

## Chapter 6

### IMPLEMENTATION PHASE

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## 6.1 – Chapter Introduction

### Phase Overview

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#### Synopsis

Imagine that you're a theater director with a new show opening on Broadway. You've rehearsed each scene and act with your players. You've practiced the various acts or scenes. You've made a few improvements. You think the timing is just right. The players know their lines and can hit their marks. Before opening night, you'll have a dress rehearsal, for one last check that everything is ready for prime time. Each scene and act flows well during a live performance. As the curtain falls on your opening night performance, your show gets a standing ovation. Your players take their bows and curtain calls. You receive good reviews. You know that your show has entertained its audience and pleased its critics.

Course developers follow a similar process to make sure that instruction works in practice. In the instructional system development (ISD) model, the *Implementation* phase involves the actual delivery of new or revised instruction and its formal acceptance within the existing training system.



In our Broadway analogy, the practice of acts and scenes are the developmental and small scale beta tests for particular components during development. The dress rehearsal is the pilot test for entire course (and the focus of this chapter). The audience is your students and the critics are the program managers and training managers.

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## Phase Overview, Continued

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### Purpose

The focus of this chapter is on how to get newly developed materials ready for full implementation by means of a pilot. The thought being, that if there are deficiencies in the training materials, they will be discovered in the pilot and corrected before the course is accepted by the sponsor and fully implemented into the Coast Guard's training system.

Chapter 5 described how the Coast Guard develops training materials; Chapter 7 discusses the evaluation of training; and Chapter 9 discusses the implementation on a Coast Guard wide training system level.

In this chapter, you will focus on putting all the pieces together for full course pilot. You are trying out the entire course, all the components together in the appropriate structure flow, timing, Ultimately, you must determine whether it works (i.e. is it capable of producing graduates who can meet desired results of the training) and fits the learner (acceptable to the students and stakeholders).

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### Audience

Primary Audience: Coast Guard (CG) Training Center active duty course developers and instructional designers, as well as CG civilian course developers and instructional systems specialists.

Secondary Audience: CG Training Center Performance Systems branch managers supporting the instructional designers/course developers; the subject matter specialist, the project lead, project manager, school chief and/or others who have been identified as having some role in the ISD process. Additionally, the secondary audience may include instructional designers employed with contracted companies performing instructional design for the CG, or equivalent individuals who have curriculum/course development responsibilities, including instructors performing course maintenance with ISD oversight.

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## Implementation Process

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### Key Events

Key events in the Implementation phase of ISD include:

1. Planning for delivery of pilot
  2. Preparing for delivery of pilot
  3. Conducting delivery of pilot
  4. Evaluating the delivery of pilot
  5. Rolling out the final product
- 

### Steps

An implementation process is presented below. Note that the actual sequence of events may vary according to the scope and nature of the project.

**Step 1:** Plan for instruction.

**Step 2:** Prepare for instruction.

**Step 3:** Conduct pilot (*WS-R.1: Pilot Course Implementation Form, PCIF*).

**Step 4:** Analyze the results of the pilot.

**Step 5:** Make final revisions to instruction as necessary.

**Step 6:** Determine whether additional pilot is necessary. (If pilot is necessary, repeat Steps 1-5. If the pilot is not necessary, proceed to the next step.)

**Step 7:** Report findings and recommendations (*see sample Pilot Course Evaluation Report, PCER, Appendix S*).

**Step 8:** Finalize materials, gain approval, and lock them down.

**Step 9:** Hand off course material to School.

**Step 10:** Follow your local procedures to close out the project.

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## **Implementation Process, Continued**

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### **Inputs**

Depending on the scope and nature of the project, key inputs to the implementation process include:

- Instructional materials from Development phase
  - Draft curriculum outline
  - Qualified instructor(s)
  - Representative group of students
  - Appropriate learning environment, tools, equipment, training databases, etc.
- 

### **Outputs**

Depending on the scope and nature of the project, outputs of the implementation process typically include:

- Pilot Course Implementation Forms (PCIF) for each lesson
  - Final report and recommendations from pilot, such as a Pilot Course Evaluation Report, (PCER).
  - Course materials ready for roll-out
- 

### **Additional Resources**

Implementation references include:

- U.S. Coast Guard Training System Standard Operating Procedures, SOP Vol. 6: *Curriculum Outline*
  - *Making Instruction Work*, Robert F. Mager, Chapter 16 Center for Effective Performance
-

## Implementation Process, Continued

### Example

Below is an example of a form used to collect data when validating course materials during the pilot test (*WS-R.1: Pilot Course Implementation Form*).

