

Teaching Food Safety, 2008

Association of Nutrition and Foodservice Professionals (formerly Dietary Managers Association)

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Does training have an impact on food safety? Absolutely yes! According to the Food and Drug Administration (FDA), one reason foodborne illness continues to be a public health concern is because food preparers and handlers are not fully informed of risks and safe food-handling practices. Education and training have the potential to decrease the incidence of foodborne illness. This booklet will review successful methods used in delivering food safety training and how delivery affects the way messages are understood, valued and applied to daily practice. This booklet guides you through the steps of delivering effective training. Learn how to make the message stick, what motivates an adult to learn, cultural influences on learning, how to create objectives that will work, and how to manage an effective learning environment. Included are sample training outlines.



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1. Introduction: Why train in Food Safety?

1.1. The Overall Burden of Foodborne Illness

Foodborne illness continues to be a significant public health concern.¹ According to the Centers for Disease Control and Prevention (CDC) foodborne diseases cause an estimated 76 million illnesses in the US annually.² This is equal to one in four Americans acquiring a food-related disease each year. Further to the CDC's report, 325,000 individuals are hospitalized and at least 5,000 die a preventable death each year.² Typically, foodborne illness is thought to have short-term, non-fatal symptoms including nausea, vomiting and diarrhea. However, in addition to death, many long-term consequences have been linked to foodborne illness. Chronic conditions linked to a foodborne illness include rheumatoid disease, reactive arthritis, several autoimmune conditions, inflammatory bowel disease, renal failure, neuromuscular disorders and malabsorptive disorders.³

Twenty to twenty-five percent of the US population is more likely to develop foodborne illness than the general population. Those individuals most at risk for foodborne illness are the very young, the very old, pregnant women, individuals with weakened immune systems and those on specific medication regimens. Foodborne pathogens are more challenging for these groups because they may develop illness from a smaller pathogen dose and may develop more severe symptoms. Both of these reasons can lead to lethal outcomes.⁴ As an example, in a recent review of foodborne illness outbreaks, food-related outbreaks in long-term care facilities represented only 2.4% of all reported foodborne disease outbreaks but resulted in 19.4% of outbreak-associated deaths in this same period.⁵ It has also been reported that an individual with AIDS is one hundred times more likely to develop salmonellosis than a non-infected person.⁶ At-risk individuals are more frequently served in institutional foodservice operations such as hospitals, skilled nursing facilities, day-care operations, schools and correctional facilities, but could be a guest at any type of dining facility.

Foodborne disease is not only a significant public health concern. Foodborne illness is bad for business. In addition to acute symptoms, chronic illnesses, and deaths associated with contaminated

food, lawsuits related to foodborne illness are on the rise. In a recent report it was stated that based on the theories of “strict liability” and “constructive knowledge,” foodservice operations are liable regardless of fault.⁷ Settlements and jury awards related to foodborne illness claims can be financially staggering. Media coverage of local outbreaks also continues to be increasingly sensationalized. Foodborne illness can result in a negative impression of an operation’s reputation, and can significantly impact the client’s brand loyalty.

According to the Food and Drug Administration (FDA) one reason foodborne illness continues to be a public health concern is because food preparers and handlers are not fully informed of risks and related safe food-handling practices.¹ Education and training have the potential to decrease the incidence of foodborne illness.⁸ An essential part of any food safety management system and foodborne illness prevention is initial and ongoing training of every employee responsible for food handling. Training should focus on awareness of the food safety risk factors⁹ (see Table 1) and safe food handling practices to control each of these risks.

Table 1.	The CDC’s Most Common Risk Factors Responsible for Foodborne Illness ⁹ : <ul style="list-style-type: none">▪ Improper holding (time and temperatures abuse)▪ Inadequate cooking or reheating▪ Poor personal hygiene▪ Contaminated equipment and▪ Food from unsafe sources
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1.2. The Impact of Training on Foodborne Outbreak Prevention

Many food safety experts agree that education and training are critically important to lowering foodborne illness risk factors.^{1, 5, 8, 10} In the Food and Drug Administration (FDA) *Report on the Occurrence of Foodborne Illness Risk Factors in Selected Institutional Foodservice, Restaurant, and Retail Food Store Facility Types (2004)*,⁹ an associated study was conducted to identify what impact food safety training may have on the control of foodborne illness risk factors. The study results indicated that the presence food safety training and manager certification had a positive effect on overall food safety compliance. In the words of the FDA: "If (employees are) knowledgeable about the relationship between the prevention of foodborne illness and the various operations, practices, and behaviors that take place in the food establishment, then he or she will be in a far better position to (control) the important foodborne illness risk factors." Poor personal hygiene was the risk factor for which training had the most positive effect.

Training in food protection is crucial. The lack of education, high staff turnover or ineffective training techniques impact the occurrence of this critical public health issue.¹⁰ The food safety educator's motto is said to be "Knowledge about safe food handling does not decrease the risk of foodborne illness – applying safe food handling practices does."⁸ This booklet will review successful methods used in delivering employee-level food safety training and how delivery effects the way messages are understood, valued and applied to daily practice.

2. What are the Qualities of Effective Trainers?

Comfort, confidence, and competence are keys to delivering effective presentations and training sessions. Trainers should possess basic qualities and fundamental instructor competencies. When delivering a presentation or training session the presenter should not only be accurate and professional, but should also be motivational, persuasive, provide memorable content and involve the audience in the presentation. To increase learning and retention it is also important to engage the audience and allow the learner time to practice new techniques and receive feedback. In later sections these skills will be detailed and key delivery guidelines will be provided. Take this opportunity to assess your current comfort and skill as a trainer (see Table 2. Trainer's Self-Evaluation).

Table 2. Trainer's Self- Evaluation ^{11, 12}

	Very much so	Adequate	I need to Improve
1. I enjoy speaking and training before an audience.			
2. I feel comfortable and confident when delivering training sessions and presentations.			
3. I prepare thoroughly for every speech or training event including development of clear learning objectives.			
4. I always consider the audience's diverse learning styles and perspectives when planning a training event.			
5. I plan for audience interaction and new skill practice.			
6. I am able to organize my thoughts in a clear, logical order.			
7. I am able to deliver sessions without depending heavily on notes.			
8. I speak with sincerity and enthusiasm.			
9. My speech delivery is free of distracting filler words, such as frequent ah's or um's.			
10. I am able to think quickly and respond clearly during question and answer sessions.			
11. My gestures, body movements, eye contact, and facial expressions are natural and appropriate.			
12. I am confident of my knowledge on each training topic, and on relevant industry-related information.			

3. See One, Do One, Teach One: Adult Learning and Retention

3.1 Making the Message Stick

There is an old military and medical training adage of unknown origin: “see one, do one, teach one.” Although simply stated, this is a wise approach to use when planning and conducting adult training and instruction. This method includes the use of active, hands-on participation; incorporates visual (sight), auditory (hearing) and kinesthetic (motor skill) learning; encourages repetition; and includes an evaluation component to assess the learner’s understanding of the task or procedure.

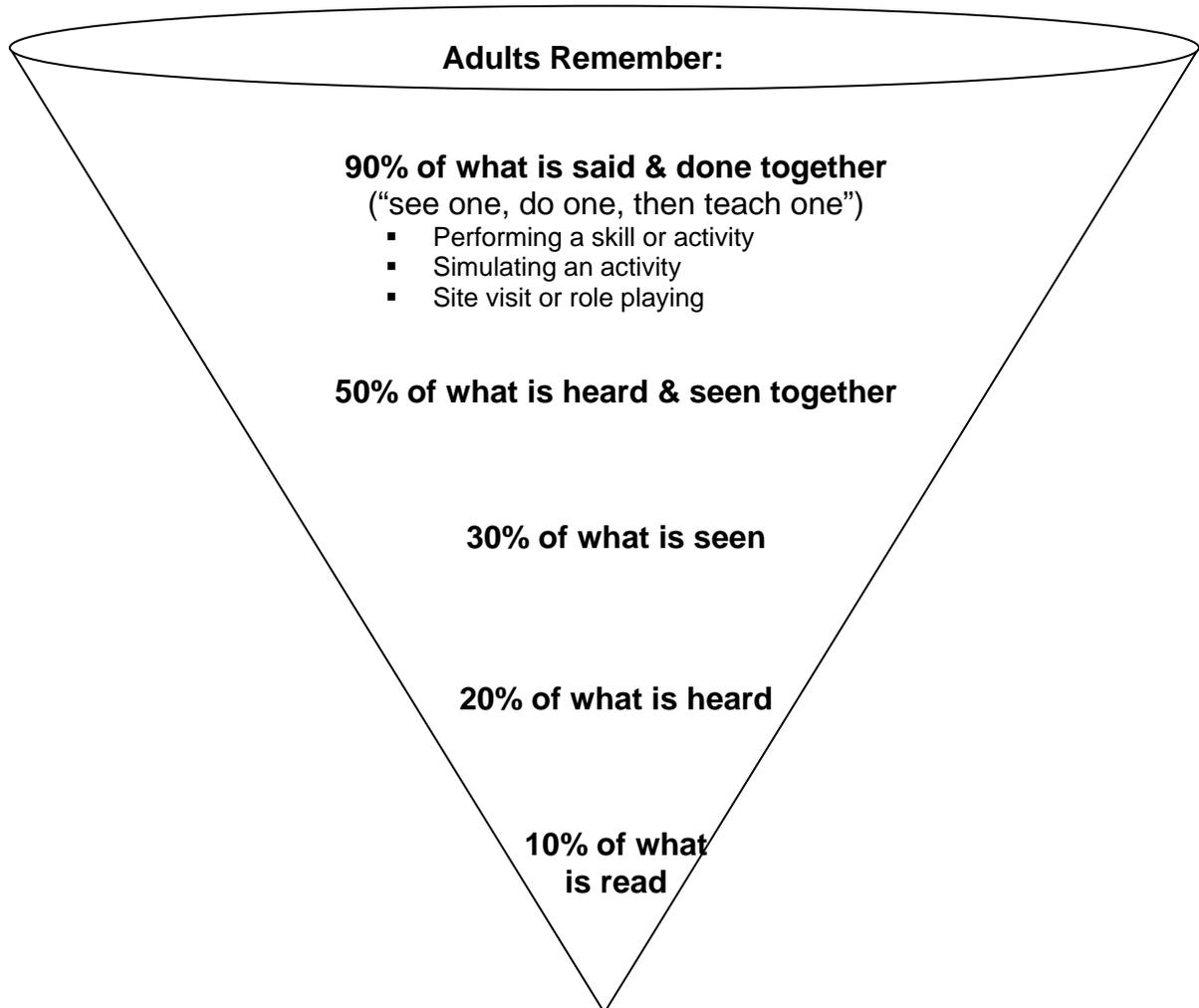
- “See one” – The learner has the opportunity to visually observe a mock demonstration; see and listen to a real-life scenario; or shadow an experienced individual and view how a task or process is correctly performed.
- “Do one” – The learner has the opportunity to demonstrate learning by imitating or performing a repeat-demonstration of the task while being observed. This assesses their ability to physically accomplish a task or correctly manipulate a piece of equipment. This allows the learner to receive confirming (“*you did it correctly*”) or corrective (“*here is the area you need to improve*”) feedback¹³ on their ability.
- “Teach one” – The learner explains the steps in the task or process while demonstrating the task again. This allows the learner to simultaneously demonstrate and describe each essential portion of the procedure or task. The learner stimulates retention by visual seeing the task performed, hearing the steps as they describe them and physically performing the task. Again, the learner also receives feedback on their proficiency.

