ESL Beginning Literacy: a content-based approach

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In recent years, researchers in English as a Second Language have suggested that it is academic, not social language use, which is critical for second language learners' success in academic settings (Cummins, 1984; Saville-Troike, 1984; Wong-Fillmore, 1983). In addition, research has shown that skills in the use of academic English is difficult to acquire and may, in fact, take at least four to five years to master (Cummins, 1984; Collier, 1987; Early, 1989). As a result of these findings, educators realize that it is neither efficient nor, indeed, effective to postpone ESL students' cognitive growth and learning of curriculum content until their English language proficiency is commensurate with that of their native English speaking peers. However, even though the importance of integrating the teaching of language with that of subject matter knowledge has been recognized, it is not a simple task to implement that process in the classroom; for, as Swain (1988) points out, "not all content teaching is necessarily good language learning".

Recent research by Early, Mohan and Hooper (in press), Hooper (1989), and Early (in press) indicates that use of the "Knowledge Framework" approach (Mohan 1986) as a teaching and learning strategy appears to be particularly promising in helping ESL students simultaneously learn subject matter knowledge and academic aspects of English. One way the Knowledge Framework approach, based on a subdivision of six types of knowledge, can be introduced to beginning level ESL students (K-12) is by using an adapted version of the Language Experience Approach (Ashton-Warner, 1963; Stauffer, 1980; Nessel and Jones, 1981).

This paper draws on work currently being undertaken as part of the large-scale project being conducted in the Vancouver School District by Bernard Mohan, Hugh Hooper and the author to assist ESL students in increasing their academic achievement. This report briefly defines the Knowledge Framework, then outlines the approach—organized around the knowledge structures of the framework—which is used to generate different types of expository text. Finally, this approach is described in action and pertinent examples of the many questions, strategies and techniques described in the preceding section are provided.

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What is the "Knowledge Framework"?

In order to help ESL students continue their cognitive growth and mastery of academic content, teachers need a carefully articulated approach which integrates the teaching of langauge and the teaching of subject-area knowledge. Mohan (1986) has provided a theoretical framework for such an approach. His approach, the Knowledge Framework, is a systematic way of integrating content objectives and language objectives that applies across the curriculum. Mohan asserts that topics or content can be broken down into six major types of knowledge which make up the Knowledge Framework. These knowledge types are: (1) theoretical or generic knowledge, which includes (a) classification, (b) principles and, (c) evaluation or values; and, (2) specific practical knowledge, which includes (a) description, (b) sequence and, (c) choice or decision-making. Work by Early, Thew and Wakefield (1986) suggests that these knowledge structures occur in a variety of ways across the (K-12) curriculum (see Table 1).

Table 1

KNOWLEDGE STRUCTURES COMMON ACROSS CURRICULA

CLASSIFICATION	PRINCIPLES	EVALUATION
Classification	Explanation Prediction	Evaluation
	Interpretation	Judgment
Generalization	Conclusion	Criticism
about	Formation	
descriptions	Generalizations	Justification
	Principles Theories	
Definition	Causes Effects	Argumentation
	Rules Strategies	
	Results Means End	
Description	Sequence	Personal
		Opinion
Comparison	Chronological order	
		Refutation
Contrast	Cycles	
		Problem/
Quantification	Processes	Solution
Spatial order	Narration	
DESCRIPTION	SEQUENCE	CHOICE

These knowledge structures are distinct but not dissimilar from Meyer's (1985) classification of top-level text structures. Table 2 displays their relationship.

Table 2

CLASSIFICATION	PRINCIPLES	EVALUATION
collection	causation	
comparison description	collection	response

DESCRIPTION SEQUENCE CHOICE

Though similar, text structures and knowledge structures do differ. Text structures are defined on the sequential patterns of discourse, whereas knowledge structures are based on semantic relationships. Knowledge structures (although often realized in texts) are not only textual, but also visual (expressed in graphic form). In our work, each type of knowledge structure lends itself to certain forms of key visuals. Table 3 lists some of the key visuals which may be used to represent each knowledge structure.

