Concept Teaching Routine

— *enhance student understanding* —

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> **"...Content Enhancement Routines can potentially increase the chances that students at risk for school failure ...will learn content as part of regular classroom instruction"**

In the April, 1992 Strategram, planning for concept instruction was discussed by using a Concept Diagram as an example. A Concept Diagram is a teaching device that can be used to enhance student understanding. An instructional device such as the Concept Diagram is at the heart of content enhancement teaching routines. A content enhancement routine is a set of integrated instructional procedures designed to help structure teaching so that learning difficulties are addressed in the content classroom. A routine is built around an instructional device such as a Concept Diagram and involves the delivery of large amounts of information. In this segment, the Concept Teaching Routine will be covered.

Specifically, the major use of the Concept Teaching Routine is to promote understanding of information. However, other Content Enhancement Routines are also designed to enhance the meaningfulness of content by helping students organize, remember and believe in the importance of information. Used together as a part of a teacher's instructional plan, these Content Enhancement Routines can potentially increase the chances that students at risk for school failure, students with learning disabilities, and students without learning disabilities will learn content as part of regular classroom instruction.

In order to teach students the concept of "mammal," the Concept Diagram will be used as the device around which the content enhancing Teaching Routine will be built. There are nine steps involved in a Concept Teaching Routine. The first three involve

preliminary steps that must be accomplished before the Concept Diagram is utilized; the next five involve steps that are guided by the Concept Diagram itself; and the last step involves summarization and post organizers.

1. Give an advance organizer. As with all well-constructed advance organizers, teacher expectations, the content that the students will learn, and the process they will go through as they learn will be discussed. In essence, they will get a preview of the what and the how of the lesson. In order to prepare the students to learn about mammals, the instructor should explain to the students what they will learn and cue them to use the Concept Diagram to explore the concept of mammals. If it is the first time that the Concept Diagram is used, more time will be needed to carefully discuss the structure of the diagram and the goals to be gained from using it. The instructor might, at this point, check on students' prior knowledge and identify misconceptions about the concept so they can be corrected using the Concept Diagram. They should link the concept of "mammals" to what has been learned before such as the concepts of "vertebrate" and preview future learning that will build on the concept of "mammal" such as the concept of "primate."

2. Elicit a Key Word List List words associated with the concept of "mammal." In order for the students to participate as partners in the development of the Concept Diagram, the teacher and all students must have a common beginning point. This can be

established by eliciting vocabulary words from assigned readings. If there are no assigned readings, the teacher can also establish the concept by eliciting associative words that students have in their own learning experience. The teacher can also explore prior knowledge of the concept or probe for misunderstandings that the students bring to the topic.

This is an important step in which the teacher can involve the students in an interactive format. It is important to establish that format since it will be used throughout the development of the Concept Diagram in class. Remember, although time has been spent constructing the ideal Concept Diagram of "mammal," never present that concept to the students as a finished product. That is the teacher's own judgment of what the students should learn. The teacher will want to be certain that students eventually include all of the elements that are critical for understanding. However, the teacher will also have to be prepared for students to share incorrect ideas about the concept. This is one of the great advantages of getting students to share their prior knowledge. Then the teacher can have a better idea of what he or she needs to correct.

To illustrate, make sure that students include in the Key Word List an adequate number of good examples of "mammals." In addition, elicit all of the characteristics that must be present in the concept of "mammal."

3. <u>Explain or review the symbols on the Concept Diagram</u>. Explain or review the elements of the Concept Diagram with the students. Remind them about the meanings of the graphics on the Concept Diagram, that is, that rectangles always signal the name or definition of the concept, solid lines signal characteristics, broken lines signal characteristics that are never present, solid ovals signal examples, and broken ovals signal nonexamples.

4. <u>Name the concept</u>. Concept Diagram A has been used in this illustration of a Concept Teaching Routine. This is the format of the Concept Diagram that will be used with the lecture-discussion format. In this format, the name of the concept is placed at the top of the diagram as the lesson is started. Another version, Concept Diagram B, allows the teacher to use a discovery format in which the name of the concept would be elicited form the students only after they had been presented with paired examples and nonexamples and had derived the characteristics for the concept themselves. They would then be able to "discover" the name of the concept for themselves. In this instance, Concept Diagram A, the teacher would inform the students that they would be developing the Concept Diagram for the concept "mammals."