This simple training philosophy is validated by Edgar Dale^{14, 15} and his “cone of experience.” (See Figure 1.) Posters, pamphlets, and handouts do not result in high rates of learning or retention.

However, as the senses of hearing, seeing and touching are employed, adults learn more. Therefore, the more adults can be involved in the instruction process, the more they will learn and retain.

Figure 1:

Edgar Dale's Cone of Experience ^{14, 15}



To be truly effective, every type of training, including instruction on safe food handling, requires:

- Knowledge of adult learning principles and personal motivation factors
- Comprehension of the different levels of adult instruction and learning expectations
- Application of adult learning styles to training methods and
- Preparation of clear and measurable learning objectives

3.2. What Motivates an Adult to Learn and Change?

It is important to keep in mind that adults learn differently than children. There are literally dozens of theories on adult learning. When planning and creating learning modules, face-to-face instruction, and other types of training programs the fundamental characteristics of adult learning should be addressed.^{16, 17, 18}

- I. Adults draw upon their accumulated life experiences, trial-and-error and past knowledge to place value and meaning on new information.

If the learner does not find the new information valuable or personally meaningful they will not change behaviors. Trainers should create training opportunities that help the learner identify personal benefits for performing the new task. Additionally trainers should help the learner connect past knowledge and experiences to new information. By relating new knowledge to known information through analogies or comparisons the learner is able to draw from past experiences to make decisions, assign importance and solve problems.

Examples:

- a. "We all have learned how important handwashing is to you and your family in preventing the spread of the common cold and flu. Today we are going to learn how handwashing is equally important to protect the food we prepare and serve."
 - b. "How many of you have heard the frequent news reports about the 'cruise ship' illness? Let's list how our building could be similar a cruise ship and then identify ways we can prevent an outbreak from this disease from occurring here."
- II. Adults are most interested in learning information and tasks that are relevant to their existing job, responsibilities, or personal lives.

The learner wants to learn new information that can immediately be applied to their work. The saying "use it or lose it" is quite relevant for retaining new-found abilities. Trainers should create practical,

hands-on training opportunities that allow the learner to apply new skills to “real life” scenarios in the workplace. The foodservice operation is literally an enormous learning laboratory with all of the tools and equipment that employees will be expected to operate. Take advantage of this opportunity to have learners directly apply and practice new tasks and skills.

Example: “Today we are going to learn three methods to quickly and safely cool food. After we have the opportunity to practice each of these new methods together, you should immediately start using these new practices on the job. Reminders of how to use these steps will be posted in your work stations to help you remember the steps.”

III. Adults are independent and self-directed.

Instead of relying on others, they want the freedom to decide what their goals are and determine what is important to be learned. Trainers should involve learners in the design and instructional process. By identifying how a training session will benefit the learner and asking the learner to be involved in planning and delivering training, the instructor is allowing the learner to accept responsibility for their learning and set independent goals.

Example: “Today we are going to prioritize our food safety training. Of the food safety topics listed on the board, please rate these from one (being least important) to ten (being most important) based on your opinion of their overall importance in protecting the food we prepare and serve. Next, for each food safety topic, please list practices you believe we need to cover in training and indicate if you would like to take part in leading a session.”

3.3. Cultural Influences on Learning

In addition to the fundamental characteristics of adult learning, adults receive, value, and retain information differently based on their upbringing, educational level and social economic background. In 2004 Donna Beagle, PhD conducted a communication study that included input from foodservice

workers, foodservice managers, foodservice owners and health regulators.¹⁹ The purpose of the study was to assess the role of communication in decreasing the occurrence of food safety risk factors. Through surveys and focus groups, the participants described their styles of giving and receiving information, learning preferences, and described the communication styles that they most valued and which lead them to change behaviors. It was identified that an individual's background significantly impacts how food safety information is delivered, heard and acted upon. Differences in the social economic status of those communicating and listening were also identified as having an impact on how the message is sent and received. Specific communication styles were recognized as having a critical impact on behavior changes that will reduce food safety risk factors. In this study two distinct communication styles became obvious.

Print-Culture Communication Style:

Print-culture communicators are usually the individuals in a position of authority who deliver informative messages, monitor performance and compliance, or deliver training. Health regulators and managers, in the study, were more inclined to use this communication style than foodservice workers. The print-culture communication style has several common characteristics.

- Print-culture communicators tend to be more literate in reading ability, are college-educated, and come from middle-class economic backgrounds with literate parents.
- These individuals use “print-culture” styles of communication, meaning that when they need or want to know something they seek out the information through reading books, journals, notes, reference materials or by exploring the internet. The print-culture communicator stores information “outside the person” or “knower” through these print-based resources.
- In addition, the print-culture communicator does not have to “live” the information in daily practice to believe it. For example, in this style of communication, the print-culture communicator could read the phrase “In a recent article, the CDC indicated that the best way to prevent the spread of disease is through handwashing.” This style of communicator would believe, value, and act upon this information based on the credible source.
- As instructors or trainers, the print-culture communicator is most likely to use a lecture format and little audience interaction. This person values time as a priority over developing a

trusting relationship with the learners. According to the study they "say what they have to say and move on."

Unfortunately, the audience of the print-culture communicator may have the following negative perceptions which are proven barriers to effective communication and training across cultural lines.

This person:

- Does not understand me or my job
- Talks over my head or talks down to me
- Uses big, fancy words that I do not understand
- Does not take time to get to know me; never listens to my perspective
- Tells me only once and does not show me how to do it correctly
- Never looks at me
- Is not to be trusted, is only here to write me up or catch me doing something wrong.

Oral-Culture Communication Style:

Oral-culture communicators are usually individuals in frontline, hourly jobs and are not in positions of authority. According to the study, and in daily practice, it is seen that frontline jobs in the foodservice industry typically pays lower wages and tends to attract people with limited education and literacy.

Demographics of the study participants that exhibited the oral-culture communication style indicated that:

- Sixty-two percent had annual incomes of less than \$15,000. The federal poverty guideline was cited at \$18,800 per year.
- Forty-two percent had attained a GED or "General Equivalency Diploma" and only twenty-eight percent had received their high school diploma.
- When asked about typical reading materials available in the home it was noted that the oral-culture communicators typically read subject matter that contained stories with significant emotional impact. Twenty-nine percent typically read tabloid-type

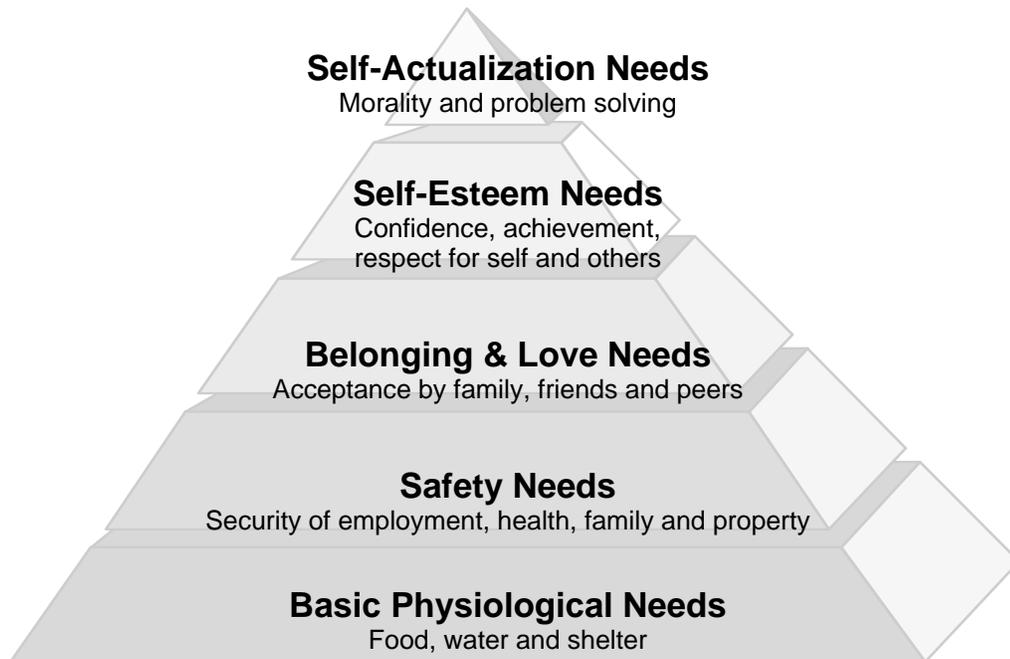
newspapers (like the National Enquirer™); eighteen percent read comic books; while only five percent read local or national newspapers.