Table 3

CLASSIFICATION	PRINCIPLES	EVALUATION
Web	Line Graph	Table
Table	Tables	Grid
Tree	Venn Diagram	Mark Book
Graph	Cycles	Rating Chart
Database		
Diagram	Action Strip	Flow Chart
Map	Timeline	
Picture/Slide	Flow Chart	Decision Tree
Plans/Drawings	Cycle	
Table		

DESCRIPTION SEQUENCE CHOICE

These visuals have either no, or lowered, linguistic demands and can assist the learner in understanding content. Key visuals have at least three major applications: (1) generative—to promote content-related language production, (2) explanatory—to increase content understanding, and (3) evaluative—to assess content of language understanding. The framework,

then, acts as an integrator of language and content. Subdividing a topic or theme into the six categories of the framework provides a starting point for building student tasks. Those tasks then integrate the development of academic discourse and the acquisition of subject-matter knowledge. Key visuals can be used in these tasks as links for the learner between language and content. One example of a student task is the writing and reading of individual-, or group-generated, experience-based expository text.

An Overview of the Basic Steps in Generating and Using Experience-Based Expository Text

The basic philosophy of the approach described here, although similar to that of the Language Experience Approach (LEA), is not identical and deviates from the LEA in three distinct ways: (1) whereas the LEA focusses on developing language skills, our approach focusses on developing language, content and thinking skills; (2) whereas the LEA tends to focus on the narrative or story structure, our approach systematically and intentionally focusses on a range of knowledge structures; and (3) whereas the LEA may use drawings as stimuli or as methods to illustrate a story, our approach uses graphics (i.e., key visuals) as recognized and legitimate representation of meaning.

There are eight basic steps in generating experience-based expository texts:

1. The teacher creates an environment/situation conducive to teaching subject-matter knowledge and stimulating language and thought. A three-dimensional model, an experiment, or a key-visual provide effective stimuli.
2. The students learn key words related to the visuals, and the visuals or models are labelled. If the visual is on a transparency, the critical vocabulary can be written directly on the transparency, or an overlay may be used.
3. The students are provided with ample opportunities to compose oral sentences based on the visuals (i.e., the teacher uses the visuals to elicit oral sentences from the students). The teacher may involve the entire class by using carefully structured questions to help elicit student responses or the instructor may set tasks which enable the students to discuss the visuals within smaller groups. Group activities must be well structured to ensure all students take an active part in the discussion. The teacher monitors each group to ensure that: (a) the central concepts are understood, and (b) the critical language to express the concepts is introduced.
4. Written sentences based on the visuals are composed. There are a number of ways that this step can be handled; two are outlined here.

(a) Method one:
  (i) The students (individually or in small groups) write down as many sentences as they can, related to the visual. (n.b. The visuals or models have been labelled and a lengthy oral discussion has taken place so the students, especially when working collectively, should be capable of producing some sentences.) Correct spelling, syntax, and so forth are not paramount at this point.
  (ii) Each student (or group) chooses their best sentence(s) to read and the teacher writes the sentence(s) on a poster-sized piece of paper or on an overhead transparency. This process continues until all (or most) students have had a turn and the key concepts in the visual have been expressed.
  (iii)The teacher offers an introductory and a concluding sentence.
  (iv)Using the visual as a guide, the class arranges its sentences in a sequence which results in a coherent expository text. During the process the students will have chosen the best sentences from alternate versions of the same idea that may have been offered.
  (v) As a group, the students make editing suggestions and correct the sentences on paper or on the overhead projector, until a satisfactory class composition emerges.
(b) Method two: this version is similar to (a), but somewhat more teacher-orchestrated.
  (i) After the oral discussion stage outlined in steps 1-3 is completed, a class composition is generated without going through the individual or group writing activity.
  (ii) The students' attention is directed to the visual and the teacher immediately gives an introductory and a concluding sentence for a text based on the visual.
  (iii)The students are directed to a particular section of the visual and the teacher systematically asks carefully structured questions for each step or section of the visual. The students are helped to generate standard forms by correct modelling from either their teacher or their peers.
  (iv)The teacher systematically records the students' best responses.
  (v) When each of the key concepts and, if possible, their relationships as represented by the visual have been recorded, the class, as a group, sets about editing the passage (i.e., adding link words, joining sentences, etc.) until a cohesive composition emerges.
5. Regardless of the method used, when the text has been satisfactorily

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generated, the teacher (if she so wishes) may direct the class to transcribe the resulting co-produced expository text.

