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IAEA

TRAINER TRAINING

Student's guide

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CURSIVE COMMUNICATION

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Table of Contents

Discovering the training profession 3

Speaking in front of a group 4

Identify learning factors 5
- Motivation 5
- Perceiving others 5
- Memorization 6
- Understanding 7

Knowing training rules 8
- Rules 8
- Techniques 9

Designing a training program 10
- Components of a training program 11
- Preparation steps 17

Developing tools and teaching aids 18
- Trainer tools 18
- Overheads 19
- Story board 20

Identify communication phenomena 21
- The course outline 21
- Getting the message accross 21
- Active listening 22
- Behavior of participants 25
- Teaching styles 26

Refer to applicable IAEA reference documents
- Responsibilities
- IAEA reference documents
- Method for developing a national training strategy
- Designing a new training program
- Setting up a training center

Bibliography .....

Discovering the training profession

As a foreword to the theoretical notions and methods dealt with in this guide, it is important to underline the dual role of the trainer.
The trainer's role consists in transferring his knowledge, know-how and behavior; however he/she must also set up conditions favorable to facilitate group dynamics and the well-being of trainees in order to contribute to the learning process.

Two key elements must be kept in mind in order to reach this objective:

- The modelling phenomena.
- The trainer-trainee relationship.

The modelling phenomena

Modelling is an inherent phenomenon in training. The trainee has a tendency to emulate the trainer. Most know-how and behavioral elements are acquired through emulation.
The trainee will be more likely to imitate the trainer if the trainer is looked up to, if he/she feels the trainer is competent and fully conversant with the subject matter.

It is thus important to take this phenomenon into account through adopting behavioral patterns the trainer wishes to instill in participants.

The trainer-trainee relationship

A successful training program depends, to a large extent, on the relationship the trainer enjoys with the trainees. This relationship begins within the first few minutes of the course. This initial phase is thus an important one.
The trainer must be attentive to:

Welcoming participants

Making real contact, and allaying any misapprehensions.
Letting the trainee get used to the setting and helping him/her to feel confident.

Introducing the participants to one another

Letting everyone knows both the trainer and the other participants.
Gather information in order to better know and "help" participants.

Introduce the program

Let the trainee know where he is going and how he is going there, what path to take

Speaking in front of a group

The trainer's work is, to a large extent, based on oral expression
Oral communication is 50 percent substance, and 50 percent form. The meaning of speech is transmitted through words, voice, and gestures.
We may thus define three fields of action for oral expression. These three areas must be consistent.

- **The physical field**
  taking control of space
  open gestures
  permanent visual contact with the audience
  stable stance

- **The vocal field**
  abdominal breathing
  articulating speech
  adequate volume
  lively tone
  varied rhythm of speech
  punctuated by frequent periods of silence

- **The intellectual field**
  knowledge of subject matter
  clear objectives
  well-defined course outline
  level of language well adapted to audience

Identifying learning factors

The factors which will enable an adult to acquire new knowledge and new behavioral elements, are based on both interpersonal relationships and on processes of perception, memorization, and understanding.

Motivation

Motivation is essential for facilitating the learning process. The interest that the trainer is able to generate in course participants, and the affective environment created by the trainer and the group, are all-important.

Affective factors contributing to positive motivation

A clear vision of objectives to be reached
Group dynamics and group participation
The relationship between new materials and acquired experiences of each participant
The relationship with the trainer
Practical application
Proof of trainees' own progress

To improve the training process, the trainer must:

Identify and take into account the areas of interest to trainees
Specify objectives
Facilitate exchanges between participants
Encourage participants to express any difficulties encountered during each class
Employ strong, original and striking images
Provide practical exercises and role plays

Perceiving others

The first tool used to understand new data is perception.
Thanks to perception we receive, select, organize, understand and interpret all information arriving from the outside world.

Factors which exert an influence on perception:

- The characteristics of the person perceiving
- The characteristics of the person who is being perceived
- The characteristics of the situation

Factors contributing to misperceptions:

- *stereotypes*
  a person is perceived as being linked to a group
- *the halo effect*
  a single characteristic is used to produce a global perception of a person
- *selective perception*
  a person's characteristics are taken in consideration based on one's own beliefs
- *projection*
  I attribute my own characteristics to other people
- *expectations*
  I perceive what I expect to perceive

Memorization

The human memory is an excellent learning tool, ...but it needs to be exercised!
When one is merely listening, the memory is not working optimally. After about one hour, memory efficiency increases (from 75 percent to 100 percent), then decreases rapidly. It then needs to be reactivated.

It is generally assumed that there are two types of memory:

- Short-term memory: memorized items are quickly forgotten.
- Long-term memory: information is stored and may be reused later.