The oral-culture communication style has several common characteristics.

- In contrast to the print-culture style, oral-culture style communicators tend to be less literate or struggle with their reading ability, have limited education, and come from low income economic backgrounds.
- These individuals use “oral-culture” styles of communication, meaning that they receive most of their information and knowledge through word-of-mouth. If they want to know something they are more inclined to ask, instead of looking up information from a print source. The oral-culture communicator stores information “inside the person”. In the words of Dr. Beagle, the “knowledge and knower are one” and the information that is stored in memory are those ideas that have significant personal meaning or have daily relevance.
- What makes information significant or meaningful to an oral-culture communicator? The information needs to have an emotional impact or can be immediately applied to the specific requirements of job-related tasks. If an oral-culture communicator heard or read the phrase: “In a recent article, the CDC indicated that the best way to prevent the spread of disease is through handwashing” from their frame of reference they may not trust the source or the person delivering the message. Furthermore they have to “live it” to believe the information. The oral-culture communicator may say “I do not wash my hands at home and I do not get sick. This must not be true.”
- Additionally, if living in poverty, an oral-culture communicator may lack adequate food or rudimentary services like water or electricity. Without running water at home, how can an individual see the importance of food safety for the public good? If you apply this to Maslow’s Hierarchy of Needs theory,²⁰ (see Figure 2) individuals must have their basic physiological needs of food, water, shelter met first. Then safety needs of employment, health and family security must be met. It is not until basic, lower-level needs are fulfilled that an individual is able to focus on personal growth, motivation or behavior change, including thoughts of a career with goals or the organization’s higher mission of protecting customers from foodborne

illness. Individuals without running water or electricity at home may not see the relevance of washing their hands for the sake of protective food and customers. The trainers approach may be to help the oral-culture communicator see the relevance of personal hygiene as it applies to being healthy enough to come to work (to pay for food and shelter) or continuing to receive a paycheck (security of employment) by complying with operational requirements.

Figure 2. Maslow's Hierarchy of Needs²⁰



- The oral-culture communicator values, remembers and acts upon information when it is received from someone who is trusted or respected. Managers, supervisors and health regulators, in their print-culture style, may be seen by oral-culture communicators as someone who has “negative power” over them, can punish or fire them, judge them as “just too lazy” or talks down to them. In addition, the oral-culture study participants shared that they see their boss mishandle food and fail to wash their hands, or may be reprimanded by their boss when they do take the extra time to do a procedure correctly. Therefore, they do not trust or value information from contradictory sources.

From a training perspective, the study concluded that “behavior changes are more likely to occur when messages are communicated in ways that are framed from the receiver's worldview, context, and priorities.”

When training is approached with the learner's interest in mind, behavior change is more likely to occur. Oral-culture communicators are most likely will change, value or take action on new information when:

- It is given by someone they trust
- The Information given verbally
- Familiar words and examples are used to relate to “lived” experiences
- It is told in a vivid, emotional story
- The behavior or task is shown and repeated often, and is modeled by managers
- They are recognized and rewarded for correct behavior

Activity: Training Step One: Temperature control of potentially hazardous foods

Why should employees learn? How will training help them in their personal lives or jobs? This is known as the “what’s in it for me” or WIIMF and provides the learner an explanation of the value of the training topic. Write a statement that describes to your unique group of food handlers, from their perspective, the importance of or motivation for temperature control of potentially hazardous foods.

The reason this topic is important to each of us is:

For an example of this training step see Appendix 12.1.

3.4. Applying Adult Learning Theory to Training Delivery

For trainers to deliver knowledge to the adult, oral-culture communicator and ensure that the information is understood, valued and applied to daily practice, consider applying the acronym TRUST and the TRUST model below.

- **T – Trust & Relationship Building:**

It has been reported that 80-90% of communication is non verbal.²¹ Trainers should build a trusting relationship by using an encouraging and supportive verbal tone; direct eye contact; open, expressive gestures; and positive body language. Rephrase sentences using “we” in stead of “you should”. Approach the topic in a non-punitive way. To maintain credibility with the oral-culture communicator, make sure to constantly and unfailingly model correct behaviors and techniques.

- **R – Relate to the Learner:**

You may have heard the term “what’s in it for me” or WIIMF. Share with employees how the information will help the learner in their daily lives and how this will improve their personal or professional situation. Use examples that relate to the context of their lives and daily work experiences. Use familiar and memorable sayings like “keep the hot food hot and the cold food cold.” Use stories about ordinary people that connect emotionally with oral-culture communicators.¹⁹ In other words, have an “Oprah moment,” delivering the training concept in a story format that is personal and adds emotional impact.

- **U – Use Understandable Language:**

Using a non-patronizing tone, speak in basic terms and use familiar words like “germs” instead of “pathogens” or “microorganisms”. State information simply and repeat the key points often.

- **S – Show the Learner**

Use vivid examples and demonstrations. Use the “see one, do one, teach one” method. Interactive learning methods in the actual work environment help oral-culture communicators see and hear

information simultaneously. Additionally the learner is allowed time for hands-on practice to apply the skill.

- **T – Tribute the Terrific**

Provide words of praise such as “terrific”, “that’s great”, and “well done.” Positive reinforcement, reward and recognition are important for oral-culture communicators to apply meaning and a sense of accomplishment to the new task.

4. ***Beginning With the End in Mind: Developing Learner-Focused Objectives***

In addition to focusing on the adult learner and the motivational factors that lead to retention, it is also important to determine the desired outcomes that the training session should bring about.

What do you expect food handlers to do differently or better as a result of the training event and how will the effectiveness of training be measured? Several expectations for training outcomes could be that food handlers will have

- Increased efficiency & productivity in performing job tasks
- Increased compliance with job requirements and standards
- Specific behavior changes

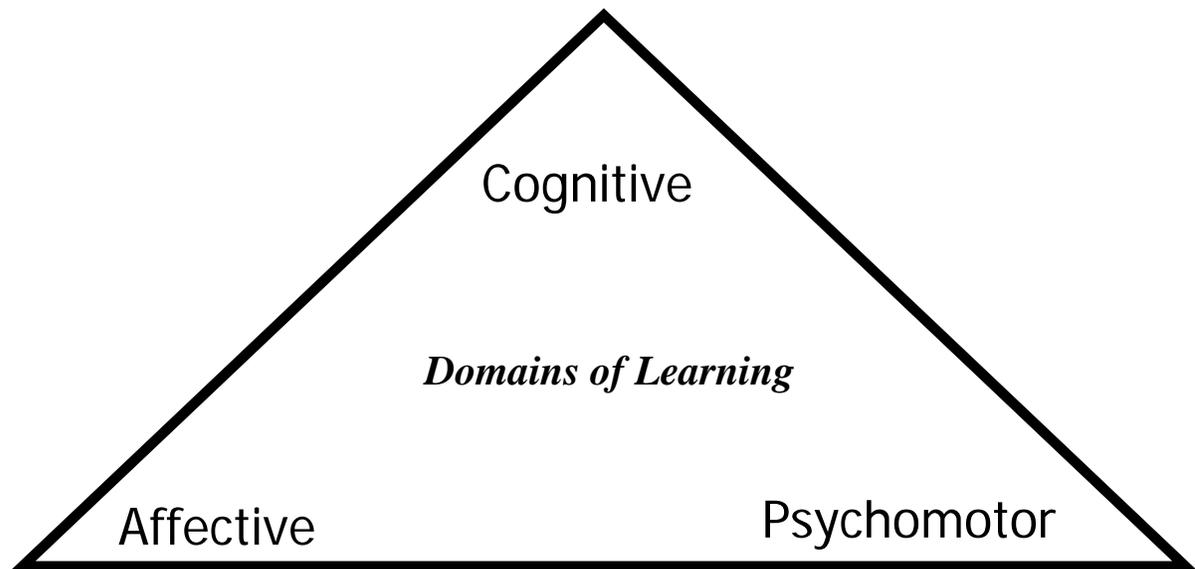
The concept of ‘beginning with the end in mind’ is crucial. This principle has been explained as “backward design.”²² As training sessions are planned and designed, first identify the desired results. This starts with writing specific and measurable learning objectives or outcomes. Learning objectives provide the trainer with a concrete plan and vision for the training session. Based on actual duties or job expectations, the learning objectives target the competency in performing crucial skills and helps focus the content of each training session into logical topics. Essentially, these measurable learning objectives become the roadmap or outline for to the training session. In addition, when learners know what is expected of them, there is a better chance that they will be successful. Previously it was explained that individuals learn in many ways; by reading, referencing and memorizing information; by seeing, saying, hearing and doing; and by valuing the information to the point of attitude and behavior change. Crucial learning outcomes should focus on the employee’s knowledge, skills and attitudes.

Benjamin Bloom is well regarded as an early leader in instructional design. His “domains of learning” are widely used in the development of specific, outcome-based learning objectives.^{23, 24, 25} Bloom’s domains of learning indicate that there are three specific domains or levels of learning or skill development (see Figure 3). These three domains are the cognitive domain (knowledge-based learning); the psychomotor domain (proficiency at motor-skills); and the affective domain (an

individual's attitudes and values). Within each domain are sub-categories for outcome assessment (see Appendix 12.3 for each domain and sub-categories).

Figure 3

Bloom's Domains of Learning^{23, 24, 25}



Bloom's domains of learning can be used to write specific, measurable, action-oriented, and outcome-based learning objectives. How do we know that employees "know" or "understand" information during or following a training session? We know because we use outcome-based measurements, known as learning objectives, which require the learner to actively demonstrate comprehension, competency or proficiency.

