WebQuest

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EDU 352: Adolescent Exceptional Learners

October 19, 2005
# KWL Chart
## Reading in the Content Area

Crystal Heckaman                                      October 19, 2005  
Biology I                               Ecology

<table>
<thead>
<tr>
<th>Know</th>
<th>Want to Know</th>
<th>Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Reading biology text can be difficult process</td>
<td>- How do I know my students understand their readings?</td>
<td>- Students will show that they understand by completing assignments or asking questions for clarification.</td>
</tr>
<tr>
<td>- There are oodles of <strong>bold-face</strong> terms</td>
<td>- How do I make reading easier for those who struggle?</td>
<td>- Make reading easier by providing other materials that contain the same information. Provide handouts of key terms and their definitions.</td>
</tr>
<tr>
<td>- There are a lot of “key concepts”</td>
<td></td>
<td>- Provide interesting projects and games for them to complete during or after they have read the material</td>
</tr>
<tr>
<td>- Text can be overwhelming if read in large chunks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- There is a lot of information that can not be covered because of time constraints</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Venn Diagram

Compare/Contrast proficient readers and struggling readers

**Proficient Readers:**
- Activate prior knowledge
- Read and Reread
- Question and Predict
- Reflect
- Paraphrase

Educators must find common ground for all students by applying reading strategies to text and providing scaffolding for struggling readers

**Struggling Readers:**
- No reading strategy or little preparation
- Easily distracted
- Read for completion not understanding
# Stages of Reading

<table>
<thead>
<tr>
<th>Stage One</th>
<th>Stage Two</th>
<th>Stage Three</th>
</tr>
</thead>
</table>
| **Before Reading:**  
Activate prior knowledge in which students can create and elaborate upon through their readings | **During Reading:**  
Allow students to understand, explain, picture, and create connections to prior knowledge | **After Reading:**  
Improve upon students prior knowledge by developing connections and furthering comprehension of topic at hand |

| 1) Assess prior knowledge and provide background knowledge  
2) Brainstorm concepts/key terms that are presented in reading | 1) Ask questions and determine answers while reading through a selected text  
2) Reread text to clarify meaning of terms or concepts not previously understood | 1) Summarize the topic that was read by discussing key concepts and vocabulary words  
2) Engage in activity that reflects upon what students have just read |
Vocabulary Activity

With the use of your text and heightened understanding of your vocabulary terms complete the following questions:

True/False
1. The biosphere includes outer space.
2. An organism’s niche includes its habitat.
3. Carnivores obtain nutrients by eating other consumers.
4. All of the energy available to organisms at each level of the food chain is stored.

Fill in the blank
5. Interrelated food chains are _________________.
6. Relationship in which one organism feeds upon another _________________.
7. A community is made up of interacting ___________ in a certain area at a certain time.

Short answer
8. Explain the difference between commensalism and mutualism. Provide an example of each.

9. Why do organisms at higher trophic levels generally consume more food than those at lower levels?

10. Ecologists have developed a series of levels of relationships between biotic and abiotic parts of the world. What are these 5 levels? Provide an example of each (other than the one provided in the text).

[This particular activity was chosen because students were able to use different thought processes to determine answers to the questions. T/F questions require analysis of question. Fill in the blanks require students to comprehend and possibly search for answers. Short answer questions involve careful processing of what is being asked as well as comprehension or memorization of the text.]
Reading Strategies (1)

The first reading strategy covers all three stages of reading.

- To trigger students’ prior knowledge about the topic the teacher should create an organizational chart containing key words that are relevant and not relevant to the topic. The topic should then be briefly discussed to give students an idea of what they will be reading about. Students should then be asked to determine which word choices they will likely come across in their reading and why they think these words are related to the topic.

- During reading, students should record page numbers and any definitions or details that will help them remember the new vocabulary term.

- After reading, ask students to share what they found out about the words and what useful information would help them remember those words. For struggling readers, this allows them to jot down information that they might not have caught on to themselves and allow them to return to the text and skim over specific sections again.
Example:

Give a basic overview of ecology. Discuss the words on the chart and clarify word meanings if necessary. On the chart, have students decide whether or not each word is related to the topic of ecology.

While reading, have students record the page numbers from which the key word was found and provide evidence in the form of a definition or example.

After reading, students may as a class or in groups discuss the information that they found and where they found it.

<table>
<thead>
<tr>
<th>Term</th>
<th>Related/Unrelated</th>
<th>Pg.</th>
<th>Definition/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>related</td>
<td>42</td>
<td>Place where organism lives</td>
</tr>
<tr>
<td>Biosphere</td>
<td>related</td>
<td>37</td>
<td>Part of Earth that supports life</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>unrelated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Magnesium</td>
<td>unrelated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Food Web</td>
<td>related</td>
<td>50</td>
<td>All feeding relationships</td>
</tr>
<tr>
<td>Mitochondria</td>
<td>unrelated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Microscope</td>
<td>unrelated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Soybean</td>
<td>unrelated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Symbiosis</td>
<td>related</td>
<td>44</td>
<td>Living together (ex. Mutualism)</td>
</tr>
<tr>
<td>Heterotroph</td>
<td>related</td>
<td>47</td>
<td>Feeds on others (ex. Carnivore)</td>
</tr>
</tbody>
</table>
Reading Strategies (2)

The second reading strategy, the Frayer Model, is a well-designed reading strategy that utilizes all three reading stages.

