The "F.I.T." Model of Instruction

Using Audience Response Systems (ARS) to Improve
the Quality of Instructor-Led Classroom Training

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Table of Contents

Author's Personal Introduction

Hi. This is Steve. I'm a human services professional, training consultant, and an over-the-top enthusiast in using and thinking about how response technologies can be utilized to bolster learning. I am also the president of B&H Consulting, a small education company located in Golden, Colorado that helps people more effectively integrate audience response systems (ARS) into their training programs. I have the privilege of running seminars (or webinars), traveling to training centers, or consulting over the phone with some of the most innovative and dedicated training professionals in the country.

This paper presents a simple conceptual framework and dozens of practical examples on how ARS has been used to support collaborative learning in classrooms. I started using ARS in my own teaching efforts ten years ago and saw my own results improve dramatically. Since that time, I've seen hundreds of applications of this technology and have gained much wisdom from observing others, from using the technology myself, and from teaching others how to utilize the technology for their own learners. In this paper I have brought together what I think is the best of the best of those experiences.

I also work with eInstruction Corporation, the worldwide leader of Audience Response Technology, as their adult learning applications specialist. I recommend to organizations that they utilize eInstruction's Classroom Performance System (CPS), not only because I find the technology to be very effective, but also because the company is uniquely committed to the pedagogy that supports the effective use of this technology. However, this paper is not written specifically to promote one technology over another. As my colleagues and I at eInstruction often say, "pedagogy first, technology second." The recommendations in this paper will apply equally well to most other response technologies. It's what you DO with the technology that matters most.

Acknowledgements

This paper presents the growing list of best practices that I have discovered through observations, hard work, research, trial-and-error, and sometimes, dumb luck. To all those practitioners, particularly those who took the time to write about their experiences, or who have shared their experiences with me directly, I give my thanks and acknowledge your amazing efforts. As I write I am standing on the shoulders of dozens of amazing, dedicated and, in some cases, downright brilliant educators. In most examples I try to cite, at least generally, the educator or source where the concept originated.

The FIT Model that is presented here was shaped most powerfully by three individuals. Dr. Darrell Ward, the founder and former CEO of eInstruction Corporation, laid out the foundational concepts of effective ARS use in his paper entitled MAP (Methodology for Academic Progress) nearly ten years ago which shaped much of my early thinking on ARS best practices. Len Scrogan, the Director of Instructional Technology for Boulder

Valley School District in Colorado, as well as many amazing BVSD teachers, worked tirelessly for several years to develop not only a menu of effective ARS questioning strategies but also compelling practices for building capacity on how to integrate ARS throughout an organization. Their work was funded in large part by the _____ Foundation, a partnership between local industries and public education. Finally, Dr. Will Thalheimer added to my thinking by taking his research (The Learning Benefits of Questions, 2004) and showing how ARS can be used to facilitate higher ordered teaching and learning applications in his paper Questioning Strategies for Higher Order Thinking (Thalheimer, 2005).

Terms of Use

As with all intellectual property, I am trying to walk the fine line between sharing my gift with other practitioners, but also asking for-profit organizations to not take advantage of my work for their own profit. I would like to give this paper free of charge to any PRACTITIONER who would like to use the model to develop ARS questions into their curriculum. All I ask in return is that you share your innovations, success stories, and dreams with me so I can in turn share them with others. However, if you are a PUBLISHER, CONTENT DEVELOPER, WRITER, or CONSULTANT working for a customer, or developing content for sale, and you are using this model to design, format or create your questions, please contact me to inquire about our modest licensing costs.

Introduction

Educating today's adult learners is more challenging than ever. Instructors are constantly competing with a fast-paced, entertainment-driven, information-saturated society that bombards students with a relentless stream of data (e.g., emails, voice mails, text messages) and the distractions of multiple responsibilities (e.g., parent, care-giver, employee, spouse). It is not surprising that many trainers and educators feel outmatched when armed only with PowerPoint and a remote mouse to compete with the challenges of a 21st century learning environment.

Most educators try their best to apply the principles of adult learning and learner-centered instruction in group collaborative environments. However, with the demand of too much information to be presented in too little time, we find that many instructors are still lecturing over the hum of a projector flashing dozens of PowerPoint slides for the majority of a class period (Thalheimer, 2005). While lecture has its place in some learning models, it is becoming increasingly clear that our classroom technologies and methods must be improved if group learning is to stay relevant and effective in the coming years.

Over the last decade a technology known as Audience Response Systems (ARS) has helped to stem the tide of a growing "chronic disengagement" among K-12, young-adult and adult learners. ARS, also known as Student Response Systems (SRS), has quickly moved from a training novelty (focused on polling, gaming and lower-level learning) to

become one of the most compelling best practice methodologies for delivering higher-level learning. Research findings overwhelmingly support the conclusion that, when used together with a thoughtful methodology, ARS learning is more interactive, engaging, and collaborative when compared to traditional teaching methods (Banks, 200?).

The power of ARS is in its breadth of impact. ARS can make a training experience more engaging (i.e., keep students "on task"), increase learning outcomes (e.g., retention), save time for instructors (efficiency), enable peer-to-peer instruction (collaborative learning) and also collect objective data to differentiate learning and measure educational outcomes (evaluation). However, the possibility of achieving such broad and penetrating outcomes is found largely in the skill of the instructor's implementation of the tool, not inside the technology itself.

Student Response Systems: Gimmick or Powerful Learning Tool?

Before we explore the many creative uses of ARS, I would like to address a common question: Are clickers really effective to promote serious learning or are they just a training gimmick? (Judson & Sawada, 2006). At first glance, the simple look and feel of ARS can easily be misinterpreted as "simplistic". This is often because the most common first experience with ARS comes in the form of a classroom trivia game like Jeopardy, a low level "drill and kill" deck of questions, or some sort of simplistic polling device ("Do you like ice cream or chocolate?). However, as I will outline in this paper, in the hands of a skilled trainer, an ARS can become the centerpiece of a highly enhanced training experience.

The most important lesson we have learned about effective ARS use is that the key to experiencing positive results is not found in the technology itself, but rather in the instructional design and methodology that is used to deliver questions and respond to results. In other words, the technology is *necessary but not sufficient* to achieve increased learning gains. Or, in borrowing (and modifying) a famous line from Lance Armstrong, "It's not about the clicker". In the words of one of the pioneer researchers in ARS technology, Eric Mazur of Harvard:

> "First, interactive teaching has been demonstrated to lead to considerably larger learning gains; second, after an instructor has been exposed to the feedback this method of teaching affords, it is impossible to go back to the passive lecture format and remain ignorant about what goes on in the minds of students." (ref)

Unlike some training technologies such as eLearning platforms or role play simulations, ARS does not "teach" anything. It requires an instructor to use the tool effectively during the delivery of the material. This methodology is not difficult to learn, but does require some planning and thoughtful consideration of the learning outcomes, timing and spacing of questions, quality of questions, and what to "do" with the response data. I hope the

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framework and examples provided in this paper will help you master this methodology in a short amount of time.

