryck made errors in how he used the language of contrast receiving a mark of 6/12. Oct. 21$^{st}$ students worked independently on comparing two characters from their novel, and a week later did a contrast paragraph. Alex checked Daryck's rough copies and again there was incorrect usage of comparison words.

For the social studies comparison/contrast essay, Daryck chose to compare Sumer and Assyria in terms of geography and climate, military, and economy. On Feb. 25 Daryck handed in his military comparison/contrast paragraphs, and on Feb. 26 he handed in his economy rough copy for the teacher to check. Most of the comparison/contrast language and sequence language was used correctly. The only teacher comments relating to the knowledge structure vocabulary were regarding the use of the sequence phrase "In conclusion" (Daryck, rough copy of military comparison/contrast, Feb. 25, 1993) which would be in the middle of the good copy of the essay. The teacher wrote "better word?" The other knowledge structure language comment was an error due to comparing a city, to a sub-civilization. "To carry on, unlike Sumer, Assur is an important economic centre in Assyria (Daryck, rough copy of economy comparison/contrast, Feb. 26,

1993)." So the error in using the contrast word "unlike" was due to a misunderstanding of the information, not due to a lack of understanding of the knowledge structure word's meaning or usage.

On his good copy (social studies comparison/contrast essay, Mar. 5, 1993) Daryck used a variety of comparison/contrast language: "similarities", "like", "alike", "both", "resemble each other", "similar", "just like", "too", "different" "not...while", "not...unlike", "in contrast", "not...the most", "in opposition to", "but", and "disimilar". As instructed to by the teacher, Daryck used a variety of sequence language to start every sentence in the body of the essay. The second sentence of each paragraph used a beginning sequence transition word or phrase such as "To start off with". Within the middle of each paragraph the sentences started with continuation sequence word phrases such as "Furthermore". Each paragraph ended with a sentence that had a concluding sequence word phrase such as "Last of all". The sequence language was used correctly. On his good copy he received a mark of 35.5 out of 40. Alex wrote: "A wonderful essay. I really enjoyed reading it! Probably your best work this year!! I'm very proud of you (hand written teacher comment)!!"

For Ancient Egypt, Daryck's table group was assigned pages 96 and 97 of the textbook (Neering and Grant, 1986) to summarize in key visual form. This section of the text was on the economy and government in the Old Kingdom. Daryck's group used a computer and published three classification trees. The first tree was headed with the Pharaoh, then split into the two taties and the army. Each side went into more detail, resulting in a tree with five levels of detail. The information was sorted logically. The second tree had four levels to describe the economy. It was divided into two main sides: trade and agriculture. The third tree could have been part of the

second tree under trade. The third tree described the methods of obtaining goods. Possibly the reason the third tree was not incorporated into the second tree's structure was that the students did not fully understand the meaning of trade. The only other significant error was the student created worksheet had a label on it saying the key visuals were "sequence" when in fact they were classification trees, and the information was not a series of steps. A classification tree could be seen as a sequence by a student in that it is read in a specific order or sequence, indicating the hierarchy of levels or information.

For the Ancient Greece chapter, Daryck and his partner were assigned pages 104 and 105 of the textbook (Neering and Grant, 1986). Their part of the text concerned the story of the Minotaur. He and his partner labeled their key visual a "sequence", and their key visual was laid out in the format of a cause/effect sequence with one column of boxes on the left, and one column of boxes on the right. They then drew in arrows to lead the reader from left to right down the page. Overall the visual did list the sequence of events, but it also indicated some causes and effects such as: "The sailors were to put up a white sail to signify that Theseus was alive, but they put a black one up." The effect which students in the class were to find and write in was that the father committed suicide based on the false flag signal. Daryck and his partner presented their key visual on June 9th. The following day they collected the entire class set of note taking key visuals, marked them out of six (students needed to complete six blank boxes), and returned them to the class.

## 2.    Types of KF Language Skills Developed –LEP Pullout Program Assignments

Daryck had been explicitly taught by the same LEP pullout teacher the year before in how

to identify and write up key visuals using knowledge structure language. The LEP teacher presented the framework explicitly so that one of the themes or content of many lessons was the framework itself.

Daryck wrote two word classification assignments in the LEP pullout program; one using words from the Mesopotamia chapter and the other using words from the Egypt chapter of the social studies text. For his rough copy using the Mesopotamia vocabulary he wrote out several possible introductory sentences. Three examples are:

> Mesopotamia is classified into many important sources of information. ....
> The important sources of Mesopotamia is categories into Places, High Peoples, Foods, Jobs, Rivers/irrigation, Writing and Building. ....
> This information of Mesopotamia is splited into Places, High Peoples, Foods, Jobs, Rivers/irrigation, Writing and Building. (Feb. 15, 1993, student notebook)

For the Egypt word classification rough copy there are changes marked by the teacher to make the wording more succinct and clear, but it is clear when his original wording is examined that he is using classification language and that the classification language usage is relatively clear and correct:

> The Egyptian facts are classified into many groups. ....
> In Source of Water, there are oasis, where foods plants can grow. ....
> There are many things in Egypt, such as quartz, a hard mineral found in many kinds of rock, myrrh, oromatic(sic) gum of the balsamodendron(sic), ebony, a hard usually black wood that is easy to carve. ....
> The third group is King's helpers, there are nomarch, supervised each province and taty, people that help King (Daryck's rough copy of assignment uncorrected wording, March 22, 1993).

For the Egypt word classification good copy, Daryck is much better at using the classification knowledge structure correctly. He used some of the teacher corrections as well as clarifying places the teacher had marked with a question mark. Some samples of his writing from his good copy of

this assignment are:

> The Egyptian facts are classified into many groups.  ....
> An oasis is a source of water in the desert where plants can grow.  ....
> Egyptian Resources include quatz(sic), a very hard mineral found in many kinds of rock, myrrh, oromatic(sic) gum of the balsamodendron(sic) and ebony, a hard, usually black wood, that is easy to carve.  ....
> The King's helpers are nomarch, people that supervised each province, and taty, people that help Kings.  (Daryck's good copy of assignment, April 2, 1993)

Overall he used clear definitions in this assignment.

