Introduction

As stated in module 6, this document provides an example of a formative assessment analysis used to determine lesson outcomes. It also provides an example of the data-based instructional decisions resulting from the analysis. The example uses an error analysis with specific criteria.

This is the type of analysis and decision making you will be implementing in your Classroom Assessment Project. In your project, you could also use a rubric to conduct an analysis of student work/outcomes. When using a rubric, the analysis should be of the same specificity as the example.

Example Analysis

The following is an example analysis of student work resulting from an end of lesson formative assessment:

Lesson Objectives:
1. Students will be able to organize information to show an understanding of main ideas within a content area text through charting with a Venn Diagram.
2. Students will be able to identify elements of an ecosystem and compare and contrast two different ecosystems.

Independent Practice (used as end of lesson formative assessment):
After content instruction and guided practice on the elements of ecosystems and how to compare ecosystems, students completed the following as an independent practice:
Students read information about aquatic and grassland ecosystems (or listened, through the use of an MP3 player, to the information being read). Students used a highlighter to highlight elements of each ecosystem as they read/listened (green for grassland and blue for aquatic). They then identified common elements of both ecosystems by circling them. All elements were then put on a Venn Diagram.

Criteria for evaluation: 8 identified elements that are different for each ecosystem and 5 elements that are common to both.

Student Work Samples: See attached

Error Analysis:
Student 1 - identified 5 elements for grasslands, 13 for aquatic and 3 elements shared by both ecosystems. The elements he identified were varied and represented animal, plant, mineral, food/water categories. Since he identified 13 aquatic elements, his knowledge of that ecosystem is at mastery level, with one exception. He did not identify grass as being an element in both aquatic and grassland ecosystems (identified as only an element in grassland ecosystem). This misconception was cleared up when I conferenced with him about his work. When examining his understanding of grassland ecosystems, it was found that although he demonstrated understanding of the main idea of the text material by correctly charting elements, his demonstrated knowledge about grassland ecosystems did not meet the lesson objective mastery criteria. His background knowledge about grasslands coupled with the text did not provide enough information for him to build a complete
schema. Direct instruction along with further practice provided through a Webquest will be given. The Webquest will provide examples of several grasslands and the elements that make up the grassland ecosystem and the student will practice identifying the elements. His ability to determine common elements (compare) the two ecosystems is not at mastery level either but may be effected by his lack of complete schema about the grasslands. It is apparent that he understands the concept of compare/contrast since he correctly identified 3 elements that were the same.

**Student 2** – Was only able to identify 2 elements of the grassland ecosystem and 4 elements of the aquatic ecosystem. The elements he identified represented only animal elements although he did identify water as being common to both systems. Difficulty identifying elements may be related to his challenges with memory and incomplete schema of the elements that make up an ecosystem. Even though he was given a cue card reminding him of the different types of elements that make up ecosystems (along with examples), he needs more scaffolding in order to build his schema of the types of elements. Intensive direct instruction along with a structured Webquest activity in which he has to find examples of each type of element within ecosystems will be given. He did demonstrate understanding of the main idea of the text material by correctly charting elements and he was able to identify 4 elements that were common showing he understands the concept of compare/contrast, however, further practice (once he builds his schema of the types of elements) will be needed.

**Student 3** – Was able to identify 13 elements of grassland ecosystems and 10 elements of aquatic ecosystems. Further she identified 6 elements in common and demonstrated she understood the concept of compare/contrast. The diversity of the elements she identified demonstrated she understood all of the types of elements in ecosystems. Her correct charting of the elements in the diagram demonstrates her understanding of the main idea of the text. The only element needing further probing was her categorization of “people” as being an element of both grassland and aquatic ecosystems. Her explanation showed a well developed schema and creative thought. She said that she had seen a TV program that showed people living in an underwater research station and that she also knew that there are African tribes that live on the grasslands.

**Analysis of Whole Class Learning:** 13 out of the 15 students met or exceeded the evaluation criteria. They demonstrated their understanding of the elements of an ecosystem, the main idea of the text material and the concept of compare/contrast by correctly identifying the specified number of elements in both ecosystems and identifying the items that are common to both. The students who did not meet the criteria are included in the error analysis above along with possible reasons for lack of mastery and interventions directed at guiding them toward mastery.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Number of students not meeting criteria</th>
<th>Number of students meeting criteria</th>
<th>Number of students exceeding criteria*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify 8 elements of grassland ecosystems</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Identify 8 elements of aquatic ecosystems</td>
<td>1</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Identify 5 elements common to both ecosystems</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

*The students in this category added elements beyond what was found in the text. This demonstrates a very well developed schema of the ecosystems and generalization skills related to their knowledge of ecosystem elements.*
Pre-planning instructional ideas for the next teaching cycle: Differentiation of instruction within the next teaching cycle will follow the learning needs of each of the above groups of students. Students not meeting criteria will be provided instruction and practice as outlined above (intensive instruction will be focused on getting them to the level of understanding needed to join the next group). Students meeting criteria will be provided instruction and practice to move them to generalization of knowledge of ecosystem elements. Students exceeding the criteria will work on synthesizing and applying their knowledge of ecosystems by creating a new ecosystem.

Work Samples Below
Student 2

- Fish
- Shark
- Water
- Tiger
- Grassland
- Aquatic
Student 3

B

Grassland

Bugs

Elephant

Sheep

Grass

Cow

Dolphin

Dory

Sharks

Hammerhead Shark

Turtles

Krill

Antelope

Elephant

Lions

Cheetah

Ducks

Eagles

Aquatic

Bushes

Swords

Car

Art

Coral

Fish

Sharks

Dolphins

Krill

Hammerhead Shark

Turtles

Antelopes

Lions

Cheetahs

Ducks

Eagles

Aquatic