The Cognitive (Knowledge) Domain:

This area of learning focuses on declarative knowledge^{13, 24, 25} and the mental skills that revolve around intelligence, knowledge, comprehension and problem solving.

- The first level in the cognitive domain is basic recall. Trainers may evaluate the achievement of specific learning objectives by measuring the learner's ability to recall information, list steps in a procedure, define terms, or describe a process. This equates to mechanical repetition or routine memorization of key information.

- The second level of this cognitive domain is interpretive skills. Beyond rote memorization, trainers may assess the learner's ability to comprehend concepts and apply this knowledge to job tasks. Trainers may measure the learner's ability to explain consequences, give examples, or interpret results. This equates to translating knowledge into specific actions.
- The third level of the cognitive domain is problem solving. This includes analytical thinking, synthesis of information, and evaluation of procedures. Learning objectives may assess the learner's ability to analyze data ("*What is the temperature?*"), formulate opinions ("*Is the temperature within a correct range?*"), and choose a corrective action ("*Does the item need to be discarded or reheated?*").

In foodservice operations, most hourly food handlers are required to perform competently at the highest problem-solving level. Below is an example of applying the cognitive domain and categories to create written outcome-based, measurable learning objective that may be used in a typical food safety training program on thermometer calibration and use. Other action verbs for this domain are provided in Appendix 12.3.

I. Recall:

- (Knowledge) The learner correctly *lists* the steps for calibrating a bimetallic stemmed thermometer.

II. Interpretative:

- (Comprehension) The learner correctly *explains* the importance of having an accurately calibrated thermometer.
- (Application) The learner *demonstrates* the accurate use of a thermometer in various types of food items.

III. Problem solving:

- (Analysis) The learner *distinguishes* between acceptable and unacceptable food product temperatures based on department standards.
- (Synthesis) The learner *generates* a corrective action when food products do not meet department standards.

- (Evaluation) The learner *selects* the correct type of thermometer for various food and procedures.

The Psychomotor (Skill) Domain:

This area of learning focuses on procedural knowledge;¹³ manual skills; use of the sense of sight, smell, taste, touch and hearing; the ability to physically manipulate equipment, tools; or eye–hand coordination.

- The first level of the psychomotor domain is awareness and readiness. Trainers may evaluate learning outcomes by measuring the learner’s ability at sensory perception and their readiness to act or react. Specific outcomes may evaluate the learner’s ability to distinguish, locate, taste or prepare.
- The second level of the psychomotor domain is proficiency at imitating another’s actions, performing habitual tasks, taking directed steps, and performing complex tasks. Learning outcomes may measure the learner’s ability to copy, manipulate, or perform a specific task under another’s direction.
- The third level of the psychomotor domain is the learner’s ability to use current skills in a creative way. The trainer may evaluate the learner’s ability to adapt or change a procedure based on equipment type and to formulate new procedures.

As before, below is an example of applying the psychomotor domain and categories to create written outcome-based, measurable learning objective that may be used in a typical food safety training program on handwashing procedures. Other action verbs for this domain are provided in Appendix 12.3.

I. Awareness and Readiness:

- (Perception) Using a fluorescent lotion like GloGerm™, the learner is able to see areas on hands and arms that are routinely missed when improperly washed.
- (Set) The learner is able to *locate* items needed to properly stock a handwashing station.

II. Increasing Proficiency:

- (Guided response) The learner is able to correctly *imitate* the trainer's steps for proper handwashing.
- (Mechanism) The learner is able to correctly and thoroughly *wash* hands before each shift and as they become soiled or contaminated.
- (Complex response) The learner is able to correctly *demonstrate* steps taken when changing disposable gloves.

III. Creativity:

- (Adaptation) The learner is able to *adapt* hand hygiene procedures in the event of infected cuts.
- (Origination) The learner *designs* handwashing signs to post at handwashing stations.

The Affective (Attitude) Domain:

The final domain may also be the most difficult to measure. An employee's values and attitudes are very personal and deeply rooted in their background and social economic status.¹⁹ While a trainer may be able to have food handlers list (knowledge) the steps for handwashing and demonstrate (skill) proper handwashing, it takes an inspirational and persuasive trainer to motivate adults to wash their hands every time it is required; not because they have been told to, but because they know it is the right thing to do.

- The first level of the affective domain is simply awareness and acceptance of operational policies and procedures. Trainers may evaluate learning outcomes by measuring the learner's compliance with department standards.
- The second level of the affective domain is measured in the employee's attachment of value to operational requirements. Learning outcomes may be measured by demonstrating commitment to programs and operational goals.
- The third level of affective learning is the learner's commitment to and internalization of the organization's mission, vision and values.

Once more, examples are provided for applying the affective domain and categories for writing outcome-based, measurable learning objective that may be used for random topics in a typical food safety training program. Other action verbs for this domain are provided in Appendix 12.3.

I. Awareness:

- (Receiving) The learner *attends* required food safety training.
- (Responding) The learner *complies* with departmental hygiene policies for uniforms and nail maintenance.

II. Attachment of Worth:

- (Valuing) The learner *seeks* advice on critical food safety procedures.

III. Commitment of Value:

- (Organizational) The learner *displays* appropriate food handling behavior and *advocates* this behavior with peers.
- (Internalization) The learner *initiates* food safety training with peers as deficiencies are identified.

Activity: Training Step Two: Temperature control of potentially hazardous foods

What are the criteria-based performance expectations for knowledge, skill and compliance in a food handler's written job description? What do you expect food handlers to do differently or better as a result of a training event and how will the effectiveness of the training be measured? Write at least three measurable, outcome-based learning objectives for a training session on temperature control of potentially hazardous foods. Use each of the three learning domains.

A simple way to start is to complete this sentence: "At the end of this training session employees should be able to...."

Cognitive Domain

1.
2.

Psychomotor Domain

1.
2.

Affective Domain

1.
2.

For an example of this training step see Appendix 12.1.

5. *Seeing is Believing: Visual Aids to Learning*

5.1. Facilitating Objective-based Application Activities

A wise and familiar Chinese proverb, often attributed to Confucius, states "I hear and I forget. I see and I remember. I do and I understand." It is quite evident from adult learning theory,^{16, 17, 18} Edgar Dale's Cone of Experience,^{14, 15} and from the characteristics of oral-culture communicators,¹⁹ that adults learn quicker and retain information better when they are actively involved in a training event. In the text *Telling Ain't Training*, Dr. Harold Stolovitch states that "the more learners do, the more learners learn." Dr. Stolovitch recommends that trainers create activities that allow learners to carrying out tasks that are specifically connected to the performance of written learning objectives.¹³ Trainers should create practical, hands-on training opportunities that allow the learner to apply new skills to "real life" scenarios in the workplace. In addition to increased retention, active training adds elements of challenge, creates a fun learning environment, requires employees to participate, increases the learner's curiosity, may relieve instruction-related stress and helps to hold the learner's attention. Food safety songs and sing-alongs have been shown to help learners remember key food handling practices with a flair for the fun, like *Schoolhouse Rock!* has so many helped children remember key math, grammar and American civics skills.^{26, 27}

Effectiveness of training is also measured by whether or not the employee develops the desired skills. Did the employee succeed (knowledge, skill or attitude) at the task or procedure? Did the trainer deliver the content in a clear and knowledgeable manner? Was the training program developed well? The accuracy and proficiency demonstrated by food handlers when completing activities helps to evaluate the level of understanding or commitment of the learner and to measure competence with expected learning outcomes. In addition, the effectiveness of the trainer's facilitation skills can be measured by how well employees complete planned activities.

The foodservice operation lends itself to active training formats by providing a real-time, live learning laboratory with all of the tools, equipment, tasks and procedures that employees will be expected to operate or perform. Trainer should take advantage of this benefit by having learners directly apply

hand-on practice of objective-based tasks and skills. Table 3 lists several examples of activities that can be tailored to various foodservice training topics.

Table 3. Training Activities

- Trainer demonstration (e.g. thermometers, equipment, chemical test strips, gloves)
- Learners shadowing, hands-on repeat demonstration, “see one, do one”
- Mock demonstrations with interactive props (GloGerm™, rubber chicken)
- Team or individual competitions
- Role playing
- Group discussion, question & answer sessions, and brainstorming
- Food safety songs²⁶
- Flash cards
- Case studies or guided scenarios
- Practice and competency assessment quizzes
- Videos
- Learning games
 - Matching or compare
 - Bingo
 - Puzzles
 - Identification games
 - Fill-in-the-blank
 - Spot-the-error or scavenger hunt
 - Fact or fiction
 - Jeopardy-type game shows

Activity: Training Step Three: Temperature control of potentially hazardous foods

How can hands-on learning be used to challenge learners, encourage hands-on learning and measure learning? Describe two different activities that could be used in a training session on temperature control of potentially hazardous foods.

Activity 1.

Activity 2.

For examples of this training step see Appendix 12.1 and 12.2

5.2. Evaluation and Feedback

The final steps in planning and creating learning modules, face-to-face instruction, and other types of training programs is to evaluate the learners knowledge and skill, then provide feedback.

Each food handler position has expectations for knowledge, skill and compliance in the learner's written job description. Evaluation of training is essential to determine if the learner, in fact, has performed the task as expected. In addition, evaluation holds the learner accountable for skill retention and job performance after the training event.

Compare the established measurement in the training session's written, outcome-based learning objectives to actual learner performance. Based on this evaluation:

- Did the learner complete the activity-based task or assignment correctly?
- Will the learner be able to do their job as expected?
- Does the learner exhibit competency with the new knowledge, skill or attitude requirement?
- Is there still a gap between what the learner knows and what the employee is required to do?

The evaluation should lead to confirming or corrective feedback.¹³ This should be provided soon after the activity is evaluated.