The difference between these two types of memory resides in the assimilation process. This is based on three factors:

Motivation

Setting oneself listening objectives
Asking oneself questions prior to listening
Being available

Techniques

Using one's own words: reformulating, analyzing, discussing
Note-taking
Using associations and mnemonic techniques
Remaining centered on the main thrust of the speech the broadest sense of discussion
Classifying ideas into main and secondary categories

Reactivation

Regularly review acquired information in order to memorize it
Add to information acquired
Link information to new experiences

As a function of the learning tools employed, the effectiveness of memory retention may vary

Reading	10
Listening	20
Seeing	30
Listening and seeing	50
Expressing	80
EXPRESSING AND DOING	90

Understanding

Over the last 20 years, research in neurobiology tends to indicate that each side (or hemisphere) of the brain has its own way of working, and its own skills. Each trainee develops learning strategies based on such preferences.

The left side is responsible for translating perception into logical, semantic and phonetic representations. This side is responsible for linear thought, language, writing and arithmetic.

The right side is responsible for global perception of situations. This is the side which is brought into play when we are capable of immediately grasping a complex model or issue. It is the seat of intuition. and constitutes the principal location of sensorial and emotional experience.

Communication with left-side dominant persons

The language of such subjects draws upon grammatical, syntax and semantic skills.

Present technical facts concretely and precisely
Be methodical
Appeal to logical reasoning
Progress step-by-step, checking to make sure that each step has been properly understood
Use convincing arguments, because this type of person does not change his mind easily

Communication with the right-side dominant persons

The language of such subjects draws upon associations with sound, ambiguity and puns, and metaphorical meaning.

Make ample views of gestures, and visual aids
Use synthetic and global presentation techniques
Make associations
Capitalize on emotional and affective factors, foster trust
Be open to negotiation, since this type of person appreciates exchanges

Knowing training rules

A successful training presentation is based on six essential rules , and ten major techniques

Rules

Clearly announce your topic, the course outline and objectives

Presenting your objectives will both reassure your trainees and contribute to enhancing motivation. The trainer provides a common target, a limited scope, and shows where he wishes to bring the group whilst setting out lines of work.

Explaining concepts and terms used

In a mixed audience, all participants may not have the same level of knowledge of technical vocabulary, of acronyms and trademarks, etc. For this reason it is important to define such items right at the start. This will facilitate overall comprehension of the lecture.

Respecting the "rule of 3"

In an effective training process, things need to be repeated three times.

1) the trainer announces the subject of discussion
2) he then speaks about the subject
3) he then identifies the subject he has spoken about

This method offers three advantages: It familiarizes the audience with the words, concepts, phrases and rules which, little by little, will permeate their system of thought.
It also lets the trainer refer to the original course outline on an ongoing basis. Lastly, it helps demonstrate the progress being made.

Use multiple techniques

Some students understand better by listening, others by seeing, and others by experimenting. To better your chances of being understood by everyone, you need to appeal to several senses and to use a variety of "supports": voice, overheads video, demonstrations, and practical applications...

Use language appropriate for oral communication

A written style is not easily understood when heard orally. Effective oral expression requires short, simple, affirmative sentences. Negative formulations are more difficult to decode. Images, metaphors, examples and anecdotes help in getting the message across and assist students in their effort to memorize information.

Provide effective means of assimilation

The process of fully assimilating knowledge requires reformulation of what has been learned. It is thus important to provide trainees with the opportunity of expressing themselves after each session: questions and answers, working in small groups, discussions, and summaries...

Techniques

There are ten major training techniques used in group training situations. These may be used alone or combined.

Technique	Results for trainees
Lecture The trainer provides new information.	They listen
Demonstration The trainer shows trainees a process or an operation.	They observe
Manipulation Trainees have to manipulate items.	They developed manual dexterity.
Experimentation The trainer provides trainees with the possibility of experimenting based on clear instructions.	They learn to implement solutions and draw conclusions.
Discussion The trainer provides trainees with the possibility of exchanging information or points of view on a given topic in order to reach a decision.	Their multiple contributions, skills, and areas of expertise are mutually enriching for all concerned. This is the effect of synergy.
Assessment The trainer evaluates the extent to which the new notions have been acquired.	This framework, though scholastic, enables participants to become aware of their progress.
Hands-on training Trainees are systematically provided with opportunities for practice.	Useful learning reflexes are put into place. Acquired knowledge is fixed in memory.
Reading The trainer provides written documents.	
Simulation Through the use of role plays, trainees are encouraged to apply what they have learned to situations in real life. They may play either their own role, or the role of their colleagues.	Trainees actively participate in searching for information, thus facilitating memorization.
Case studies Case studies are used to analyze complex situations. Trainees are encouraged to analyze the situation, assess problems and propose remedial actions.	This technique facilitates the transition between the training situation and professional life. It enables trainees to act out real-life situations and better understand them. It enables implementation of true problem-solving work.