6. The teacher/students read the text. Through teacher questioning techniques the students are lead to make deductions about phonetic analysis, morphology, capitalization, punctuation, sentence and discourse structure.

7. If the teacher chooses, comprehension activities (e.g., True or False statements, cloze passages, questions—three levels) may be structured.

8. The teacher may reinforce the concepts and provide alternate and perhaps slightly more formalized, versions of the studied genre by sharing carefully chosen model texts (either from library books or magazines) on the topic.

How does the experience-based expository text approach work in the classroom?

As stated above, this approach is suitable for use with beginning ESL students (K-12) who are learning English in the school context, in either mainstream or specialized ESL classrooms. It is particularly helpful in introducing pre-literate or illiterate students to written language. This paper shall now report on one elementary school ESL classroom in which this approach was implemented. In the class were twenty students who ranged in age from ten to thirteen years. The children came from a variety of language backgrounds; they had all been in Canada for less than eleven months.

In her ESL class, it is Mrs. C.'s practice to have groups of children select a work-topic from a theme which she has identified from the provincial science or social curriculum. The topic of "How Animals Live" was chosen in this manner as the science area for study. This particular theme, as Mrs. C. handled it, fell into two parts. The first section dealt with the discourse and knowledge structures of description and classification, and the second dealt with the discourse and knowledge structures of sequence and principles. The written discourse of choice and evaluation were not examined in the lessons reported here. It should be noted, however, that the reported process works equally well in teaching this type of written genre. Mrs. C. simply chose not to include them at this time.

In this unit, a classification tree (see Figure 1) and a slide presentation were used to show examples of animal-types and to: (a) stimulate discussion, (b) convey content information, and (c) establish the students' existing background knowledge and ideas of this theme. The students were encouraged to relate their knowledge about the topic, while Mrs. C. recorded those ideas on the blackboard. She then led the students through

a series of carefully structured questions to organize and to expand their stated knowledge:

- Into how many main groups can animals be divided?
- What is the difference between the two groups?
- What are these groups called?
- How many groups of vertebrates are there?
- Do you know what these groups are called?
- Which animals are in the warmblooded group?
- Which animals are in the coldblooded group?
- Can you give me some examples of animals in each group?

Figure 1. A classification tree of animal types.
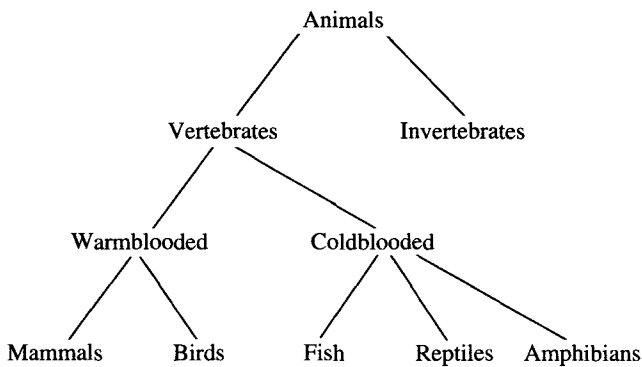
At the onset (i.e. when brainstorming and establishing and compiling the students' background knowledge of the topic was occuring fluency was of paramount importance. At that stage Mrs. C. concentrated on modelling the correct structures and providing the students with the technical vocabulary of biology. After discussing these questions at some length, Mrs. C. summarized and reviewed the lesson by asking these same questions again. This time she recorded the students' responses to produce the following text:

> Animals can be divided into two groups. One group has backbones. The other group has no backbones. These groups are called vertebrates and invertebrates. There are two groups of vertebrates. They are called warmblooded and coldblooded. Mammals and birds are warmblooded. Fish, reptlies and amphibians are coldblooded. Horses and cows are examples of mammals, seagulls and eagles are examples of birds, goldfish and salmon are fish, snakes and lizards are reptiles and frogs are amphibians.