Hundreds of articles and empirical studies have been conducted on the effectiveness of ARS for learning. One of the best collections of these articles is maintained by Vanderbilt University:

http://www.vanderbilt.edu/cft/resources/teaching_resources/technology/crs_biblio.htm#business

This collection of research is a great resource, but it can also be a bit overwhelming. For instructors who have not yet seen or experienced what ARS can do in a collaborative learning environment, it can be somewhat difficult to fully grasp the impact. It is one of those technologies that must be seen (or experienced) to be believed. In the following pages I attempt to give you a taste of my experience, as well as my best lessons learned from other educators.

My First Experience with ARS Teaching

I first experienced ARS (the Classroom Performance System or CPS made by eInstruction Corporation) as a teaching assistant at the University of Kansas in the School of Social Welfare. I was new to teaching and was given little direction by my department on how to teach. So I naturally did what I experienced in my college courses - I stood up in front of my students and started talking over a deck of PowerPoint slides. This worked great for about the first 5-7 minutes of every class. Then gradually side conversations started occurring in the back of the room, sometimes newspapers would go up (today it is texting or checking email on a BlackBerry), and I quickly realized that "telling ain't teaching." (Stolovich & Keeps, 2002). In my attempt to become a better instructor, I stumbled upon a product called the Classroom Performance System.

The first lesson I learned was that the quality of my questions was very important. Basic definition questions (e.g., What does "malingering" mean?) did not have much of an instructional impact. So I started giving real-life case examples in class (I was teaching mental health policy and practice) and asked students to evaluate what best practice principles were violated in the scenarios. I also started using pair-share activities, getting students to explain their answers to each other, click in again after their discussion, and then facilitated a large group call out activity. The learning energy in the room became electric!

I later learned that the best practices I was discovering were being tested all around the world at Harvard, the University of Colorado, and in numerous professional industries such as medicine, physics, chemistry, business, and law with the same dramatic results (Banks, 200?). For the next ten years I immersed myself in studying the effects of this simple yet powerful tool with other educators from all over the world.

What Has Technology _Really_ Done for Teaching/Learning

Technology has dramatically improved nearly every industry (medicine, architecture, business, science, etc). in terms of giving practitioners a greater ability to achieve positive outcomes. Take medicine for example. A surgeon today can save many more lives than she could, say, 50 years ago. Is this because today's surgeons are much brighter or more skilled?... of course not. It is because of technology. Doctors now have lasers instead of scalpels, heart rate monitors instead of stethoscopes, as well as new medicines and other devices that significantly improve their ability to promote health effectively and efficiently.

Now consider education. Can an educator today armed with a computer, projector, PowerPoint and a remote mouse achieve far greater learning outcomes than an educator from 1950? The surprising answer is… probably not. The primary reason is that classroom technology has made information faster and flashier, but has not necessarily improved the learning process. ARS is one of the first teaching technologies that fundamentally changes how students learn and how teachers teach. By itself, ARS does immediately improve the ability of instructors to facilitate instruction. It requires training and experience to use the tool effectively. Just as a surgeon's laser does not _heal_ a person, ARS does not _teach_ the student. An ARS simply provides a new tool for instructors to engage students in a more compelling manner, as well as adjust their instruction based on real-time data.

The Importance of Questions

Few could argue the important role of questions in a group learning experience. Questions engage the brain, get students in an active learning mode, stimulate critical thinking, and lead to numerous other learning benefits (Thalheimer, 2002).

Even though we know the import role of using questions during instruction, it is likely more "good theory" than "common practice". As Thalheimer suggests:

> Despite years of reform movements in education and pleas for active learning for adult learners, classrooms are still dominated by lecture. This is true in primary schools, middle schools, high schools, corporate training sessions, conference presentations, church sermons, public meetings, elder hostels, and the local library's evening speaker's series. (Thalheimer, 2004)

Thalheimer goes on to explain that there are certainly important reasons that lecture formats continue. They can be very effective in certain situations. However, by embedding ARS technology into a lecture format, even the driest material can become interesting, engaging, and interactive.

Of course there are better and worse ways to ask questions in a group learning environment, with or without ARS. For example, giving time for all learners to consider

a question before eliciting feedback rather than rushing to the first person who raises a hand is a commonly cited best practice (ref). Also, peer-to-peer questioning (i.e., students discuss a question together before answering) has been shown to lead to greater learning benefits (ref). The timing and spacing of questions and the quality of the questions also has an important impact on learning (Thalheimer, 2002). As will be highlighted throughout this paper, all of these established questioning best practices can be integrated and enhanced with ARS.

We have also learned a great deal from research in the field of learning in the last decade that is incorporated in the FIT Model. The work of Marzano, particularly <u>Classroom Instruction that Works</u> is used to support many of our questioning strategies (e.g., compare contrast, non-linguistic representation of information, reinforcement, etc.). The work of DuFour in regard to professional learning communities (i.e., the use of common assessments and data driven instruction) has also informed much of our thinking. The work of ____ in the TIMS study (Tennessee International Math and Science Study) has helped us determine the correct placing of focusing questions and how we delay the presentation of the "correct" answer to questions.

<u>Questioning Strategies in the Classroom</u>

Traditional (One-to-Many / One-to-Volunteer / One-to-One)

If you are an instructor, chances are you already use questions while you deliver instruction. Whether you know it or not, you are likely often using one or all of these three common methods:

- One-to Many
- One-to-Volunteer
- One-to-One

Knowing how these three questioning strategies impact your students is critical to understanding how and why ARS can improve learning gains. This is because ARS gives you two new strategies known as <u>one-to-all</u> and <u>all-to-all</u> that dramatically enhance the cognitive learning experience of students. Let's look at each method individually.

One-to-Group: The most common type of questioning technique that I have observed in training sessions is what I call "One-to-Many" (Figure 1). I recently attended a two day workshop delivered by a well-known training company where I counted this technique used 87 times throughout the two day course.

The instructor simply throws out a question to the entire group and looks for general responses to emerge. Here are a few examples:

- How many of you would like to increase your "close rate" in sales? (wait for a show of hands, then move into lecture)

- How many of you have observed what you considered to be a "sexual harassment" situation at work? (wait for a show of hands, then move into lecture)

- Do you think having a "safe work environment" is important? Pretty important huh? (wait for a few head nods, then move into lecture)

- How often do you have to apply OSHA safety regulations throughout the day? Pretty often? (wait for a few head nods, then move into lecture)

Figure 1

The One-to-Many questioning strategy is certainly not "bad" in and of itself, but my experience is that it is extremely limited in its ability to facilitate active learning. The main problem with this method is that instructors often *think* they are using a "student-centered" approach because of these questions, and therefore tend to overuse this type of question. In other words, the "One-to-Many" method is often used "one-*too*-many" times.