5. <u>Discuss the characteristics</u>. Sort out the characteristics that must be "always present" from those that are "sometimes present" in the concept. Distinguishing between these two types of characteristics often leads to deep understanding. Similarly, as they are suggested, place the characteristics that are "never" characteristics in the proper column. Many teachers are concerned that they do not wish to introduce distractors such as "never" characteristics especially to younger students. However, these items do not need to be introduced gratuitously. Indeed, most deep explorations of a concept lead to student suggestions that some "never" characteristics are truly "always" characteristics or in more cases "sometimes" characteristics. These need to be corrected as they occur.

6. <u>Provide examples and</u>

nonexamples. Places are provided on the Concept Diagram for examples and nonexamples. It is important that the teacher involve the student in deciding whether an item is to be placed in the "example" or in the "nonexample" section. For items that do not clearly fall into one category or the other, the teacher can place the proposed items in the middle ground between the graphics for examples and nonexamples. Then, the students can help decide where to place them by checking whether that item has all of the "always" characteristics but none of the "never" characteristics. For example, this may not be necessary with the example of "elephant," but students may be puzzled about where a "bat" is to be placed.

It is important to match examples and nonexamples and to arrange the pairs in sequence from easy to difficult. Begin with an easy discrimination such as that between "humans" and "snakes." Students will experience early success in discriminating the mammal from the non-mammal. They will also have little trouble discriminating elephants as mammals and alligators as nonmammals. However, a few students may have more difficulty discriminating between whales and sharks until they carefully explore the characteristics that must always be present in a mammal and those that must never be present. End with a real challenge as is provided by the paired example and nonexample of bats and birds, two winged creatures of about the same size. Some students will have to concentrate to discriminate between the two.

7. <u>Link examples and nonexamples to characteristics</u>. Student participation is guaranteed in this section. Involve them in checking the placement of an item in the"example" or "nonexample" group. The teacher interacts with the students to draw lines from each proposed

CONCEPT DIAGRAM A

Concept Name: MAMMALS

Definitions: Mammals are warm-blooded animals that have hair and nurse their young.

Characteristics Present in the Concept:

Always	Sometimes	Never
+ warm-blooded	+ can fly	○ cold blooded
+ have hair	○ live in water	
+ nurse their young	○ can talk	
	○ walk on 4 legs	

Example:

humans

elephants

whales

bats

Non example:

snakes

alligators

sharks

birds

The Nineties Buzz Word: Collaboration

by

Karen Beeler & Rosie Lundquist

Collaboration may be to the nineties what "New Math" was to the sixties, but let's enjoy it while it's here. The ninth grade English class at Interstate 35 has gone from approaching Warriner's Grammar "the right way, the wrong way, and my way" to team taught learning strategies with no signs of the world coming to an end. In the spring of 1989, we set up an experiment in which the resource and classroom teachers began to work together collaboratively.

In addition to teaching the Sentence Writing Strategy during one semester of ninth grade English, we supplement the program with a variety of other activities.

We begin with a pretest to see if any students are at mastery level. So far, in three years, we have yet to have any students test out initially.

We like the fact that the exercises in the strategies are written in a lower reading level so that we don't have to overcome reading and vocabulary problems as we teach the other concepts. We compensate and challenge the students with a separate vocabulary study instead.

Each Friday students receive vocabulary worksheets to work on during class. Papers are due on Monday and students take a quiz over the twenty words.

Within the first nine weeks a unit on library skills is conducted in conjunction with the librarian as well as a review covering punctuation and capitalization rules. Other strategies we include during the year are *Error Monitoring, FIRST-Letter Mnemonics,* and *Test-Taking Strategies.* We include oral group work, individual work, and small group work for writing some of their initial essays. We present material on the overhead in a main idea/ detail format. Students take their own notes from the overhead and have frequent teacher made pop quizzes (especially over the linking and helping verbs).

As students take the mastery tests for each sentence type, we promote the mastery concept with each class by rewarding the class with popcorn on Friday if everyone in the class achieves mastery. The students seem motivated to achieve and it is a fun and inexpensive reward.

