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# Self-Assessment of Oral Communication Presentations in Food Science and Nutrition

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# Self-Assessment of Oral Communication Presentations in Food Science and Nutrition

## **Abstract**

Self-assessment allows learners to observe, analyze, and evaluate their own performances. Self-reflection allows the student to assess his or her communication skill level and progress against a standard. Additionally, the implementation of self-assessment through carefully prepared classroom experiences enables learners to manage their own learning and encourages the habit of lifelong learning. The objective of this study was to compare self-evaluation formats for assessment of an oral communication activity. Senior students in 2 sections of a 1-credit seminar course were videotaped while presenting 30-min oral presentations to the class. Students viewed their presentations and assessed their work using either a scoring rubric or a reflection assignment. Peer and instructor evaluations were also completed. Average scores by students and instructor were similar for rubric and reflection assessment methods. Oral evaluation scores by peer assessment were higher than by self- and instructor-assessment. Students were able to accurately describe the strengths and weaknesses of their presentations; however, comments from the reflection format were more thoughtful and provided more personal information in comparison to the scoring rubric. This study demonstrated the importance of reflective material such as student thoughts and feelings. Skills in reflective self-evaluation and documentation of their progress in oral communication will help students position themselves to develop their own academic and professional goals, provide feedback to instructors, and compile a record for future employers.

## **Disciplines**

Health Information Technology | Higher Education | Interpersonal and Small Group Communication | Other Food Science

## **Comments**

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**Self-Assessment of Oral Communication Presentations  
in Food Science and Nutrition**

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Title: Assessment

JFSE Section: Classroom techniques

## **ABSTRACT**

Self-assessment allows learners to observe, analyze, and evaluate their own performances. Self-reflection allows the student to assess his or her communication skill level and progress against a standard. Additionally, the implementation of self-assessment through carefully prepared classroom experiences enables learners to manage their own learning and encourages the habit of life-long learning. The objective of this study was to compare self-evaluation formats for assessment of an oral communication activity. Senior students in two sections of a one-credit seminar course were videotaped while presenting 30-minute oral presentations to the class. Students viewed their presentations and assessed their work using either a scoring rubric or a reflection assignment. Peer and instructor evaluations were also completed. Average scores by students and instructor were similar for rubric and reflection assessment methods. Oral evaluation scores by peer assessment were higher than by self- and instructor-assessment. Students were able to accurately describe the strengths and weaknesses of their presentations; however, comments from the reflection format were more thoughtful and provided more personal information in comparison to the scoring rubric. This investigation demonstrated the importance of reflective material such as student thoughts and feelings. Skills in reflective self-evaluation and documentation of their progress in oral communication will help students position themselves to develop their own academic and professional goals, provide feedback to instructors, and compile a record for future employers.

## **Introduction**

Classroom assessment is described by Huba and Freed (2000) as: "...the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning (p. 8)." This description encompasses the process and goal of assessment with the implication that instructors are the individuals in the classroom who engage in the assessment process. The results of assessment, as intended by Huba and Freed, seem much too important to leave to the instructor alone. This investigation is based on the premise that students also benefit by participating in the assessment process and the focus of the investigation is student self-assessment.

Institute of Food Technologists Education Standards were established to enhance excellence in food science education through use of outcome-based measures of student learning. Shared learning outcomes and well-designed assessment tools assure that students within a program meet the learning objectives. It is necessary to use multiple assessment tools, including self-assessment, to determine achievement of course and program goals (IFT, 2008).

When students engage in self-assessment, the result can benefit both students and instructor. For the instructor, student self-assessment provides feedback regarding the effectiveness of current teaching approaches used and offers insights regarding future classroom needs. Self-assessment reveals what students have learned as well as bringing to the surface potential student misconceptions regarding course content. Finally, self-assessment results in opportunities for instructors to build relationships with students as a result of increased interaction with them that is part of the assessment process (CELT 2008).

For students, self-assessment is an integral part of the learning process. Self-assessment facilitates students' abilities to transfer knowledge from the classroom to other settings; through self-assessment, students learn to take charge of their own learning, a practice that can carry over into their professional lives. As assessment opportunities guide students in developing their abilities to manage and take responsibility for their own learning, students may experience an ability to think more critically about course content. Additionally, some sources believe the self-assessment process enhances students' perception of instructor interest and concern regarding them and their classroom success (CELT 2008; Mentkowski and Associates 1982; The National Research Council 2000).

When formally integrated in a learning environment, self-assessment encourages the habit of lifelong learning. The entire curriculum of Alverno College, a private women's school, is based on self-assessment: "...the ability of a student to observe, analyze, and judge her performance on the basis of criteria and determine how she can improve it (Alverno College Faculty 1994, as reported in Locker 2000, p. 3)." The design of the curriculum necessitates the individual constantly reflect on her performance with the expectation that when students leave Alverno College, self-assessment guides their lifelong learning.