One-to-Volunteer: The next most common questioning strategy is known as "one-to-volunteer" (Figure 2). This is where the instructor poses a question to the entire group and waits for someone to volunteer a response. Questions in this strategy can either be close-ended or open-ended. Here are a few examples:

Close-ended

- Can someone tell me which variable you think research suggests is most related to student achievement? (wait for one person to give an answer, interact, move into lecture)

- Who knows what variable is most critical in terms of safety? (wait for one person to give an answer, interact, move into lecture)

<u>Open-ended</u>

- Can someone tell me what factors contribute to patient safety in this situation? (wait for one person to give an answer, interact, move into lecture)

- Who can give me some examples of when you might apply this conflict resolution strategy with an employee? (wait for one person to give an answer, interact, move into lecture).
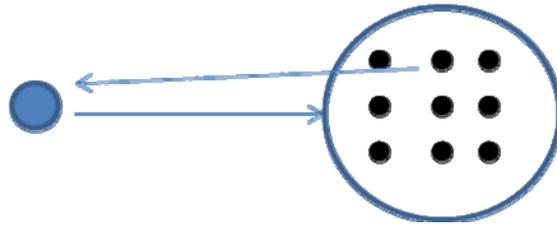

Figure 2

Instructors use this type of questioning strategy frequently because it is an easy way to shift the energy in the room from passive to active learning. However, it is important to consider what is actually occurring from the learner standpoint.

When a question is asked in this manner, learners make a conscious or unconscious decision to engage with the question at various levels.

Level 1: Engage with the question and give a response (either raise of hand or call out)
Level 2: Engage with the question (that is, think about it) but remain passive (see what others respond)
Level 3: Disengage with the question by focus attention on other social dynamics in the room (e.g., Why is Joe always answering questions?)
Level 4: Disengage with the question by focus on something else (like, what is for lunch?)

Learners who engage at Level 1 certainly achieve the greatest learning benefit from the question. Those that engage at Level 2-4 would achieve less benefit. There are many factors that impact the level of engagement that learners choose including the size of the group, the personality type of the student, and how important he/she finds the information (related to either internal or external motivation). However, my experience has been that the same 30% of the students engage at Level 1, while the majority of learners become passive listeners to the more vocal students in the room.

There are several other problems with this questioning strategy. First of all, learners often experience a negative pressure as the instructor tries to increase participation (this is usually indicated when the instructor says something like, "Ok, this is the *participation* part of the training."). Secondly, when the same few people respond all the time instructors can find themselves teaching just to those students. Finally, just as with the "One-to-Many" strategy, instructors start to over rely on this method without considering the actual benefit of the questions from the learning standpoint.

One-to-One: The third typical questioning strategy, known as "one-to-one" (Figure 3) is used by instructors who want to elevate the accountability in the room by calling on individual students. This method is used frequently in law school, some businesses courses, and military training. This method is more common if the number of learners in the room is smaller (5-8), the instructor believes the learners are confident in their knowledge of the subject, or the instructor has a particularly strong rapport with the students. Questions in this method can be either close-ended or open-ended. Here are some examples:

Close-ended
- Susan, can you tell me what factors impact a client's survival rate in this case?
- Tony, what court case would support this argument?
- Sergeant Johnson, what would be the correct maneuver toward this enemy position?

Open-ended
- Mike, what would you do in this situation?
- Omar, how would you handle a conflict situation like this with a customer?

Figure 3

This questioning strategy obviously raises the engagement level in the room. It also raises the anxiety level (sometimes called the "pucker level") as well. The main problem with this method is that in many training situations, the group etiquette does not allow for this to be used very often. Even when it is used, the instructor is still only engaging one student each time, while the mental energy of the other students tends to drift toward, "Oh, thank God he didn't pick me, "or, "What a stupid answer."

Of course all three questioning strategies described above can be improved in various ways such as giving time for all students to think of an answer before responding, giving opportunity for students to discuss together before responding, or blending questions with

a collaborative group activity. However, the two new strategies described below create a new and powerful engagement experience that is not possible without the use of ARS.

ARS Enabled Questioning Strategies (One-to-All / All-to-All)

When using ARS in a group learning environment we now have two new questioning methods that can dramatically increase the engagement level of your learners. These methods are known as "One-to-All" and "All-to-All".

One-to-All: When using ARS in a group learning session instructors can now deliver questions and receive feedback from every single learner at the same time. This is known as a "One-to-All" questioning strategy (Figure 4). These questions can be pre-made and embedded throughout the training session at key moments, or delivered verbally on-the-fly. Questions can be survey (no correct answer), multiple-choice, true/false, yes/no, or numeric.
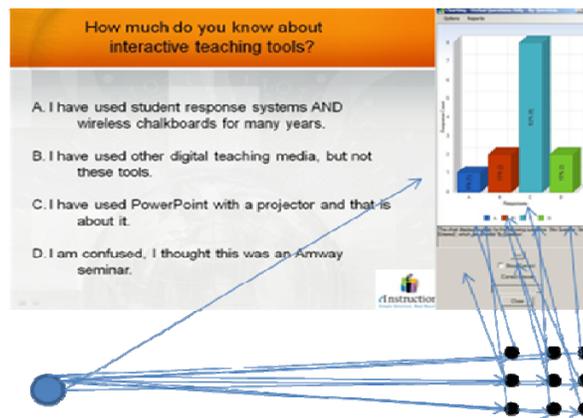

Figure 4

The questions are displayed on the screen or delivered verbally. Using their hand held remotes, students click in on their response to the question. The responses are then displayed for everyone to see.

Rather than give examples here, you can see a list of the wide range of possible ARS sample questions in Appendix A.

There are numerous benefits of using the "One-to-All" question strategy with ARS.

A. <u>Every</u> student engages in an active mode with <u>every</u> question
B. <u>Time</u> is given for every student to "think" about the question before responding
C. The display is <u>anonymous,</u> so students do not fear being singled out or embarrassed
D. Checks for comprehension are possible <u>throughout the session</u> so that instructors can adjust their training as needed (e.g., spend more or less time in certain areas)
E. Students can see how their answer <u>compares</u> to other students
F. For objective questions, the instructor can "hide" the correct answer and give time for students to <u>discuss</u> with each other before responding
G. The instructor can see <u>real-time</u> unbiased results and thus "learn" from other students

A. The instructor can <u>interact</u> with the data (e.g., ask for a volunteer from various "groups" to give explanation of their response")
B. The instructor can "<u>slice</u>" the data to see how various "groups" responded (e.g., how did our managers respond verses the support staff)
C. Instructors can "<u>scaffold</u>" questions by layering on more information to a scenario and watch how the graph changes each time
D. Points can be displayed during the session to increase the <u>competitive</u> energy of the students
E. Questions can be designed to create a "<u>meta-cognitive</u>" experience for students (i.e., thinking about my thinking)
F. Data for the entire session is collected for <u>evaluation</u> after the session

All-to-All: The second questioning method that can be delivered using ARS is known as "All-to-All". This has also been defined as a "peer-to-peer" strategy (Mazur, 1997). It allows students to discuss their thinking with each other before giving their explanation. In CPS we use a tool called the "Pick a Student" feature to facilitate this method. Here is how it works…

Not every question I want to ask in class is a multiple-choice question. I also want to ask some "open-ended" questions such as "What are some of the reasons that…" or "Give me some examples of…". However, the same dynamic still exists. I ask a question, I get three or four students raising their hands (typically the same students over and over), and I call on one. The other students are then passively listening to how that student responds.