Collaborative teaching benefits everyone.

Karen Beeler & Rosie Lundquist

For the teachers, those benefits were shared discipline, adult interaction, greater flexibility, a twenty-five percent reduction in work load and improved student grades. (Only one student failed the semester because he chose not to do his assignments.) For the students the benefits were: decreased frustration, a shorter wait for help, a chance to choose the teacher with whom they felt more comfortable, improved writing skills, and better grades.

The statistics we gathered during the semester validated the feeling that the change had been worthwhile. We kept scores on pretests and post tests. We discovered that eighty-three percent of our students had achieved eighty-five percent mastery of the material. Our goal was for eighty per cent of the students to achieve mastery. From a survey we discovered that eighty-nine percent of the students thought that the Strategies Intervention Program was practical and seventy-five percent like learning for mastery.

For teachers who are considering collaborative efforts these guidelines may be helpful. Be prepared to give up territoriality (it hurts less than you think). Share the planning and be adaptable. Administrative support is important because some schedule changes may be required. To find teachers who want to collaborate use a survey so all teachers have an opportunity to participate or use your intuition to find a compatible person. Choose teachers who are already strong and secure in their own areas because collaboration shouldn't be a vehicle for administrators to "shape up" incompetent teachers. News of a respected teacher's success will also encourage other collaborative experiences

within the school.

Teachers also respond to rewards so, if at all possible, tie collaborative teaching to a concrete reward, for example: a peformance-based pay plan, a payment plan which includes a stipend paid in the July paycheck, or time compensation plan.

Set attainable goals and criteria. **One goal should be to limit paper work!**

"For the students, the benefits were decreased frustration, a shorter wait for help, a chance to choose the teacher with whom they felt more comfortable, improved writing skills, and better grades."

The discussion and clarification of the roles of team members is most important. Share equally all menial tasks as well as the creative and challenging ones. Find and use each teacher's strengths. Feel free to experiment with a variety of learning channels and class activities to accommodate the student's talents.

Our collaborative teaching has survived for two years and has spread to the four core areas of our freshman curriculum. It takes a different format in the other classes. While we work together two or three days each week in English, the social studies team works with mini units which are taught at the end of a unit only twice a year.

Karen Beeler and Rosie Lundquist teach at I-35 High School, Truro, Iowa 50257. Karen and Rosie have also sent along a test for use with the Sentence Writing Strategy which can be found on page 7.

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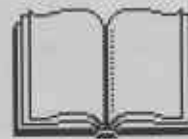**A DISSECT BOOKMARK**

from

Brenda Chihak

While preparing a presentation to promote generalization, Brenda created a book mark to share with participants. She has tried it out on her students and they were extremely receptive. Brenda reports that students carry them around in whatever books they may be using. She has provided an example of the bookmark below which can be reproduced for classroom use. Thanks go to Brenda for sharing her creative efforts.

WORD IDENTIFICATION STRATEGY

DISCOVER THE CONTENT

ISOLATE THE PREFIX

SEPARATE THE SUFFIX

SAY THE STEM

EXAMINE THE STEM

CHECK WITH SOMEONE

TRY THE DICTIONARY

Front

RULES OF TWOS AND THREES

RULE 1

If a stem begins with:
* A vowel, divide off two
* A consonant, divide off three

RULE 2

If that makes no sense, take off the first letter and use RULE one again.

RULE 3

When two vowels are together, try making both of the vowel sounds (diet).
If this does not work, try pronouncing them using only one vowel sound (believe).

Back

Developed by Brenda Chihak, Cedar Rapids, Iowa
May be reproduced.

Name: _____ **Date:** _____

Instructions
1. For each sentence, underline each <u>independent clause</u> with two lines.
2. Underline each <u>dependent clause</u> with one line.
3. In the blank to the left of each sentence, write the correct sentence formula for the sentence.
4. In the short blank to the far left, label each sentence type using S=Simple, CD=Compound, CX=Complex, CD-CX=Compound-Complex.

Example:
CD-CX   D, I, c, I.   0. (Although) I need money, I will not steal, nor will I borrow.

