

Effective presentations: tips for success

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Presentations are given in a variety of environments, and effective strategies can be used to improve a speaker's presenting skills.

Presentation environments range from informal to formal, and presentation lengths generally range from a few minutes to what often feels like well beyond an hour. The classic presentation format is the method most commonly used to convey information in the scientific work place and meetings, but it is a technique that is often poorly implemented. A few choice guidelines, properly applied, can improve the result exponentially, and an example of how to structure presentations for the classroom format will be provided here.

The skills of effective presenting are principle driven, and educational literature provides those precepts that with practice are readily learned and applied—whether at a plenary talk to 8,000 immunologists at the International Congress of Immunology or with ten colleagues at a weekly lab meeting or to graduate students in a course.

It has been observed that most faculty members lack knowledge of educational principles and teaching strategies¹, and it has been proposed that principle-based teaching competencies apply in any format of teaching². To be effective, faculty need to be competent in developing a learning environment, actively engaging learners and being able to self-assess their own teaching competencies. Training faculty well in understanding educational principles results in people who are skilled and effective presenters³.

What makes a presentation effective? Three key principles discussed below can help lead to an effective presentation.

Principle 1: develop a learning environment

First, in developing a learning environment, a speaker needs to know what the format

can achieve. The presenter should determine what an audience can learn from the presentation. Given that a presentation is an excellent medium for providing information, generating understanding or creating interest, it is necessary to decide which of those three will be the basis of the talk. If, for example, the presenter's aim is to provide information that he or she has synthesized from a particular field, and those data are available in another format—a review article, for example—then the speaker should request that the audience members read the article before the presentation. Why should they listen to the speaker reiterate facts already in print? The presentation can then be about concepts and implications of what the presenter has researched. Knowing the goal to be achieved is the critical first step in preparing an effective presentation.

To further create the optimum environment, a speaker must know his or her audience and accept that they will arrive with some prior understanding and prior knowledge^{4–6}. That awareness will help gauge the level of complexity of the presentation. To know the audience, the speaker needs to gather as much information about the listeners as possible. If it is a scientific meeting, the speaker can find out who might be attending the talk from preregistration forms. Alternatively, at a medical school, it is prudent to inquire about the level and depth of the students' knowledge and how the talk fits into the curriculum.

If the talk is part of a course or a curriculum, it is essential that the speaker know what comes before and after the presentation. It is useful for speakers to know how their lecture is placed in relationship to other teaching strategies and other content. For example, one course developed at Harvard Medical School placed lectures in relation to clinical experiences. One goal of the course was to integrate the clinical aspects of a disease with the pathophysiological

mechanisms. The lecturer provided core basic science concepts about human inflammatory diseases after the students had observed patients in the clinical setting. In the clinic, each student observed and interacted with patients and developed an understanding of the realities of living with the diseases being studied. After the students rotated through each clinic, they had the opportunity to select one area of in-depth study and return weekly for additional clinical sessions in that specialty. The focus of their final paper was to design a new clinical protocol that incorporated the basic science of the proposed therapy into how the efficacy of the therapy might be monitored in patients. To make their presentations effective, the lecturers needed to understand each of the key components of the course.

The next step to developing an effective presentation is to set clear goals based on the audience. Even with the goals decided, the first piece of writing needs to be an outline that organizes the presentation into the following three sections: an introduction, a development phase and a conclusion. Each section has different goals.