Designing a training program

Specifications for a training program should take into account the assessment of 8 essential components for course development, and observance of 10 preparatory steps.

Components of a training program

- Needs
- Audience
- Training objectives
- Teaching objectives
- Course entry requirements
- Content
- Scenario
- Assessment tools

Training needs

Training is required when, in order to solve a problem, new skills must be acquired, including:

- **Knowledge**
- **Know-how**
- **Human skills**

The training need corresponds to the gap between required skills and existing skills.
The training program is the response required to fill this gap.

Audience

The first question which must be passed prior to designing a new training program is "What audience"? »

General characteristics

Age: what is the average age? Are there significant differences?
Sex: breakdown

Professional experience

Are trainees professional occupations widely differing? Is the level homogeneous?
What existing skills are there?
What are common and diverging aspects?
Do they have specific skills to build on?
What examples may I use with respect to their professional reference framework?

Attitude with respect to training program

Are they volunteers? What is their degree of motivation?
Do they have a negative point of view concerning the usefulness of their training program?
Are there certain methods or tools which they may dislike (video...)?
Are they under stress when starting the training session?

Training objectives

A detailed needs assessment will produce clear training objectives, i.e., the final set of expected results in terms of new skills, aptitudes and behavior.

Teaching objectives

A detailed needs assessment was used to produce clear training objectives; the trainer will translate these objectives into teaching objectives.
These will be used to fill the gap between the existing and target skills, aptitudes and behaviors.

- A teaching objective is defined in terms of new skills to be mastered
- A teaching objective is defined in terms of measurable actions

Teaching objectives are determined taking into account the following three factors:

- ***Performance***
  The capacity and skills which the trainee is required to master upon completion of the training program with a view to their effective implementation in professional situations.
- ***Conditions***
  The conditions and methods used during the training program to reach the required level of skills.
- ***Criteria for success***
  The criteria to be used to define the acquired quality or level of performance.