With CPS and the Pick a Student feature, I can now deliver that same question more effectively. The flow looks something like this:

"I am going to ask a few questions about what we just learned and then randomly select a few students to respond using CPS." "Here's the first question… <u>Why is it important to know about your battalion organizational structure? Give me one situation where knowing the organizational structure would help you</u>? I'll give you a few seconds to think about this question, jot down a few notes if you'd like, and then I will randomly select a few cadets to give us their answer."

By using this method to ask open-ended questions, it is not just the first student to raise his/her hand that engages with the question, but every student must get ready to answer. Therefore, more active learning is taking place. We call this "No Student is Allowed to Hide!"

After a few seconds, say… *"Ok, I am going to randomly select a student to give me your answer. But before I do, I am going to give you two minutes to share your answer with another student. Then, if CPS picks you, you can share your answer, or another answer you heard from another student."*

Give students a few minutes to discuss. This increases the peer-to-peer learning in the room.

After a few minutes, hit the "Class" then "Pick a Student" button on the CPS "Engage Bar" to select a student. Let's say it selects STUDENT 17 - *"Alright, student 17, what is your response?"*

Note: If a student roster was created ahead of time in CPS, the actual name of the student would appear on the screen.

It is recommended for this feature that you only deliver questions that have a "range" of possible responses. For example, do not deliver a question in this mode like, "What is the capitol of Albania." But rather use questions like…

"What are some of the reasons that communism failed as a form of government in the Soviet Union?"

"Who is one person, either famous or in your life, that demonstrates qualities of leadership that you admire? Explain how he or she does this."

The methods of One-to-All and All-to-All facilitate more engagement, create opportunities for peer-to-peer learning, and fundamentally lead to more learner enjoyment. We often call this "stealth learning" because the students are so caught up in the enjoyment of the experience they often forget they are actually working hard to learn the material.

The F.I.T. Model Framework

The FIT Model is built on over a decade of theoretical development and experimentation from instructors teaching in fields as foundational as phonics and language development to highly technical subjects such as physics and tactical military training. Three of the primary developers of this pedagogy were Ward (1998) from eInstruction, Thalheimer (2004) from Work-Learning, and Mazur (1997) from Harvard. Many other current researchers and practitioners have added to their concepts, particularly in the field of science and higher education (Banks, 2006).

The Three F.I.T. Principles

> *Principle #1:* **F**ormative assessment that <u>directs</u> your teaching

In other words, instructors can *discover* important things about students (assessment) *before* they begin a lesson (formative) that actually *impacts* (or directs) how they deliver instruction. One educator referred to this as "agile instruction." The current common practice of instructors is to simply deliver the same lesson the same way to different groups. However, with a few key ARS questions placed at the start of a lesson instructors can make important decisions about content focus, pacing, starting point, and engagement strategies with a few.

One application of formative assessment can be found in how fire fighters in Golden, Colorado use a pre-test, where questions were linking to competencies, to inform how instruction was delivered (ref). Ohio child welfare trainers also used ARS to assess workers ahead of time to determine what actual courses would be most needed for each worker to improve their clinical performance (ref).

> *Principle #2*: **I**nstruction that engages <u>all</u> students

One of the greatest challenges with instructing digital natives is finding ways to keep them engaged throughout a learning event. Students are used to learning by processing multiple streams of data, collaborating, and being challenged (ref). Using ARS effectively enables a learning dynamic that is much more engaging for all students, but particularly for our "lower level" learners.

> **Principle #3:** **T**esting that is <u>embedded</u> in the learning

One of the most dramatic benefits of using ARS is that instructors can now see in real-time if students are actually comprehending the material without waiting for a final test to discover the misconceptions.

The Three Best Practices of the FIT Model

There are three main best practices to developing effective ARS lessons; timing and spacing, quality of questions, and use of data.

Best Practice #1: Timing and Spacing of Questions – Ward (1988) was one of the first to recommend beginning instruction with 2-3 ARS questions. This puts students in an active learning mode, stimulates thinking about the material, and informs the instructor of the baseline level of knowledge or attitudes of learners. It is then recommended to embed questions every 12-15 minutes throughout delivery of the material. This is about the average attention span of an adult learner.

Finally, it is recommended to deliver 2-3 closing questions at the end of instruction that allows for reinforcement, reflection, and transfer of learning. Figure 5 provides a visual illustration of the recommended placement of questions in a 90-minute session.

These recommendations should be considered basic guidelines and not firm rules. However, some aspects of our findings are fairly consistent, such as starting your lesson with 2-3 questions. One question seems to be insufficient to get students into an active mode, while four questions often appears to be too many. Learners need a cognitive break from active learning to allow new information to process. Clumping too many questions together in one location can tire learners and create training fatigue.
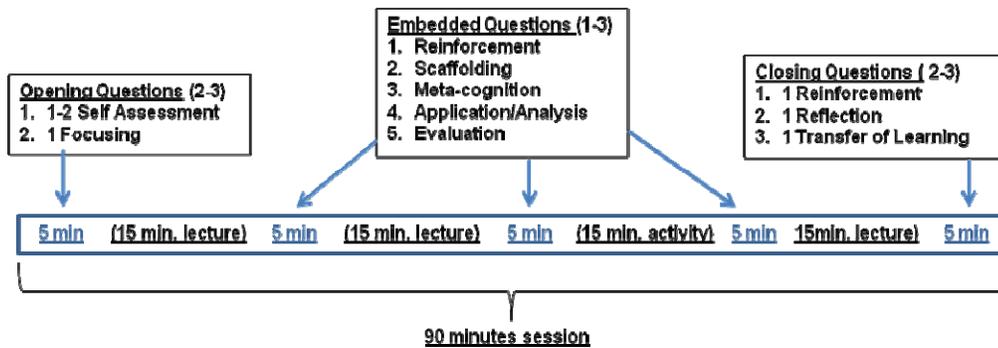
Figure 5

Best Practice #2: Quality of Your Questions – The basic rules of question development that apply in test item development also apply in the FIT Model. For example, questions should be clear, grammatically correct, and written at the appropriate reading level for the audience. However, embedded ARS questions can do things that static test questions cannot, such as scaffold across a series of information, direct instruction in real-time, and facilitate peer-to-peer discussions. Thalheimer (2004) includes a comprehensive list of methodologies that engage higher level thinking capacity of learners. In this paper, we will provide some of our favorite techniques and encourage you to develop some of your own.

Best Practice #3: What to DO with the Data – When instructors first start using ARS during instruction, they are often caught off guard when they realize they must now actually do something with the data. For example, instructors might be surprised to realize that a concept they just taught (and taught very well!) was not comprehended by half of their students. Now the instructor must decide if she is going to re-teach the material right then (and if so, how), remediate later, or simply use that information to improve future practice. An important part of teaching with ARS is preparing yourself to decide what you will do with the frequency distribution of your questions.

