

**FEATURES
SECTION**

Effective Teaching: The art of engagement Part 1

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Invited paper

Introduction

Today most orthodontists own a laptop computer that is equipped with PowerPoint (Microsoft Corporation) or some other type of presentation software. In addition, most orthodontists use a digital clinical camera with high resolution to gather photographic records of their patients before, during, and after orthodontic treatment. So any orthodontist has the capability to assemble a lecture or presentation for a group of dentists. What if you were invited to give a one-hour presentation about orthodontics to a local dental society, study club, or other specialty group? Would you accept? Most private practitioners would enjoy the opportunity to appear before their referring dentists and be recognized by their peers. What would you talk about? How would you structure the presentation? Will they like what you say? Will you teach or lecture? Now, you may think that teaching and lecturing are synonymous terms. But they are not. Anyone can stand in front of an audience and lecture. But the audience may not learn anything, if the presentation is not structured and delivered properly. Since most orthodontists have little training in the fundamentals of teaching, their presentations are often ineffective and simply become a 'show and tell' lecture. However there are specific teaching principles that can make any presentation a valuable learning experience for the audience. The following article will identify, illustrate, and discuss valuable guidelines that should help any orthodontist develop a more meaningful presentation and become a more effective teacher. The article is divided into two parts. In Part 1, we will discuss the formulation and organization of the presentation. In Part 2, we will provide information on the delivery, flow, and conclusion of the presentation.

Guideline 1 - Know Your Audience

Before you begin to plan your presentation, you must know to whom you are speaking. It is imperative that your topic is interesting and meaningful to as many individuals in the audience as possible in order to keep them engaged. Suppose the audience for your presentation will be the local dental society. This potential audience could include periodontists, pedodontists, oral and maxillofacial surgeons, prosthodontists, endodontists, orthodontists, and a large contingent of general dentists. Therefore, your topic should include as many of these disciplines as possible to maintain the audience's attention and keep them engaged. The worst strategy is to select a topic that excludes a large portion of your audience. For example, if you plan to show a series of examples of before and after dental records of treated orthodontic cases, in order to inform the general dentists in the audience about when to refer you their patients, your presentation would be perceived as exclusive and self-serving. When the audience develops this attitude, their minds become disengaged and you lose your ability to teach. So, when you are selecting a topic, the first point to remember is to select an *inclusive topic*. A wonderful example of a dental topic that is currently popular and would engage nearly all of the participants at a dental society meeting is the use of implants to restore missing maxillary lateral incisors in adolescent orthodontic patients (Figure 1a-f).

Vital information about key interdisciplinary aspects of this topic could easily be presented in one hour and would be of significant importance to: pedodontists, who monitor many of these young patients; periodontists and oral and maxillofacial surgeons, who will