### 3.    How did Daryck Respond to a KF Based Approach?

While discussing how to do comparison/contrast during the year end interview, Daryck

described the novel study assignment where he had to compare two characters:

> We have to contrast the two characters in the novel, like there are brothers and sisters and one is like very intelligent and one is not.  So we have to contrast them like from their school, at home, physical appearance, and everything....We had to make a T-chart, like those T-charts, and one for Meg, and for Charles Wallace.  First of all I just put Meg is a female and Charles Wallace is male.  Has mouse brown hair and blond hairs for, smart in talking, stuff like that (Daryck, interview, June 18, 1993).

He then gave examples of the language he used for writing up the charts: "Meg and Charles

Wallace are dissimilar because Meg is a female and Charles Wallace is a male."  A second example

was "Meg is different from Charles Wallace because Meg is twelve years old and Charles Wallace

is five years old (Daryck, interview, June 18, 1993)."

During the year end interview when asked why there wouldn't be any comparing and

contrasting words in a comparison/contrast chart, Daryck stated: "Because these are just notes.

Kind of like note form, like short sentence.  Not really like a full sentence (interview, June 18,

1993)."  During the year the expert knowledge framework social studies teacher had stressed with

his students to use point form notes when completing key visuals.

When discussing how the expert knowledge framework social studies teacher prepared

them for unit tests, Daryck said:

> First before the test we have a review session like a review period. Like go over what was
> going to be on the test. He just review the test those key visual that he hand out....And he
> just tell us the key visual and also test us on it like first he split us into two groups and then
> he ask us question whether we study or not. And so he just prepare us for the test.
> (Daryck, interview, June 18, 1993).

Daryck commented that these types of review sessions were also "sometimes did it on science and

we also did it in math (interview, June 18, 1993)." When asked whether he used the knowledge

framework during tests, Daryck answered, "I think one or two tests in social studies he [the

teacher] ask us to like to use the knowledge framework, I think use classification language to write

up a paragraph on something (Daryck, interview, June, 18, 1993)."

During the end of year interview, Daryck often referred to student made key visuals, and

student made and marked written assignments from the Egypt and Greece chapters when students

taught sub-sections of the textbook to the class.

> A student have to be like teachers and make up key visuals, so then we just use the key
> visual to write up a paragraph using knowledge framework. Like there are two beliefs
> about Alexander from people. One view is that historians think that he was a powerful,
> man soldier. So that was from this key visual "Beliefs about Alexander from
> People"(interview, June 18, 1993).

Daryck was describing a key visual made by two other students from page 141 of the text.

These two students assigned a paragraph assignment where each student had to write up the

key visual using correct comparison/contrast language. These same two grade seven students

then marked all the written assignments. Daryck commented that he got a good mark on his

paragraph, "I got seven." Daryck also discussed a key visual made by a third student, who also

assigned a contrast t-chart and paragraph to the class:

> First of all he tell us to do first cause and effect key visual then he ask us to do contrast the two theories of Mycene and Crete use a T-chart to help you. So we did a T-chart about theory about the fall of Mycene and the theory about the fall of Crete–the differences between them (Interview, June 18, 1993).

When asked if he could think of any reasons for the LEP teacher giving him social studies key visuals as part of the LEP pullout program, Daryck responded: "Cause we're doing it with [Alex], so when we don't understand as well, so probably [Carol] is trying to like clear our thoughts I think, and so we will understand what was taught (Daryck, interview, June 18, 1993)." While looking at the social studies key visuals assigned in the LEP pullout program, the interviewer pointed to the cause/effect transitional words the students had written on the cause/effect chains and asked the students why they thought the LEP teacher had them do that? Daryck started to answer "Like try to teach us the proper" then Frank (another LEP student from Daryck's class who was studied) interrupted and finished off Daryck's idea, "Oh I know, to teach us to write a better sentence using cause and effect (Frank, interview, June 18, 1993)." Daryck used a variety of cause/effect language on the key visual: "When...then." "If....," "Eventually" "Because...,"(cause/effect key visual for pages 34-36, Grant and Humphries, 1991).

At the beginning of the interview, when asked what he thought the knowledge framework was and its use to him as a student, Daryck answered:

> Mostly clear our thought and like make our paragraph if we have to do paragraph like make it more easiest for us to do paragraph because we already classified. If we read this page we have to make a classification chart, and then like classify what was the main point of the para, of the stories. And then if we do that so we will do a better paragraph. (Daryck, interview, June 18, 1993)

At the end of the interview, when asked about the usefulness of the knowledge framework,

Daryck said:

> It helped us a lot. Whoever did this we should thank him....It help us like do our paragraph better. Before if you don't have a key visual ... to do it with so we would just wrote down anything I know. Like just wrote down some of the non–like not those, like not main information. Just wrote down the everything that says on the book....If we did as like a T-chart or somethings(sic) where we will find out the main information for our work so we know what the teacher will ask for. So that's how it help us (interview, June 18, 1993).

4.      **Comparing Daryck's Response to the KF Approach in the LEP and Social Studies Classrooms**

How did Daryck apply knowledge framework skills in the LEP pullout classroom by

comparison with the experienced KF social studies classroom? In both classrooms knowledge

structure language was brain stormed, written down on blackboards, flip charts, and student

notebooks, as well as practiced orally and in writing. Both experienced KF teachers had the

intent of students learning the knowledge structure vocabulary words: their meanings and

usage. On his own initiative, Daryck shared with his LEP teacher the knowledge framework

word lists his grade seven class had brain stormed. Even though many of the key visuals he

completed in the LEP class were later repeated in the social studies class, Daryck worked hard

to complete all key visuals, and sometimes put up his hand in the social studies class to give

oral answers. He tried to use a variety of knowledge structure language for each assignment,

rather than relying on a few knowledge structure words or phrases. He made student created

key visuals in both classrooms, and wrote compound and complex structure sentences as well

as full length paragraphs using key visuals as an outline or organizing tool. Both teachers

emphasized the inclusion and correct use of knowledge structure language to lend cohesion and maturity to student writing.

## 5. Conclusions Concerning Daryck's Response to KF Based Approach

By the end of the year Daryck was able to identify and label correctly several types of key visuals, knowledge structure language and written genres. He was able to draft his own key visuals to create a key visual outline for writing a paragraph or to summarize part of a textbook passage. He had some exposure to choice and evaluation language orally and in writing using the language for a couple of assignments in each classroom. He also grew in his understanding and use of description, classification, sequence and principles language as evidenced by his improving marks during the year as well as written teacher comments. He was not 100% accurate in his labeling of key visuals, text and knowledge structures, but he was able to graphically represent textbook ideas clearly, use knowledge structure language when explicitly directed to, and had practiced writing a number of written genres four or more times between the LEP and social studies programs, specifically the genres of classification, description (comparison/contrast), sequence, and principles (short cause/effect chains).