FIT Instructional Design Template

We have found that the best way to learn to use the FIT Model is to start creating questions for an actual lesson, try them out, and then begin the refinement process. Learning to teach with ARS is very much like learning to drive a car. Rather than sitting and reading the owner's manual, it is best to just get behind the wheel and taking 'er for a spin. The following steps will allow you to plan your course so that you arrive at the right location (that is, with successful learning outcomes!). Don't worry - if you back into the trashcans a few times as you are leaving the driveway, that is part of the process. Every new learning experience has its risks.

Appendix A includes a few examples of each type of question for your review. These questions come from a variety of content areas. If you are not familiar with that content area, try not to let this limit your thinking in terms of how that question might be useful to you. Each content expert must do the work of modifying the questions to fit his or her content and students. This is the fun, and the challenge, of using ARS effectively.

Opening questions
(2-3 questions presented in the first 3-4 minutes to learn from students and get them in an active learning mode)

One of the best decisions I made when I first started using ARS was to try delivering questions earlier in my lesson rather than later. I found that if I waited 15-20 minutes to deliver my questions I had missed several critical opportunities. Delivering questions early allowed me to get my students warmed up and interested in the clickers, helped me learn important things about my audience, and set a tone of "interactivity" that got the momentum of learning started in the right direction. My rule of thumb has become 2-3 questions in the first 3-4 minutes. The only thing I do BEFORE delivering questions is a brief introduction of myself and a little about the session.

There are two main types of opening questions that are recommended; self-assessment questions and focusing questions. Within both of these question types there are a variety of options that can be used.

Type 1: Self-assessment questions – The "F" of the F.I.T. Model stands for "**F**ormative assessment that <u>directs</u> your teaching". In other words, *discover* important things about your students (assessment) *before* you begin your lesson (formative) that actually *impacts* how you deliver your instruction (directs). One author referred to this ability as "agile instruction" (ask Scrogan for this ref). The current common practice of instructors is to simply deliver the same lesson the same way to different groups. However, with a few key ARS questions placed at the start of the lesson you can actually make important decisions about content focus, starting point, and engagement strategies.

Self-assessment questions, delivered at the start of a lesson through ARS, are one of the most effective ways to begin the process of differentiating instruction. It also reflects one of the most basic principles of teaching…. *Know your audience*. Before I launch off into my brilliant presentation (with my shinny deck of PPT slides that I finished at 11:48 the previous evening) it would be useful if I could find out important things from my group such as how much do they already know about the topic, how much do they *think* they know about the topic, what is their interest in the topic, etc.

There are four main types of self-assessment questions that our instructors have found to be effective; learning readiness, topic interest, prior knowledge, and confidence in ability. Don't limit yourself to these four. Feel free to create more. But if you are new to ARS, this is a great place to start.

Self-assessment questions put students in an active learning mode, show the instructor what level of students he/she has, and may even address ambivalence to learning a topic. Notice that we try NOT to use the typical survey responses such as "strongly agree – strongly disagree". It is much more interesting to word your answer choices with typical response that engage learners in a more qualitative thought process.

1. *Readiness to Learn:* How ready are you to learn (general)
   a. I am very distracted. "Running on Empty" should be my theme song.
   b. I am present, but need more coffee.
   c. I have good energy to learn today. Good to go!
   d. I am SO READY to learn today that other people regularly tell me to sit down and be quiet.

   Rationale: A learning readiness question is effective in settings where you are just getting to know your students (vs. in a regular class). It is a very warm question, easy to understand, and interjects some humor.

2. *Interest in the Topic:* How interested are you in learning about this topic? (used to address specific ambivalence to a topic)
   a. This topic is a struggle for me to find interesting, but I will do my best.
   b. I find this topic mildly interesting.
   c. I really enjoy learning about this topic.
   d. This is one of my FAVORITE topics to learn!

Rationale: A topic interest question is effective in "mandatory" trainings or when you are not sure of the interest that students bring to the class. Be careful! If you get 90% answering A, you will need to be ready to address this ambivalence. However, I have found that if you allow students to express resistance to learning, this can actually help them become more open to learning the topic – if you have an effective session prepared of course.

3. *Background Knowledge:* How much prior knowledge do you have about this topic?
    a. I am an EXPERT in this area. I can contribute a lot in class.
    b. I am a VETERAN in this area, but could always learn more.
    c. I have all the BASICS down for this material, but need some instruction to go to the next level.
    d. I consider myself a ROOKIE in this area, only the most basic knowledge
    e. I am a BLANK SLATE in this topic - very Zen-like at the moment.

    Rationale: A prior knowledge question is useful when you are unsure of how much exposure your students have had to the topic. One of the main principles of adult learning is to validate and build upon the learning students have already acquired. This question allows instructors to become much more agile in their instruction (ref).

4. *Confidence in Ability:* How much confidence do you have about your ability to… (verbally deescalate a situation, deliver instruction using an ARS system, do a risk assessment on a child, etc.) (used when the topic is particularly skill based)
    a. Very confident – I know the information and have extensive experience
    b. Confident – I know quite a bit about this, but could use a refresher.
    c. Unsure – I think I know how to do this, but need some time to check my understanding and time to practice.
    d. Very unsure – I am starting from scratch. I need both the basic information and time to practice with feedback.

    Rationale: There is a lot of research to suggest that students learn a various speeds based on how confident they are in their current ability in a certain area. Confidence in ability questions are particularly useful when the material being taught involves a specific skill development (e.g., rifle safety, motivational interviewing, etc.).

ACTIVITY: Construct a "Self-assessment" question you will use during your instruction. Feel free to steal (or borrow ☺) questions from above, or create your own questions with the wording that is right for you.

1. Question type (from the 4 types mentioned above): _____

Question stem:

_____
_____
_____

   a. _____
   b. _____
   c. _____
   d. _____

Rationale: (Why are you using this question? What will you do/say about the data?)

_____
_____
_____

Type 2: Focusing Questions – Focusing questions are "objective" questions (where one or more answers are correct) where we expect most of the students not to know the correct answer. You are trying to show students what they DON'T know to create cognitive dissonance. Typically you want the question to relate to information that you will present in the next 10-15 minutes.

1. Write a question that references interesting or important research:
   Example 1: The fastest group of internet users is 16-24 yr olds.
         Correct answer: False, it is 2-5 year olds.

2. Write a question that catches novices in a common misconception:
   Example 1: Every cell in your body that has chromosomes has the exact same number of chromosomes.
         Correct answer: False, the sperm and the egg cell only have half.

   Example 2: True or False: The press has the power to end your political career.
         Correct answer: False, how you <u>deal</u> with the press can end your career. If you follow the lessons we teach in this course, the press will have nothing to use against you.

ACTIVITY: Write a "focusing question" that you will use during your instruction. We recommend only one.

Question stem:
_____
_____
_____

    a. _____
    b. _____
    c. _____
    d. _____

Rationale: (Why are you using this question? What will you do/say about the data?)
_____
_____
_____

Embedded Questions
(presented throughout the lesion – every 7-12 minutes – to create engagement, retention, and discussion)

Embedded questions are dispersed throughout your lesson to make sure the material is being understood and to facilitate higher level learning of the material (i.e., application, analysis, meta-cognition, and transfer of learning). There are five primary methods that have been used by instructors to delivery embedded questions:

1. Reinforcement
2. Application/Analysis
3. Scaffolding
4. Evaluation
5. Meta-cognition

Each method is described below with at least one example. More examples are provided in Appendix A.