**Know your audience
before you select your
topic.**

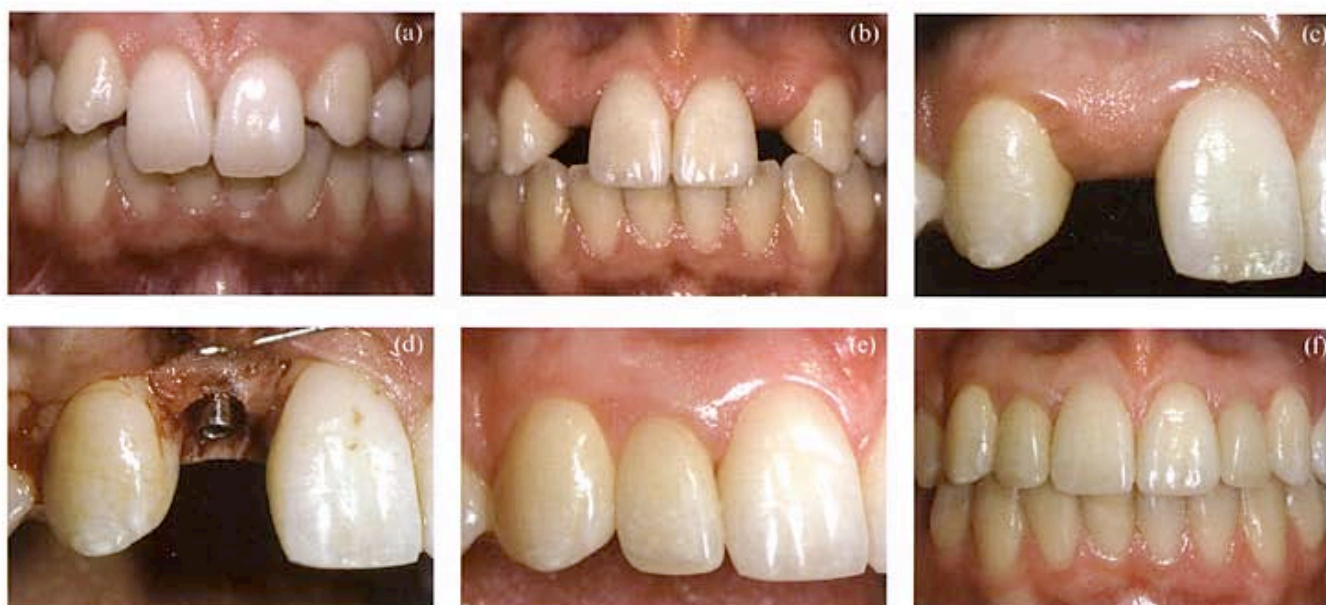


Figure 1 (a-f) Engaging an audience at a dental society meeting: select an *inclusive* topic that would engage most dentists. For example the topic of single-tooth implants to replace missing maxillary lateral incisors. During your presentation you could describe issues related to managing extraction of primary teeth, how much space is needed for the implant, the timing of implant placement, provisionalization of the space during adolescence, and coordination of final restoration. These subjects would provide information for pedodontists, periodontists, oral and maxillofacial surgeons, prosthodontists, and general dentists, and thus attendees at a dental society meeting

eventually place the implants after orthodontics; and prosthodontists and general dentists, who eventually will restore these implants. By including a majority of the participants in the topic selected, it will be much easier for you as the presenter to keep your audience engaged.

Another method of engaging the audience is to select a *unique* topic. A unique topic describes a challenging dental problem or situation that involves the majority of your dental audience. However, these dentists may not be aware of the benefits of orthodontics in overcoming this problem. An example of a unique topic is the management of an adult dental patient with significant mandibular incisor abrasion (Figure 2a-f).

This is a challenging situation for prosthodontists and general dentists to restore, because worn teeth continue to erupt to maintain contact. In order to restore abraded, mandibular anterior teeth, the dentist would have to remove more tooth structure to create space for the restoration. In addition, restoring short abraded teeth could require crown lengthening (periodontist) and/or root canal therapy (endodontist) and/or opening of the patient's vertical dimension of occlusion (oral and maxillofacial surgeon). However, many dentists do not realize that an orthodontist can intrude abraded mandibular incisors and create the space for restorations without removing more tooth structure or involving crown lengthening and root canal therapy. If you

selected this unique topic, you would involve nearly all of the dental society, and it would be easier to keep the audience engaged in your presentation.

A third strategy to engage your audience is to select a topic that will require you to *speak the language* of the audience. Remember, if you are speaking to a dental society, they will not be familiar with specific orthodontic terms. If you use orthodontic jargon such as maximum anchorage, Class II elastics, segmental mechanics, edgewise archwires, utility arches, etc., you will disengage your audience and your ability to teach is diminished. However, if you select a topic that requires

Select a topic that allows you to speak the audience's language.

you to use language that will be specific to most of dentistry rather than orthodontics, you will impress the audience with your broad knowledge of dentistry. This strategy will help to keep the participants engaged. An example of a topic that would require you to use dental terminology is the management of severely fractured maxillary anterior teeth in adolescents and young adults (Figure 3a-g).

This type of dental trauma could involve the pedodontist, oral and maxillofacial surgeon, periodontist, endodontist, prosthodontist, orthodontist, and general dentist. If an adolescent fractures a maxillary central incisor at the level of the gingival margin, two options are possible. One option is extraction and