- *Confirming* feedback provides learners with affirmation that the task was performed correctly. Additionally, it provides the food handler a sense of achievement. Furthermore, the learner is provided recognition that serves as positive reinforcement to continue performing in the same manner.
- *Corrective* feedback should be provided when there is a gap in employee performance. We can all learn from making mistakes. First, identify why the learner failed to meet the objective. Was it related to a gap in knowledge or skill, a learning deficit such as literacy, or an issue of attitude, values or dedication to the task? Explain to the learner what the expectation is and why the objective was not met. Model for the individual how to perform the task correctly, provide additional corrective training as needed and continue to challenge the learner until the learning objective is met. Dr. Stolovitch warns that feedback should address the skill or performance objective and not be directed personally at the individual.¹³ Additionally, it is recommended to keep the feedback positive and encouraging.

6.0 Ready, Willing and Able

Knowledge of adult learning principles, development of measurable learning objectives, and interactive design of training sessions are only a few aspects of instructor development and effective training. Additionally, facilitators need to be knowledgeable in the topics or skilled in the tasks that are to be presented. There is no easier way to lose audience trust and confidence than lack of credibility and knowledge. In the words of football star Charlie Batch

“Proper preparation prevents poor performance.”

6.1. Researching for Readiness

As training programs are developed, several aspects need to be thoroughly reviewed. First, assess your audience.

- How many individuals will be in the training session? This can impact the training location, audiovisual requirements as well as the flow and function of planned activities.
- What is the current knowledge level of the audience and what expectations have been placed on the trainer and learners? It will be important to approach the training with the least knowledgeable and most knowledgeable attendees in mind. If the content is too difficult learners may become frustrated and give up. If the content is too basic then learners will quickly become bored. Training should be blended to meet both learners' needs.
- What work resources, equipment and unique procedures are in the operation? Especially for oral-culture communicators it will be important to keep the training practical and applicable to the daily work environment. If hypothetical and abstract examples are not part of their "lived" experiences, oral-culture communicators will not realize why the behavior or task is necessary.¹⁹ Therefore the new information will not be valued, retained or acted upon.
- What cultural considerations should be made? Identify if education, literacy, language, cultural beliefs or social background will be a barrier to effective learning.

The second aspect of “proper preparation” is researching your topic. Especially in the field of food safety, it is important to seek the guidance of experts, use industry best practices and ensure compliance with all local, state, federal and accreditation requirements. For each food safety topic presented, consider the following:

- What regulations or standards exist? Be sure to review state food codes, the FDA food code, accreditation standards, government guidance documents and fact sheets and respected food safety websites (see Web-based References) for the most accurate and appropriate food handling regulations. Attend relevant continuing education events to keep updated on emerging issues and knowledge.
- What industry standards exist? Check with equipment manufacturers and foodservice distributors. A distributor food show is one example of a venue that allows trainers to question industry representatives on the various food safety aspects of products and equipment.
- What is the current policy or procedure within the facility and what is the current level of compliance? Review recent health inspection, third-party inspection or self-inspection reports to determine if compliance is good, marginal or unacceptable. Identify deficiencies to determine if it is related to a poor procedure, defective equipment, lack of adequate food handler training or employee attitudes.
- What are similar organizations doing? Attend professional meetings and network with peers to identify fresh approaches to standard practices and procedures. Ask to shadow procedures at leading facilities to identify best practices. Benchmark through professional organizations and their reference materials or publications.

A leading food safety website that is the gateway to key government food safety information including the Food and Drug Administration, Centers for Disease Control and Prevention, Food Safety and Inspection Service, and the Environmental Protection Agency is <http://www.foodsafety.gov>. As noted in Figure 4, the website contains a wide array of information for researching and delivering food safety training programs.

Figure 4 FoodSafety.gov Gateway to Government Food Safety Information



While researching make sure to take thorough notes and cite the sources of information including books, manuals and internet websites. In that manner, critical points can be accessed at another time without the need to seek out original sources or re-research. In addition, when developing and delivering public presentations, creating handout materials and documenting references, proper citation is important. Specific laws regarding copyright and use of other's materials can be reviewed at <http://copyright.gov>.

6.2. Organizing Your Topic

Thomas Edison may have said it best. "Genius is one percent inspiration and ninety-nine percent perspiration." Credibility and audience attention can be lost if the facilitator is not organized and does not deliver thoughts in a clear, organized sequence. Organization of training content, learning objectives, activities and delivery methods does take time. For training to be effective, planning is essential. Age-old wisdom on organizing thoughts and training topics has suggested to "tell them what you are going to tell them; tell them; then tell them what you told them." While simple, that is exactly what a training plan, speaker notes or document outline should include.

- “Tell them what you are going to tell them”

This introduction should include the topic to be discussed, the WIIMF (“what’s in it for me”) or learner motivation points, the expected learning outcomes and the trainer’s background in the subject matter. The introduction should also draw the learner’s attention and provide learner motivation. Additionally, during the introduction the session content should be previewed (what you are going to tell them) and indicate to the learners how the information will be of value to them personally or professionally. Moreover, the trainer should set the learner’s expectations for how understanding and compliance will be measured, monitored, and the overall organization’s expectations.

- “Tell them”

This is the body or content of the training event. To manage time and to maintain lesson clarity, the content should not stray from the specific, written learning objectives. Each learning objective should be used like a main heading of an outline and supported by key expectations, relevant data, motivational stories, examples, and anecdotes. As well, the trainer’s verbal content should be reinforced with visual demonstrations of the expected behavior, on-going assessment of audience comprehension, and hands-on application of skills by the learners. By using verbal information, visual demonstrations, memorable phrases and application activities the same content is repeated several times. Repetition leads to learning and retention. In addition, when varying the training methods, instructors reach food handlers, whose learning style differs from reading, hearing, seeing or doing.

- “Tell them what you told them”

The conclusion should review the key learning objectives and reinforce the key points made during the session. This is a final opportunity at repetition.

Trainer notes help the trainer stay on track. If the training session is repeated or given by more than one trainer, notes also ensure that consistent content is provided. Appendix 12.2 contains an example of trainer notes that incorporate an introduction, body and conclusion with learning objective and group learning activities.

6.3. Evaluation of Learning and Training

To ensure that training objectives and expected outcomes have been accomplished learning should be evaluated. This should be incorporated into the lesson activities or evaluated through a post-training competency test. Likewise, a follow-up evaluation should be used at a later time to monitor on-going retention.

In addition to evaluating learning on the food handler's part, trainer effectiveness and performance should be evaluated through a post-training attendee evaluation form. Identify the key aspects of the training session and facilitator's delivery that should be assessed to ensure that meaningful and accurate training is consistently provided.

Questions may include open ended questions like:

- What was the most valuable thing you learned?
- List one recommendation for improving this program.

Questions with a scaled rating system (poor, fair, good or 1-5) could include:

- Will the information be useful in your daily job?
- Did the activities help you understand the task or skill?
- Did the trainer have good knowledge of the information?
- Did the trainer speak clearly and enthusiastically?

Evaluations are a great opportunity for the trainer to evaluate the training program content and their own performance to identify areas for revision, development and improvement.

7. First Impressions: Setting the Stage for Learning

There are two sayings of importance: “First impressions are lasting impressions” and “you never get a second chance to make a first impression.” Unprepared and disorganized instructors are more likely to deliver low quality training events and lose the interest and respect of the audience. To that end, starting a off on the right foot is critical to the session’s overall success and the trainer’s believability.

7.1. Preparing the Training Environment

For each training event, it is critical to prepare the training content and location before the audience arrives. Once the audience arrives it will be too late to retrieve forgotten notes, handouts, activity props or audiovisual equipment. Preparation is even more vital if the trainer will be traveling to another building, city or state. A training check list (see Table 4) helps the presenter to plan appropriately for the pending event.

7.2. Appearance

A second aspect of first impressions is the trainer’s appearance and approachability. Attire is important to establish the learner’s initial impression of the trainer. If dressed too casually, the audience may have the impression of trainer inexperience, ill preparedness or that audience is taken for granted. Equally, attire can create a class or cultural barrier. If dressed too formally the audience may have the impression that the trainer is not “one of us”, and outsider or unapproachable. A good rule of thumb is to dress equally to or just one notch above the audience’s attire. Do not forget to wear a warm and caring smile, as well.

Table 4

Training Checklist

At the Initial Training Request	Details
Training date(s) and time(s)	
Training topic	
Training location	
Training contact name (at location) Contact's phone and e-mail	
Training address and directions	
Unique state or local training or trainer requirements	
Expected attendance numbers	
Audience background and details	
Four to Six Weeks Prior to Training	
Continuing education credit applications	
Travel arrangements to location	
Advanced orders for books, manuals, handouts, examinations, other training materials	
Audiovisual equipment requests, reservations	
Training room set-up (classroom, theater, U-shaped, other)	
Training room accommodations (pens, pencils, paper, unique requests)	
Break accommodations (food and beverage)	
Collect, order, request and organize all training props and activities	
Review or develop training content, rehearse delivery, and practice demonstrations	
One Week Prior	
Confirm all training details with location contact	
Confirm early access to the building and training room for set-up	
Confirm receipt of advanced material orders	
Day of Training	
Pre-event training room set-up and audiovisual equipment operation check	
Cue-up videos, organize props	
Arrange or distribute books, manuals, examinations or handouts	
Review building layout and emergency exits	
Post-Training	
Post-training room clean-up	
Review of class evaluation forms	
Revision of training content	

7.3. Icebreakers

A third aspect of starting off on the right foot is the use of an icebreaker. Icebreakers are quick activities that can be used for various reasons, including to “warm-up” the audience. These activities help the trainer establish the tone of the training event, create an open environment for learning and help the participant have a bit of low-risk fun. At the beginning of a training session they can be useful to introduce the training topic, preview content, pre-test the audience’s knowledge on the subject, or bring in a theme that is woven throughout the session. Icebreakers also help wake-up, energize or even focus audiences’ attention. Furthermore, during the icebreaker the facilitator has an opportunity to read the audience’s mood, their level of prior subject knowledge, and level of interest.