Type 1: Reinforcement questions – Reinforcement questions are basic knowledge or comprehension level questions that are important in terms of checking for understanding. This can be used, for example, to make sure learners understand the basic vocabulary needed to understand a concept.
    Example: What does the word "occlude" mean?
        a. Make smaller
        b. Avoid
        c. Block
        d. None of the above are correct
    Correct answer: C

ACTIVITY: Write a "reinforcement question" that you will use during your instruction.

Question stem:

_____
_____
_____

    a. _____
    b. _____
    c. _____
    d. _____

Rationale: (Why are you using this question? What will you do/say about the data?)

_____
_____
_____

Type 2: Application/Analysis – Application or analysis level questions are designed to get student to think critically about a specific situation. They are typically delivered around a hypothetical or actual situation that requires a decision to be made or some type of analysis.

Example: In the situation we just described, what would be your best response as a manager?
    A. Ignore the problem and hope it goes away
    B. Bring both workers in together to discuss the problem
    C. Speak to both workers individually first. Then bring them together to discuss the problem.
    D. Fire worker A based on sexual harassment procedures.

Example: From the video we just watched, what principle of Strengths-based Management was violated?
    A. Principle 1
    B. Principle 2
    C. Principle 3
    D. Principle 4
    E. None of the above – this was perfect practice

ACTIVITY: Write an "analysis/application question" that you will use during your instruction.
Question stem:

_____
_____
_____

    a.   _____
    b.   _____
    c.   _____
    d.   _____

Rationale: (Why are you using this question? What will you do/say about the data?)

_____
_____
_____

Type 3: Scaffolding questions – walk students through a series of questions that build upon one another to support critical thinking and decision making. Typically involves a peer-to-peer activity.

> **Example:** Work this equation: $2 + 3 \times 5 = ?$
>> A: 17
>> B: 25
>
> Then, provide this information: My Dear Aunt Sally is an acronym that is often used to remember "order of operations". The "M" of My stands for "multiplication". With this new information, please rework the problem and select your answer.
>
> This new information will allow more students to select the correct answer.
>
> Note: You can also use a "peer-to-peer" activity to allow student to discuss together before selecting the second question. This allows for more teaching moments in the room.

ACTIVITY: Write a "scaffolding question" that you will use during your instruction.
Question stem:

_____
_____
_____

    a.   _____
    b.   _____
    c.   _____
    d.   _____

Rationale: (Why are you using this question? What will you do/say about the data?)
_____
_____
_____

Type 4: Evaluation Questions – Evaluation questions put the student in the role of teacher or "evaluator" of a situation. This can be a very empowering experience for students as well as give them the opportunity to discuss their rationale for their thinking.

 Example: Students watch a video about suicide prevention. In the video, a boss interacts with an employee who is talking generally about wanting to "end it all". Several questions can be delivered after this video that would allow students to evaluate the response.

How well did you think the boss handled the situation?
   a. *Perfectly*
   b. *Good, but needed some improvement*
   c. *Poor, missed several opportunities*
   d. *Very poor*

How well do you think you could handle a situation like this?
   a. *I could have done much better*
   b. *I could have done about the same*
   c. *I still need lots of practice before I could do this.*

ACTIVITY: Write an "evaluation question" that you will use during your instruction. Question stem:
_____
_____
_____

   a. _____
   b. _____
   c. _____
   d. _____

Rationale: (Why are you using this question? What will you do/say about the data?)
_____
_____
_____

Type 5: Meta-cognitive questions – Meta-cognitive questions are designed to get students to think about their thinking. Any clicker question or RSG question can be modified to create discussion simply by getting students to explain their thinking after their response.

> Example: Would you certify this witness as an expert witness in your courtroom?
> A. Yes
> B. No
>
> Second question:
> A. I said yes, and I am from a rural area.
> B. I said yes, and I am from an urban area
> C. I said no, and I am from a rural area.
> D. I said no, and I am from an urban area.

Based on the responses, you would then be able to reflect on how the initial choice of "certify or no-certify" could have been influenced by demographics. The discussion about that influence would allow students to reflect on how their personal experience might be influencing their decision.

ACTIVITY: Write a "meta-cognitive question" that you will use during your instruction. Question stem:

_____
_____
_____

a. _____
b. _____
c. _____
d. _____

Rationale: (Why are you using this question? What will you do/say about the data?)

_____
_____
_____

<u>Closing Questions</u>

(presented at the end of a lesson to reinforce content, allow students to reflect on their learning, and help them transfer their learning to real world situations)

Closing questions are the hardest to deliver because students (and instructors) are often exhausted from the learning and ready to leave. However, these are also some of the most important teaching opportunities because they become the final moment that solidify the students' learning.

Type 1: Reinforcement Questions – This reinforcement is the same as the reinforcement found in the Embedded Questions (above).

Type 2: Reflection Questions – The most common method for reflection is to use the Random Student Generator to facilitate questions like this:

> Example: What is the best thing you learned in this lesson that you did not already know? And how could you apply that in a real world setting?
> - Give students a moment to do a "pair-share" activity to facilitate more learning moments.

ACTIVITY: Write a "reflective question" that you will use during your instruction. Question stem:

_____
_____
_____

a.   _____
b.   _____
c.   _____
d.   _____

Rationale: (Why are you using this question? What will you do/say about the data?)
_____
_____
_____

Type 3: Transfer of Learning – These questions encourage students to think about what they will DO with their learning after the training or how they might take a next step.

One of the most discouraging findings in the field of adult education in the area of *transfer of learning*. That is, how much of what we teach actually makes a difference in the "real world" for learners, translates into behavior change, or is remembered six months later (ref from social work area, does Will have a ref on this?).

Example: *How will you continue your learning after this class?*
    a. Identify a co-worker who is skilled in this area and ask for some coaching.
    b. Look up more information on the web or other resources.
    c. Access an on-line eLearning class.
    d. I am not sure. But I would like to learn more. I need some ideas.
    e. I am not planning to do any more learning in this area.

ACTIVITY: Write a "transfer of learning question" that you will use during your instruction.
Question stem:

_____
_____
_____

    a. _____
    b. _____
    c. _____
    d. _____

Rationale: (Why are you using this question? What will you do/say about the data?)

_____
_____
_____

Conclusion

We hope that you have found these concepts to be a helpful resource as you start or continue your use of ARS. We would love any and all feedback about the paper and any ideas for future development. Happy clicking! ☺

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Appendix A

Opening Questions (4 types)

1. Readiness to Learn
2. Interest in the Topic
3. Background Knowledge
4. Confidence in Ability

1. Readiness to Learn

(Example 1) How do you find yourself this morning/afternoon?
   A.   I am amazed I made it here today. "Running on Empty" is my theme song.
   B.   I have projects coming out my ears! Will try to cram in a little more.
   C.   I have good energy to listen, learn, and participate. Good to go.
   D.   I am very excited about this topic. I am on the edge of my seat!