The purpose of this investigation is to compare 2 methods of self-assessment, a rubric and a reflective piece, to determine what, if any, differences might emerge regarding the two methods. Self-assessment is viewed as an integral part of the learning process and is also valued for its usefulness to students when they enter their professional lives. To identify the benefits of the rubric compared to the reflection would add value to the self-assessment process.

### *Rubrics*

The origin of “rubric” is uncertain although Lantz (2004) speculated the term originates from the Latin *rubrica*, referring to the Roman practice of using red earth to mark items of significance. The use of the rubric as an assessment tool today is to identify criteria that are especially significant to meet a learning goal. A specific type of rubric, the holistic performance list, identifies criteria with an accompanying point value for each criterion. That is the type of rubric used for this investigation.

Among the advantages of using a rubric is that it takes the guess work out of what is expected from students by clearly stating those expectations. The clarification of expectations also makes them useful as assessment tools for complex tasks. Richlin (2006) recognized that rubrics use a common vocabulary to enhance consistency when a number of individuals, such as peers and the instructor, are conducting assessments. Finally, a rubric gives students direction in mastering the next level of accomplishment for each criterion. Potential problems resulting from the use of rubrics are: the choice of criteria might appear to be subjective if learners are unaware of their significance or unfamiliar with the concept being assessed; the detailed nature of a rubric is in danger of obscuring “the big picture” of the concept being assessed; in the case of the holistic performance list rubric, the points given each criterion may be awarded inconsistently by reviewers.

### *Reflections*

The use of reflection pieces as assessment can be traced to John Dewey’s work, *How We Think* (1910). Dewey defined reflective thought as “Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends (p. 10).” This partial definition fits well with the

application of reflection to self-assessments. In the classroom, reflections serve several purposes: they ask the learner to assess his or her level of accomplishment on a task, to consider the causes of this result, and to set goals for future progress. As Mentkowski and Associates (1990) pointed out, reflections used for assessment purposes help the student develop future goals based on an understanding of their past and current work.

There are a number of advantages of using reflections as a self-assessment tool. The process of self-reflection can be useful beyond formal education and assist learners in managing their personal and professional development throughout their lifetimes (Moon 2004) because learning requires the learner to actively practice the content, writing a reflection becomes an active learning process. It is possible that for some students, it is the reflection that enables the knowledge to “sink in.” When knowledge is complex or messy, reflection may be helpful in bringing order to it. Finally, the learner has opportunities to learn more about him or herself through the preparation of the reflection.

A potential disadvantage to the use of reflection emerges as a result of some researchers' conclusions that reflection is a developmental and a learned process; that is, instructors may feel ill-equipped to develop reflection assignments and students may feel just as ill-equipped to respond to these assignments if efforts are not taken to learn the process. Unlike the rubric which essentially requires the user to select a level of accomplishment from a predetermined set of choices, reflective assessment requires students to generate the reflection. Students must be guided in the process of reflection and in developing the thinking ability to reflect at different degrees of sophistication. Reflection may be a curriculum issue in addition to an assessment procedure. An additional disadvantage is that, unlike the rubric from which criteria could be arbitrarily selected, reflective assessment is not a task that should be practiced superficially.

Finally, decisions such as whether reflections should become weighted in the course grade and the extent to which they are weighted offer additional challenges.

### **Materials and Methods**

The 2 methods of assessment chosen for this investigation were the rubric and a reflection assignment (Figure 1 and 2). The rubric was chosen because the department traditionally employs rubrics for assessment with a variety of assignments across the curriculum. The reflection was selected as it has recently become a component in the development of a department-wide electronic portfolio project. The purpose of this investigation was to determine whether either showed advantages as assessment and learning devices.

Learning objectives emphasized by both the rubric and the reflection were: student ability to present research and general content; delivery skills; audience interaction during the speech and response to audience questions. The rubric and reflection assignments demonstrated that even when similar criteria are prioritized, the nature of the assessment devices require different formatting with the rubric components more specific and the reflection questions more global.

Senior students of a 1-credit seminar course (Professional Seminar in Food Science and Human Nutrition, FSHN 480) presented 30-min videotaped oral presentations. Students were given the assessment tools (rubric and/or reflection) at the beginning of the course to guide them during development of the assignment and give direction for the presentations. Both assessment tools were available to all students and students were free to discuss course content and assessment methods. Students in each section did not conduct presentations on the same day. Rubrics (the traditional method of assessment for oral presentations) by peers and instructor were completed on the day of presentations. Students viewed their own presentations and assessed

**FSHN 480 Oral Presentation  
Self-Evaluation Rubric**

Main point(s) of the presentation:

\_\_\_ Clarity of Purpose (assign up to 20 points)

Was the purpose of the presentation absolutely clear?