Teaching objectives are expressed using action verbs

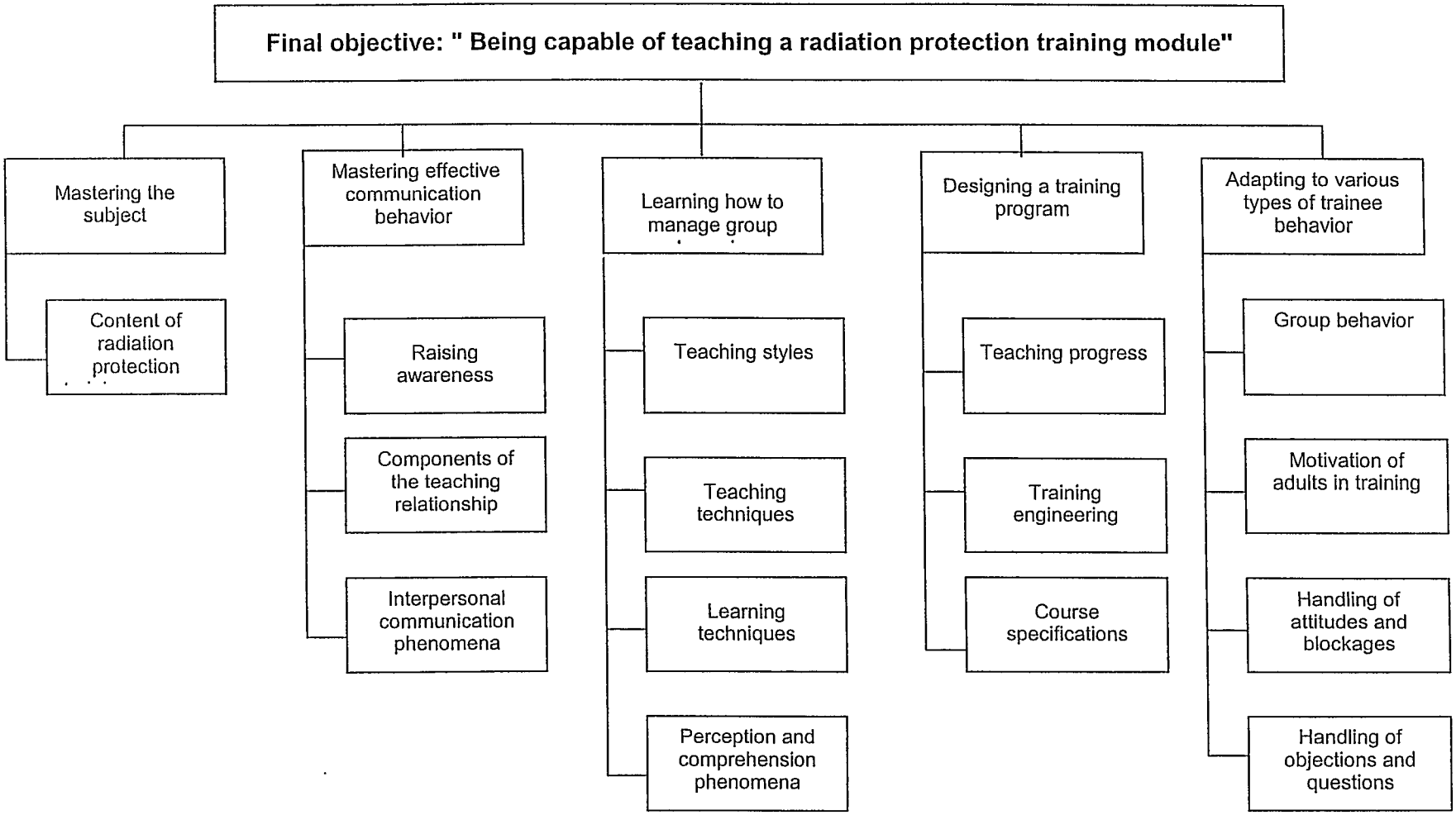
Course entry requirements

Course entry requirements correspond to skills and knowledge which candidate trainees must have prior

- to enrolling for this particular training session
- in order for the session to be effective
- and in order to have a homogeneous group of trainees

Content

In order to draft a course content outline, you must first perform a detailed analysis of all knowledge and skills to be acquired in order to reach the final objective. A training project is built based on a needs "pyramid".
Here is an example for a Trainer training course development project:



The teaching scenario

The teaching scenario is developed by adding methods and teaching situations to course content.

Methods

There are four main families of teaching methods

Classic lecture

The trainer speaks in front of the class. He/she uses notes and visual aids. Participants listen and take notes. This is useful for the phases of introduction, presentation, explanation and summary. It is, however, very passive.

Demonstrative

In addition to discursive teaching, the trainer performs a demonstration for the class and may additionally request the audience to reproduce his behavior. This type of teaching is a bit more active than the former.

Interrogative

The trainer uses a logical series of questions and answers to lead participants towards the discovery of course content. In this way, participants go half of the way themselves. This method uses group participation and feedback.

Active methods

The trainer provides learning contexts. Participants are encouraged to ask questions and discover the initial approach to course content, which is then exploited and supplemented by the trainer. This type of method positions participants as true players in the process of building knowledge and skills.

Teaching situations

When a trainer uses active methods, he develops, for each stage of the teaching process, "situations" adapted to the various objectives.

- Testing
- Training exercises for specific points
- Case studies
- Role plays
- Work in small groups
- Acquired skills testing questionnaires

Assessment

Training assessment is used to measure any discrepancies between the results obtained and the initial objectives.

There are two types of assessments

- Training assessment of acquired notions
- satisfaction assessment

Assessment of acquired notions

1) Purpose of assessment of acquired notions

The purpose of assessing acquired knowledge and skills is to:

- raise trainee awareness of gains in new knowledge, aptitudes and skills, throughout the training process
- enable the trainer and training manager to assess the extent to which the training program has been successful, and to implement any required corrective measures

2) There are three major types of assessment techniques:

Normative assessment

Purpose: to classify, and qualify the level reached (examination, diploma).

Global assessment

Purpose: to measure the degree of mastery of a set of skills.

Training progress assessment

Purpose: to regularly test the progress in skill acquisition in the course of training.

3) Assessment phases

Assessment of course entry requirements

At the time when training objectives are being defined, the trainer and training manager define together both the course entry requirements and testing methods.

In-progress assessment of acquired notions

Assessment of acquired notions is performed throughout the training process. Intermediate assessment tools are used to measure any discrepancies between the objective of each teaching sequence and the results obtained, in order to determine the progress made and to make any necessary adjustments.

Assessment of acquired notions

The final assessment of acquired notions is used to measure skills and knowledge acquired at the end of the training session, to measure any discrepancies between global objectives and results, and to flag areas requiring improvement. This assessment is of the entire content of all teaching sequences.

4) Assessment tools

Assessing knowledge

Questionnaires used to test acquired knowledge
Multiple-choice: questionnaires providing several possible answers are used
Closed questions
Open questions
Fill in the blanks

Assessment of human skills and know-how

Hands-on work
Case studies
Use of observation forms by other participants
Discussions in small groups
Group discussions

Satisfaction assessment

Purpose of satisfaction assessment

The purpose of satisfaction assessment is to:

- enable trainees to express their own points of view upon completion of the training session:

  Immediately after the session, concerning whether course objectives have been reached, whether course content will be useful to them in their jobs, and quality of teaching and analyses.

  Later (after putting into practice), concerning the effectiveness of newly acquired notions, transfer of knowledge, and middle or long-term evolution in their knowledge and skills.

- It is up to the trainer and the training manager to measure the appropriateness of tools and methods, time management, discrepancies between objectives and results, as well as to perform necessary corrective measures.