Key aspects of icebreakers:

- The icebreaker should be low-risk. If learners “fail” or are “wrong” during the icebreaker, they may lose interest or may be reluctant to participate during the remainder of the session. Trainers should set the activity-up as a win-win situation and facilitate the activity so everyone has fun, is successful and benefits.
- The icebreaker should stimulate participation by all attendees. The trainer should create these activities so that all learners have a chance to take part.
- Additionally, the icebreaker should be an appropriate length. Based on the time-span of the training program it may be 1-2 minutes for a short in-service or 15-45 minutes for half or full-day training events.
- Icebreakers need to be adapted for varying group sizes. What works for a small group of ten will not work for larger groups of fifty or five hundred.

Sources for icebreaker ideas include libraries, book stores and the internet. Several on-line sites are provided in the reference section of this document.

7.4. Audience Control

An additional aspect of first impressions is setting audience expectations. The attendees will look to the facilitator to set boundaries for conduct during the event. During the introduction take a minute to review the agenda, identify when breaks will be taken, and set expectations for participation and audience questions. This is a good time to establish an open environment of “ask questions at any time” and “there are no dumb questions” or a closed environment of “please hold your questions until the end.” Request cell phones and pagers to be switched off or silenced.

7.5. Murphy’s Law: Planning for the Inevitable

As quoted earlier “Proper preparation prevents poor performance.” Just like a foodservice disaster plan, planning for training events should take into account all of the things that could possibly interrupt or interfere with the training: Equipment malfunctions, power fails, demonstrations go wrong, handouts and materials do not arrive and attendees may be disruptive. Before every training session, take time to visualize the training event, the room, equipment and demonstrations and identify what could go wrong. What preparation can be done to prevent these situations from occurring? Many times, despite the disaster, the “show must go on.” Having a back-up plan for every inevitability may help the trainer quickly recover and continue with the session.

8.0 At a Loss for Words: Presentation Delivery Skills

Speaker confidence and knowledge of subject material are just two keys in delivering effective presentations and training sessions. The trainer self-assessment checklist (see Table 2) lists many critical traits of effective training success. When delivering a presentation or training session the presenter should not only be well-informed and professional, but should also possess the qualities of a motivational, persuasive speaker. The delivery methods and content should be memorable and interactive to enhance retention of the content or skill. Review the TRUST model described earlier for trainer methods that appeal to and engage audiences. The trainer's rapport with the audience affects the way messages are understood, valued and applied to daily practice.

8.1. Skills for Body Language and Vocal Delivery

Establishing rapport with the audience begins with the trainer's presence or audience appeal. Beyond knowledge and appearance, these are the verbal and non-verbal skills used to build interest, hold the learners attention and generate motivation.

Non-verbal skills include the use of eye contact, facial expressions, body language, posture, gestures and movement.

- Direct eye contact establishes a visual bond with the audience, shows genuineness, enthusiasm, sincerity and confidence.
- Facial expressions help to amplify emotions, build passion, raise motivation, add drama, and show enthusiasm for the topic.
- Gestures are the use of hands, arms and other body movement to illustrate or emphasize specific points. As an example, while talking about the steps for handwashing, hand gestures can be used to demonstrate each procedure. Gestures punctuate urgency, symbolize emotions, and can emphasize or exaggerate points.

Non-verbal prompts take the learner up the "cone of experience" from just hearing, to hearing, experiencing and seeing at the same time.^{11, 14} Inappropriate or negative non-verbal

cues can also detract from effective audience interaction and communicate that the instructor is self-conscious, insecure, cold, or unsympathetic.

Verbal volume, pitch, tone, pace and use of pauses are an important element in a speaker's presence.¹¹ Remember the monotone teacher in the movie *Ferris Bueller's Day Off*?²⁸ Prevent boring the audience with a dull performance by considering the following:

- Volume – Make sure that everyone in the audience is able to hear the verbal content. Speak at a level that projects the voice without shouting. Like wise, changing volume, whispering or shouting, could be used to add emphasis or dramatic impact.
- Pitch – Varying verbal inflection and changing the pitch of one's voice conveys passion and emotion to the listener and help's retain their attention. Speakers should practice being conversational to prevent monotone and boring qualities. Try to mimic the vocal variety and pitch changes heard in the voices of newscast reporters or radio announcers.
- Tone – Verbal tone should be pleasant, approachable, and encouraging. Speakers should avoid verbal tones that may be taken as patronizing or condescending.
- Pace and pause – The rate of speech should also vary; rapid at times to build excitement and show passion; slow at other times to display conviction or emphasize crucial points. Pauses can be added for dramatic effect and to allow the listener time to reflect on a concept.

In addition to pitch, pace and verbal tone, ensure that the vocabulary used is clearly understood. While the trainer may be familiar with terms like "microorganisms" and "pathogens" or acronyms like "HACCP", these may be unfamiliar or even aloof to many food handlers, especially those from the oral-culture communication style. Use simple, recognizable terms, and thoroughly explain new works or acronyms that the listener needs to learn. The trainer should also check pronunciation of words for accurate delivery.

8.2. Rehearsing

“The Brain is a wonderful thing. It works from the time you are born and never stops working until you are about ready to speak in public!” (Robert Frost) It has been widely reported that the number one human fear is the fear of speaking in public.²⁹ It is quite natural to be nervous, self-conscious or unsure of yourself when speaking in front of groups. One way to feel more confident is to prepare and practice. Preparation helps to lessen the risk of “Murphy’s Law” from ruining the event and the trainer’s self-confidence. Trainers should practice and be familiar with the content, demonstrations, prop use, activity facilitation, and use of all audiovisual equipment. Preparation includes rehearsing so the information can be delivered in a conversational tone and with limited use of notes. Practice is essential to deliver content within a specified time frame without ending too quickly or going past allotted training times. To help lessen anxiety, rehearse more. Practice in front of a mirror or, if possible, in front of a video camera. This allows the trainer to:

- Hear verbal pitch, volume, tone and pace. Continue practicing until the content is delivered in a smooth, conversational, and inspiring manner.
- Look at facial expressions, gestures, and eye contact. Rehearse so that movements are natural, appropriately animated, and facial expressions are friendly and sincere.
- Listen to the content and phrases used. Ensure that thoughts are logically organized, simple words are used, and phrases are clearly stated and understandable.

To help enhance confidence and public speaking skills consider participation in a local speaker’s organization such as Toastmasters International (<http://www.toastmasters.org>). Weekly meetings help the trainer to practice delivery skills and receive peer feedback in a low-risk environment.

9.0 Conclusions

It is well reported that foodborne illness and the associated risk factors can be lowered by effective and on-going training. Because adults learn, value and act upon training content differently based varying learning styles; facilitators must use a wide variety of strategies to bring about consistent behavior changes. Training sessions on the foodborne illness risk factors should be planned with the adult learner in mind and allow as much hands-on application as possible. Adult learners should receive motivational justifications for participating in training sessions and complying with food safety standards. Outcome-based learning objectives should state the expected behaviors that food handlers should demonstrate for proper food protection. The trainer should prepare and practice training techniques that are persuasive, inspiring and deliver content that is memorable. Lastly, trainers should be a role model to food handlers and exemplify correct food handling techniques not only during training sessions but in every day practice.

10.

Web-based Resources

(all web addresses valid on November 30, 2007)

GENERAL FOOD SAFETY TRAINER REFERENCE:

Gateway to government food safety information: <http://www.Foodsafety.gov>
Center for Food Safety and Applied Nutrition <http://www.cfsan.fda.gov>
Centers for Disease Control and Prevention <http://www.CDC.gov>
Food Safety and Inspection Service <http://www.fsis.usda.gov>
International Association of Food Protection <http://www.foodprotection.org>
DMA Food Protection Connection <http://www.dmaonline.org/fppublic/connect.html>

Free Management Library:

Resources fro Facilitators http://www.managementhelp.org/grp_skill/resource.htm

USDA FSIS Taking Care of Business.

Food Safety References for Retail and Foodservice Establishments
<http://www.fsis.usda.gov/OA/pubs/fstea.pdf>

FOOD SAFETY TRAINING TOPICS:

National Food Service Management Institute:

Wash Your hands: Educating the School Community
<http://www.nfsmi.org/Information/handsindex.html>

First Day...Every Day: Basics for Food Service Assistants, Part I
Food safety and sanitation, HACCP, and accident prevention participant handouts and video. <http://www.nfsmi.org/Education/Satellite/tt1097/satinfo.html>

Responding to a Food Recall
Leader guide, participant booklet, color brochures, and color posters.
<http://www.nfsmi.org/Information/RespondingFoodRecall.html>

Serving It Safe, 2nd Edition
Leader guide <http://www.nfsmi.org/Information/sisindex.html>

Kansas Department of Health and Environment;
Focus on Food Safety On-line Education
http://www.kdheks.gov/fofs/online_edu/KDHEweb.html

Oregon Department of Health Services.
Food Safety: Your Self-Training Manual (June 2006)
<http://oregon.gov/DHS/ph/foodsafety/docs/fhmanual06.pdf>

USDA Food Safety Training and Education Alliance
Food Safety Signs and Posters
<http://peaches.nal.usda.gov/FSTE/resources/tooltime/signs.asp>

CDC Clean Hands Coalition <http://www.cleanhandscoalition.org>

Iowa State University. Food Safety: It's Your Job Too!
<http://www.extension.iastate.edu/foodsafety/Lesson/lessons.html>

NSF Scrub Club <http://www.scrubclub.org/home.aspx>
Penn State Nutrition Information and Resource Center
On-line Publications Food Safety <http://nirc.cas.psu.edu/online.cfm?area=320>