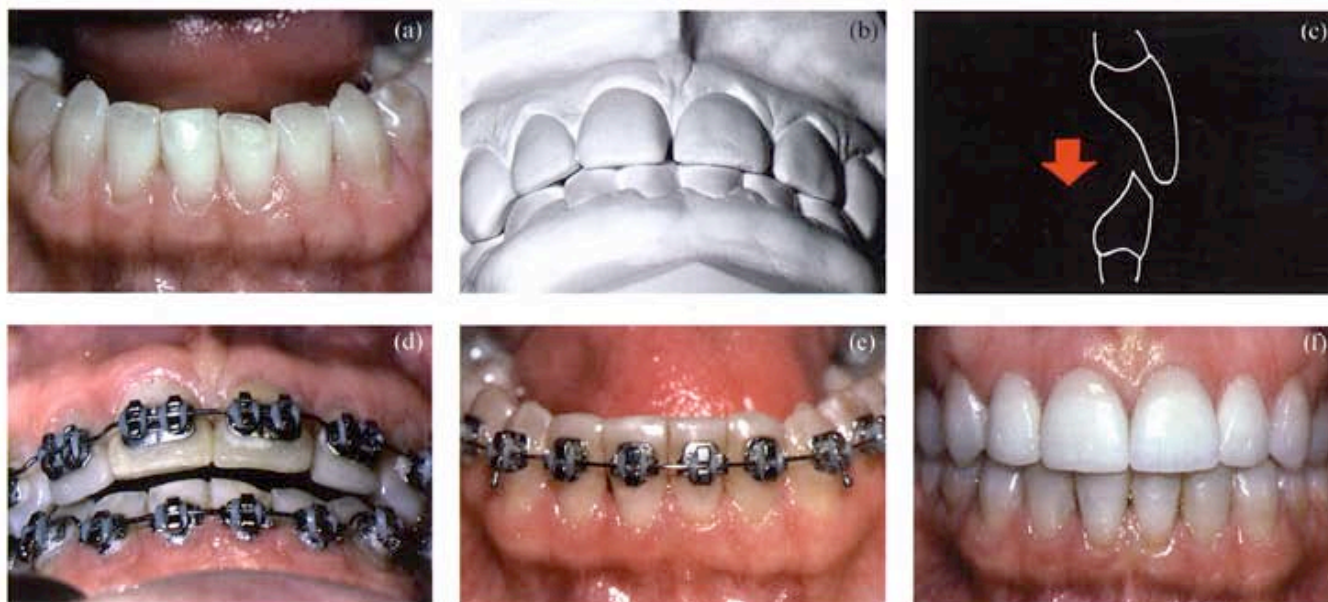


Figure 2 (a-f) A second way of selecting a subject to engage a mixed dental audience is to select a *unique topic* for example the management of severe mandibular incisor abrasion in adults. This is a difficult problem for the restorative dentist alone to manage. However, orthodontics can intrude abraded and overerupted mandibular incisors permitting the dentist to restore the teeth without further tooth reduction, and could eliminate the need for endodontics and periodontal crown lengthening. This topic has broad interest for several disciplines

replacement with an implant. A second option is forced orthodontic eruption to provide the restorative dentist with sufficient tooth structure to place a porcelain crown on the tooth. This would be an excellent one-hour topic

that would not only involve all of dentistry, but would require the orthodontist to use terms such as biologic width, connective tissue attachment, epithelial attachment, bone level, ferrule, root to crown ratio, apically