Satisfaction assessment tools

Immediately after the session

1) Written questionnaire with both satisfaction assessment grid and open questions concerning:
   - Reaching of objectives
   - content and rhythm
   - usefulness of training program
   - teaching quality

2) Group discussions

Later:

A questionnaire is sent to each participant concerning:
- ease of knowledge and skills transfer
- effectiveness of acquired skills
- evolution in knowledge, know-how and human skills

Preparation

The design of a training program requires the following 10 preparatory steps:

- Analyzing needs and the audience
- Defining training objectives
- Determining course entry requirements
- Designing the teaching progression way
- Breakdown into objectives and sub-objectives
- Designing sequences for each sub-objective:
  - content
  - methods
  - techniques
  - teaching situations
- Ordering sequences logically according to teaching progression
- Identification of keywords required for explanatory purposes
- Designing teaching aids:
  - overheads
  - story boards
  - videos...
- Designing assessment tools:
  - testing of acquired notions
  - satisfaction assessment

Developing tools and teaching aids

Trainer tools

Whiteboard
Paperboard
Written supports
Tape recorder
VCR
Computers
Teaching games
Specific tools depending upon technology being taught

Recommendations for use

- Advanced preparation for certain items on paperboard.
- Plot out complex diagrams in pencil before class.
- Note course outline on a board which will remain visible during the whole training program.
- Check that the overhead projector and computers are in working order prior to use.

Preparatory work prior to training program

- Check the student enrollment details have been sent out
- Arrange the classroom appropriately
- Try out all required equipment
- Prepare documents to be delivered
- Prepare teacher's "kit": markers, Scotch tape, erasers, paper, tacks, magnets, name cards

Overheads

Visual supports assist students in their effort to understand and memorize information. These are intended to be of service to the audience, not a crutch for the speaker. They illustrate what the speaker is presenting, without repeating it verbatim.

Guidelines when designing your overheads

- Title: keywords on one line
- Three ideas maximum
- Eight lines of text, or 30 words
- Sentences of one or two lines
- Selection of font styles:
  - Use a single font family
  - Lowercase letters
  - Mono spaced letters, without feet
  - Size greater than 5 mm in height
- Three colors maximum with a single type of information per color
- Clear illustrations

Guidelines for use

- Stand beside the overhead projector so as to be able to look at the audience
- Leave participants adequate silent time to assimilate the information displayed
- Talk about what is being projected, and turn off the projector when you change topics
- Point to interesting items of information using a pencil on the transparency
- Turn off projector often so as to establish a rhythm, and to avoid tiring the audience
- You may wish to use Post-It (TM) notes in order to "reveal" information gradually on the slide
- You may also "enrich" information gradually by overlaying overheads
- Do not "overwhelm" the audience by using too many overheads

The Story board

The story board is in fact a tool for the trainer. It provides a full overview of the training sequence at a glance. It also helps you manage your time and the visual aids employed.

A few guidelines

- Write out of the introduction and conclusion in full
- Use expressive titles for main topics
- Use keywords to identify sub-topics
- Identify topic hierarchy through the use of different colors

Example

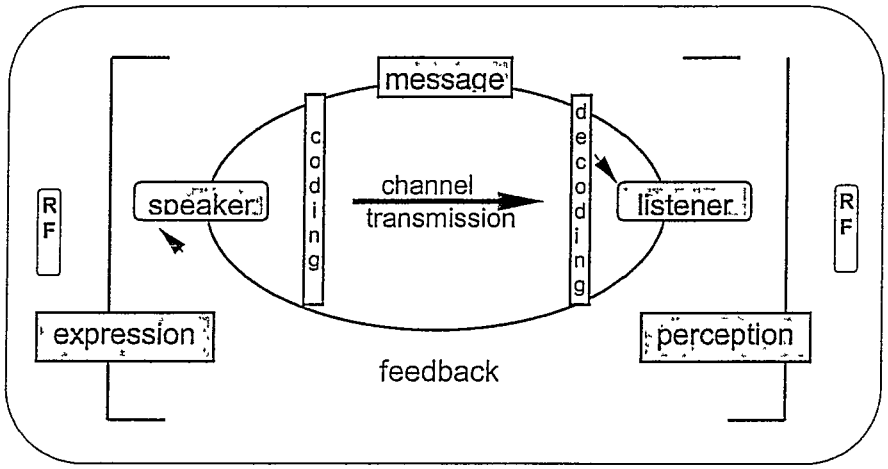
STORY BOARD: expressive title		
Visual aids	**Starting time** **Duration**	**Content**
Put course outline on paperboard	10h00 1 minute	**INTRODUCTION** **Introduce course objectives and outline** *Write out in full* **Purpose: Engage participants' attention** **IMPORTANT TIME**
n overheads	10h01 1 minute	**Topic 1: expressive title** Linking ideas: *"First of all, I would like to give you an overview..."* **a) 2 or 3 keywords (red)** **b) 2 or 3 keywords (green)**
n overheads	10h02 5 minutes	**Topic 2: expressive title** Linking ideas: "*I have just presented... We will now be speaking about...*" **a) 2 or 3 keywords (red)** **b) 2 or 3 keywords (green)** **b) 2 or 3 keywords (blue)**
n overheads	10h07 5 minutes	**Topic 3: expressive title** Linking ideas: "*I have just spoken about.... We will now go into....»* **a) 2 or 3 keywords (red)** **b) 2 or 3 keywords (green)** **c) 2 or 3 keywords (blue)**
	10h12 2 minutes	**CONCLUSION** **Summary of presentation + conclusion** *Write out in full* **Purpose: Lead participants to take action** **IMPORTANT TIME**