The next step in this theme was to involve the students in talking, learning and thinking about how animals live. This involved the students

not only in acquiring this content knowledge, but also in acquiring a context in which to learn the language and knowledge structures of sequence and principle (laws of nature). Mrs. C. chose the food chain as the demonstration topic within this theme. She made several cardboard cut-out models of one example of a food chain so that the students could work together in groups of three or four, rather as one class group.

FIGURE 2
A FOOD CHAIN
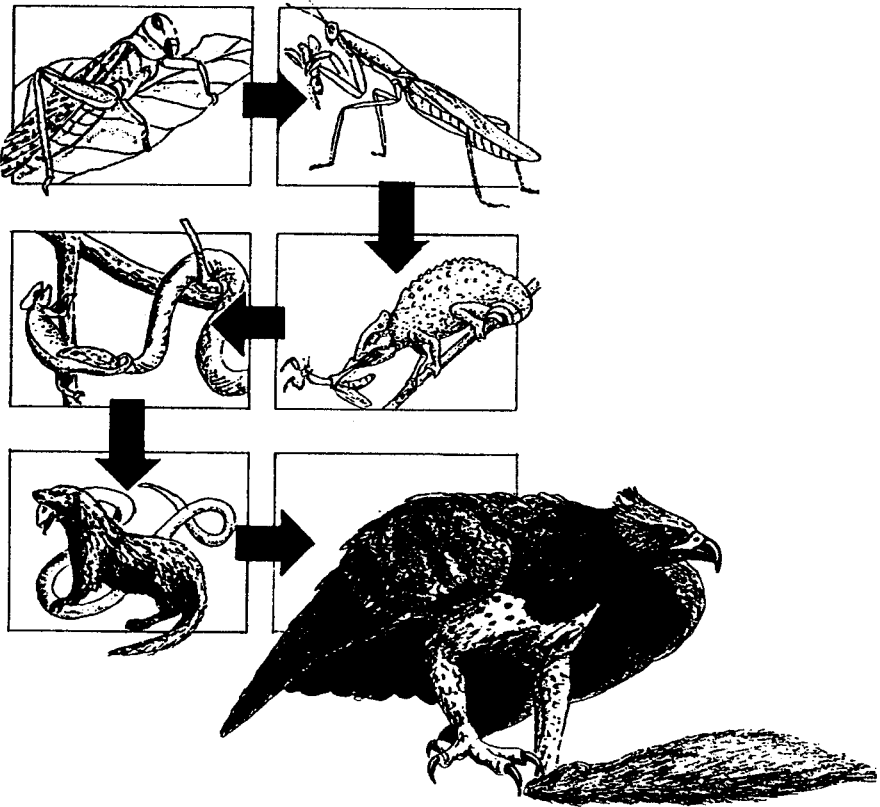
The students were given the cards in random order and asked to arrange them in sequence. No further direction was given and the students were left to discuss and solve the problem for themselves. After some time had been given to allow the students to talk and work through a sequence, the accuracy of the students' sequences was checked by showing them a transparency of the correct answer. Mrs. C. then introduced the key vocabulary items and the sentence and discourse patterns to realize the language of process/chain. The procedures she used were very similar to the basic

steps in generating experience-based expository text outlined above. In this instance, after the key characteristics were identified and the oral language was elicited from the class, the students worked in groups (as described in 4(a) above) to produce written sentences. Mrs. C. provided the introductory and concluding sentences. The students' best sentences were offered, sequenced, corrected and edited to build the following piece of sequence and principles text:

> All animals need the sun to live. The sun makes plants grow and animals eat the plants. The plant-eating animals are then eaten by the meat-eating animals. Meat-eating animals don't just eat plant-eating animals, they also eat each other. One example of how this works is: first the mantis eats the locust, then the mantis is eaten by a chameleon. Next the chameleon is eaten by a snake. After that, the snake is eaten by a mongoose, which is then killed by an eagle. The dead animals rot and that helps the soil to grow new plants. This is called a food chain.

Based on the text, a variety of reading activities were then undertaken to reinforce both language and content learning.