Rationale: I almost always start with this question. It tells me so much about the group and helps me to communicate a message to them that "I am listening." It also helps the group settle in and gives them permission to "be where they are at." Remember, be ready for anything. If, for example, 50% choose A or B – don't panic. Simply make a comment like, "OK, I understand that place. If you are at level A or B let me encourage you to let this be a session where you pick out 2-3 or three nuggets rather than trying to absorb the entire message." You may also want to be conscious of creating lots of space for discussion between participants. For a room where over 50% are at the A or B level, remember – less is more!

Note: The reason that we do not provide many other examples of this question here is that the variation is found primarily in the wording of the answer choices. Develop the wording of this question to fit your audience.

2. Interest in the Topic

(Example 1) How interested are you in learning about the Uniform Code of Military Justice?
   A. Extremely – I would like to become part of the military police.
   B. Very – I the find this topic very interesting.
   C. Somewhat – This topic seems only somewhat interesting to me.
   D. Not at all – I do not find this topic interesting, but I understand it is important and will do my best to learn it.

Rationale: This question is like the first "readiness to learn" but more specific to the topic. This gives you even more information about your students and the general readiness to learn question. Notice that answer D allows students who are not interested to voice that view but still gives them a place to say they understand its importance.

(Example 2) Is this training mandatory for you?
A.Yes
B. No

Rationale: This question was developed by a trainer who had a mixture of students that came to her training sessions either because they were required by their employer (externally motivated) or because they wanted to improve their professional development (internally motivated). The data displayed can be a great way to connect with your students and reduce the "why do we have to be here" energy.

(Example 3) What is your MAIN purpose for coming to this session/meeting?
A. General information gathering
B. I have a specific problem and am hoping to find a solution.
C. I have a specific innovation or solution, and I am hoping to get more information on that topic or share this information with others.
D. Networking – The topic is the foundation of why I am here, but I mostly interested in connecting with other participants in the room during and after this session.
E. I am confused. I thought this was an Amway seminar.

Rationale: This is my favorite second question. It is like the first, but gives me more information about what my audience is looking for. Remember – your presentation should not be about YOU or your topic, it is ultimately about meeting the needs of your audience. They have come because your topic is the foundation (assuming they did not come to the wrong presentation, which of course happens all the time! ☺). However, their SPECIFIC felt need is what is going to make your presentation most impactful.

(Example 4) Which choice best reflects your motivation for being here today? Please be honest! ☺
A. I have a strong agenda that I want to reinforce or share with others.
B. I have some firm opinions, but I also want to learn from those with different opinions.
C. I have not really decided where I fall out on this issue. I am here to listen and learn.

Rationale: This question is like the one above it, but more useful if your session is more about "consensus building" or has some element of persuasion to it. For example, if the topic you are presenting has some level of debate about it, or you know there are a mix of opinions in the room, you may follow up with this question with the one below.

(Example 5) Where do you fall right now on the topic of _____? (renewable energy, community policing, hiring for diversity, etc.).

A. I am mostly against this concept, at least the way I understand it right now.
B. I am somewhat <u>against</u> this concept, but see some validity the other side.
C. I am stuck in the middle. I see good points on both sides.
D. I am somewhat <u>for</u> this concept, but see some validity for the other side.
E. I am mostly for this concept, at least the way I understand it right now.

Rationale: This question is best used at the beginning of a presentation on a topic that is controversial. Of course, if you know your audience is skewed to one direction or the other (e.g., if you are in a room full of advocates for one position) you may not need to spend any time on this question. You certainly don't want to isolate or single out the 2-3 people in a room who hold a contrary view in a room of advocates.

3. Background Knowledge

(Example 1 - survey) How much do you know about (name of the topic) _____.
A. Expert! I could teach this session
B. I can hold my own, but not ready to teach yet
C. I know the buzz words, but not much substance
D. I am a blank slate… very Zen like at the moment! ☺

Rationale: The key to this question if for you to get to know the distribution of your audience. If it is 'normally' distributed (bell curve), then you can briefly speak to each group (e.g., "I am going to look for our experts to bring some great example of how they have overcome some of the main obstacles to this program."). If your distribution is skewed one way or another, you can make very important decisions about what material you cover in more depth or skip over entirely.

(Example 2 – objective) Between 2000 and 2002 home internet use of 13-17 year olds rose from 71% to 83% (a 12 point gain). During that same time frame, home internet use of 2-5 year olds rose from 6% to _____.

A. 10% (4 points)
B. 18% (12 points)
C. 26% (20 points)
D. 36% (30 points)
E. Trick question, it actually went DOWN to 4% (-2 points)

Rationale: Notice this is the first OBJECTIVE question I have given as an example. I find it very important not to rely exclusively on subjective (survey) type questions, even in an informative presentation. Mixing in questions that have a "right and wrong" answer engages your audience in a different way, can stir up some cognitive dissonance (e.g.,

"That surprises me!"), and can spark discussion (e.g., "Now turn to the person next to you and see if you can figure out why this might be the case.").

The correct answer is 'D' by the way!
http://www.cpb.org/stations/reports/connected/connected_report.pdf

Research suggest that the most effective spacing of CPS questions in a learning experience is:

A. Every 2-3 minutes
B. Every 5-7 minutes
C. Every 7-12 minutes
D. Every 20-30 minutes
E. Does not matter. Same retention will occur no matter how often you space your questions.

Rationale: Of course you know that the correct answer is 'D' because you read that section so carefully! ☺ This is a great example of a question that I ask <u>before</u> the section of my presentation on the timing and spacing of questions.

Note: It is hard to give too many specific examples of good objective questions because they are so industry and content specific. However, don't let this discourage you in your development and use of objective questions with your CPS system. Also, we will develop many more useful objective questions in our coming volumes of the Best Practice Primer series in specific content areas (OSHA Safety, Human Resources Core Training, National Restaurant Association Training, etc.). Stay tuned and stay in touch!

4. Confidence in Ability

How confident are you in your ability to use a computer?

A. Expert – I know how to use "msconfig"
B. Veteran – I know what a ".pst" file is and where it is on my computer
C. Moderate – I can make a "New Folder" and save pictures to that folder.
D. Novice – I can barely use email.
E. Blank Slate – Email? What is email?

Rationale: Confidence in Ability questions are very much like Background Knowledge questions. However, they tend to highlight specific behavioral skills that are related to the topic we are teaching. This type of question can be particularly useful when

Embedded Questions (5 types)

1: Reinforcement Questions
2: Application/Analysis Questions
3: Scaffolding Questions
4: Evaluation Questions
5: Meta-cognition Questions

1. Reinforcement Questions

Which best represents your opinion about the new standards we have
presented?

- A.   This is EXACTLY what I have been hoping for.
- B.   This is close enough for me to give it my support.
- C.   I can live with it, but I wish it had a few more elements
- D.   Close but not quite. I have strong reservations.
- E.   Sorry, but I would openly oppose this.