Identify communication phenomena

The course outline

Communication phenomenon are usually represented in the form of a diagram. This is used to identify the three contributing factors to any act of communication:

- The speaker: who has information to communicate
- The message: the information to be communicated
- The listener: to whom the message is sent



Getting the message across

Each message item which we communicate to a listener is subject to an increasing level of distortion

What I have to say	100 %
What I think of saying	90 %
What I know how to say	80 %
What I say effectively	70 %
What the listener understands	60 %
What the listener listens to	50 %
What the listener understands effectively	40 %
What the listener accepts	30 %
What the listener retains	20 %
What the listener will say or repeat	10 %

Active listening

Listening and understanding are not the same thing. Listening is not natural. When you practice active listening, you are mobilizing your energy to be fully available to the speaker.

A few guidelines for active listening

Being available
Setting aside momentary preoccupations so as to concentrate on what is being said.

Beware of spontaneous reactions
Try not to prejudge information, allow new or different ideas to reach you.

Get the full message
Listen to the message as it is, and take into account the non-verbal aspects.

Take into account the speaker's emotions
Detect the speaker's emotions Let the speaker know that you have understood it.

Note all significant signs, both verbal and nonverbal
Identify double meanings and act so as to clear them up.

Indicate to speaker what has been understood
Reformulate messages. In this way, the speaker may provide additional information if required.

Two active listening tools are particularly important in training situations: reformulation, and question and answer sessions.

Reformulation

Reformulation consists in rephrasing the speaker's ideas in one's own words in order to:

- carry the speakers presentation one step further by summarizing it
- reopen the discussion and encourage the speaker to express himself/herself further
- let the speaker know that he/she is being listened to
- check that you have properly understood what the speaker is saying

Reformulation offers additional advantages:

- it helps to reduce aggressive behavior
- it allows participants to express feelings

Main types of reformulation

Echo reformulation
You echo a word used in the sentence in order to clarify the meaning or tone.
- I will never to anything → - never?

Reflection reformulation
In this type of reformulation, the same idea is expressed using different words. The speaker hears what he has just said

Clarification reformulation
This type of reformulation serves to clarify confusing statements and to identify the essential elements of the message. Clarification reformulation may be centered on message content, or on latent content.
- what you mean is that..., - if I have understood you correctly...

Handling questions

Another active listening tool consists in the trainer asking questions as well as acknowledging questions from participants.

Questions asked by the trainer

Questions asked by the trainer are part of the active listening process. They serve to:

- act upon the direction and content of message
- pursue or reopen discussion
- obtain information
- clarify information received.

Types of questions

Open questions

Open questions do not "lock down" the speaker; they offer to the speaker freedom in his/her speech and in the way he/she wishes to go..
Tell me how you spend your day?

Closed questions

Closed questions require short answers, often "yes" or "no" answers, or specific information, such as figures.
Have you seen the latest Spielberg film?

Alternative questions

Such questions offer a limited number of answers
Will you be taking your holiday in July or in August?

Direct questions

A direct question requires an immediate response, with no possibility of escape. Such questions require the individual to take a stand.
Do you like reading?

Indirect questions

Indirect questions place the problem in a more general context.
Are your colleagues happy with the working atmosphere?

Projective questions

Projective questions invite the individual to project himself/herself into a hypothetical situation.
If you had a year off, what would you do?

Questions asked by participants

Questions asked by participants may have different objectives. This is why it is important to identify the type of question being asked and to deal with it carefully.

Possible objectives

- Request further information
- Go further into the topic
- Reassure oneself
- "Trap" the trainer
- Create a diversion
- Draw attention to oneself

Recommended attitudes

The trainer knows the answer

If the answer is short: answer right away
If the answer is lengthy: suggest that the answer may be provided at another time.
If the topic is to be dealt with in an upcoming session: indicate that the answer will be provided during that session.
If the question is off-subject: Indicate this and re center the discussion on the topic at hand.
If the question is worth spending some time on: open the topic to group discussion and summarize.