## C. Part II Summary

In summary, both Eric and Daryck were still learning English grammar and vocabulary, as evidenced by the types of grammar errors made. Over the course of the year, Eric started to use some knowledge structure language within his written assignments for his grade seven

social studies–this language use appears to be implicit. He was not responding to a clear, classroom teacher directive to use the language, though he had practiced many types of knowledge structure language explicitly as part of the LEP pullout program. He also began to make his own key visuals such as the one he made comparing a hunting gathering existence with a farming existence for his Mesopotamia stations unit in social studies. He also began to make key visuals in the LEP pullout program. Daryck had begun to learn how to make key visuals the prior year. He continued to learn how to make a variety of key visuals related to each knowledge structure in both the LEP and mainstream social studies classroom. He learned a variety of knowledge structure language explicitly in both programs. He learned that certain types of transitional words were linked to specific knowledge structures and was able to use most of the knowledge structure language correctly when the teacher assigned a written task that required him to use a certain type of knowledge structure as part of the task's clearly stated requirements. He was able to make a variety of key visuals in his grade seven classroom to answer questions or summarize text. He was also making a variety of key visuals as an outline tool or to summarize the social studies textbook as part of the LEP pullout program. Neither student achieved full mastery of the knowledge framework, but each was able to use parts of the framework implicitly for certain tasks, and Daryck was quite comfortable using the knowledge framework explicitly in a variety of student initiated and teacher supplied situations.

## Chapter 5

## Conclusions

**I.     Teacher Processes**

**A.     The Relevance of Experience with the Knowledge Framework**

When looking at daily as well as overall year long classroom planning and the interaction

between teachers, students and task, one can see a contrast between the less experienced

knowledge framework teacher, Barb, and the more experienced knowledge framework teachers,

Alex and Carol.

The less experienced knowledge framework teacher used parts of the knowledge

framework in her lesson planning.   Barb was beginning to emphasize both note taking and report

writing skills.  She was beginning to use key visuals by referring to some key visuals in the

textbook and explaining their meaning, using some key visuals to summarize content information,

having students complete cloze key visuals as a note taking tool to summarize textbook

information, as well as using key visuals as an organizing tool for writing.  She only used

knowledge structure language once as a deliberate part of her lesson plan--for the

comparison/contrast of two Early Peoples.  Together with the collaboration teacher and teacher-

librarian, the steps in the report writing process were outlined and modeled.  Barb only used the

parts of the framework she was given by other experienced knowledge framework teachers.  The

parts of the knowledge framework she used were for specific, short term tasks and were

presented as tools for that task, rather than as a tool useful for a range of tasks and situations.

Barb was taking workshops to learn more about the knowledge framework, but was still

struggling with what it meant and how to use it as a teaching tool in long range planning. Barb

made a comment during her year end interview after she mentioned the three part workshop, and the collaboration with the collaboration teacher and teacher-librarian, "I don't think it's clear in my mind yet what the knowledge framework is, and because I don't get to teach all of it [meaning all subject areas] it's confusing to me still (Barb, interview, June/93)." Since she had not fully mastered how to use the knowledge framework for herself, she was not ready to integrate it into her planning the way the two more experienced knowledge framework teachers did.

The two experienced knowledge framework teachers focused on long term knowledge framework goals. They developed all aspects of the knowledge framework: the framework itself, knowledge structure language, key visuals, reading text, note taking and oral and written genres. They built skills explicitly and incrementally–slowly adding more detail, new situations or examples. They both monitored student outcomes for each step in the process they outlined and assigned to their students. These two more experienced knowledge framework teachers built in recurrence of tasks and skills. The final aspect both teachers shared, was the goal of teaching students the knowledge framework explicitly so that students could apply the knowledge framework skills independently in future. Presumably Alex and Carol shared these identified knowledge framework traits as a result of their three years of knowledge framework teaching experience.

During her year end interview, Carol commented on the development of her own understanding of how to teach using the knowledge framework. Prior to being hired at the pilot project school she had heard of the knowledge framework and had previously taught a summer program using a workbook based on the framework, "but still it wasn't until I became part of this pilot project at this school, and my teaching style changed because I began to see the framework

applied and it clicked for me (Carol, interview, June 25/93)." Barb, as a less experienced

knowledge framework teacher, was just beginning to see some of the teaching possibilities using

the framework. Carol's comment suggests that it takes time to work with an idea to learn,

understand it, then be able to apply it independently. Alex made a comment during his interview

which emphasized this, "You want to feel comfortable and see how it [knowledge framework]

works in one [subject] area, and then once you feel comfortable and confident as a teacher, and

you see the students are making remarkable progress, you can then take it a step further (Alex,

interview, June 22, 93)." This was a teacher process not unlike the knowledge framework

process that Alex, Carol, and the pilot project school as a whole, had been employing with the

students. Each year the pilot project school developed goals for integrating the framework. As a

school they started with one subject area, and by this year they had integrated it into language

arts, science and social studies. A couple of teachers were starting to integrate it into the math

curriculum.

These findings are similar to the work by Johnson (1992) who studied preservice ESL

teachers, Johnson found that the less experienced teachers tended to focus on maintaining the

flow of instruction and completing short term, immediate tasks. The less experienced knowledge

framework teacher used the framework as part of short term teacher planning and for specific

types of tasks that had been described, modeled or jointly planned. She was working from the

familiar or concrete, but unable at that point in her development to apply it more fully. The more

experienced knowledge framework teachers used the knowledge framework as part of their year

long, long range planning and carefully crafted links between various knowledge framework based

tasks so that students could recognize the links explicitly and eventually learn the knowledge

framework skills and strategies.


**B.**     **The Role of the Content Teacher vs. the Language Teacher**

When contrasting the two experienced knowledge framework teachers to better understand how they interpreted the framework differently, one needs to consider their assigned roles within the school culture. Carol, as the LEP specialist, emphasized the language aspects of knowledge structures, learning and understanding the knowledge framework explicitly, and applying these knowledge framework skills using a variety of topics to reproduce the range of content area subjects:

1)      So that LEP students could read and understand a variety of source materials such as textbooks, newspapers and key visuals.

2)      So that students could organize their thoughts and ideas orally and in writing to communicate clearly personal as well as content area information.