To complete this theme, Mrs. C. divided the class into five groups. Each group was asked to choose one of the five main vertebrate groups to explore in more depth. They were then asked to choose one example of their animal type for further exploration by participating in discussion amongst themselves in order to reach a concensus. After each group had made its choice, Mrs. C. supported their work by (a) supplying carefully articulated key visuals (see Figure 3 for example); and (b) moving from group to group to ensure that the important concepts were, indeed, understood and that the key language necessary to express the content and knowledge structures were learned and practiced. The following example of text from one of the groups is offered as a typical example of the final edited work the students were able to produce.

> There are many different kinds of frogs and they live in most parts of the world. Frogs belong to the group of animals we call amphibians. Frogs are pretty small and they have smooth, wet, skin. Frogs eat snails, worms, slugs and insects. They use their long sticky tongues to catch insects. Frogs mostly live in ponds but some frogs live in trees.
>
> Frogs lay their eggs in the spring. The eggs are covered in jelly. They are called spawn. After two weeks, the eggs turn into tadpoles. At first the tadpole has a head and tail, then it gets outside gills. After five weeks, the tadpole starts to grow legs. Their back legs grow first, then their front legs. Also, the tadpoles are slowly growing lungs which they need to breathe on land. After about three months their front legs grow longer and their tails grow shorter. They are now little frogs.

Figure 3. Characteristics and life-cycle of the common frog.

From tadpole to frog.
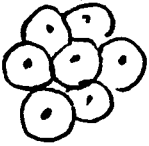
eggs (spawn)

tadpole hatches
two weeks later

tadpole with
gills outside

tadpole with
gills inside

back legs grow
after six weeks

front legs grow
after nine weeks

CHARACTERISTICS	
body covering	smooth wet skin
way of bearing young	lay eggs— no shells
way of breathing	gills / lungs
home	land and water, marsh, trees, ponds
food	snails, slugs, worms, insects
countries	most parts of the world
special features	long sticky tongue, webbed feet

– lungs slowly grow
– their front legs grow longer
– tails grow short
– leaves water three months
  after eggs are laid
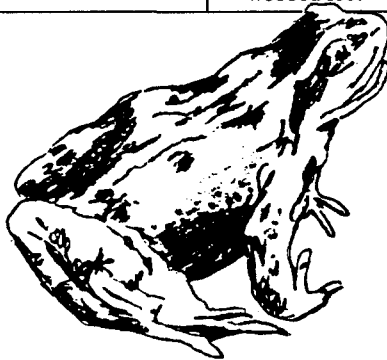
The results were impressive. Moreover, these students were learning to write and to read expository discourse with apparent enthusiasm and confidence.

Each group shared its texts with the others and a class book on "Animals and How They Live" was produced. The teacher and a group of the more proficient students wrote a short introduction and conclusion to the book and generally edited the complete text. Another small group worked on the key visuals and cover design.

As described in the above section on basic steps, these texts became part of the class reading material and were used to: (a) lead students to make deductions about phonetic analysis, morphology, and so forth; and (b) guide students towards an understanding of the nature of expository texts.

Conclusions

This paper provided an overview of a writing-reading procedure that can be used to teach beginning ESL students (K-12) subject-matter knowledge and expository paragraph structure. A brief description of this approach in action was given. The report not only exemplified this way of work, but also demonstrated that: (a) teachers, without too much difficulty, can successfully design instruction for beginning level ESL students which integrates the teaching of subject-matter knowledge, academic aspects of language and knowledge structures and (b) beginning ESL students, when adequately supported in tasks designed to elicit particular subject-matter knowledge and discourse structure, can produce recognizable examples of a variety of genre. The suggestion here is not, by any means, to limit the students' early literary experience only to material which they have produced themselves. Rather the suggestion is that this approach is valuable in that it enables low English proficiency students to work with academic context and discourse. Perhaps most importantly, this paper showed that we need not waste ESL students' time. That is, we need not postpone their cognitive growth, their learning of curricular content, and their learning of academic aspects of English until their social/survival English is well underway. Clearly, when adequately supported in tasks specifically designed to develop academic English, beginning ESL students show every sign that they can successfully handle the task.

In closing, it is important to stress that this article offered but one task. If ESL students are to efficiently and effectively achieve academic success, they must be provided with tools for success as soon after their arrival in the school system as they are socially and emotionally able. It is imperative that we design and implement many more tasks, strategies, instructional routines and approaches to this end.

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