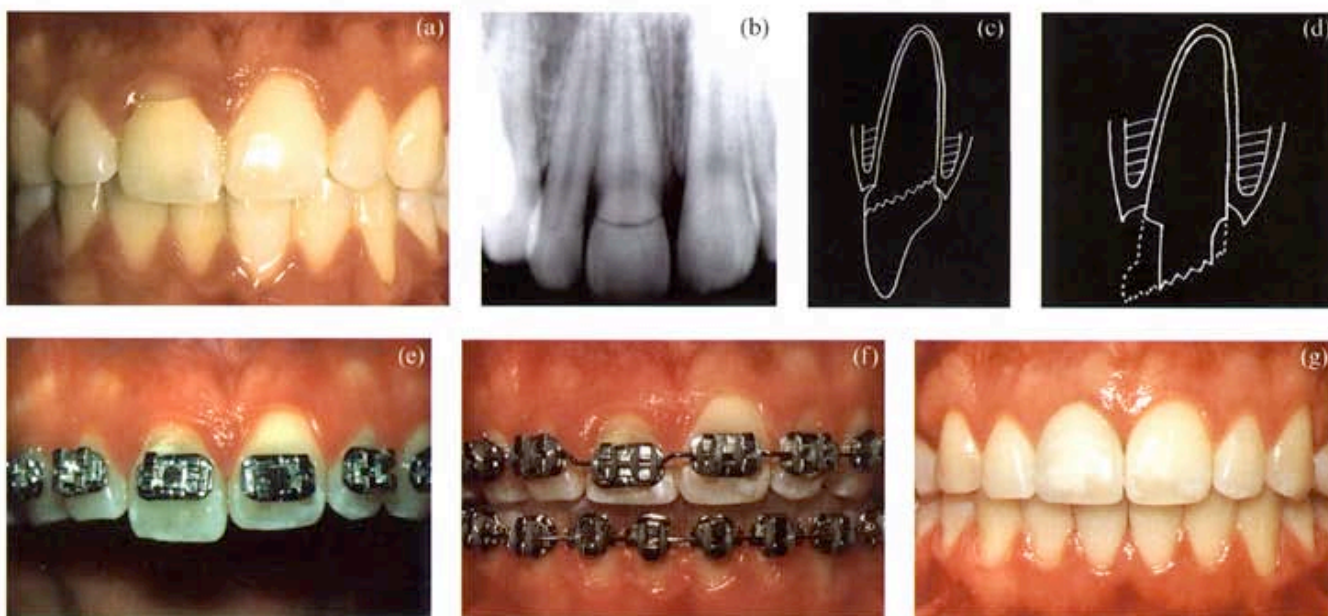


Figure 3 (a-g) Engaging a mixed dental audience with your presentation topic: select a topic that requires you to speak in the terms and vocabulary common to most dentists. Such a topic could be trauma and fracture of a maxillary central incisor down to the level of the alveolar bone. A possible solution for this problem is to perform forced eruption of the root, in order to restore the tooth. This treatment plan would require you to use terms such as biologic width, ferrule, emergence profile, post and coping, and other terms that are familiar to most dentists, but not used by orthodontists. Using these terms will help you engage the audience by using your broad knowledge of dentistry

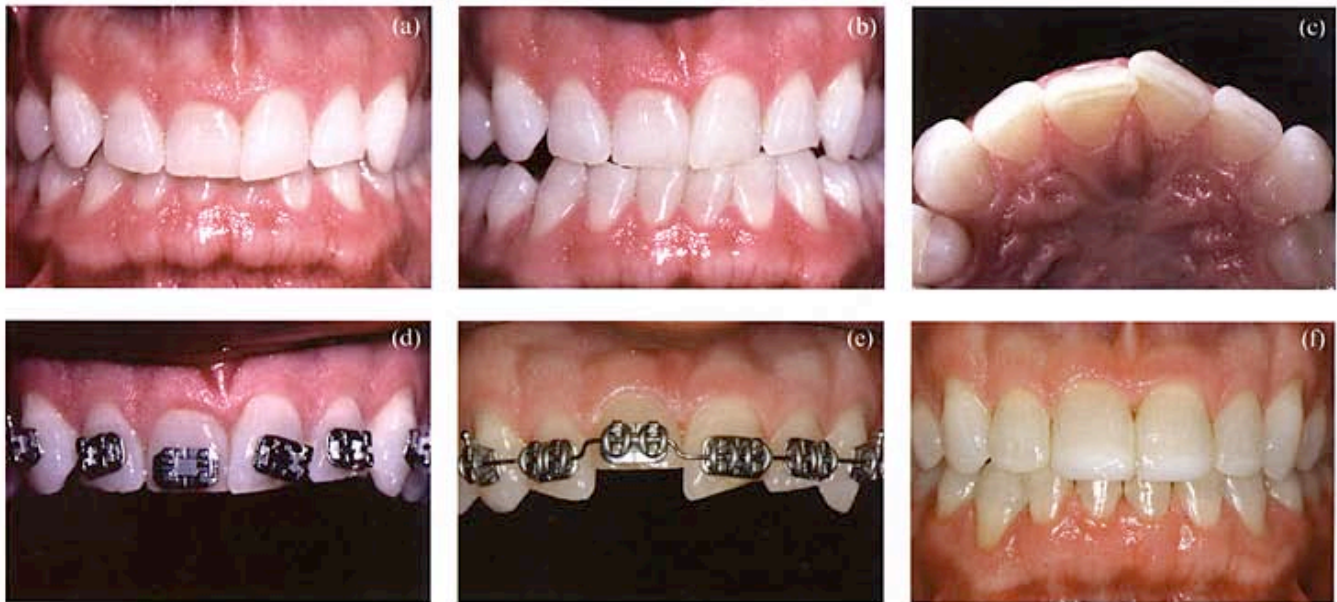


Figure 4 (a-f) A fourth method of selecting an engaging topic for a presentation to a group of dentists is to choose a subject that will enhance the esthetic appearance of a referring dentist's anterior restorative dentistry. Significant anterior maxillary abrasion would be an ideal topic. This topic would certainly engage the attention of the restorative dentists as it combines orthodontic intrusion with esthetic restorations

positioned flap, post and coping, and other terms that orthodontists seldom use, but are common to most dentists. If you show your audience that your knowledge base is broad by speaking the language and using the terms that they understand, you will keep the audience engaged and your teaching will become more effective.