3)      So that students could create key visuals to communicate personal as well as content information.

4)      So that the students could use key visuals for note taking and to organize their writing to make it clear.

5)      So that the students learn and use the knowledge structure language to add cohesion and clarity to the students' oral and written prose.

6)      The teacher evaluated students on school reports based on their growth in language skills: oral, listening, reading and writing.

As a mainstream content area teacher Alex emphasized the cognitive aspects of

knowledge structures when presenting content area information, so that students could better understand the various ways information can be organized:

1)    So that students could read and understand their content area textbooks.

2)    So that students could make their own notes by summarizing textbook information on a teacher provided key visual.

3)    So that students could be able to read and understand the content information contained within a variety of key visual formats.

4)    So that students, using the knowledge framework as a tool, could convey and share their understanding of content information through informal question and answer responses, short written paragraphs, through student created key visuals, through formal written essays, and through formal oral presentations.

5)    The teacher evaluated students based on their content knowledge as reflected and realized through their command of the four communication skills: oral, listening, reading and writing.

The contrast between these two teachers is more one of role or purpose at the school site; their overall approach, and knowledge framework teaching methods, were very similar. Alex as the content teacher, did focus on many of the same knowledge framework language skills, as Carol, the LEP specialist. Both teachers presented the knowledge structure of description, specifically comparison/contrast. Alex had his students complete several small comparison/contrast assignments as part of their novel study in language arts, as well as completing two formal comparison/contrast essays for science and social studies. Carol emphasized comparison/contrast of Mesopotamia to Vancouver, and Chinese New Year to

Canadian New Year's Celebrations. She also emphasized comparison/contrast on several of the same social studies key visuals which Alex had used as part of his social studies curriculum, and she developed the genre through several of the Window on the World assigned topics (see Appendix K) for journal writing.

Alex and Carol covered the knowledge structure of principles, specifically cause and effect. Both teachers reviewed and had students complete several teacher created cause/effect key visuals for the grade seven social studies textbook, had students practice the language orally, as well as writing the key visuals up in sentences. Both teachers provided students with opportunities to create their own cause/effect key visuals based on textbook information.

Both Alex and Carol had students sequence personal events when the concept of sequence, and the language of sequence was first introduced. In these two teachers' classrooms students wrote up their personal sequences in complete sentences using the language of sequence.

Alex and Carol had students classify foods into student created categories at the start of their classification units, possibly to help students develop an understanding of the concept of classification. Students wrote up their food classifications into complete paragraphs. For vocabulary development, both Alex and Carol used the same word definition key visual to define (classify and categorize) terminology in social studies and other subject areas. The same classification/description database charts (see Appendices I and J) and classification trees were used to help students organize and sort social studies information as well as prepare for social studies unit tests.

Carol encouraged her students to engage in self-evaluation of their work, study and test taking habits. This self-evaluation was year long, often after major tests, units or assignments in

the regular classroom. She explicitly developed the language of evaluation through Window on the World topics such as "What part of Mesopotamia life do you find most interesting and why (Field notes, Jan. 8, 1993)?" "What do you think was Egypt's most advanced technological achievement (Field notes, March 1, 1993)?" She also developed the language of evaluation in conjunction with the unit on t.v. violence. She had students complete an options/consequences key visual where students identified the advantages and disadvantages of t.v. Like Carol, Alex had students complete options/consequences key visuals for novel study characters concerning major choices the characters made. He also had students write up a report card on the main character in the novel. As part of the presentations for the Greece and Egypt sub-chapters, students assigned tasks to the class, then collected the work and graded it. Alex intended to further develop the language of evaluation as part of the personal planning curriculum by having students evaluate their lifestyle choices and explain their decisions. Due to the teacher strike it is unknown whether Alex was able to realize this goal during the three weeks of school that remained. So both teachers did present evaluation and choice implicitly, and were able to do some explicit development of options/consequences key visuals. Alex was able to brain storm with his class the language of choice on January 8th, but the language of evaluation was never formally developed in the same manner as the other 5 knowledge structures.

Similar to the findings in Mohan (1986, p.39), the experienced content knowledge framework teacher, Alex, focused on the cognitive aspects of knowledge structures in relation to the social studies curriculum.

> Every teacher is interested in communicating the structure of knowledge because every teacher wants students to be able to transfer their learning beyond the immediate lesson. The content teacher wants students to learn detailed information in a particular lesson, but

beyond that, the teacher wants to convey the 'shape' of subject matter, the structure that underlies the detailed information (Mohan, 1986, 39).

Mohan then goes on to give an example for social studies where the teacher would want students to transfer specific learning about an imaginary culture to the overall concept of culture.

## C.    A Model for Collaboration Between Language and Content Teachers

As Mohan suggests (1986, p. 39), Alex as content teacher wanted students to be able to identify the structure of the topic being presented, but in his year end interview Alex indicated that his goals were much broader. He wanted his students to understand how knowledge in general could be structured. The most powerful example of this was on April 1, 1993 when Alex demonstrated for his students how he identified the overall structure of a textbook passage, then talked through how he, in the role of teacher, identified the salient information to include in a key visual before drafting the visual. When assigning the Ancient Egypt unit sub chapters, Alex had students as a whole group predict the dominant knowledge structure for each subsection based on the textbook headings.

Alex had the advantage of teaching his students several subjects for most of the week, and did state in his year end interview that it had been a goal of the pilot project for that specific year to integrate the framework across language arts, science and social studies (Alex, interview, June 22, 1993). Whether it was purely a goal of the pilot project, or a personal realization, Alex also provided considerable language support for his students and developed a number of the oral and written language aspects of knowledge structures which is similar to the role outlined for the language specialist (Mohan, 1986, p. 39). Would all content area teachers, after acquiring similar

levels of experience and background in the knowledge framework provide the range of language support as evidenced in Alex's classroom? That issue can not be determined by this study.

Carol's overall language emphasis is consistent with the role of the language teacher as outlined by Mohan (1986):

> The language teacher wants student to learn the language of a given topic, but also wants students to apply their language learning across the curriculum. The language teacher is not only interested in students learning the language of food classifications or insurance classifications: the wider aim is for students to learn the language of classification in general (p. 39).

The key advantage to Carol's pullout program was the small group situation which provided more opportunity for immediate individual feedback and multiple turns at oral language skill practice. In Alex's larger class, not every student had a chance to orally practice each skill. He did encourage weaker and shyer students to participate, but could not afford the equality of opportunity that Carol was able to provide with her small group.

