

WRITING INSTRUCTIONAL OBJECTIVES

The What, Why, How and When?

What?

An instructional objective: is a statement that will describe what the learner will be able to do after completing the instruction (course). (Kibler, Kegla, Barker, Miles - 1974).

Why?

1. Provides a focus that enables instructors and students to work toward a common goal.
2. Provides a means of measuring whether the students have succeeded in acquiring skills and knowledge.
3. Allows opportunity for self-evaluation.

How?

1. Instructional objectives need to be **realistic, measurable and learner centered**.
 - Realistic objectives can be achieved within your time frame and in your given environment.
 - Measurable objectives enable you to know how well learners have acquired skills and knowledge.
 - Learner centered objectives state what the learner can do at the end of training. They always start with action verbs.
2. When writing objectives, do not use verbs that cannot be measured such as know, understand, and learn.

When?

1. Before a course is developed (by designer).
2. Before a course is taught (by instructor).
3. Objectives should be reviewed with students at the beginning of the course/module.

ELEMENTS OF AN INSTRUCTIONAL OBJECTIVE

The A, B, C, D's

Objectives classically have several components:

A. Audience

For whom the objective is attended.

NOTE: They are not written for the instructor, but for students.

B. Behavior

The specific observable actions/behaviors that the learner is to perform or exhibit.

C. Conditions

Relevant factors affecting the actual performance (the givens), example:

1. Given a case study, diagram, clinical problem....
2. After a lecture or demonstration....

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3. After completing the reading....
4. After attending this workshop....
5. After attending this Best Practice Session....

D. Degree

The level of achievement indicating acceptable performance (the competence), example:

1. To a degree of accuracy, example 90%.
2. To a stated proportion, example 3 out of 5 or a minimum of 3.
3. Within a given period of time.
4. According to the information given in the text, lab manual, lecture.
5. In compliance with criteria presented by the instructor.
6. In accordance with recommendations of some external organization or authority.

Objectives can be classified into domains of learning:

1. Cognitive
2. Psychomotor
3. Attitudes

These domains of learning are further broken down into component parts and examples of this breakdown are provided according to Bloom, Simpson and Krathwoh (see **Appendix A**).

The taxonomy of the domains of learning

Appendix B is an example of the domains, and how each domain can be taken from the knowledge level through to the application level, and finally to the problem-solving level; and which verbs can be used to describe the transition from knowledge level through to application and problem-solving levels.

An example of writing - learning objectives in a cognitive domain the knowledge level, application level and problem-solving level. The following examples are taken from materials developed by the Centre for Learning Resources, College of Allied Health Professions, University of Kentucky, Lexington, Kentucky 40536-0218. Principal developer: Elizabeth O. Daniell.

Cognitive - Knowledge Level

GOAL:

The student will be able to establish a plan for physical therapy services.

INSTRUCTIONAL OBJECTIVE: Upon completion of a lecture, the student will be able to list at least four areas of planning for physical therapy services.

GOAL: The student will be able to comprehend the controlling and influencing factors which affect radiographic qualities.

INSTRUCTIONAL OBJECTIVE: After completion of the assigned reading, the student will be able to list at least five qualitative characteristics of a processed radiograph which determine its acceptability for diagnostic purposes.

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Cognitive - Application Level

GOAL: The student will be able to establish a plan for physical therapy services.

INSTRUCTIONAL OBJECTIVE: | Given a description of the legal and organizational structure of a hypothetical hospital clinic, the student will be able to list physical therapy services which would be legal and realistic for that clinical setting.

GOAL: The student will be able to comprehend the controlling and influencing factors which affect radiographic qualities.

INSTRUCTIONAL OBJECTIVE: | Given a series of 10 processed periapical exposures, the student will determine the diagnostic quality of each according to the stated criteria of acceptability (90% accuracy must be achieved overall).

Cognitive - Problem-Solving Level

GOAL: The student will be able to establish a plan for physical therapy services.

INSTRUCTIONAL OBJECTIVE: | Given the case of a spinal cord injury patient, the student will plan objectives for physical therapy services that are compatible with those of the institution; within the legal purview of physical therapy; realistic; prioritized; and adequately documented.

GOAL: The student will be able to comprehend the controlling and influencing factors which affect radiographic qualities.

INSTRUCTIONAL OBJECTIVE: | Given 10 processed periapical radiographs of unacceptable quality, the student will determine the procedural error responsible for the low quality and

Summary

Remember, writing instructional objectives can be made easier by asking the question: What is the intended result of the instruction in terms of the learner? To be absolutely clear an objective should be stated in such a way that both the prospective learner and teacher ideally will be able to answer three (3) questions about their expectations:

1. What should the learner be able to do?
2. Under what conditions?
3. How well (example: speed, accuracy)?

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The first question is obligatory, the others are less important; the third may not always be practical to include.