A fourth method of engaging your audience is to select a topic that will *enhance the esthetic appearance* of a referring dentist's restorations. This strategy will certainly engage the restorative dentists in your audience and help them to understand the importance of tooth position in esthetic dentistry. A good example of this type of topic would be to discuss the management of patients with significant abrasion of their maxillary incisors (Figure 4a-f).

A protrusive bruxing habit may cause maxillary incisors to wear unevenly and continue to erupt producing gingival margin discrepancies between adjacent maxillary anterior teeth. You can teach the audience how to diagnose this problem and how to prescribe the appropriate solution. One of those solutions is to intrude the abraded teeth orthodontically. This approach will level the gingival margins and provide the dentist with an ideal situation for restoring these teeth with either porcelain crowns or veneers. The esthetic appearance of the dentist's restorations will certainly be enhanced by the orthodontic intrusion. This factor will improve your effectiveness as a teacher by keeping the audience engaged in your topic.

Guideline 2 - Breadth Versus Depth

You have selected your topic. You have one hour for your presentation. Now you must decide if your discussion will be general or detailed. We call this difference breadth versus depth. Too often the novice presenter overlooks this critical step in the planning process, and it results in an audience that becomes disengaged, and the ability to teach is diminished. A valuable way to distinguish between breadth and depth is to think of the subtopics of a presentation on either a horizontal or vertical plane. The horizontal topic provides breadth, and the vertical topic provides depth (Figure 5a-b). The same general topic can be covered in either manner, but one technique will have greater teaching impact than the other. For example, suppose

A good teacher knows when to select breadth versus depth.

the topic you selected for the dental society is to illustrate how orthodontics participates in the treatment of anterior esthetic dilemmas. You identify five esthetic problems that you could discuss: midline discrepancy, incisal plane asymmetry, uneven crown length, gummy smile, and open gingival embrasures. Under each of these subheadings, you decide to include four different solutions for each problem in order to illustrate how orthodontics, periodontics, oral surgery, and restorative dentistry play a role in the management of these esthetic dilemmas. So, you now have 20

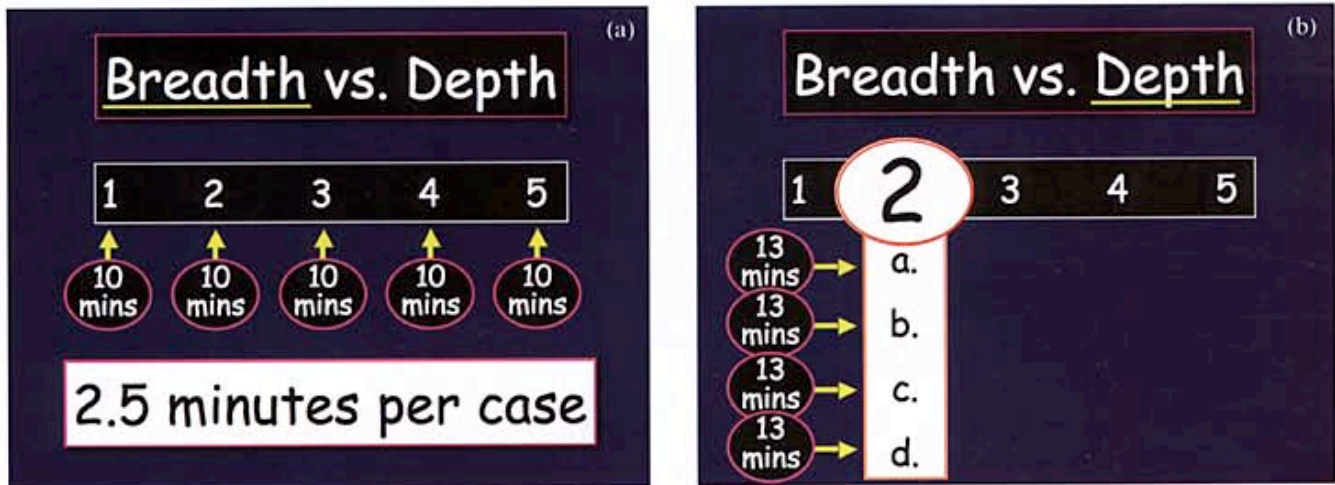


Figure 5 (a,b) A speaker must decide if the presentation will be general or detailed, referred to as breadth versus depth. A valuable way to distinguish between breadth and depth is to think of the subtopics of a presentation on either a horizontal or vertical plane. The horizontal format provides breadth, and the vertical format provides depth. The same general topic can be covered in either manner, but one technique will have greater teaching impact than the other. A good teacher recognizes the difference between breadth and depth, and for a presentation of one hour or less will typically choose depth rather than breadth to keep the audience engaged