## II.    Student Responses

Finally, not only were year long teacher processes and planning observed, but also students responses to these knowledge framework based tasks. Based on direct observation, copies and videotapes of students' work, as well as student interviews it was noted that the students could use knowledge framework skills implicitly to complete a task with teacher modeling. With recurrence, students could learn to use the skills explicitly as evidenced by Carol's Window on the World journal, classification, sequence and principles assignments, and Alex's Ancient Egypt and Ancient Greece knowledge framework based presentations. Eric, the LEP student from the novice knowledge framework social studies teacher's class, had begun to

use knowledge structure language for written tasks, complete key visuals for note taking, and make some key visuals on his own when explicitly directed to do so by a teacher.

The LEP student, Daryck, from the experienced knowledge framework social studies teacher's class, had received two years of explicit instruction in the framework from Carol, the LEP pullout teacher, as well as having one full year of explicit instruction in his mainstream grade 7 classroom across a range of content subject areas. This student was quite successful at recalling specific knowledge structure language, identifying knowledge structures in key visuals and text, using the knowledge structure language in genre specific writing and making his own key visuals. It is quite possible that his mainstream classroom teacher, Alex, helped to develop metacognitive links for his LEP students by concretely demonstrating and assigning the same genre across content areas. Furthermore, Alex emphasized concurrently several nearly identical genres, key visuals and knowledge structures across the subject areas of science, social studies and language arts.

## III.    Limitations

The data presented and analyzed in this study reflect the teachers, students and classrooms studied. The participants in this study were not randomly selected, nor was the sample large enough to generalize the findings to all elementary teachers. All LEP students available were studied, but a sample of three students, is too small to generalize how grade seven LEP students in general would respond to an explicit, knowledge framework based approach. There was no control group of teachers or students to which the knowledge framework based teaching methods, which were observed and described in this study, could be compared to measure the effectiveness or value of the approach. Rather, the detailed descriptions of the six individuals, the

three teachers and the three LEP students, provides exploratory data which raises questions and suggests directions for further investigation of the knowledge framework.

## IV.     Implications

Implications are discussed for the following areas: the role of experience, collaboration, and student development (how to assist LEP students master knowledge structure skills).  First I will discuss the role of experience.  The two experienced knowledge framework teachers used the framework throughout the year linking, repeating and building knowledge structure language skills.  Recurrence of knowledge structure language, tasks and skills working towards student mastery, was a common theme for the two experienced framework teachers.  Novice teachers need time to work through the variety of teaching strategies related to knowledge structure development.  They not only need to understand how the knowledge framework works for themselves, but also they need to understand how students can use it, to make it a natural part of the curriculum.  Further research is needed to determine how teachers do acquire and master of these knowledge framework skills.  From the data collected, such a study would need to be daily, with observations of the variety of teacher interactions, mentoring and sharing, as well as direct observation of the teacher's attempts to implement new ideas.  Based on both of the experienced framework teachers' comments, such mastery takes one or more years to develop where they build in recurrence of tasks and develop specific language skills over several months.  Often classroom teachers do not focus on the language needs of LEP students by breaking assignment requirements into manageable steps with the language skills explicitly developed.  As LEP students are integrated into the mainstream,

support in the regular classroom becomes a crucial issue. Further study would be needed to determine which of the strategies observed during this year were of the most immediate benefit as well as long term benefit for LEP students.

Next I will discuss implications in relation to collaboration. In this study the LEP and experienced knowledge framework classroom teacher focused on the same types of knowledge structure language and skills, cooperating for the benefit of the LEP student. The LEP environment provides important opportunities for LEP students to practice these skills in a risk free environment, with direct one-on-one attention paid to their development of these skills. Further longitudinal study would be needed to determine how to optimize this collaboration and what types of support are needed at the school and district level in terms of administrative support, learning resources, staffing, and training to realize benefits for mainstreamed LEP students.

Finally I will discuss implications in relation to student development. Follow up studies of these LEP students as they progress through their academic career is also important to determine which of these skills they continued to use in their further academic studies. Do they retain an implicit understanding and use of the knowledge framework? Can they explicitly and clearly describe the knowledge framework and use it correctly to study, make notes, and complete written assignments? Do these students continue to value, as demonstrated by their self reported comments in the year end interviews, and need these skills in high school and university?

## V.    Conclusion

In conclusion this qualitative study described the type of knowledge framework based language tasks used by two grade seven social studies teachers, and by the LEP pullout teacher,

as well as the response of LEP students to this approach. Two of the teachers, one social studies teacher and the LEP teacher, were experienced with the knowledge framework; whereas the third teacher was beginning to learn how to use it.

The two experienced knowledge framework teachers contrasted with the novice teacher in terms of their long term goals and planning which supported students learning the knowledge framework explicitly, using the framework to make student summary key visuals of textbook information, using key visuals as an outline tool for writing, and supporting the instruction of knowledge structure vocabulary to strengthen students' written responses. The novice knowledge framework teacher used the framework for specific short term tasks such as writing or note taking. The experienced social studies teacher and the LEP specialist collaborated using the knowledge framework for the benefit of LEP students by emphasizing the same knowledge structure language skills, having clear assignment criteria, and thorough modeling of language tasks. The experienced knowledge framework social studies teacher used similar knowledge framework strategies as the LEP teacher. The content teacher's focus was on developing all students' language skills for his grade seven classroom; whereas the LEP teacher was focused on developing LEP students' language skills for a variety of content area classrooms. Overall the LEP students observed in this study responded well to this knowledge framework approach. They were able to use knowledge structure language in written assignments when directed to by the teacher, complete and make summary key visuals from textbooks, and make outline key visuals for writing tasks.

In conclusion, this study points to how knowledge structures could form a basis for collaboration between teachers, and how language specialists and content area specialists could work collaboratively to support LEP student learning.

# Bibliography

Brinton, D. M., Snow, M. A., & M. B. Wesche (1989). Content-Based Second Language Instruction. New York, NY: Newbury House Publishers.

Callaghan, M. & J. Rothery (1988). Teaching Factual Writing: a genre-based approach. The Report of the DSP Literacy Project Metropolitan East Region, Australia.

Chamot, A. U. & J. M. O'Malley (1987). "The Cognitive Academic Language Learning Approach: A bridge to the mainstream" TESOL Quarterly, 21 (2), 227 - 249.