Remember to use action verbs which are measurable. Do not use verbs that are open to many interpretations such as appreciate, have faith in, know, learn, understand, and believe.

Remember not to confuse the learning objective, which is pupil oriented, with a teaching objective, which describe a process; your objective should describe a pupil outcome rather than what will be taught.

Remember to involve prospective students as much possible in formulating objectives to enhance their commitment to the program and to improve their level of competence and performance.

Suggested reading: Continuing Medical Education, Primer, 2nd Edition edited by Adrienne B. Rosof and William Campbell Felch, MD; Chapter 6, page 52 to 59

Slides

- *If you need to apologize for a slide, it is preferable to leave it out.*
- **Uniformity**
 - Use a slide master to ensure your slides are as uniform as possible in terms of background, logos, fonts, and colors. Try to avoid looking like you have taken slides from previous presentations. The audience expects that you have prepared the presentation especially for them.
- **Contrast & Colors**
 - Make sure that you are using good contrast to enhance the visibility of your materials.
 - Most consider the best contrast for visibility is a dark (e.g., dark blue) background with a white **or yellow bolded lettering**. If you are using a dark background, do NOT use other colors (like red or even light blue). Even though they may be visible to you on your computer screen, they will not be easily visible to your audience on the projection screen.
 - Another high contrast method is to use a white or pale yellow background with dark lettering. This gives you more options in terms of color selection. If using a light background, do not pick other colors for figures or text that are also light in color. **These will be difficult to read.**
 - Use color and bolding to provide emphasis when needed.
 - Some suggest using no more than 3 colors on a text slide.
 - Avoid using red and green to differentiate parts of your slide. This will be a problem for those with a common form of color blindness.
- **Backgrounds & Special Effects**
 - Avoid fancy or detailed slide backgrounds. Although they may look nice, they may cause your slides to become difficult to read.
 - Avoid unnecessary sounds and special effects (e.g., animation).
 - If using videos or sound files, be sure that the original files are in the same folder as your slide presentation. If not, they may not work properly.

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- Using current technology, inserting a digitized video clip into a slide presentation usually makes for a seamless presentation than using a VHS or other format video tape in combination with a computerized slide presentation.
- **Text**
 - Font selection should include easy-to-read fonts such as Arial or Comic Sans. Members of your audience will like find Times New Roman and Courier difficult to read. Use the same font throughout your presentation.
 - Font size should be easy to read from the back of the room you are speaking in. Use at least 36 point font for titles and at least 24 point for bullets. Most of the time, the **smallest** font that can be easily read will be 20 point. It might be reasonable to use this in footers. Make it easy on your audience and chose a font size that is as large as possible.
 - Font color tips are included above in the section on Contrast.
- Remember the 7 x 7 Rule to minimize your chances of reading your slides and keeping them easy to read:
 - 7 words per line
 - 7 lines per slide
- Some suggest a 40 word limit on a slide.
- Spell check your slides before you show them to your audience.
- *If you need to apologize for a slide, it is preferable to leave it out.*
- **Figures and Tables**
 - Provide titles for all figures and tables.
 - Label all axes on chart slides. Include units.
- **Variety**
 - Whenever possible, include pictures, tables, and figures to make your point.
 - Over-reliance on text slides will make the presentation easier on you (using slides as an outline), but may be annoying and boring to your audience. It can also be distracting if the audience is reading detailed text slides while you are speaking.
 - Unless providing a direct quotation, it is preferable to use phrases rather than full sentences on slides.
 - If presenting data in tables, leave only essential data in the slide to make your point. Keep it uncluttered and easily readable for your audience.
- **Back-Ups**
 - Bring a hard copy of your slides in case of an equipment failure. You may need to speak from these without your slides in the event your equipment fails.
 - Bring your electronic slides in more than one format. Bring the format suggested by your program's coordinator as well as at least one other electronic form of your presentation (e.g., USB thumb drive, CD, ZIP disk, floppy). Check with the program coordinator to see what formats are compatible with the equipment to be used.