Type   Formulas

____ _____   1. The wind was blowing strongly while it rained heavily; the storm would last a long time.

____ _____   2. Jeanne went to pick Paul up and drove him home.

____ _____   3. Unemployment has risen sharply in the last year, and money has become tighter.

____ _____   4. If we find a cure for cancer, thousands of lives could be saved each year.

____ _____   5. Steve and Chris looked longingly at the motorcycle and dreamed of owning it.

____ _____   6. The nature hike will be postponed until clear weather begins, but it will still be two days long.

____ _____   7. Although the mail came today, no letter or package arrived.

____ _____   8. After he ran quickly from the scene of the crime, the gangster got away, and the police were baffled.

____ _____   9. The girls decided to have a party before school ended.

____ _____   10. We could still see a shadow of the moon during the eclipse; it was a beautiful sight.

____ _____   11. You have several courses from which to choose; you also have to take some required courses.

____ _____   12. Could you and Bill pick up the laundry and drop off the cleaning?

____ _____   13. Rick wanted to go out with Tony and Andy, yet he had a term paper to write.

____ _____   14. You should decide if you want to go.

____ _____   15. Before you make your decision, you need to think about the alternatives, and you need to consider the consequences.

____ _____   16. Tina's friends took us to the concert and escorted us home.

____ _____   17. At the job fair there were many employers; Todd talked to all of them.

____ _____   18. We wanted to stay because we were having so much fun, but we had to be home by 1 A.M.

____ _____   19. Although it was hard, I filled out the papers; I wanted the job badly.

____ _____   20. The teachers organized a union, and they lobbied for pay increases.

Developed by Karen Beeler and Rosie Lundquist
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example to each characteristic on the diagram (See Concept Diagram on page 3). As the teacher checks each characteristic, she places a "+" beside characteristics that are present in the proposed example and a "0" beside characteristics that are not present in the proposed example.

For instance, in the figure shown on page 3, for the example, bat, lines ending in "+" symbols are placed beside the characteristics of "warm-blooded," "have hair," and "nurse their young." Note, however, that "0" will be placed beside three of the "sometimes" characteristics: "can talk," "walk on 4 legs", and "lives in water". Only one "+" will be placed in that column beside the characteristic "can fly." To gain control of a concept, students must understand that examples can look very much different and still belong to the same concept class, and the "sometimes" characteristics allows discussion of this possibility. Note also that a "0" will be placed beside all characteristics in the "never" characteristics column. Even one "0" in this column means that the example is not a member of the concept class.

8. Construct a definition. Although the graphic symbol for the definition of the concept is placed near the top of the diagram near the name, the construction of the definition is completed after the students have discussed the characteristics and drawn lines from all potential examples to all of the characteristics. This helps them understand a very important point: To be a member of the concept class, an item must possess all of the "always' characteristics, but none of the "never" characteristics. The "sometimes" characteristics are, of course, variable and may or may not be present in all of the proposed examples. Allow the students to discuss freely how the definition should be constructed and revised as they determine. Some of the best discussions occur at this point because all students are involved in constructing a

definition. This is the perfect summary for what has been learned about the concept as well as good experience in constructing a definition.

Note that one important element must be included in the definition in addition to all of the "always" characteristics. This is the name of the larger group to which the concept belongs. Students will learn to include this name in all definitions. So encourage them to think about the large group that this one fits into. For example, "mammals" fit into the class called "animals." This is a first step toward encouraging students to always think in terms of larger categories and clustering of information.

9. Give a post organizer. The post organizer is always important because it allows for a review of the concept and a restatement of the decisions about examples of the concept and the best definition. It is an ideal pattern to always review both the content, in this case, mammals, and the process of thinking that has just occurred, in this case, the analysis of the concept characteristics and the synthesis of those characteristics into a definition.

Although these are the basic steps in using the Concept Teaching Routine, the ways that you can plan for its incorporation into lesson and assessment plans are many. Among them are the following:
* homework assignments
* small group cooperative work
* tests

The Concept Teaching Routine is one example of how teachers in content classes can enhance content so that students can understand, remember, organize and believe in the importance of information. Based on specific teaching devices for learning, these content enhancement routines enable the teacher to focus on critical information, plan carefully, deliver information in a visual as well as verbal format, provide students with ways of approaching problems of a similar nature, and provide variety in instructional formats.