subsections each being illustrated with a different clinical example. Remember, you only have one hour for your presentation. If you use five minutes for your introduction and five minutes for your conclusion, you have 50 minutes to discuss the treatment of 20 patients. This gives you two and one-half minutes for each example (Figure 5a). This is called covering a topic with breadth. With this approach you can provide a lot of general information to the audience, but your ability to teach is limited by the small amount of time you have allocated for each example. However, if you select just one of the five esthetic problems, for example incisal plane asymmetry, you could use the 50 minutes to carefully analyze and describe the differences in treatment for each of your four clinical examples. You could still involve the different dental disciplines in your discussion. The advantage is that you have 12–13 minutes for each example (Figure 5b), which allows you to cover each topic in detail, give the audience valuable information that they can apply to their practices, and keep the audience engaged in your presentation. This is called covering a topic in depth. A good teacher recognizes the difference between breadth and depth, and a presentation of one hour or less will typically use depth rather than breadth to keep the audience engaged.

Guideline 3 - Amount of Material

You have selected your topic. You will cover the subject in depth rather than breadth. The next challenge to the presenter is to determine the amount of material that you can present in one hour. The amount of material

can be subdivided into the number of clinical examples and the number of individual images or slides. Once your topic has been selected, you will identify clinical examples that will allow you to teach the principles to the audience. How many examples are needed to make your point? This is where the novice presenter differs from the teacher. The novice believes that the number of clinical examples is limitless (Figure 6). A novice may show five or six examples of the same type of treatment of a particular problem. The telltale symptom of this mistake is when the presenter says, 'And here's another case...' over and over again.

The novice often shows multiple examples of the same treatment.

Showing similar examples disengages the audience.

Showing multiple examples of the same treatment disengages the audience. After the second example, the audience gets the point, and any further illustration

of the same point has absolutely no teaching value. In fact it tends to make the presenter look insecure, and forces him or her to talk rapidly and make the same comments about each example. These consequences disengage the audience.

In most situations, one clinical example if adequately analyzed, discussed, and illustrated is much more powerful than a series of similar situations. This approach will keep the audience engaged and improve the teaching effectiveness. Good points to remember are that:

- the quantity of examples *does not* improve the quality of the teaching (Figure 7).

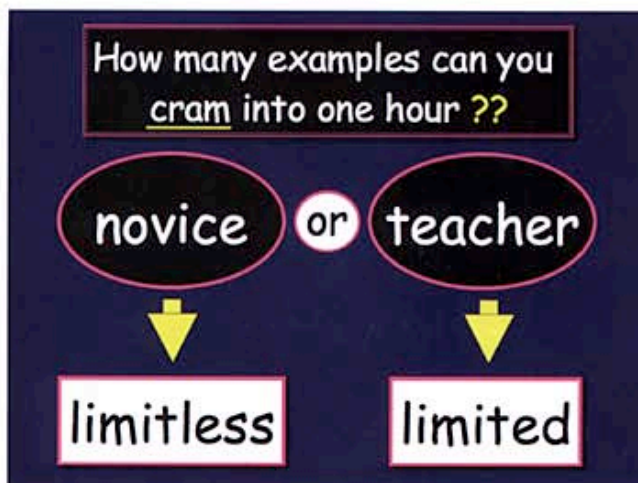


Figure 6 Once your topic has been selected, identify clinical examples that will allow you to teach the principles to the audience. The number of examples selected will affect your ability to teach and keep the audience engaged. The novice generally believes that the number of clinical examples is limitless, but after the second example, the audience gets the point. Further illustration of the same point has no teaching value. In most situations, one clinical example if adequately analyzed and illustrated is much more powerful than a series of similar situations

On the other hand:

- the quality of the example *does enhance* the quality of the teaching.