Christie, F. (1990). "The changing face of literacy" in F. Christie (ed) Literacy for a Changing World: a Fresh Look at the Basics. Hawthorn, Vic.: The Australian Council for Educational Research. p. 1 - 25.

Christie, F., Martin, J.R., & J. Rothery (1989). "Genres Make Meaning: Another Reply to Sawyer and Watson" English in Australia. No. 90, p. 43 - 59.

Collier, V. P. (1995). "Acquiring a Second Language for School" Directions in Language and Education. National Clearinghouse for Bilingual Education Vol. 1, No. 4, Fall 1995.

Collier, V. P. (1987). "Age and Rate of Acquisition of Second Language for Academic Purposes" TESOL Quarterly, 21, (4), 617-641.

Cope, B. & M. Kalantzis (1990). "Literacy in the Social Sciences" in Frances Christie (ed.) Literacy for a Changing World. Victoria: Australian Council for Educational Research Ltd. 118 - 142.

Crandall, J. (1993). "Content-Centered Learning in the United States" Annual Review of Applied Linguistics. 13, 111-126.

Cummins, J. (1981) "Age on Arrival and Immigrant Second Language Learning in Canada: A reassessment" Applied Linguistics, Vol. 11, No. 2. p.132-149.

Disadvantaged Schools Program (1989a). The Discussion Genre. Sydney: Disadvantaged Schools Program, Metropolitan East Region.

Disadvantaged Schools Program (1989b). The Report Genre. Sydney: Disadvantaged Schools Program, Metropolitan East Region.

Doyle, W. & K. Carter (1984). "Academic Tasks in Classrooms" Curriculum Inquiry. 14, (2), 129 - 149.

Dunbar, S. (1991). "Spelling: A way to higher level thinking?".

Early, M. (1990). "Enabling First and Second Language Learners in the Classroom" Language Arts. 67, 567 - 575.

Early, M. (1989). "Using Key Visuals to Aid ESL Students' Comprehension of Content Classroom Texts" Reading Canada Lecture, 7, (4), 202 - 212

Early M., Thew, C. & Wakefield, P. (1986). English as a second language. K-12: Resource book. Vol. 1. Victoria, BC: Ministry of Education, British Columbia.

Grant, L. and Humphries, C. (1991). Key Visuals Chapters I to VI to Accompany the Textbook Other Places, Other Times.

Graves, D. (1983). Writing: teachers and children at work. Portsmouth, NH: Heinemann Educational Books.

Gunderson, L. (1985). "A Survey of L2 Reading Instruction in British Columbia" The Canadian Modern Language Review. Vol. 42, No. 1, 44 - 55.

Kamler, Barbara (1992). "The Social Construction of Free Topic Choice in the Process Writing Classroom" The Australian Journal of Language and Literacy. Vol. 15, No. 2, 105 - 121.

Johnson, Karen (1992). "Learning to Teach: instructional actions and decisions of preservice ESL teachers " TESOL Quarterly Vol. 26, No. 3, p. 507 -535.

Martin, J.R. and Veel, R. (1998). Critical and Functional Perspectives on Discourses of Science. Routledge (ISBN:0-415-16790-6).

Martin, J. R. (1993). "Genre and literacy - modeling context in educational linguistics". Annual Review of Applied Linguistics. 13, 141 - 172.

Mohan, B. (1990). "LEP Students and the Integration of Language and Content: knowledge structures and tasks" Proceedings of the First Research Symposium on Limited English Proficient Students' Issues.

Mohan, B. (1989). "Knowledge Structures and Academic Discourse" Word. Vol. 40, No. 1 - 2, p. 99 - 115.

Mohan, B. (1986). Language and Content. Reading, MA: Addison Wesley.

Neering, R. and P. Grant (1986). Other Places, Other Times. Toronto: Gage Educational Publishing Company.

Parks, S. and H. Black (1990). Organizing Thinking: Book II. Critical Thinking Press and Software, Pacific Grove, CA.

Raimes, A. (1991). "Out of the Woods: Emerging Traditions in the Teaching of Writing" <u>TESOL Quarterly</u>. Vol. 25, No. 3, p. 407 - 430.

Ratekin, N., Simpson, M.L., Alvermann, D.E. & E. K. Dishner, (1985). "Why teachers resist content reading instruction" <u>The Journal of Reading</u>. Vol. 28, 5, 432 -437.

Rothery, J. (Forthcoming). <u>Exploring Literacy in School English</u>. Sydney: Metropolitan East Disadvantaged Schools Program.

Rothery, J. & R. Veel (Forthcoming). "Exposing the ideology of literature - the power of deconstruction" To appear in <u>English in Australia</u>.

Rothery, J. (1989). "Learning About Language" in Hasan, R. and Jim R. Martin (eds.) <u>Language development: learning language, learning culture</u>. Norwood, N.J.: Ablex (Advances in Discourse Processes 27 - Meaning and Choice in Language Studies for Michael Halliday). p.199 - 256.

Shih, M. (1992). "Beyond Comprehension Exercises in the ESL Academic Reading Class" <u>TESOL Quarterly</u>. Vol. 26, No.2, 289 - 318.

Snow, M. A. & D. M. Brinton (1988). "Content-Based Language Instruction: Investigating the effectiveness of the adjunct model" <u>TESOL Quarterly</u>. Vol. 22, No.4, 553 - 574.

Vancouver School Board (1992). <u>The ESL Pilot Project</u>. Vancouver, BC: VSB.

Walsh, J., Hammond, J., Brindley, G., & D. Nunan. (1991). <u>Evaluation of the Metropolitan East Disadvantaged Schools Program's Professional Development Program for Primary Teachers, focusing on Teaching Factual Writing</u>. Erskineville, NSW: Metropolitan East Disadvantaged Schools Program.

Winningham, B. (1990). "Silent Voices: How language minority students learn in the content areas" <u>The Quarterly of the National Writing Project and the Center for the Study of Writing</u>. Vol.12, 1, 4-9

## Appendix A
## Year End Interview Questions -- Barb

1.   In teaching grade seven social studies this year, what did you hope the students would have learned?

a)   Content objectives -   What specific content do you expect students to have learned by the end of the year?  Which facts?  Which general concepts?

b)   Language objectives -   What were your language aims?  What would you expect the students to learn?  What language concerns did you have?

c)   Other objectives -   What do you want the students to be able to do?  What types of abilities would you?  What things do you want them to do with the content?