If the trainer does not know the answer to the question

Say so and commit to finding the answer and responding at a later time.
Relay the question to a participant who does know the answer.

Trick questions

Answer with humor if the situation and participant's behavior so allow.
Move back to the topic at hand.
If the purpose of the question seems to be to produce conflict, attempt to appease the situation, indicate that the question appears to be aggressive, open the issue up to the group if the group disapproves of the question, re center and move on to the next topic.

The participant wishes to show off

Indicate that the question is a good one, and answer quickly. If the problem reoccurs too frequently, explain to the participant that his attitude is bad for the group as a whole.

Behavior of participants

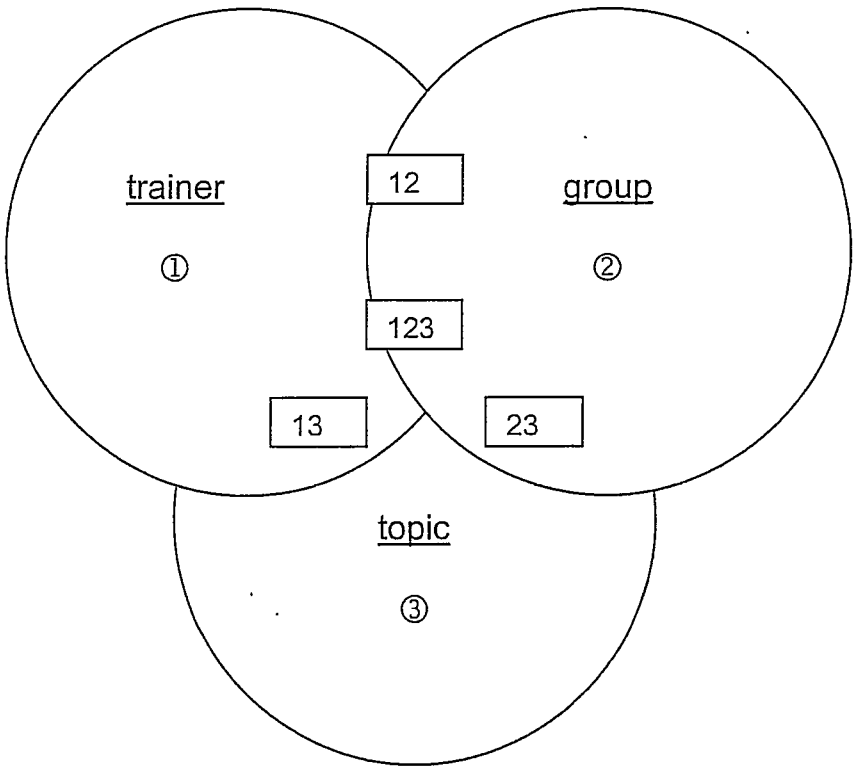
The behavior of participants depends upon a great number of factors: the participant's own personality, interest in the subject, group dynamics, relationship with the trainer, and time of day...
The various types of behavior may be stereotyped using different names:

Trainee behavior	Trainer's attitude
The fighter Provokes the trainer as often as possible	try to remain calm
The wise man keeps his distances Such participants may be of considerable help	welcome his contribution
The know-it-all Takes the floor too frequently	get the group to question some of his/her theories
The bigmouth Leaves no time for others to speak	interrupt tactfully
The shy participant Participates infrequently due to lack of self-confidence	ask him/her easy questions. Draw attention to whenever may be of interest in what he/she is saying
The opponent Systematically contradicts whenever said	play upon his/her ambition. use his/her experience
The sleeper is interested in nothing	ask him/her about his/her own activities. Request that he/she provide examples
The aloof participant Observes proceedings from a great height	do not criticize the participant. Use the "yes, but" technique
The Machiavelli Uses clever arguments to trap the trainer	send his/her questions back to him/her, or relay them to the group as the whole

Teaching styles

There are three major teaching styles

- **Group centric**
- **Trainer centric**
- **Topic centric**



In order to better explain training styles, we have classified them into three major categories. The purpose is to find the right balance between these three approaches.