If not, how could this have been improved?

\_\_\_ Content (assign up to 20 points)

Was it on an interesting topic? Why?

Was the rationale logical?

Was the audience addressed at the proper level?

\_\_\_ Presentation Skills (assign up to 10 points)

Did the presentation style enhance the overall presentation?

What were the strengths?

What were the weaknesses?

\_\_\_ Organization (assign to 10 points)

Was the presentation well-organized?

Did it follow a logical order?

If not, how could this have been improved?

\_\_\_ Ability to Engage the Audience (assign up to 10 points)

How well was the audience engaged?

Did the presenter stimulate discussion and/or questions?

What did the presenter do that successfully engaged the audience?

What did the presenter do that disengaged the audience?

\_\_\_ Quality of materials used in the presentation (assign up to 10 points)

Were the materials used appropriate?

Did the materials used enhance or detract from the presentation? How?

\_\_\_ What was the level of overall effectiveness by the presenter (assign up to 20 points)?

Figure 1- Rubric for self-evaluation of oral presentations.

their work using either a scoring rubric or a reflection assignment. Presenters returned the self-evaluation (rubric or reflections) the week following his/her presentation. Students in section 1 (n = 17) completed the self-assessment using the rubric and students in section 2 (n = 18) completed self-assessment using the reflection format. The students using the rubric were invited to write comments about their work. Each self-assessment method included a self-score (0 to 100); the scores were averaged for each section.

Peers (6 students per presenter) and the instructor (1 instructor, the same instructor for both sections) completed evaluations of the oral presentations using the rubric. Students in one section completed self-assessment using the rubric and students in the other section used the reflection questions. Instructor and peer-assessments were completed using the rubric only. The instructor and peers used the rubric and students used either the rubric or reflection format for self-assessment. The instructor and peer evaluators gave each presenter a numerical score (0 to 100); average scores for each section were reported.

**FSHN 480 Oral Presentation  
Self-Evaluation and Reflection**

Please review your oral presentation on the videotape/CD and answer the following questions about what you learned.

1. How effective were you in translating the research information topic to your audience?
2. How effective were you in answering questions about the topic?
3. What would your score be if 100 = no improvement needed? What would you need to do to improve your score?
4. How did preparing and presenting the information improve your understanding of the topic?
5. What did you learn about yourself while preparing/presenting the research information?
6. How will you approach this experience the next time you have to interpret scientific information to a lay audience?

Figure 2- Reflection questions for self-evaluation of oral presentation.

Comments from both rubrics and reflections that demonstrated self-reflection were selected by the investigators.

Analysis of variance (ANOVA; Microsoft Office Excel 2007) was used to compare self-evaluation scores for the rubric and reflection methods of assessment (not shown) and to

compare effect of evaluator (self, peer, or instructor). When F-values were significant, least significant difference (LSD) values were calculated ( $P < 0.05$ ).

## Results and Discussion

Oral presentation scores rated by students using the self-assessment rubric or reflection were not different (Table 1). There was no interaction between method and evaluator so main effect means were reported. Scoring results for evaluators are presented (Table 1). Peer evaluation scores were higher than self-assessment ratings or scoring by the instructor.

Table 1-Comparison of two assessment methods and evaluators for oral presentations.

<b>Evaluator</b>	<b>Rubric</b>	<b>Reflection</b>	
Self	90.2	88.4	NS
	n=17	n=18	
<b>Evaluator</b>	<b>Rubric Section</b>	<b>Reflection Section</b>	<b>Total<sup>z</sup></b>
Self	90.2 n=17	88.4 n=18	89.3 <sup>a</sup> SD =
Peer (rubric only)	93.6 n=6	91.5 n=6	92.6 <sup>b</sup> SD =
Instructor (rubric only) n=1	90.7	89.8	90.3 <sup>a</sup> SD =
	91.5	89.9	LSD = 2.29

NS = not significant,  $p < 0.05$ .

<sup>z</sup> Main effect means for evaluators. There was no interaction between method and evaluator type.

<sup>a-b</sup> Means not followed by a common letter are significantly different,  $p < 0.05$ .

### Rubric Results

The rubric provided guidance to the students in preparing and presenting the assignment, as indicated by similar student and instructor scores. The rubric responses required students to focus on presentation components prioritized by the instructor; however, the comments were sometimes perfunctory, such as “not well” (Table 2), and may have been limited by the items on the rubric. An exception to this was the delivery component where comments indicated that

students exhibited an awareness of their delivery behaviors. None of the comments focused on lessons learned from this assignment that might be applied to future presentations. Possibly a rubric is helpful when the technicalities of an assignment are the priority or during initial exposure of students to the concept.

