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## Structured Feedback: A Tool for Teaching and Learning

A three-fold approach to teaching based on learning (new knowledge acquisition); application (transferring that new knowledge to real life situations/settings), and; reflection (refining and adjusting content and delivery) is very important for teachers to prepare students in the emerging global society. This three-fold approach also offers a unique setting for learners to attain the knowledge and skills needed for higher order learning and thinking. In the following paragraphs, we describe a strategy, "Structured Feedback" that we have used in our efforts to improve teaching and learning at the undergraduate level. First, we define the strategy and describe the process used to implement the strategy. Second, we present results of its use in two courses and comment on student and teacher perspectives on the use of this teaching strategy.

Structured Feedback is a mid-semester learning/assessment tool designed to provide feedback to students and for the instructor to adjust teaching during the course of the semester. In Structured Feedback, students respond to their level of confidence in learning (or not learning) the content/topics presented in class (see Figure 1). Each student in class is provided with a Structured Feedback form to indicate their perceived level of confidence on the topics/concepts discussed in class. The form is divided into two sections. Section one contains the course # and title, space for writing student name, date, and lists topic/concepts discussed in class. Section two contains two boxed areas for students' responses. Students write the topics/concepts with which they are confident in the "upper" box, and write topics/concepts with which they are not confident in the "lower" box (see Figure 1).

**Figure 1:** Structure Feedback Form



**AEE 496A**
**Introduction to Research Methods – First Quarter Assessment**

Name: _____    Date: _____

Topic: UNIT I – Research Foundations

Characteristics of Research              Research designs
Components of a Research study           Types of research
Scientific Reasoning                     Conceptual and Theoretical frameworks
Variables and levels of variables
Hypotheses
Definitions

Of all the topics discussed so far in Unit I, identify the topics you feel confident you learned something or clear to you. Just identify the topics.

- Characteristics of research
- Components of a research study
- Scientific reasoning
- Variables and levels of variables
- Hypotheses
- Definitions
- Research designs
- Types of research

Of all the topics discussed so far in Unit I, identify the topics you feel not confident or unclear to you. Just identify the topics.

- Conceptual and theoretical frameworks
-

The instructor gathers the Structured Feedback responses from each student and summarizes the responses to determine which topics or concepts students are confident and comfortable with and which topics or concepts students had difficulty understanding or need emphasis or reinforcement. An example summary of responses of all students are recorded in a matrix table format (Figure 2) where the concepts/topics are listed on the left column of the matrix table while the student identification numbers are listed on the top row of the matrix table. As feedback, each student receives an individual Structured Feedback sheet and summary of responses (matrix table) for the entire class. Responses from left to right in the matrix table (Figure 2) reflects the overall response for the entire class, while the responses from top to bottom reflect individual student feedback.

The matrix table helps the instructor to make adjustments for the entire class as well as attention to individual students in the class. For example, as shown in Figure 2, student # S3 needs emphasis in three of the topics, while the overall class needs reinforcement on topics such as conceptual/theoretical frameworks, and research classification topics. Other ways the matrix table can help the instructor include: 1) reemphasizing a particular topic or concept, 2) changing and/or adapting teaching style, 3) giving additional examples to clarify, and 4) meeting with individual students requiring further assistance.

**Figure 2:** Summary Sheet (Matrix Table) for Structured Feedback Responses

AEE 496A – Introduction to Research Methods
Spring Semester 2009
Structured Feedback Assessment Strategy Summary for Unit I – Research Foundations

| Unit I – Research Foundations /Topics | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Characteristics of Research | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 1/10 | oK |
| Research Process | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 2/10 | oK |
| Scientific Reasoning (LET Model) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10/10 | oK |
| Variables, classification, and levels | ✓ | ✗ | ✓ | ✓ | ✓ | ✓? | ✓ | ✓ | ✗ | ✓ | 2/10 | oK |
| Hypotheses and types | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10/10 | oK |
| Operational definitions | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10/10 | oK |
| Review of Literature | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10/10 | oK |
| Conceptual/theoretical frameworks | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ | (4/10) | |
| Research classifications based on primary objective, nature of data, and time | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✗ | ✓ | 2/10 | oK |
| Basic vs. Applied Qualitative vs. Quantitative Cross-setional vs. longitudinal | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ | ✗ | ✓ | ✗ | ✓ | (5/10) | |
| End Sought from each type of research | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 10/10 | oK |

We have used this strategy in two different courses at the undergraduate level. Student reactions have been very positive and almost all students agree that this teaching strategy helped clarify doubts they had about certain concepts/topics. Overall, students agreed that this strategy helped them identify where they need further help or reinforcement on key concepts discussed in class. Select student comments included:

*"I really liked this because I can ask the teacher to help in a systematic way."*

*"One way of showing that the whole class or very few students understood the concepts taught in class."*

From the instructor perspective, this strategy has helped to re-examine and re-evaluate time spent on a topic and corresponding evaluations. Further, the use of this strategy helped refine teaching skills, provided mechanisms to deliver feedback to students on a regular basis, and gave confidence that the students are learning as evidenced by performance and participation. From the students' perspective, students realize that they are responsible for content if they missed class. Structured Feedback is a valuable tool for both teacher and students in terms of reinforcing key concepts; in preparing or reviewing for exams; in changing teaching style or strategy; and making mid-semester adjustments.

The Structured Feedback strategy may not be applicable as defined in the setting of a large class because of its inherent time/effort requirements. However, creative use of instructional technology may address this limitation. Also, providing timely and frequent feedback to students is critically important for this strategy to be successfully implemented and to be of value to students and the instructor. As we try to improve this strategy further, we plan to explore: 1) how to capture or account for higher level learning objectives, 2) the amount of time spent on each topic and corresponding feedback, 3) other assignments to show linkages to learning objectives, and 4) linkages to test performance.

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