Rationale: This questions resides in the "be careful what you ask for" category. It can be
somewhat dangerous to ask a question like this, but actually much more dangerous to
launch off into an initiative that does not have strong support. You may need to be very
intentional about how you frame up the boundaries of a question like this ahead of time.
For example, you might say, "If we get at least 80% in the A-C we will proceed."

2. Application/Analysis Questions

Application questions look to "next steps" and ask students to apply what they already
know to a novel situation. Analysis questions look to "what just occurred" and ask
students to analyze WHY it occurred. The only difference between the two is in what
direction (future or past) the question looks.

(Application)
What would be the next line of questioning you would use with this suspect?

- A.   Previous warrants
- B.   Name, address, phone
- C.   Identify other suspects

(Analysis)
Why do you think the suspect is evading your questions?

- A.   He has contraband in his backpack.
- B.   He is about to run.
- C.   He is trying to avoid going to jail.

3. Scaffolding Questions

Scaffolding Questions ask the SAME QUESTION several times based on the information changing over time.

(Scenario) Describes a suspect breaking into a car. 50ft. away. Has not seen officer.

What would you do with your weapon?
> A. Nothing
> B. Hand on weapon
> C. Unclip weapon
> D. Draw to low ready
> E. Draw on target
> F. Squeeze and pull trigger

(Scenario) Describes a suspect breaking into a car. 30ft. away. Sees officer and moves toward him. Suspect is waving crowbar.

(Same question)

(Scenario) Describes a suspect breaking into a car. 30ft. away. Suspect drops crowbar and falls to the ground, obeying officers direction.

(Same question)

4. Evaluation Question

Evaluation questions ask students to determine to what degree a principle is being applied (fidelity) or identify what principle is being violated.

(Scenario) Joe's treatment team believes he can learn, grow and change. In order to assure his success they develop a treatement plan for him to follow that incorporates his strengths such as buying a guitar, connecting with his aunt, and working in an outdoor setting.

What principle was violated in this example?
- A.   Principle 1: Clients can learn, grow and change
- B.   Principle 2: Focus on strengths
- C.   Principle 3: The client is the director of the helping process (Correct)
- D.   Priciple 4: The relationship is primary and essential.

<u>4. Meta-cognitive Question</u>

Meta-cognitive questions get students discussing the reasoning behind their thinking.

(Scenario) A manager decides to report an employee for drug use on the job. Was his decision appropriate?

    A.   Yes – 70%
    B.   No – 30%

The instructor then asks students to explain their reasoning behind their responses.

<u>Closing Questions (3 types)</u>

1: Reinforcement Questions
2: Reflection Questions
3: Transfer of Learning Questions (2 Types)

<u>1. Reinforcement Questions</u>

Reinforcement questions in closing are the same use at Embedded Questions but they are just put at the end of the lesson.

<u>2. Reflection Questions</u>

Reflection questions allow students to think back over the lesson to solidify the learning that took place.

Which ACTION STEP gives you the most energy? Which will you be most likely to do?
      a. Go out and get the book and read it!
      b. Make a list of the common best practices for my industry
      c. Talk to my stakeholders about what they would like to see
      d. Bookmark this for later… honestly, I am too busy to add to my pile!

Rationale: Transfer of learning is one of the most challenging things to accomplish in any presentation. A question like this can help participants to think through some specific options – even small ones – to get them moving. Following up with an opportunity for each person to share what they put with the person sitting next to them is a great option.

Transfer of Learning Questions get student to think beyond the learning experience to what they will do NEXT with their learning.

What would be the most helpful for you to <u>receive</u> after this meeting?
A.   Receive the polling data in an email
B.   Have someone contact me about volunteering
C.   Have someone come out to my organization to do a presentation
D.   A and B
E.   B and C
F.   A and C
G.   All of the above

Rationale: Notice that we worked around the limit of "one" possible choice by putting in options D-G. This type of ending question is also useful to help participants to realize that their learning does not need to end when the session is over. Hopefully, the presentation is just the beginning!

Other Question Types

How would you describe your group/team (or table, or row) compared to others in the room?
   a. We are definitely the best looking team.
   b. We may win the award for worst dressed.
   c. We could take any other team in a leg wrestling
     competition.
   d. We ain't pretty, but baby… we got substance!

Rationale: This is a great question to use to introduce some humor, but also to solidify some team cohesion. You could then move into a team competition where each group just gets one CPS clicker and teams compete for points.

Show a funny video clip or picture, and ask....
To what degree does this (these) characters represent your organization?
A.   Yep, this is us!
B.   Some of us are here, others have moved beyond.
C.   Honestly, we may have been there in the past, but we have growth through it.

Rationale: Combining CPS questions with rich media is a very effective way to get out of a 'linear' discussion and to put participants in an 'active' learning mode. You can also use this same process to evaluate a role play, scenario presented in text format, or set of ideas or criteria that have literally been created by participants in the session.

Appendix B: Common Misconceptions, Questions and "Yes, Buts"

A. It would take too long to add ARS questions into my training. I am already trying to fit too much material into too little time.

There are two main responses to this common argument. First, if our outcome is "covering material" then the argument is valid. However, if our outcome is learning and retention, student actually learn and retain more effectively when they are active.

B. I get it. But I am don't think my instructors would be able to change to this new model of interactive training. They have been delivering direct instruction and lecture for a long time. Change is hard.

Of course as with any change you must take care to follow common best practices…. Highlight the benefits, help instructors take ownership (vs. feeling that it is forced on them), and provide training and support. By the way, eInstruction offers free on-line training with instructors, free video training, free training manuals, and free technical support. Other customized trainings (web and on-site) are also available at an affordable price. Beyond these common best practices, here are a few other critical steps that we have noticed in our most successful deployments.

1. Develop content ahead of time. (screen shot). We have found this to be the largest step to successful large deployments. If you hand an ARS system to a group of instructors, show them how "easy" it is to create questions, even give them this FIT Model document, and hope for good things to happen….. you will typically get great work from about 30% of your instructors. However, if you invest in creating a deck of good questions for your instructors, and even modify PPT slides to give a quick "reminder" of what questions should go where, you will get 80-90% of your instructors up and running very quickly.

2. Run a small "pilot" with your eager instructors first, and have "old school" instructors attend their training once they are confident with ARS to observe. The most motivating moment with CPS is seeing how students respond. When you deliver good questions that are spaced correctly, the excitement of the is contagious.

3. The first few times your old school instructors use ARS, have another instructor (or helper) present to assist them with the technology. Many instructors fear using CPS for the first time because they fear looking clumsy or foolish in front of their students if the technology does not work seamlessly the first time they try it. First of all, I recommend that instructors tell their students they are trying a

new technology and would like their feedback. But it can also be helpful to have someone running the ARS the first few times to take off some pressure.

4. Pair up your instructors in teams. This will give support to those that need it, and help your more advanced instructors build confidence as they teach others.

5. Give clear expectations of what you expect from your instructors. Some people change because they see the light… others because they feel the heat. If you really want to integrate ARS into your common practice, at some point you have to draw a line in the sand and make learning the tool a mandatory requirement of what you expect.

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