In the introduction, the goal is to gain the audience's attention and arouse motivation. It is important to find a 'hook' that will make the audience want to stay and listen. Three classic strategies to catch attention of the audience are as follows: appeal to their interests, offer conceptual conflict or underscore certain contradictions in the field. For example, in a lecture at a scientific meeting, the presentation of new, unpublished data will (hopefully) appeal to the audience's interests. In a lecture to a group of medical students on an immunology topic such as the generation of antibody diversity, the introduction of conceptual conflict would be helpful, such as why the immune system in any one person is able to producing millions of different antibodies, each with

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PEER OBSERVATION OF TEACHING

Instructor:	Observer:	
Session Observed:	Date:	Comments
Establishing Learning Environment		
Introduces self & students.		
Knows learners and adjusts session accordingly.		
Respects learners.		
Demonstrates sensitivity to diversity.		
Incorporates learners' ideas.		
Is accessible.		
Managing the Session		
Communicates clear goals.		
Starts and Ends on time.		
Summary provided.		
Clear connection to previous future sessions.		
Content		
Instructor prepared.		
Main ideas clear.		
Supporting information provided.		
Use example of ideas explained.		
Instructor related ideas to learner's prior knowledge.		
Handouts are relevant.		
Student Interaction promotes learning		
Instructor engaged learners.		
Instructor posed questions/statements.		
Sufficient wait time.		
Students encouraged to ask questions.		
Instructor response to learners' questions.		
Instructor encouraged student's expression of uncertainty		
Rapport with learners.		
Verbal/Non-Verbal		
Voice: Articulation, pronunciation, volume		
Voice: Absence of fillers (er, ah, etc.).		
Body movement and gestures.		
Eye contact with learners.		
Instructor enthusiasm.		
Use of Media (if appropriate)		
Slide/chalkboard content.		
Slide/chalkboard organization.		
Slides appropriate in number.		
Slides well constructed.		
Presentation related to slides.		
Visual aids/other.		
3 Strengths		
3 Areas for Improvement		

Figure 1 Forms can help an observer provide feedback to a presenter.

distinct amino acid sequence and distinct specificity for antigen, even though the human genome contains, in total, only about 30,000 genes. In a talk leading to an explanation of DNA recombination, the question "How can that be possible?" would be recommended. Other effective strategies to arouse attention range from recounting a personal experience to relating a composed story that presents a challenge or a problem.

There are many effective strategies mentioned in the next section that will engage audiences in the first few minutes of a presentation and make them want to follow as the speaker moves on to the development phase. There the goal is to develop and explain concepts or clarify any discrepancies in the literature.

Principle 2: actively engage learners

The development phase of a talk helps organize content around concepts, and it provides key opportunities for actively involving the audience. Educational literature supports that idea⁴⁻⁶ and provides the rationale for why active learning is important. The literature on effective

lecturing proposes that shifting away from the goal of information transmission and rote memorization is essential to effective teaching⁷⁻¹¹. Passive learning in a lecture, characterized by rote learning and regurgitation of information, contrasts with active audience participation, which motivates the audience to interpret and apply information so that learning actually takes place⁸. It has been found that 'good' teachers are those with enthusiasm and skills in effective communication¹².

Jo Handelsman, a lecturer at Yale University and a recipient of many awards for effective lecturing skills, integrates active learning with small mini-assessments, such as quizzes, so she can determine whether the students understand the concepts being taught (<http://opac.yale.edu/undergrad/handelsman.html>). In her own class, she tries to lecture for no more than 20 minutes and then engages students in a discussion of the ideas that were presented. Thus, in the development phase of the presentation, some simple, effective strategies for the promotion of active learning are discussion, group work, brainstorming and voting.

The conclusion is perhaps the easiest section to organize; in this section, the speaker should reiterate key points of the talk, restate answers to questions asked or propose future trends in the field. Effectiveness in presentation requires that a cogent conclusion be provided.

After the presentation is written, what if any materials could be developed to support and enhance a speaker's content, whether audio-visual or printed? A handout that includes a brief abstract of the goals and objectives, copies of slides (if used) and references will complement any presentation in achieving such intended outcomes. Those can be provided online or in printouts. There are several caveats to the use of PowerPoint-style presentations. A first caveat is to ensure that the font—most presenters prefer Arial—is large enough to be read from the back of the room and that very few colors are used; a black font on a white background may seem plain but is really the clearest. A speaker should also remember that 10% of any audience is probably colorblind, most often mistaking red and green. Bad PowerPoint techniques are evident to all in their distracting use of background designs, pointless transitions, spelling mistakes and so on. Too much text on a single slide is not helpful; some of the audience will be trying to read the slide rather than listening to the talk, and others will be too far away to make sense of it. Fortunately there are resources aplenty, online and otherwise, to help speakers avoid common pitfalls, but Tufte's critical analysis still stands well in highlighting how visual materials can enhance or hinder a lecture¹³.