WS-R.1: PILOT COURSE IMPLEMENTATION FORM						
<i>Please complete this form as thoroughly as possible and attach supporting materials as necessary.</i>						
<b>Title of Course:</b> Cold Water/Ice Diving Course		<b>Course Start Date:</b> 26 Feb 2010	<b>Course End Date:</b> 5 Mar 2010	<b>Lecture Evaluation Date:</b> 2/26/2010		
<b>Unit/Lesson #:</b> Lesson 1	<b>Lesson Title:</b> Prepare the Dive Plan.	<b>Instructor:</b> Chief "Sample"		<b>Pilot Course Evaluator:</b> Dan Montgomery		
Lesson Times						
<b>Proposed Duration:</b> 1 hr 55 minutes	<b>Lecture / Lab /Etc.</b>	<b>Proposed Time</b>		<b>Actual Time</b>		<b>Mid-Lecture / Lab Break</b>
		<b>Start</b>	<b>Finish</b>	<b>Start</b>	<b>Finish</b>	
	Lecture	0900	0945	0900	0937	13 minute break
<b>Actual Duration:</b> 1 hr 50 minutes	Practical Exercise	0955	1055	0950	1050	
<b>Time-line notes:</b>						
Job Aids						
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>						
<b>Job Aid Name:</b> None				<b>Job Aids Used:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
<b>Job Aid Name:</b>				<b>Job Aids Used:</b> Yes <input type="checkbox"/> No <input type="checkbox"/>		
TERMINAL PERFORMANCE OBJECTIVE (TPO)						
1.1 Given a real or simulated Operations Order (OPORD) or Deployment Order, <b>PREPARE</b> a dive plan without error.						
STEPS						
<b>#</b>	<b>Step</b>		<b>How Met</b>			
1.1.1	<b>IDENTIFY</b> mission objectives		Lecture and Practical Exercises			
1.1.2	<b>SELECT</b> mission location.		Lecture and Practical Exercises			
1.1.3	<b>SCHEDULE</b> the mission		Lecture and Practical Exercises			
1.1.4	<b>IDENTIFY</b> operational hazards		Lecture and Practical Exercises			
1.1.5	<b>SELECT</b> dive team personnel		Lecture and Practical Exercises			
METHODS OF INSTRUCTION <i>(List the instructional methods used)</i>						
<input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Demonstration <input checked="" type="checkbox"/> Exercise/Practical <input type="checkbox"/> Exercise <input type="checkbox"/> Exam/Review <input type="checkbox"/> Laboratory <input type="checkbox"/> Role Play/Simulation (RP/S) <input type="checkbox"/> Video Tape/DVD (VIDEO) <input type="checkbox"/> Computer-Based Training (CBT)						
<b>Other:</b>						

## Implementation Process, Continued

### Example, Continued

The following image is the second page of the PCIF:

WS-R.1: PILOT COURSE IMPLEMENTATION FORM			
<i>Please complete this form as thoroughly as possible and attach supporting materials as necessary.</i>			
<b>Title of Course:</b> Cold Water/Ice Diving Course	<b>Course Start Date:</b> 26 February 2010	<b>Course End Date:</b> 5 March 2010	<b>Lecture Evaluation Date:</b> 2/26/2010
INSTRUCTIONAL MATERIALS, EQUIPMENT & TECHNOLOGIES <i>(List materials required by the Instructor to present this lesson)</i>			
<input checked="" type="checkbox"/> Instructor Guide <input type="checkbox"/> CG Addendum <input type="checkbox"/> Computer <input checked="" type="checkbox"/> PowerPoint <input type="checkbox"/> Web Access <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Handouts <input checked="" type="checkbox"/> Lab Exercise <input type="checkbox"/> Role Play/Simulation <input type="checkbox"/> Video Tape/DVD (VIDEO) <input type="checkbox"/> Computer-Based Training <b>Other:</b>			
STUDENT MATERIALS <i>(List materials required by the student)</i>			
<input checked="" type="checkbox"/> Student Guide <input type="checkbox"/> CG Addendum <input type="checkbox"/> Desktop Computer <input type="checkbox"/> Web Access <input type="checkbox"/> SAROPS <b>Other:</b>			
ASSIGNMENTS <i>(List items required of the students)</i>			
<input type="checkbox"/> Pre-reading <input type="checkbox"/> Pre-exercise <input type="checkbox"/> Pre-Exam <input type="checkbox"/> Pre-Computer-Based Training (CBT) <input type="checkbox"/> Post-reading <input type="checkbox"/> Exercise <input type="checkbox"/> Exam <input type="checkbox"/> Laboratory <input type="checkbox"/> Computer-Based Training (CBT) <b>Other:</b>			
ASSESSMENT <i>(List the methods used to assess student learning):</i>			
Method of Assessment		System for Grading	
Individual and group participation. Students were responsible for planning each dive with instructors adding feedback as needed.		Instructors observed the groups as they prepared and presented their dive plans. There was no formal grading done.	
OBSERVATIONS <i>(TPO/EOs not met, major suggested changes to instruction, etc)</i>			
The TPO and all EOs were met.			
SUGGESTIONS <i>(Minor suggested changes, etc.)</i>			
None			
ADDITIONAL COMMENTS			
None			