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Handouts

- Most audiences appreciate having handouts.
- While most prefer copies of your slides, they also appreciate having space on which to take notes during your presentation.
- If you were required to make last minute changes to your slides or their order compared to the handouts that your audience has in hand, be sure to point out marked differences so the audience can follow your presentation.
- Other good ideas for handouts:
 - Copies of an article that enhances a key point in your presentation
 - Your learning objectives and post-test self-assessment questions

Suggestions for additional reading or information resources

Body Language & Speaking

- ***Speaking & Keeping in Touch with the Audience***
 - Project your voice from your diaphragm.
 - Speak loud enough that every member of your audience can hear you clearly.
 - Check to be sure that your sound is reaching the back of the room before beginning your presentation.
 - If you make unneeded sounds during your presentation (e.g., “uh,” “um”) it is preferable to be silent than to use sound fillers such as these.
 - If you are getting ready to make an important point, lowering your voice level can be an effective way to regain close audience attention.
 - Watch for signals from your audience - you may have lost sound, need to clarify a complicated instructional point, or some other problem may be evident.
- ***Using the Pointer***
 - If you are nervous, place your hand firmly on the podium and use that to stabilize your hand. It will reduce the effect of shaking on the pointer. Another solution is to use the mouse rather than a laser pointer. It won't show your hand shaking.
 - NEVER point a laser pointer into your audience. Severe eye damage may occur.
 - Use the pointer to highlight important sections on your slides, especially when showing pictures, figures, graphs, or tables.
 - Try to avoid using a pointer bounce from word-to-word as you read a slide.
- ***Eye Contact***
 - Try to make eye contact with members of your audience throughout your presentation.
 - Move your attention to all areas of the audience during your presentation.
 - If you are nervous about making eye contact, try looking at the forehead or just above individuals in the audience.
- ***Hands***
 - Try to avoid nervous habits (twirling your hair, playing with your pen or pointer).

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- Try to avoid excessive hand and arm motion during your presentation. While effective in some cases to make a point, excessive hand/arm movement can be distracting.
- Try to avoid placing your hands on your hips or crossing your arms across your chest. This may give your audience the wrong message about your attitude toward them.

Active Learning Suggestions

Your audience will learn and retain your material/concepts more effectively if you incorporate active learning strategies in your presentation. Some examples of these strategies:

- Include cases or examples in your presentation. As you present them, ask the audience for their responses.
- Include problem-based activities in your presentation.
- Consider peer discussions - the audience can briefly discuss a concept in pairs and offer responses during a full-audience discussion that follows.
- Consider inserting question slides within your presentation to get brief audience feedback on their understanding of an important point or concept.
- Time permitting, include role-playing activities.

If you have additional suggestions for Speaker Tips or Active Learning strategies, please email them to: mbukszar@rx.umaryland.edu.

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Learners benefit most when active learning techniques are included in an educational activity. Actively engaged learners are more likely to assimilate and retain information and skills. Active learning includes the provision of learning feedback to ensure that misconceptions or errors are addressed and resolved during the educational process.

Incorporate learning feedback (learning assessment) as you are planning your educational activity. Learning assessment will allow you to determine whether participants have achieved the program's stated educational objectives. It can be accomplished as an individual (self-assessment) or a group activity. When done for self-assessment, answers should be provided to the learners, preferably with explanations as to why each of the distractor responses is considered incorrect. Answers are not provided to learners as part of a certification process or as a means of ensuring that learners have completed a self-study activity.

The most traditional way to conduct learning assessment is using a post-test format. Consider using less traditional and potentially more valuable methods. These allow learners to self-assess their own learning while providing you (the speaker or program developer) important feedback as to the effectiveness of your educational activity in a timeframe in which misconceptions can still be rectified. The ideas presented below also serve as active learning strategies:

- ✓ Conduct a pre-test/post-test, getting audience feedback. Show pre-test questions on a slide using traditional question formats (e.g., multiple choice, short answer, true/false). Assess baseline knowledge, but do not provide answers. Explain that answers will be covered during the program. Cover the material and during (best would be immediately after content delivery) or at program completion, conduct your post-test questions. Get audience response again, but this time provide the answers and explain why distractor responses are incorrect.
- ✓ Use small groups for learners to practice and demonstrate their mastery of a specific skill (e.g., using an inhaler, demonstrating injection technique, counseling a patient).
- ✓ Provide a brief case or problem-solving exercise with specific questions for the audience to discuss in pairs. Ask volunteers to present their answers and justification during a discussion period.
- ✓ Provide a detailed case or problem-solving exercise in which small groups work together to answer specific questions. Ask volunteers to present their answers and justification during a discussion period.

Spacing these learning assessment activities throughout your presentation will not

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only help your learners self assess, help you assess your effectiveness, but will also keep things interesting.

- ✓ When reviewing answers to questions, use the opportunity to point out common errors to these questions, explaining why the distractor answers would be incorrect.
- ✓ Consider getting audience response to questions using a show of hands or by holding up colored cards (provided to participants in advance) as a simple “audience response system.”

If you have additional suggestions for Learning Assessment strategies, please email them to: mdavis@rx.umaryland.edu