Principle 3: develop self-awareness of teaching skills

How should the effectiveness of a presentation be evaluated? Speakers should have not only awareness of how successful they were but also a method with which to evaluate their presentation. A presenter may have excellent content to present and may have organized it the very best way, but poor technique in delivery can completely undercut effectiveness. Certain approaches, several of them time-tested and worth adopting, are discussed below.

A presenter's voice, for example, needs to be loud enough that everyone can hear, whether or not a microphone is used. Practicing the talk by speaking it aloud and most especially speaking the words that might be confusing to the audience are extremely effective techniques that also provide a useful indication of the actual time the presentation will take. Along with that exercise, pacing of the speech provides a further facet worth exercising; slow delivery of some thoughts demonstrates impact, whereas fast delivery demonstrates passion. Pauses can be



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By using effective presentation strategies, a speaker can engage the audience in the first few minutes.

used to suggest reflection or to allow the audience think of a response to a question, rhetorical or otherwise.

One common mistake is to seem to be speaking to only one part of the room. It is important that the speaker make eye contact with the audience on the far right and far left and in the middle. Some speakers complain that direct eye contact makes them nervous or initially distracted, but focusing on the space between participants can help speakers overcome this until they are settled into the lecture.

It is important to be aware of body movement and body language. Some movement is good, but too much, such as shaking coins in a pocket, can be distracting. Speakers need to develop a self-awareness of style by judging how the audience is responding. Occasionally the speaker should move away from the podium and, if able to use interactive methods, move into the audience. Including an interactive strategy such as a case vignette will usually engage the audience and prevent distraction and even the ultimate effect of a poor presentation—sleep.

Finally, in the context of techniques, if the time allotted is coming to an end and not all subject matter has been covered, the speaker should be flexible and be ready to begin wrapping up; trying to race through the remaining slides or talking too fast thwarts a good ‘take-

home’ conclusion. The key is to begin on time and end on time.

Those are elements on which the presenter can build an awareness of effectiveness. There are external resources as well with which a presenter can become self-aware of his or her style. A peer can observe the presentation and provide feedback. An observation tool such as the one published by MedEdPORTAL (<https://www.mededportal.org/publication/8416>) is designed to provide the observer with domains to observe. There are forms available that can help an observer provide feedback to the instructor. The teaching behaviors listed on the form provided here (Fig. 1) are based on the literature, but they are not exhaustive, nor are all behaviors appropriate for every teaching session. A modified form is now in use at Yale School of Medicine (Fig. 1). The domains in bold font are used to guide the observation, and space is provided for descriptive comments based on observations.

Work on reflective practice has shown that speakers can reflect during the talk and make changes and, after the session, reflect on how the presentation went and how to make changes for the next time¹⁴. Making a video recording of the presentation to watch after the session is a useful tool. The distribution of a brief questionnaire, which can include some ratings relating to the presentation as well as opportunities

for open-ended comments, is an alternative. Finally, another possibility is to assemble a few members of the audience after the presentation for a brief period to offer comments and critiques.

Concluding remarks

In summary, the following three principle-based teaching competencies should be achieved: offer a climate conducive to learning, actively engage learners and develop a self-awareness of teaching competencies. Five quick key questions should be asked when selecting a presentation format. Who is the audience? What content should be included in the introduction, the development phase and the conclusion? What strategies will engage the audience? What, if any, materials could be developed to support and enhance the content? How can the effectiveness of the presentation be evaluated? Following the recommendations provided here should lead to an effective presentation.

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