## 6.2 – Planning for the Pilot

### Introduction

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#### Overview

Begin planning for the pilot when you have identified new performance needs during the analysis phase of ISD and your manager has authorized the development of new instruction.

As course developer, you and your team will produce a technically accurate draft product that is acceptable for beta test or pilot delivery before a group of students in a live training environment. At this point, you will be ready to conduct the instruction.

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#### Steps

The basic steps for planning for a pilot test are:

**Step 1:** Determine (or confirm) pilot date.

**Step 2:** Determine training team.

**Note:** In the pilot, we know from development that the performance tests are sound, but we are really trying out the instructional strategy for the first time. It is extremely helpful for the sake of continuity to have the same person who designed the course materials also validate that the strategy works during the pilot.

**Step 3:** Determine training site(s).

**Step 4:** Determine student population.

**Step 5:** Determine collection plan for pilot data.

*Follow your local procedures if you use a different form/collection tool during validation of your pilot test (other than WS-R.1: PCIF).*

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#### Performance Support

Use the following performance support resource to plan for the pilot:

- *How to Plan for the Pilot* (JA – Q.1)
-

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## 6.3 – Preparing for the Pilot

### Introduction

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#### Overview

Preparing for the pilot begins during the initial planning of an ISD project and continues throughout all subsequent phases of ISD. Ongoing evaluation activities ensure that all aspects of the training system, including the delivery function, are prepared to support instruction.

Thorough preparation ensures that instruction produces graduates who can meet Coast Guard performance requirements. Conversely, inadequate preparation diminishes the quality of instruction. If instructors are not ready to deliver the course or necessary resources are not available, students will have unnecessary difficulties in mastering performance objectives, no matter how well the instruction is designed. Consequently, the training system fails.

Refer to the *Training System Management* in Chapter 9 of this SOP for additional preparation guidance and support.

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#### Steps

Preparing for the pilot involves the following steps:

**Step 1:** Prepare training materials.

**Step 2:** Conduct a run through of new materials with instructors.

**Step 3:** Revise training materials (if needed).

**Step 4:** Prepare training site.

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#### Performance Support

Use the following performance support resources to prepare for the pilot:

- *How to Prepare for the Pilot (JA – Q.2)*
-

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## 6.4 – Conducting the Pilot

### Introduction

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#### Overview

Now all the planning and preparing comes to fruition when you actually conduct the pilot. This is really the first formal evaluation of a new course. We use the word pilot to mean the tryout of the entire course and not just parts or pieces.

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#### Steps

There are not really steps that are being completed in this phase, but rather a number of activities that are being completed in addition to the actual delivery of the course in the real training environment. These activities include:

- Data about each lesson is collected by means of the Pilot Course Implementation Form (WS-R.1)
  - Updates to the course materials regarding necessary deviations from the instructor guides
  - Updates to the course materials regarding deficiencies in the course materials
- 

#### Performance Support

Use the following performance support resources to conduct the pilot:

- *How to Conduct the Pilot* (JA-Q.3)
  - *Pilot Course Implementation Form* (WS-R.1)
-

## Roles and Responsibilities

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### Course Developer

During the pilot, the course developer's roles and responsibilities include:

- Help the instructor(s) to prepare.
- Make sure that duplications of required materials are completed on time, in sufficient quantities.
- In cooperation with the school chief, introduce the pilot
- Use data collection forms to evaluate and capture data in the observation of the pilot \*NOTE: It is recommended that at least one course designer be involved in the project to conduct the pilot.
- Assure students that their observations and feedback will be treated confidentially.
- Protect the integrity of the instructor(s). Provide feedback and observations in private, not in front of students.
- Help resolve instructor questions or unusual problems.
- Be an unobtrusive observer. Stay out of the direct view of students.
- Track start and stop times for lessons, practice exercises, and performance tests.
- Note problems, deviations from the plan of instruction, and observed discrepancies with the instruction or materials.
- Debrief the instructor, other observers, and students daily, at the end of each unit, and at the end of the course.
- Analyze and report the results of the pilot.