UNL Extension in Lancaster County
Food Safety Educational Materials <http://lancaster.unl.edu/food/resources.shtml>

World Health Organization
Prevention of foodborne disease: Five keys to safer food
<http://www.who.int/foodsafety/consumer/5keys/en/>

The Food Safe School Action Guide for Food Service Professionals
http://www.foodsafeschools.org/FSAG_CD/team.htm#professionals

USDA FSIS Food Safety Education Programs
Be Food Safe http://www.fsis.usda.gov/Be_FoodSafe/index.asp
Thermy http://www.fsis.usda.gov/food_safety_education/thermy/index.asp
Is It Done Yet? http://www.fsis.usda.gov/Is_It_Done_Yet/index.asp

Partnership for Food Safety Education.
FightBac. <http://www.fightbac.org/>
FightBac Downloads: http://www.fightbac.org/component/option,com_docman/Itemid,83/

ALTERNATE LANGUAGE RESOURCES:

Kansas Department of Health and Environment;

Signs and Fact Sheets Available in These Languages
English - Bosnian - Chinese Simple - Chinese Traditional - French - German - Greek -
Italian - Japanese - Korean - Laotian - Russian - Spanish - Vietnamese
http://www.kdheks.gov/fofs/other_edu_materials.html

Department of Inspections and Appeals, Iowa
Signs and fact sheets in 14 different languages. <http://www.profoodsafety.org/>

Food safety.gov
Other language documents <http://www.foodsafety.gov/~fsg/fsglang.html>

Food Safety Resources for Non-English Speakers
<http://www.foodsafetyweb.info/resources/NonEnglish.php>

VIDEOS:

Public Health for Seattle, WA & King County
Food Safety Streaming Videos <http://www.metrokc.gov/health/foodsfty/videos/index.htm>

Carl Winter, PhD. Food Safety Music Webpage, UC Davis. <http://foodsafety.ucdavis.edu/>

GAMES AND INCBREAKERS:

Fluorescent lotion for handwashing effectiveness

GloGerm <http://www.glogerm.com>

GlitterBug <http://glitterbug.com>

National Science Teachers Association, Food and Drug Administration.

Lose a Million Bacteria, the Game <http://www.cfsan.fda.gov/~cjm/millprt.html>

USDA Food Safety and Inspection Service

Food Safety Word Match <http://www.foodsafety.gov/~dms/fsematch.html>

FDA CFSAN

Food Risks: PERCEPTION VS. REALITY. A Program to Promote Food Risk Awareness and Understanding <http://www.cfsan.fda.gov/~dms/risk-toc.html>

National Food Safety Education Month Archives <http://www.foodsafety.gov/~fsg/fs-month.html>

Icebreaker sites:

<http://www.glennparker.com/Freebees/icebreakers-and-openers.html>

<http://www.reproline.jhu.edu/english/5tools/5icebreak/icebreak2.htm>

http://adulted.about.com/cs/icebreakers/index_2.htm

<http://www.rttworks.com/images/downloads/Icebreakers.html>

11. Competency Assessment Quiz

1. Individuals at highest risk of developing a foodborne illness include all of these except
 - a. Young children
 - b. The elderly
 - c. Pregnant women
 - d. Healthy adults
 - e. All of the above

2. Foodborne illness is more frequent in at risk groups because
 - a. These individuals may have a weaker immune system
 - b. These individuals may be infected with a smaller amount of pathogens
 - c. These individuals eat away from home more
 - d. All of the above
 - e. A and B only

3. Which is not a common foodborne illness risk factor as identified by the CDC?
 - a. Improper cooking and holding
 - b. Inadequate employee training
 - c. Poor personal hygiene
 - d. Contaminated equipment
 - e. Food from unsafe sources

4. The FDA conducted a study to identify the impact of food safety training on controlling foodborne illness risk factors. Which risk factor was most positively affected by training?
 - a. Improper holding
 - b. Adequate pest prevention
 - c. Poop personal hygiene
 - d. Prevention of cross contamination
 - e. Improper cooking

5. Which is not an important quality for a trainer to possess?
 - a. Training employees as quickly as possible
 - b. Comfort and confidence before an audience
 - c. Considering the variety of attendee's learning styles
 - d. Including audience interaction or hand-on practice
 - e. Use of persuasive gestures and facial expressions

6. In terms of "see one, do one, teach one", which of these activities is the "teach one?"
 - a. The learner views a demonstration
 - b. The learner explains steps while demonstrating a task
 - c. The learner mimics the trainer's demonstration
 - d. The learner shadows an experienced individual
 - e. All of these are examples of "teach one"

7. Based on Edgar Dale's "Cone of Experience" which results in higher levels of retention?
 - a. Performing a hands-on demonstration of a new skill
 - b. Reading a handout
 - c. Listening to the trainer's lecture
 - d. Watching a demonstration
 - e. Reviewing a poster with step-by-step instructions

8. Which is true about adult learners?
- a. Adults assign value and meaning to new information based on their life experiences.
 - b. Adults are interested in learning information that can be immediately applied to their job or personal lives.
 - c. Adults like to make decisions on what information they will learn.
 - d. Adult learn more when they are actively involved in the training event.
 - e. All of these are true about adult learners.
9. Which is not a characteristic of the print-culture communication style?
- a. These individuals are more literate in their reading ability.
 - b. These individuals are less literate in their reading ability.
 - c. When these individuals want to know information they tend to look it up instead of asking.
 - d. When training others, these individuals tend to use a lecture format and little audience interaction.
 - e. These individuals do not have to “live” the information to believe it.
10. All of these are characteristic of the oral-culture communication style except
- a. These individuals are less literate in their reading ability.
 - b. These individuals prefer to see a demonstration.
 - c. These individuals prefer that trainers “say what they have to say and move on”
 - d. When these individuals receive most of their information through word-of-mouth.
 - e. These individuals have to “live” the information in their daily lives to value and remember it.

11. Based on Maslow's Hierarchy of Needs, an individual living in poverty is more likely to be at what needs level?

- a. Self-actualization
- b. Self-esteem
- c. Belongingness
- d. Physiological
- e. Psychomotor

12. In Donna Beagle's study it is recommended that trainers

- a. Use verbal delivery and tell vivid stories
- b. Demonstrate tasks and allow learners to practice new skills
- c. Repeat the information frequently
- d. Model and encourage appropriate behavior daily
- e. All of these were recommended

13. Providing learners with a motivation to learn or explanation of the training value from their personal perspective is called

- a. "First impressions are lasting impressions."
- b. The "Cone of Experience"
- c. "What's in it for me?"
- d. "Tell them that you are going to tell them."
- e. "Backward design"

14. Which is not part of the TRUST model or acronym for training delivery techniques?

- a. Trusting relationship
- b. Relate to the learner
- c. Use understandable language
- d. Show the learner
- e. Tell the learner only once

15. Outcome-based learning objectives are use for which reason?

- a. Provides a plan or outline for training content
- b. Measures and employee's skill and competency
- c. Measures the effectiveness of training
- d. All of the above
- e. None of the above

16. The "domains of learning" were first developed by

- a. Donna Beagle
- b. Harold Stolovitch
- c. Benjamin Bloom
- d. Edgar Dale
- e. The Centers for Disease Control and Prevention

17. Which learning objective measures the cognitive (knowledge) domain?

- a. The learner describes the steps in mixing a solution of sanitizer.
- b. The learner demonstrates the proper use on a sanitizer test strip.
- c. The employee obeys department procedures for cleaning and sanitizing equipment.
- d. All of the above
- e. None of the above

18. Which learning objective measures the psychomotor (motor skill) domain?
- a. The learner handles chemicals in a safe manner.
 - b. The learner prepares a three compartment sink for use.
 - c. The employee washes and sanitized food contact surfaces correctly.
 - d. All of the above
 - e. None of the above
19. Which learning objective measures the psychomotor (motor skill) domain?
- a. The learner determines if chemical test strip results are within the correct range.
 - b. The learner prepares a solution of sanitizer.
 - c. The employee observes manufacturer guidelines for chemical use.
 - d. All of the above
 - e. None of the above
20. Activities incorporated in training sessions
- a. Help the learner retain or remember skills
 - b. Require the learner to participate in training
 - c. Evaluate the learner's competence at a skill
 - d. A and C only
 - e. All of the above
21. If a learner does not properly complete the activity what type of feedback should be given?
- a. Corrective
 - b. Confirming
 - c. Collaborative
 - d. Cognitive
 - e. Compliance

22. When organizing a topic the “Tell them what you are going to tell them” would include

- a. The activities
- b. The “What’s in it for me?”
- c. The body or content
- d. The conclusion
- e. None of the above

23. What is an icebreaker?

- a. A prop used when calibrating a thermometer
- b. A quick activity used to warm-up the audience
- c. A sub-category in the affective learning domain
- d. A technique used for audience control
- e. A method of rehearsing a presentation

24. All of these are nonverbal skills except

- a. Vocal variety
- b. Eye contact
- c. Facial expressions
- d. Gestures
- e. All of these are nonverbal skills

25. Which technique can use used to prevent a monotone delivery?

- a. Varying the pitch and volume of the voice
- b. Varying the pace of delivery
- c. The use of pauses
- d. All of the above
- e. A and B only

Answer key:

- | | |
|-------|-------|
| 1. D | 14. E |
| 2. E | 15. D |
| 3. B | 16. C |
| 4. C | 17. A |
| 5. A | 18. D |
| 6. B | 19. C |
| 7. A | 20. E |
| 8. E | 21. A |
| 9. B | 22. B |
| 10. C | 23. B |
| 11. D | 24. A |
| 12. E | 25. D |
| 13. C | |