2.   a)   What sorts of things did you do in your classroom to integrate students' language and content needs?
     b)   What ideas lay behind what you did?  Principles?  Reasons?
     c)   How would you define "integration of language and content"?

3.   How would you describe your teaching style and what are the main influences?

4.   You've just joined this pilot project school.  Could you describe the professional development you've undertaken this year, both formal workshops and informal collaborations, which have helped you learn more about knowledge structures, key visuals and integrating language and content.

5.   What do you see as the value of:
     a)   Key visuals
     b)   Teachers' identifying knowledge structures and knowledge structure language
     c)   Students being able to identify knowledge structures in text
     d)   Students consciously learning knowledge structure language and being encouraged to use it correctly to complete written assignments.

6.   In closing, what general comments would you like to make?  Regarding for example:
     S.S. curriculum
     Integration of language and content
     Key visuals
     Knowledge structures and their language
     Expository writing skills
     Students language needs

Thank you for your time and consideration.

## Appendix B
## Year End Interview Questions -- Alex

1.  What were your main, overall themes for the school year across subject areas?

2.  a)  You taught three main courses to your grade seven class: language arts, science and social studies. What objectives were common to all three subject areas that linked them together?

    i)  Content objectives -  What specific content do you expect students to have learned by the end of the year? Which facts? Which general concepts?

    ii)  Language objectives -What were your language aims? What would you expect the students to learn? What language concerns did you have? Language across the curriculum? Reading in the content areas?

    iii)  Other objectives -  What do you want the students to be able to do? What types of abilities would you? What things do you want them to do with the content?

2.  b)  What were your specific objectives for social studies. How did they differ from your overall objectives.

3.  a)  What sorts of things did you do in your classroom to integrate students' language and content needs?
    b)  What were your underlying principles? Reasons?
    c)  How would you define "integration of language and content"?

4.  Could you describe for me briefly, what influences have shaped your current teaching style (for example workshops, courses, collaborations). How long did it take for your current teaching style to develop?

5.  What do you see as the value of:
    a)  Key visuals
    b)  Teachers' identifying knowledge structures and knowledge structure language
    c)  Students being able to identify knowledge structures in text
    d)  Students consciously learning knowledge structure language and being encouraged to use it correctly to complete written assignments.

6.  In closing, what general comments would you like to make? Regarding for example:
    S.S. curriculum
    Integration of language and content
    Key visuals
    Knowledge structures and their language
    Expository writing skills
    Students language needs

## Appendix C
## Year End Interview Questions -- Carol

1.  In teaching grade seven English Language Assistance (ELA) this year, what did you hope the students would have learned?

    a)  Content objectives -     What specific content do you expect students to have learned by the end of the year? Which facts? Which general concepts?

    b)  Language objectives -    What were your language aims? What would you expect the students to learn? What language concerns did you have?

    c)  Other objectives -      What do you want the students to be able to do? What types of abilities would you? What things do you want them to do with the content?

2.  Would you define your grade seven ELA pullout program as a traditional servicing program? In what ways is the program "traditional"? In what ways does it differ?

3.  a)  What sorts of things did you do in your classroom to integrate students' language and content needs?

    b)  What ideas lay behind what you did? What were your underlying principles? Reasons?

    c)  How would you define "integration of language and content"?

4.  Could you describe for me briefly, what influences have shaped your current teaching style (for example workshops, courses, collaborations). How long did it take for your current teaching style to develop?

5.  What do you see as the value of:
    a)  Key visuals
    b)  Teachers' identifying knowledge structures and knowledge structure language
    c)  Students being able to identify knowledge structures in text
    d)  Students consciously learning knowledge structure language and being encouraged to use it correctly to complete written assignments.

6.  In closing, What general comments would you like to make? Regarding for example:
    S.S. curriculum
    Integration of language and content
    Key visuals
    Knowledge structures and their language
    Expository writing skills
    Students language needs
    Pullout Model Programs

## Appendix D
## Year End Interview Questions -- Students

We're going to spend about 30 minutes talking about some of the assignments you had to do this year for Social Studies and ELA. I will want you to describe what the assignment was, what you had to do, and evaluate your performance on the assignment.

| Assignments from Barb | Assignments from Alex |
|---|---|
| Compare/Contrast Early Peoples Text | Compare/Contrast Mesopotamian |
| Nile River Report | Civilizations |
| Pharaoh Report | Egypt student made key visuals |
| Mesopotamia Unit Test | Greece student made key visuals |

### The Questions:
1. What did you have to do for this assignment?
2a) What types of things did the teacher give you to help you do the assignment?
b) How could they help you? How could you use them? Did you?
3. How did you do on this assignment?
4. What else could the teacher have done/given you to help you do your best work?
5. What could you have done?
6. What type of key visual is this (the one the teacher gave)?
7. Which knowledge structure is this type of writing?

### Assignments from LEP Pullout - Carol
Key visual p. 30-31 Classification
Key visual p. 29 - 32 Sequence
Key visual p. 34 - 36 Principles. Cause/Effect sentences
Classification word defining tree
Classification word list
Classifying Egyptian vocabulary
Letter to the CRTC

### The Questions:
Similar to the Social Studies probe questions above, also:
How could this assignment help you with your social studies?
Regarding cause/effect, classification and persuasive writing: do you think you have to do this type of writing often in school? In which subjects?

Appendix E

<u>Description (Comparing)</u>
      <u>Friday, October 2, 1992</u>

<u>The Language of Comparing</u>

- to compare; comparison
- similar to
- the same
- identical
- equal
- alike
- similarly
- exact(ly)
- related
- like; likewise
- just like
- close to; very close
- go together
- have in common
- corresponds to
- correspondingly
- resembles
- resemblance
- equivalent

Description (Contrasting)
        Thursday, October 8, 1992

## The Language of Contrasting

- different from (because; in that)
- while
- on one hand
- but
- to (in) contrast (with)
- meanwhile
- unlike
- not the same
- opposite
- in opposition to
- uneven
- in one way
- in the other way
- do not go together
- contrary
- on the contrary
- opposed (to)
- differs
- not alike
- even though
- even so
- just because
- not similar
- the difference between
- dissimilar
- however
- although
- do not have in common
- nothing in common
- less than
- more than
- slower than
- faster than
- better than
- whereas
- as for
- doesn't like...because
- unmatched
- uneven