Table 2-Comparison of selected student self-evaluation comments.

<b>Common Assessment Question</b>	<b>Rubric with Scoring</b>	<b>Reflection Questions</b>
Content (rubric # 1 and 2)/Translation of Research (reflection #1)	“Statistics were very interesting and surprising.”	“My presentation was interesting, followed a logical order, and had good content.”
	“Always kept audience up on what we were covering and discussing throughout presentation.”	“I was able to look at the audience and gauge their reactions.”
	“Information was relevant to studies presented.”	“I could tell in the questions at the end of the speech that everyone was listening.”
Presentation Skills (rubric #3,5, 7)/Understanding Topic (reflection #4, 5)	“I did a good job at not always standing behind the desk.”	“I learned that less is more on PowerPoint.”
	“Sometimes, I swayed back and forth too much.”	“I became personally involved and fascinated with the topic.”
	“Sometimes, I fiddled with my hair.”	“To fully explain the topic to others, I had to fully understand it myself.”
	“I had good eye contact and hand gestures.”	“I had to go beyond memorization and really digest it.”
		“Preparing and practicing are vital to my performance.”
		“I really learned self-confidence through this project and felt a great feeling of pride once it was complete. I am becoming more professional...”
Ability to Engage Audience (rubric # 5)/Effectiveness in Answering Questions (reflection #2)	“Not well.”	“I could give exact answers for most of the questions.”
	“At the end, yes, but not a great amount.”	“Moving toward the audience and being more relaxed made the audience feel more comfortable asking questions...which increased the effectiveness of my answers.”
	“I was relaxed and appeared to be conversational.”	“Because I get nervous, I felt I could have done a better job answering questions. I did okay, but I relied on my partner more than I should have.”
	“The audience was not very well engaged. They looked bored and disinterested.”	“I should have thought more about the questions before answering.”
	“We did not ask many questions or make great eye contact.”	“Greater enthusiasm would have increased my effectiveness.”

### *Reflection Results*

Students were guided in the development of their reflections by a series of questions provided by the instructor. The questions were sufficiently focused as to guide responses on the presentation components but open-ended enough that the response was left to the student.

Although not statistically different, students' scores were slightly lower than the instructor's scoring of the assignment and lower than the average of the group who self-assessed with the rubric. Reflections tended to be substantive with students indicating a self-awareness of their work as they presented and of audience responses to their presentations.

These observations led to conclusions about actions needed to develop stronger future presentations (Table 2). The nature of the planning and goal-setting that resulted from the reflection assignment is consistent with theories associated with life-long learning that show adults use their past experiences to plan their future actions (King and Kitchener 1994, Mezirow 1990). The reflection assessment may not be as comprehensive in terms of demonstrating knowledge about presentations as the rubric assessment, however the results were more focused on the specific strengths and weaknesses of the presenter than was the case with the rubric assessment. Despite the advantages of the reflection assessments, it should also be recognized that some of the reflection comments were more descriptive than prescriptive; for example, "My presentation was interesting, followed a logical order, and had good content." does not indicate an awareness of the presenter's decisions or actions that resulted in these positive qualities. For the reflection to benefit future presentations, it would be beneficial for the presenter to provide evidence or speculate regarding behavioral motivations to support conclusions.

### Conclusions

The results of this study show that self-reflection assessments seem to enable the student to move beyond the framework imposed by rubrics, thus making the assignment a part of their personal and professional development and enabling students to own the knowledge conveyed through the assessment, a very personal learning experience. It might be assumed, for example, that students who reflected on their responses to audience questions saw this as a critical area, either for its positive outcome or for its need to be improved, in comparison to other areas of their speeches. Therefore, the audience interaction is what they wrote about.

The results of the 2 assessment devices used may indicate the format of the assessment is dependent on the instructor's objectives. If the purpose is to help students learn about key skills and to identify varying levels of accomplishment of those skills, rubrics may be the more beneficial choice because they operate as a teaching tool that guides and focuses on the important concepts associated with an area of knowledge or on the content inherent in a curricular goal.

This investigation was preliminary and future explorations would benefit from a more systematic analysis of student reflection data. A qualitative analysis of the reflection responses and the rubric comments would be helpful in determining whether the learning experience resulting from either differed. Another area for future exploration would be the nature of the questions asked in the reflection to determine how students can be guided to reflect in increasingly more sophisticated ways. Finally, the challenges reflections present in terms of the overall curriculum need to be identified and addressed.

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