

The Business Meeting - An Alternative to the Classic Design Presentation

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Introduction

There is an increasing consensus among both academics and practicing engineers that effective communication skills are an integral part of an engineering education (1-3). For engineers who had been out of school for ten years, Kranzber (4) reports that the most common answer to the question "What courses do you wish you had taken?" was English courses. However, both ABET (5) and the rest of the technical community (6) are recognizing that communications are part of a broader package of interpersonal, communication, and teamwork skills, that Seat (7) refers to as "performance skills". Many educationally focuses programs, including Rowan (8) and the University of North Dakota (9) have integrated technical communication into their core engineering curriculum. However, in many cases, oral communication exercises in engineering consist of little more than giving repeated technical power point presentations to an audience and answering a few brief questions at the end. This exercise emulates a presentation at a technical conference, but very little else in the business world. There can be no doubt that this presentation format is valuable, but it should not be the only experience that an undergraduate engineering student receives.

Conducting a business meeting instead of a final presentation in senior plant design provides an alternative to ANOTHER formal oral presentation. In this model, student teams plan and conduct a formal business meeting with faculty and industrial representatives serving in formalized roles. Details of the process are provided below.

The Process

Each design team is asked to conduct a business meeting with the executive committee of their company/customer. The executive committee consists of:

- The Chief Executive Officer
- The Engineering Director
- The Finance Director
- The Marketing/Sales Director
- The Safety/Environmental Director
- The Proposed Plant Manager

Obviously, the number of members on the executive committee and their specific roles can be altered to accommodate the number of faculty and/or industrial representatives attending the presentations. Each group makes a formal presentation to this committee including a description of the proposed process, relevant design issues, an economic analysis, and recommendations. This presentation should not exceed 30 minutes. During the presentation, the committee limits itself to questions of clarification.

Following the formal presentation, the members of the committee will ask questions of the design group. Committee members may address their questions to the team as a whole, or to specific members. Although there is no time limit to the questioning period, 20-25 minutes may represent a typical length of time. During the presentation, the current speaker stands at the overhead projector or computer while the other group members are seated facing the committee. All group members are seated during the questioning.

Team Roles

Each member of the lab group should perform a specific function on the team. At least three distinct roles must be filled:

1. The Team Leader - This member is responsible for providing the introductory material and anything dealing with the “big picture”. Team leader responsibilities include making sure that all members of the group are given sufficient opportunities to participate in the questioning and that EVERY question receives an adequate answer.
2. The Economics Expert - This member is responsible for presenting the economic analysis and fielding detailed questions about economic calculations and other issues.
3. The Engineering Expert - This member is responsible for presenting the technical aspects of the process including equipment selection, sizing and processing issues. This person should be prepared to justify technical assumptions and other process decisions.

Teams with four members may divide either the economics or engineering issues between two members, but there must be only one team leader. Obviously, these positions may be further divided or additional roles may be added to accommodate larger teams.

Grading

Grading is based on both team and individual performances. On the presentation itself, the team as a whole is graded on a five-point scale based on the following items:

1. Visual Aids (Clarity, Font size, Usefulness)
2. Organization (Appropriate Structure and Flow)
3. Introduction (Grabs attention, Appropriate content)
4. Body (Completeness, Accuracy, Clarity, etc.) **x3**
5. Summary (Concise, Covers key points)
6. Overall Effectiveness (Did the speakers accomplish their goals?)

Total Possible Points: 40

Thus, each team member receives the same score from these 40 points. Individual team members also will be evaluated on:

- 7. Delivery (Volume, Clarity, Rate, etc.)
- 8. Poise and Appearance (Appropriate dress, Nervousness, etc.)

Total Possible Points: 10

Thus, every team member will receive up to 50 points from the presentation. 40 of these points will be the same for every member, while 10 points will vary from member to member. This division of team and individual grading makes all members accountable for the success of the time while maintaining individual distinctions.

The questioning period also results in a portion of the grade, but the mechanism will be different for the experts and the team leader. Each expert will be evaluated on the following items:

- 9. Poise (Calmness, Ability to “think on one’s feet”)**x2**
- 10. Ability to Answer **x2**
- 11. Interaction with Audience (Eye contact, Demeanor)

Total Possible Points: 25

Thus, each expert has 25 possible points for his or her role during questioning. The experts' total for the presentation and questioning will be divided by 7.5 to provide a 1-10 grade. The team leader has additional responsibilities during the questioning, so his or her scoring is more involved. The team leader will be evaluated on:

- 9. Poise (Calmness, Ability to think on one’s feet) **x2**
- 10. Ability to Answer **x2**
- 11. Interaction with Audience
- 12. Distribution (Were all members of the group used well?) **x2**
- 13. Responsibility (Were all questions suitably answered?) **x2**

Total Possible Points 45

Each team leader has his or her total score divided by 9.5, resulting in the same 1-10 grading as the experts. It is important to note that the team leader does not receive more credit than the other team members, but that more of the team leader’s grade is determined by the questioning. A sample grading sheet follows.

Final Meeting Grade Report

Evaluator: _____

Project: _____

Common Presentation Grades:

1. Visual Aids (Clarity, Font size, Usefulness)
2. Organization (Appropriate Structure and Flow)
3. Introduction (Grabs attention, Appropriate content)
4. Body (Completeness, Accuracy, Clarity, etc.) **x3**
5. Summary (Concise, Covers key points)
6. Overall Effectiveness (Did the speakers accomplish their goals?)

Total Points

Team Leader: _____ Economics: _____ Technical: _____

Delivery _____

Delivery _____

Delivery _____

Poise and Appearance _____

Poise and Appearance _____

Poise and Appearance _____

(Questioning)

Poise x2 _____

Poise x2 _____

Poise x2 _____

Ability to Answer x2 _____

Ability to Answer x2 _____

Ability to Answer x2 _____

Audience Interaction _____

Audience Interaction _____

Audience Interaction _____

Distribution x2 _____

Responsibility x2 _____

Individual Total _____

Individual Total _____

Individual Total _____

Group Leader: _____ Economics: _____ Technical: _____

Team Total: _____ Team Total: _____ Team Total: _____

Individual Total: _____ Individual Total: _____ Individual Total: _____

Grand Total: _____ Grand Total: _____ Grand Total: _____

Score: _____ Score: _____ Score: _____

Selection of Experts and Team Leaders

Design teams select their own team leaders and experts. The team leader will be responsible for sending all members of the executive committee a brief e-mail that includes:

1. A formal invitation to the meeting including a mention of the time and place
2. A statement identifying the team leader and other experts
3. A BRIEF summary of the topic to be discussed during the meeting

The e-mail must be sent at least 24 hours before the meeting.

Results

The business meeting format has proven successful at two different Universities. Students report that they "felt more like a team" and were "less stressed" by the presentation format. Students with internship or other industrial experience reported that the format "was more realistic" and "closer to what they experienced in their jobs.' The faculty have enjoyed this method as well. Because of the group format, there was more time for detailed questioning. It was also easier to evaluate both group and individual performances. Overall, the business meeting provided a useful alternative to a classical oral presentation.

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