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### Instructor(s)

During the implementation phase, the roles and responsibilities of instructor(s) include:

- Deliver the course as designed.
  - Protect the integrity of the course. Discuss course problems in private, not in front of students.
  - Control the course content, process, activities, and learning environment.
-

## 6.5 – Evaluating the Pilot

### Introduction

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#### Overview

Now that the pilot is over, it is time to evaluate how it went and report your findings up the chain. The most common way for documenting and reporting findings is via a pilot course evaluation report (PCER). Your final report shall include: background information important to the reader about the pilot; major observations made during the pilot; and recommendations about proposed future action regarding the course and reasons for conclusions and recommendations. (See *PCER example, Appendix S*). Recommendations for changes to the course need to be based on data obtained during the pilot.

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#### Steps

Evaluating the pilot involves the following steps:

**Step 1:** Review completed PCIFs.

**Step 2:** Organize information into quantitative and qualitative categories.

**Step 3:** Review evaluator, designer, instructor, and student comments about the course.

**Step 4:** Make recommendations about future course of action.

**Step 5:** Summarize data into a report.

**Step 6:** Archive decision for future reference.

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#### Performance Support

Use the following performance support resources to prepare for instruction:

- *How to Evaluate a Pilot (JA – Q4)*
  - *Example of Pilot Course Evaluation Report (EX-S.1)*
-

## Pilot Evaluation

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### **Quantitative and Qualitative Data**

Qualitative involves analysis of data from open ended questions such as: “What did you like most that lesson?” Quantitative data involves analysis of numerical data such as the percentage of students passing performance test on first try. Both can be powerful information for making changes to a course. Likely the most telling quantitative data is statistical results of how well or poorly learners achieve the course performance objectives (Level 2).

Qualitative data is a little trickier to dissect and course developers should be aware of whether such information that is gathered is cosmetic or substantive.

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### **Cosmetic vs. Substantive Suggestions**

Once the feedback about the pilot is organized, you will likely have evaluator, peer, instructor, and student comments about the course. It is important to distinguish the comments as either cosmetic or substantive. Substantive comments are those that directly affect the learning outcomes of the course. Proposals about typos or misspelled words, deleting unneeded activities, or correcting technical errors are substantive in nature and should be fixed as timely as possible. Cosmetic comments are those having to do more with the manner and approach the designer used in the instructional strategy. An example of cosmetic changes include remarks about classroom arrangement, uniform of instructors, stories told by instructors, or use of names placards on the tables. The thing to remember is cosmetic changes to a course can be made as long as it improves the overall student’s experience and can be easily made without sacrificing the validity or reliability of the course.

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### **Determining Future Action**

Once you’ve reviewed all the data, you have to make a final recommendation about the way ahead for the course and to summarize your recommendations into a report. Based on the results, determine the appropriate recommendation:

- Introduce the course as planned.
  - Introduce the course after making specific changes.
  - Make substantive changes and conduct an additional pilot.
  - Return the course to the design or development phase.
-

## 6.6 – Rolling out the Final Product

### Introduction

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#### Overview

After corrections are made from the results of the pilot, it is finally time to roll out the final product for full implementation. This last section of the chapter is devoted to how to put into service the new instruction and close out the project.

Although the majority of this chapter of the SOP is devoted to trying out the materials via the pilot, during the Implementation phase, members of the School house will continue to deliver the instruction. As course developer, it may become your duty to monitor, revise, and validate instruction according to plans for improvement based on evaluation outcomes.

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#### Steps

The steps in implementing the final instructional product involve the following activities:

**Step 1:** Roll out the final instructional product.

**Step 2:** Continue to monitor the results of instruction via Course Assessments (CAP) and Classroom Observations, per Chapter 7.

**Step 3:** Submit curriculum change notices as necessary to maintain currency, per Chapter 8.

**Step 4:** Assess the results of instruction – Level 1, 2, 3.

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#### Performance Support

The *How to Roll out the Final Product* (Job Aid JA-Q5) provides a step-by-step guide for operational evaluation of the instructional system.

Chapter 7 (Evaluation) has detailed instructions, job aids, and checklists for how to continuously evaluate the effectiveness of instruction.

Chapter 8 (Course Maintenance) gives guidance on how to prioritize and handle course change notifications.

Chapter 9 (Training Systems) discusses the management, administration, support, and delivery functions that are usually out of the instructional designer's hands, but need to be present for instruction to be effective and successful.

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## Roll out of Final Product

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### Procedure

Local procedures will likely dictate how to get materials accepted into the School house after the pilot and locked down to prevent unauthorized changes to them. A short job aid (JA – Q5) is presented in *Appendix Q* that provides some guidelines about what that process could entail.

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