Training Topic: Temperature Control of Potentially Hazardous Foods: Cooling
<p>“What’s in it for me?” Learner motivation:</p> <ul style="list-style-type: none"> ▪ You may have seen the recent news story about the restaurant in our community that was closed by the health department because of a foodborne illness outbreak. I know that several of us have eaten there and many of us have taken your families there to dine. Anyone of us or any of our family members could have been among those who got sick. Of the 150 people who got sick from eating there, 75 had to be hospitalized and 3 people died. ▪ Even after they were allowed to reopened, everyone on this community was afraid to eat at that restaurant and eventually the owners went bankrupt and closed their doors. All of the employees working there lost their jobs and had to find new ones. ▪ I never want that to happen to any of our customers or to any one of us. ▪ The reason that they were closed was they were cooling leftover whole chickens overnight at room temperature.
<p>Learning Objectives:</p> <p>At the end of today’s training session we should all be able to:</p> <ul style="list-style-type: none"> ▪ <i>Identify</i> the three methods for cooling food that we have approved for use in our foodservice department. (Cognitive, recall) ▪ <i>Apply</i> the correct cooling methods to any food that we prepare that requires cooling. (Cognitive, application) ▪ Correctly <i>demonstrate</i> the use of an ice-water bath, cooling wand, and our new blast chiller. (Psychomotor, proficiency) ▪ <i>Comply</i> with our department procedures for properly cooling food. (Affective, responding)
<p>Activities:</p> <ol style="list-style-type: none"> 1. Demonstration: The use of an ice-water bath, cooling wand, and blast chiller will be shown in step-by-step demonstrations and related to typical foods served. 2. Matching: Following the demonstration, employees will play a competitive matching game to match the correct cooling method to several typical foods. 3. Repeat demonstration: Three work stations will be set-up allowing each food handler the opportunity to see, practice, and then correctly demonstrate skill at each method.
<p>Evaluation and Feedback:</p> <p>Each food handler will receive feedback on their performance. As needed, food handlers will be provided further one-on-one instruction until proficiency is demonstrated.</p> <p>Managers and supervisors will monitor each food handler’s daily performance and compliance. As needed, food handlers will be provided further instruction until proficiency or compliance is demonstrated.</p>

Appendix 12.2 Sample Training: Wash Your Hands

- I. Learning Objectives
 - a. Recognize how easily germs are spread and can cause illness.
 - b. List when hands should be washed.
 - c. Demonstrate thorough handwashing using GloGerm or GlitterBug
 - d. List the steps for thorough handwashing.

- II. Lesson outline with trainer notes for key lesson objectives

Learning Objective	Method	Key Points to Cover
	<p>Before training: **Make sure hand sinks are fully stocked with paper towels and soap.</p>	
<p>Introduction: WIIMF “What is in it for me”</p> <p>Recognize how easily germs are spread and can cause illness.</p>	<p>Demonstration: The unhealthy handshake (see directions below)</p>	<p>One of the four FightBAC messages is CLEAN. This applies to hands as well as other surfaces in our homes and at work.</p> <p>Hands are one way germs can be spread. The common cold and flu can be spread unclean hands. Food can also be contaminated by unclean hands.</p>
<p>List when hands should be washed.</p>	<p>Handwashing Challenge (part 1)</p> <p>Divide the group into small groups.</p> <p>Each group is to create a list of times when hands should be washed. Go around the room and have each group read one item on the list until all lists are exhausted.</p> <p>List these on a flipchart or dry-erase board.</p>	<p>The Center for Disease Control (CDC) tells us that handwashing is “<i>The single most effective way to prevent the spread of germs</i>”</p> <p>We should wash our hands <u>after</u>:</p> <ul style="list-style-type: none"> ▪ Going to the restroom ▪ Handling raw meat ▪ Changing diapers or petting animals ▪ Coughing, sneezing or using a tissue ▪ Touching your hair, face or skin ▪ Handling trash, dirty dishes or garbage ▪ Handling chemicals <p>We should wash our hands <u>before</u>:</p> <ul style="list-style-type: none"> ▪ Eating ▪ Touching food or food contact surfaces

<p>Demonstrate thorough handwashing using GloGerm or GlitterBug.</p>	<p>Demonstration: The handwashing Challenge (part 2) (see below)</p> <p>Each group selects and sends up one member or representative. Each representative will participate in the handwashing (GloGerm) challenge.</p>	<p>“Every one of us can improve our handwashing”.</p> <p>When washing our hands we should scrub under our nails and around the cuticles, scrub between our fingers, the backs of our hands and wash above the wrist.</p> <p>When we wash our hands we are not trying to kill germs, we want to drown them. So we need to use “friction” and “flow”.</p>
<p>List the steps for thorough handwashing.</p>	<p>Earlier we listed the times when we should wash our hands. Let’s go over the steps to properly wash our hands.</p>	<p>Do a mock demonstration as you list:</p> <ol style="list-style-type: none"> 1. Get your paper towel ready 2. Run warm water (as warm as you can stand without burning) and wet your hands. 3. Apply soap. Scrub all areas to create a lather, which will loosen germs. This is the Friction! You should scrub for at least 10-15 seconds. It will take you that long to sing the “ABC’s” or “Happy Birthday”. 4. Make sure to scrub under the nails and around the cuticles, scrub between the fingers, the backs of the hands and wash above the wrist. 5. Rinse all of the lather off. This is the Flow! 6. Use the paper towel to dry your hands. 7. Use this same towel to turn off the water. <p>Now your hands are clean.</p>
<p>Conclusion</p>	<p>Today we have</p> <ul style="list-style-type: none"> • Recognized how easily disease-causing germs are spread. • Listed when hands should be washed. • Demonstrated thorough handwashing methods. 	<p>Proper handwashing is important for life-long health.</p>

III. Demonstration Instructions:

<p>Demonstration: The unhealthy handshake</p>	<p>Purpose: Identify the reasons hand hygiene can cause food to become contaminated and causes illness.</p> <p>Directions:</p> <ol style="list-style-type: none">Apply GloGerm lotion or powder to your hand so all can see.Shake hands with one person.Have that person turn and shake hands with the person beside them.Continue to “pass” the handshake on to 4-5 individualsDim the lights. Use the black light to show how germs can travel from one person to another. <p>Alternate activity: Cover a beach ball with GloGerm Powder and play toss or keep the ball in the air. Dim the lights. Use the black light to show how germs can travel from one person to another.</p>
<p>Demonstration: The handwashing challenge. Part 2.</p>	<p>Purpose: Demonstrate proper handwashing using GloGerm or GlitterBug.</p> <p>Directions:</p> <ol style="list-style-type: none">Each group selects and sends up one member or representative. Each group draws an outline of a set of hands on paper.Provide GloGerm lotion to the volunteers (an amount the size of a quarter). Have them rub it onto their hands (just like hand lotion).Use the black light and show one volunteer’s glowing hand so all can see.Ask the volunteers to scrub their hands for 10-15 seconds, and complete handwashing within at least 20 seconds (sing the ABCs) with hot, soapy water and then return.Dim the lights. Have the volunteers (one-by-one) to hold their hands up and use the black light to show any places that may have been missed during handwashing. (<i>Typically the nails, between fingers and the wrists</i>).Tally the number of missed (glowing) spots on the hand outlines. The representative with the least number of spots “wins.”Conclude by saying “every one of us can improve our handwashing methods”. Let’s review the key points one more time.

Web resources:

- <http://www.fightbac.org/>
- <http://www.cleanhandscoalition.org/resources.htm>
- <http://www.GloGerm.com> (GloGerm fluorescing lotion or powder)
- <http://www.GlitterBug.com> (GlitterBug fluorescing lotion or powder)

Appendix 12.3. Bloom's Domains of Learning: Illustrative Verbs³⁰

Cognitive Domain-Intellectual Learning

I-Recall	Knowledge	Cite, count, define, describe, draw, identify, label, list, match, name, outline, record, relate, repeat, reproduce, select, state, underline
II-Interpretive skills	Comprehension	Convert, defend, describe, distinguish, estimate, explain, express, generalize, give examples, infer, locate, paraphrase, restate, summarize, tell in own words, translate
	Application	Apply, calculate, change, compute, convert, demonstrate, employ, examine, illustrate, interpret, locate, modify, operate, practice, prepare, produce, relate, schedule, solve, use
III-Problem solving	Analysis	Analyze, appraise, break down, compare, contrast, debate, demonstrate, diagram, discriminate, distinguish, illustrate, point out, question, select, separate, subdivide, test
	Synthesis	Arrange, assemble, categorize, combine, compile, compose, construct, create, design, devise, formulate, generate, integrate, manage, modify, plan, prepare, propose, organize, rearrange, revise, reconstruct
	Evaluation	Appraise, assess, choose, compare, conclude, critique, decide, estimate, evaluate, grade, interpret, judge, justify, measure, rank, rate, recommend, revise, select, support

Psychomotor Domain-Neuromuscular Coordination

I-Awareness & readiness	Perception	Distinguish, hear, see, smell, taste, touch
	Set	Adjust, approach, locate, place, position, prepare, record
II-Increasing proficiency	Guided responses	Copy, determine, discover, duplicate, imitate, inject, pour, repeat, smear, stain, streak, transfer, use
	Mechanism	Adjust, build, draw, filter, illustrate, indicate, manipulate, mix, pipette, set up, start, wash
	Complex Overt Response	Calibrate, coordinate, demonstrate, handle, maintain, operate, perform
III-Creativity	Adaptation	Adapt, build, change, develop, make, supply
	Origination	Construct, create, design, produce

Affective Domain-Values and Attitudes

I-Awareness	Receiving	Accept, attend, develop, realize, receive, recognize, reply
	Responding	Ask, behave, complete, comply, consult, cooperate, discuss, examine, obey, observe, participate, respond
II-Attachment of worth	Valuing	Accept, balance, believe, choose, defend, influence, prefer, pursue, seek, value
III-Commitment of value	Organization	Advocate, codify, consult, discriminate, display, favor, judge, order, organize, persevere, persist, promote, relate, systematize, volunteer, weigh
	Internalization	Initiate, internalize, verify

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