**Appendix F**

<u>Sequence</u>
<u>Monday, October 19, 1992</u>

<u>A.</u>    <u>The Language of Beginning</u>

-    in the beginning
-    once upon a time
-    to begin with
-    to start with
-    initially
-    first
-    firstly
-    first of all
-    the first stage (step)
-    starting with
-    as we start(ed)
-    to start off with
-    for starters
-    commences with (begin)

<u>B.</u>    <u>The Language of Simultaneous</u>

-    at the same time
-    at the exact moment
-    at exactly the same time
-    meanwhile
-    while
-    as _____, _____; _____ as _____.
-    at that very moment
-    simultaneously
-    during
-    just when
-    right then
-    occurring at the same time
-    just as
-    just then
-    at precisely the same time
-    correspondingly

### C. The Language of Continuation

- to continue
- to carry on
- carrying on
- afterwards
- after
- then
- next
- furthermore
- in addition to
- to be continued
- continuing (on)
- to proceed (ing)
- ongoing
- later on
- from then on
- to start where we left off....
- to go on
- also
- prior to this
- previous to this
- the next step is
- the next stage is
- after awhile
- to continue with
- just after that
- subsequently
- eventually
- previously

**D.** **The Language of Conclusion**
**Tuesday, October 20, 1992**

- finally
- to finish (off with)
- to end... (with)
- in conclusion,
- Last but not least
- finishing off with
- Lastly
- to conclude (with)
- at the end
- as we end off
- the last stage
- the last step
- as we finish
- as we (I) finish
- to summarize....
- last of all
- in the end
- overall
- to rap it up!
- to complete

## Appendix G

Principles (Cause and Effect)
Thursday, December 3, 1992

The Language of Cause and Effect

| Cause | Effect |
|---|---|
| if | ...then... |
| because | ...the effect... |
| when | ...so... (cause language not needed) |
| since | the consequence |
| (assume) | ___cause___. Consequently, |
| (suppose) | therefore, |
| seeing...that | which resulted in |
| knowing that | .... As a result |
| inasmuch | This means |
| in that | because of time |
| due to | |
| once | |
| the reason why | |

**Appendix H**

Choice
Friday, January 8, 1993

The Language of Choice

-       I think....
-       my decision is
-       it seems to me....
-       I believe....
-       in my opinion....
-       I feel....
-       I choose to....
-       I decided to....
-       I'll choose....
-       I chose....
-       I have chosen....
-       I have selected....
-       I conclude that....
-       From my (their) point of view....
-       The way I see it....
-       my choice....
-       my opinion....
-       I thought....
-       my selection....
-       From where I stand....
-       From my standpoint....

Appendix I

Chapter One (Early Peoples):  Other Places, Other Times

| | When | Where | Tools | Food | Shelter | Clothing | Art |
|---|---|---|---|---|---|---|---|
| **Homo Habilis** | | | | | | | |
| **Homo Erectus** | | | | | | | |
| **Neanderthal Man** | | | | | | | |
| **Cro-Magnon Man** | | | | | | | |

Appendix J

Chapter Two (Mesopotamia): <u>Other Places, Other Times</u>
Pages 34 - 66

| Meso-potamia | Gov't and Laws | Religion | Military | Education | Writing and Art | Geography and Climate | Economy and Money | Transpor-tation |
|---|---|---|---|---|---|---|---|---|
| <u>Sumer</u><br>Where:<br><br>When: | | | | | | | | |
| <u>Babylonia</u><br>Where:<br><br>When: | | | | | | | | |
| <u>Assyria</u><br>Where:<br><br>When: | | | | | | | | |
| <u>Vancouver</u><br>Where:<br><br>When: | | | | | | | | |

(Grant and Humphries, 1991)

## Appendix K

### Window on the World Journal – Table of Topics Assigned
### LEP Pullout Program

| Date | Journal Task | Knowledge Structure |
|------|-------------|--------------------|
| Jan. 4 | Holiday description web | Description & Sequence |
| Jan. 8 | What part of Mesopotamia life do you find most interesting and why? | Evaluation & Principles |
| Jan. 13 | If you had lived in Mesopotamia, what would you have chosen for a career and why? | Choice & Principles |
| Jan. 18 | If you were an archeologist studying Mesopotamia what are some things that you would like to find? | Choice & Principles |
| Jan. 20 | Would you prefer to have been a Sumerian, Babylonian or Assyrian? Why? | Choice & Principles |
| Jan. 22 | Where would you fly to get to Mesopotamia today? | Description |
| Jan. 25 | What do you usually do on weekends? | Description |
| Jan. 27 | How do you feel you did on your social studies test? Strengths, Weaknesses, Plan of attack for your next unit | Evaluation |
| Feb. 1 | What do you already know about Egypt? | Classification |
| Feb. 8 | If you travelled to Egypt what do you imagine you would see, wear and eat? | Description |
| Feb. 10 | Describe where Egypt is located in the world. | Description |
| Feb. 12 | What does love mean to you? How can we help each other? | Classification & Principles |
| Feb. 15 | If you were an archeologist and discovered an Egyptian tomb, what would you find inside? | Principles |
| Feb. 17 | How do you think Ancient Egypt and Modern Egypt are the same? | Description |
| Feb. 19 | Egypt is... | Description |

| Date | Journal Task | Knowledge Structure |
|---|---|---|
| Mar. 1 | What do you think was Egypt's most advanced technological achievement? | Evaluation & Principles |
| Mar. 3 | What is the latitude and longitude of a) Cairo b) Vancouver | Description |
| Mar. 10 | There are ____ ____ that you can ____ people. Some ____ are: age, height, weight, culture, etc. | Classification |
| Mar. 12 | What are you doing over Spring Break? | Description & Sequence |
| Mar. 22 | Timeline of Spring Break (listing 5 major events) | Sequence |
| Mar. 29 | What did you do this weekend? | Description & Sequence |
| Mar. 31 | After organizing your information, what do you find easy and difficult about writing your information into paragraphs? | Evaluation & Principles |
| Apr. 2 | What is the most delicious food you have ever tasted? | Evaluation & Description |
| Apr. 7 | What are some of the hardships that Egyptians would have had? | Classification & Principles |
| Apr. 14 | Pick a topic, create a classification key visual and write a topic sentence. | Classification |
| Apr. 16 | What is good about t.v.? What is bad about t.v.? Is television having a negative effect on children? How can this be changed? | Evaluation & Principles |
| Apr. 23 | Which law would you like to abolish? Why? | Choice & Principles |
| May 5 | Draw a graphic showing the types of programs on t.v. | Classification |