The amount of material also relates to the number of images or slides that can be covered in one hour. When presenters used Kodachrome slides to illustrate their material, a good guide to determine the amount of material was based on the number of slides that could fit into the slide carousel. Most carousels hold 80 slides. If the presenter used two screens and two projectors, the slides in a pair of carousels could be effectively covered in one hour. The number of images would total 160 (Figure 8). If the presentation lasted for 60 minutes, that allowed an average of about 20 seconds per slide. Now

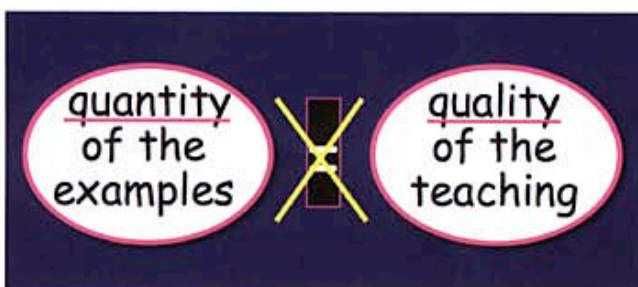


Figure 7 A good teacher knows that the *quantity* of the examples does not improve the *quality* of the teaching. On the other hand, the *quality* of the example will enhance the *quality* of the teaching

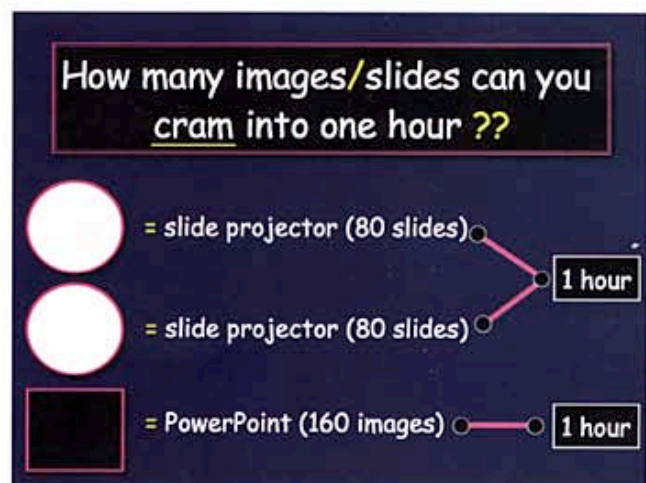


Figure 8 The number of images that can be effectively presented and discussed during a one-hour presentation is about 160. This is equivalent to using two pairs of slide carousels and two screens. One hour gives each image an average of 20 seconds on the screen. Some images will be seen longer and some less. However, this number of images will create a smooth unhurried pace to the presentation

in some cases the image might only be on the screen for a few seconds and in other situations for a longer period. But this method of planning was always a good guide to determine the number of slides or images that could be covered adequately.

Today, presentations are made using computers. Computers have enhanced the ability of teachers to illustrate their material effectively. However, computers permit the novice to cram too many images into a presentation. This reduces the amount of time that each image remains on the screen, and greatly jeopardizes the teaching effectiveness of a presentation. Most of us have sat through the 'whirlwind' presentation, where the presenter goes through the images so rapidly that the audience's eyes and mind almost become hypnotized. At that point the audience becomes disengaged, and it is impossible to teach. We still believe that 160 images per hour is a reasonable guide for any presentation (Figure 8). With an average of 20 seconds per image, the presenter will have the ability to proceed at a reasonable pace, which will help to keep the audience engaged and enhance the teaching effectiveness.

Guideline 4 - Have an Engaging Introduction

You have selected your topic. You will cover it in depth. You are aware of the amount of material that you can cover in an hour. Now you begin to put the presentation together. The beginning of your presentation is perhaps

the most important part. It sets the stage for the remaining hour. Use the first few minutes to engage your audience immediately. You must interest them in your topic, and then keep them engaged throughout your presentation. If the audience is not with you at the start, your teaching effectiveness is reduced. One of the least effective ways to start your presentation is to show your title. However, this is how most presentations begin. The audience already knows the title of your presentation. It should be listed in the program for the meeting. What's the benefit of leading off with a title slide? None. It certainly will not engage the audience.