This model allows students to build upon their pre-existing knowledge by categorizing and analyzing information that they already know and that which they discover through their text.

Students use a single notecard for each term and provide the term’s definition and page number where it was found, characteristics of the term, examples of the term, and a picture depicting their interpretation of the term.

*Example:*
<table>
<thead>
<tr>
<th>Organism that uses light energy or stored energy to make its own food; a producer</th>
<th>Plants that take in sunlight, carbon dioxide, and water to photosynthesize and create the sugar that keeps them alive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasses, weeds, flowers, shrubs, trees, grains, and garden vegetables</td>
<td></td>
</tr>
</tbody>
</table>
Reading Strategies (3)

The third reading strategy combines stages two and three as students use notecards or sticky notes while they are reading to jot down confusing phrases, interesting statements, or questions that they have pertaining to their reading selection.

After they have completed their reading assignment, students hand in their notecard or sticky notes to the teacher, who then covers in depth the information that students found intriguing and that which they struggled to interpret.

Example:

<table>
<thead>
<tr>
<th>How does a habitat change or disappear? What happens to the plants and animals that lived there?</th>
<th>How do we determine the order of the trophic levels from autotroph to first-, second-, and third order heterotrophs in an ecosystem? Are food chains or few webs always provided to help us determine who eats who/what?</th>
</tr>
</thead>
<tbody>
<tr>
<td>page 42</td>
<td>page 50</td>
</tr>
</tbody>
</table>
The fourth reading strategy involves stage three in which students discover what they have learned and use this information to complete other tasks.

The Essay Question Quadrat is a reflective assessment that benefits students by appealing to all learning styles. The four quadrats consist of questions pertaining to recall, relationships, reasoning, and reorganization of concepts covered in the reading.

By looking at the text from many different perspectives, students are better able to interpret and later relate concepts to new areas of the text. Memorization of the text is not the objective of any classroom and therefore time should be spent on relating concepts to everyday situations and the world around us.

**Example:**

<table>
<thead>
<tr>
<th>Recall:</th>
<th>Relate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Identify the 5 levels of organization of living and nonliving parts of the environment and provide an example of each.</td>
<td>-As a human, you have developed specific feeding habits. What other organisms have taken on this same feeding habit and what do they eat?</td>
</tr>
<tr>
<td>-What are the 3 symbiotic relationships that organisms develop? Give</td>
<td>-Create a realistic food chain that utilizes four trophic levels and ends with your</td>
</tr>
</tbody>
</table>
an example for each relationship.

<table>
<thead>
<tr>
<th>Reason:</th>
<th>Reorganize:</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Compare and contrast the feeding habits of heterotrophic consumers and decomposers.</td>
<td>-What if you were the primary herbivore in a habitat and another herbivore moved into the territory overtaking your niche, what would you do?</td>
</tr>
</tbody>
</table>

**Reading Strategies (5)**

The fifth reading strategy involves the third stage in which students reflect and analyze what they read about.

By creating a short (2–3 sentence) daily journal, students are able to express their understanding of a particular topic in their own words. They create their own perception of the text and analyze what they feel is important. Students are also able to relate the topic to past experiences/feelings and other things the concepts made them think about.

*Example:*
Journal (10/17/05)
For today’s class we read about ecology and how living and nonliving things interact in the environment in which they live through their feeding/energy intake habits, survival relationships, and the flow of energy through the different ecosystems.
I saw a heterotrophic vulture eating a dead deer along side the road on my way to class this morning and it made me think of the trophic levels that were affected by this food chain.
Supplemental Material– Web Sites

(1) http://www.physicalgeography.net/fundamentals/9o.htm
   This site provides a great deal of supplemental reading related to the chapter currently being discussed. It provides visuals of both trophic level organization and a food web structure. Links at the bottom of the page lead you to a chapter summary which offers a more in depth exploration of the chapter. Paragraphs 4, 7, 8, and 12–17 apply to our textbook and allow students to see the material from a different writing style. At the bottom of this page there is also hyperlinks to the definitions of words if student are confused or want to see the meaning in a different view.

(2) http://nationalgeographic.com/
   The National Geographic Society is well known for their amazing magazine and the pictures that they capture. They also have generated a great deal of information about the biosphere that we live in. They have created an incredible website loaded with information. By simply typing in a word into the search engine, you will find numerous intriguing links to the world around you. If you can’t afford to see the world with your own eyes, National Geographic has graciously provided it at the click of a button. By typing in “habitat” I was provided with several links and the first one took me to a site entitled “Exploring your Habitat”. A more detailed look took me to “forests”
and I was provided with pictures, online adventures, games, online radio broadcasts, video of a rain forest with tons of information linked to the creatures.

Supplemental Material—Web Sites (cont.)

(3)  http://www.globalchange.umich.edu/globalchange1/current/lectures/kling/ecosystem/ecosystem.html
Though this site was created for a college classroom, it allows students to read the text information in a different format and from a different author. The first half of this site pertains to information that is covered in class and the second half is definitely a little higher level reading and more in depth than we plan on getting into in this course. The visuals used on this site cover biotic/abiotic components of the ecosystem, the flow of energy, and a simple food chain.

(4)  http://www.enchantedlearning.com/Home.html
This site provides a great search engine for finding definitions to scientific terms presented in the text. If a student is struggling to comprehend the definition of a key concept provided by the textbook, they can easily type the word into the search box and come up with an easy to understand meaning of the word.