Attitude	Results
The three main teaching styles	
1 Trainer focused	
The trainer is only centered on himself. Egocentric. this is the "one-man show"	The group becomes more interested in the form of the presentation than in the fundamental notions being presented. The result is superficial learning
2 Group focused	
The trainer is only centered on the group. The trainer does everything in his power to encourage group members to express themselves and to feel at home.	The trainer lets himself/herself become overwhelmed. The trainer is lax. The group is dispersed and no longer listens
3 Topic focused	
The trainer remains centered on the subject matter. Trainer is too focused on his field researcher scientist.	The group may have problems understanding and is likely to lose interest.
Mixed teaching styles	
12 Trainer gives as much importance to himself/herself as to the group	
Friendly. Brotherly. Buddy	Enjoys good relationships. However, the atmosphere may become too familiar, and the trainer can lose credibility.
13 Magisterial - Directive	
Lecturer	The group may feel that the trainer is haughty. This may interfere with group participation. If he is not careful, the trainer may not even realize this.
23 Teaching "technician"	
Applies teaching directives to the letter when dealing with his/her topic. Provides a great number of exercises.	The group may be worn out because no room has been left for relaxation and exchanges.
Recommended attitude	
123 Trainer participative active	
This type of training attaches an equal importance to all three contributing factors. The trainer is able to provide dynamic teaching in showing his/her ease. He/she listens to the group and may thus adapt teaching style in the light of student reactions. Lastly, the trainer adopts his level of language, and uses practical illustrations and examples which are easily understandable by the target audience.	

Refer to applicable IAEA reference documents when designing and implementing your course contents.

Responsibilities

The ultimate purpose in radiation protection training is to enable the trainee to operate independently under his/her own responsibility, while minimizing elements of risk for him/herself, for others and the environment. If the operator is recognized as having adequate skills for operating under his/her own responsibility, and is authorized to do so, he/she is within considered to be a qualified operator. (id° dans version française)

Responsibility for radiation protection training is shared essentially between relevant national authorities, the employer, and the employee. These responsibilities are listed in chapter 2 of the Safety Guide RS-G.1.4

IAEA reference documents

In addition to the Basic Safety Standards 115, there are a number of other applicable texts which you should become familiar with, including texts describing main principles and means of implementation , namely:
- Safety Guide RS-G.1.4: "Building competence in radiation protection and the safe use of radiation"
- Safety Report 20: "Training in radiation protection and the safe use of radiation sources"
- "Guidance for the development , implementation, monitoring and evaluation of training activities", NS-SCS, December 1998"
- "Guidance for the elaboration of training material for the PGEC in radiation protection and the safe use of radiation sources and practice specific specialized courses, NS-RPMSS, 2001".

These documents deal with the means of acquisition of initial knowledge and know-how, as well as the acquisition of operational skills and the requirement for refresher courses in the continuing education context.

Method for developing a national training strategy

The various steps recommended by the IAEA for developing a national training strategy are described in chapter 4 of the Safety Guide RS- G.1.4

It should be noted that the implementation of such strategies on the national level may only be successful if data is continually updated and feedback is systematically obtained. For this to be the case, it is not enough to take into account current requirements; future needs are also vital.

During the training program development phase, the trainer encounters specific difficulties due to the nature of the audience (age, level of education, etc.), motivation (age, profession, experience etc.), and emotional perception of risks involved (habitual

risks are not always taken seriously enough, or on the contrary some participants may be prey to irrational fears).

Designing a new training program

The list of tasks to be accomplished both before and after a training program, is provided in Safety Report 20, chapter 5. Some examples are appended to this document. However, certain items should be underlined.

Prior to training:

The organizer should have the full picture of the profession for which the training session is to be implemented. Ask yourself the question "am I fully competent in the field?"». Generally speaking, the trainer's level of skill is only partial; for this reason he/she must be assisted by specialists, or must obtain further training in the profession (or in the field). However, during the design and course content definition phases, it is expedient to refer to the standard syllabus defined by the IAEA.

When selecting the various teaching methods to be used, the trainer should take into account the specific limitations inherent in each method. A universally successful method does not exist.

The appropriate trainers must be identified, and the content and teaching methods to be used must be set up in cooperation with them, in order to avoid both excessive coverage or lack of coverage of certain areas-- and trainers must be convinced to use the content and methods indicated. It is extremely useful to organize a meeting of all trainers to be involved in order to forge a true team. When selecting trainers, you must find the proper balance between technical skills and teaching skills. For this reason, sometimes the best specialist is not necessarily the best teacher for a given type of audience.

The structure implemented must be capable of responding to scientific and logistic questions asked by potential participants. The training manager must draw up a list of selection criteria for teaching candidates.

During the course:

Right from the course design phase, you will need to have an extremely proactive and appropriate organization. many tasks may not be put off.

The skill acquisition assessment phase is indispensable. Because of the level of risk involved and the nature of the new tasks assigned, an employee who erroneously believes that he/she has been appropriately trained, or whose hierarchy so believes, may in fact be more dangerous than an untrained employee.
In addition, the skill assessment phase is often either rejected or poorly perceived by participants, who are often seasoned professionals.

The methods used in assessment will differ depending upon what is being assessed: knowledge, skills, or operational skills. The most appropriate method of assessment will be selected based upon what is being assessed.

The certificate or diploma provided to participants upon successful completion of the course of study, must clearly indicate whether it is:
- a simple presence sheet or course attendance certificate
- or a certificate attesting to the acquisition of a certain level of skills