Although there are several strategies for engaging the audience with your introduction, we will give four examples that apply to various situations. The first strategy is to begin with a comment or statement followed by a question. In a presentation that we gave on the topic of teaching effectiveness to a group of about 600 orthodontists, we began the presentation with an email message. The simulated message was directed to each orthodontist in the audience. It represented an invitation from their local dental society to give a one-hour presentation at an upcoming dental society meeting, and it was signed by the program chairman of the dental society. This statement was followed by a series of questions directed to each person in the audience. Would they accept the invitation? If so, what would they present? Would the dentists like the topic? Would they lecture or teach? This last question led into our topic which was 'Effective teaching: The art of engagement'. Our intention was to get the audience's attention immediately with an invitation to do something desirable, but perhaps threatening. The purpose of the body of our presentation was to show each orthodontist how they could successfully structure an effective presentation for their dental society.

Another method of engaging the audience is to ask a question followed by a statement. In a presentation that we gave to a group of orthodontists on orthodontic-periodontal interaction, the opening image was a question: 'How do you manage treatment for the orthodontic patient with periodontal problems?' We then showed four articles from the American Association of Orthodontists' Bulletin gathered over a three-year period that described six situations where orthodontists had been sued for neglectful management of periodontal problems. In each situation the settlements went against the orthodontists, who paid in excess of \$100,000 in damages, in each situation. We then repeated the question, 'How do you manage periodontal

problems in your adult patients?' The purpose of the presentation was to give the orthodontists the information they would need to adequately diagnose and manage the eight different types of periodontal osseous defects that could occur in their patients. At that point, the audience was engaged.

A third method of engaging the audience is to begin by showing pre- and post-treatment photographs of successful treatment of a particular dental or orthodontic problem. Then the focus of the ensuing presentation would be to teach the audience how they can achieve the same level of success in their patients. This introductory approach was used in a presentation to a mixed group of general dentists, surgeons, periodontists, and orthodontists on the topic of single-tooth implants to replace missing maxillary lateral incisors. Final intraoral photographs of 10 patients were shown and the audience was challenged to identify which of the lateral incisors were implants and which were natural teeth. Each patient had at least one implant. In fact there were 14 implants among the 10 patients. However, they were nearly impossible to identify. By the time we reached the last of the 10 patients, the audience had been engaged. The purpose of this presentation was to share with them the keys to making a lateral incisor implant indistinguishable in the mouth of a young post-orthodontic patient.

A fourth method of engaging the audience is to show posttreatment photographs of a clinical failure, followed by the necessary steps involved to re-treat the patient and overcome the failure. This is a powerful method of engaging an audience, because it immediately shows the human side of the speaker. After all, nobody is perfect and problems can happen during any type of dental therapy. This strategy was used in a presentation given to an interdisciplinary study group of dentists and specialists. It illustrated the pitfalls of working in a multidisciplinary rather than an interdisciplinary manner. It showed a failed attempt at multidisciplinary treatment, followed by the result after interdisciplinary re-treatment. The purpose of the ensuing presentation was to describe the guidelines that are necessary to achieve successful treatment results in the interdisciplinary patient. The audience was engaged.

Guideline 5 – Use a Conversational Tone

If you are not an experienced presenter, you may make a common mistake that affects many novice speakers, i.e. creating an unnatural lecture tone with your voice. You must avoid this tactic. Your message will have much

Begin with a comment followed by a question.

OR

Start with a question followed by a comment.

more impact if you deliver it as though you were simply discussing the topic with a colleague, associate, or staff member. However, this is difficult if you have little experience giving presentations. Here is a method that will help to bring a conversational tone back to your voice:

- Pick out two or three people in the front two or three rows of your audience and look them directly in the eye as you are delivering your message. This technique will encourage you to be conversational.
- Vary your attention between the three people you have selected and simply continue to give the presentation to them without focusing on the remainder of the audience.
- This technique works if you have an audience of 20 or 2000. After all, in a large group you simply cannot see everyone, and the passion in your voice will be diminished if you do not make direct eye contact with the people to whom you are speaking.

Remember you are not trying to lecture to the group; you are trying to teach them something. Direct eye contact creates a voice tone that will help you to teach and not simply lecture.

Make eye contact with the audience to create a conversational voice.

Summary

This article has identified, illustrated, and discussed the first five guidelines for creating an engaging presentation. First and foremost, you must know your audience and select a topic that will keep them engaged. Then you must determine the scope of your presentation – breadth versus depth. Third, determine the amount of material you can effectively cover in your allotted time. Fourth, you must engage the audience from the start with a powerful and meaningful introduction. Fifth, you should speak with a conversational tone in order to keep the audience engaged. In Part 2 of this article, we will discuss the delivery, flow, and conclusion of the presentation.