Piloting a Curriculum:

Evaluating the Effectiveness of a New Training

I-TECH's Technical Implementation Guides are a series of practical and instructional papers designed to support staff and partners in their efforts to create and maintain quality programs worldwide.

A successful training program requires multiple components, including skilled trainers with adequate content knowledge, training participants who have the necessary baseline knowledge and motivation to learn, and a well-written curriculum to guide everyone through the process. Implementing training programs often requires a significant amount of training staff time, trainee time spent away from work, and dollars spent on transportation, lodging and per diem. Pilot-testing a curriculum is an important aspect of quality control in training and can help to ensure that the time and investment in training really pays off. This guide presents an approach for conducting such an evaluation.

Why Pilot?

The purpose of piloting a curriculum is to make sure the curriculum is effective, and to make changes before it is distributed or offered widely. Piloting a curriculum helps to identify which sections of the curriculum worked and which sections need strengthening. The process should include a comprehensive evaluation of the curriculum's effectiveness and usefulness in achieving the course's training objectives. The information gathered from the pilot is used to strengthen and improve the course content, materials, and delivery strategies in the next version of the curriculum.

Pilot testing will only be effective if you have the resources, time, and ability to revise the curriculum based on the evaluation feedback received from the pilot. If, for some reason, you will not be able to make changes to the curriculum, then completing the pilot-evaluation process described below is not advisable.

The process described in this guide for piloting a curriculum is appropriate for extensive, classroom-based curricula in which you have invested significant resources. This type of process is not as relevant for an on-site training where training topics might vary with the situation, or for a less structured curriculum in which experts present case studies or their own PowerPoint slides.

Preparing for the Pilot

The pilot evaluation is an extensive assessment carried out during the first time that a newly developed or adapted curriculum is used to conduct training. Participants should be informed that they are participating in a pilot session of the training workshop when they are invited and will be asked to provide extensive and honest feedback as part of the pilot-evaluation process. Emphasizing that their feedback is critical to the development and improvement of the training will often help motivate participants to complete written-evaluation forms in detail and participate actively in group discussions on the training experience. On the first day of the workshop, facilitators should mention that evaluation activities will be more extensive than normal because of the fact that this is a pilot, and they should articulate the specific evaluation activities that will be conducted.

It is also critical to brief the facilitators in advance that this is a pilot test of the curriculum. Some facilitators may have presented similar material before and may have their own presentations that they are used to giving. For the curriculum pilot, it is important that all facilitators follow the curriculum as closely as possible. All facilitators should be provided with copies of the curriculum well in advance of the workshop so that they have an opportunity to review their assigned sessions.

Recruit at least one observer who will be present at the whole training. The observer is often someone who participated in the development of the curriculum, but this is not a requirement. If it is not possible to get someone who participated in the development of the curriculum to attend the pilot, then the observer can be someone with listening and observation skills who is knowledgeable about training design. The observer role is described in more detail later in this guide.

Areas to Evaluate During the Pilot

The evaluation of a pilot curriculum should assess teaching methods, appropriateness of content, materials, issues of timing and flow, and general effectiveness of the training. Some key questions to answer through the evaluation of the pilot are listed below:

Teaching methods

- Were the teaching methods (lecture, discussion, group work, etc.) used in the training successful in increasing participant knowledge/understanding?
- Did some methods work particularly well?
- Did some methods not work and need to be changed?

Content

The pilot session is not the time to review clinical accuracy of the content. The curriculum should have undergone a technical review prior to piloting to ensure that the content is clinically accurate and reflects current guidelines.

- Was the content at the appropriate depth and breadth for the audience?
- Was the reading level of the curriculum too difficult/easy?
- Were the right topics covered?
- Were there topics missing?
- Were there stories, examples, cases mentioned during the workshop that could be incorporated into the curriculum?

Materials

- Were the materials user friendly for both trainers and participants?
- Did the trainers use all of the materials? (PowerPoint slides, handouts, worksheets)
- Did participants refer to the training materials?
- Were there additional materials and resources that would enhance the training?

Effectiveness

- Did participants acquire the intended skills and knowledge from the training? If not, what were the weak areas?

Timing and flow

- Was there too little or too much time allocated for individual activities?
- Was there too little or too much time allocated for the workshop as a whole?

Participants' feedback should include their subjective response, i.e. what worked well, and objective measures, i.e., a change in knowledge.

Conducting the Evaluation

The evaluation of the pilot session of a new curriculum should encompass feedback from three key groups in order to triangulate data and assess the training from different perspectives: the participants, the facilitators/trainers of the workshop, and the observer(s).

Participant Evaluation of the Workshop

The purpose of a training event is to enhance participants' capacity in a specific, defined area. Participant feedback on the workshop is thus a central piece in assessing the effectiveness of a curriculum. Participants' feedback should include their subjective response to the workshop (What worked well? What did they feel they learned? What did they not understand? How will they apply what they learned in the workshop in their work setting?) and objective measures, such as a change in their knowledge and/or skills resulting from the workshop. Following are specific tools for collecting participants' feedback:

Tool 1: Daily written evaluations

A daily evaluation, to be completed by participants at the end of each day of the workshop, captures participants' reactions to workshop sessions and activities while the information is still fresh in their minds. A daily evaluation form should be brief and easy to complete to avoid overburdening participants. Often, daily evaluations only ask what participants liked and did not like about the day's session. Since this is a pilot, you may want to include some knowledge-related questions specific to the content covered that day to see if participants absorbed some of the key themes of the day.

Generally, the data from the daily evaluation form does not need to be rigorously tallied and analyzed; rather, the trainers should scan the forms to determine general trends. For example, if a particular session seems to be receiving notably lower scores than other sessions, this would indicate the need for further investigation to determine the reason. The daily evaluation should also include a question about information not understood by participants so that facilitators can clarify any misunderstandings at the training the following day.

Tool 2: Final written evaluation

Participants should complete a final written evaluation at the end of the final day of the workshop. This evaluation allows participants to reflect back on the knowledge and skills acquired during the training within the context of the workshop as a whole. It can often capture different information than the daily evaluation, as material that was unclear or confusing on Day 2 may have become clear by Day 5. A final written evaluation also allows participants to reflect on their key learning from the overall workshop and assess how they will be able to use what they have learned when they return to their work settings.

Tool 3: Focus group discussion

Focus group discussions with participants at the end of the workshop can be a useful method for obtaining feedback about the workshop and curriculum. The group discussion format inspires synergies that can result in a rich discussion, evoking different information than might be provided in a written format. It also facilitates feedback from those who are more comfortable expressing themselves verbally than in writing.

Participants should be divided into groups of approximately 6-8 for the focus groups. Trainers should identify individuals not directly involved with the workshop to facilitate the focus group discussions and take notes. A focus group discussion guide should be developed and used to structure the discussion, but should not limit or constrain the discussion. Key themes emerging from the groups should be identified and summarized. Refer to I-TECH's Organizing and Conducting Focus Groups for more detailed information on focus group discussions.

Tool 4: Pre- and post-test

The purpose of the pre- and post-test is to provide an objective measure of changes in knowledge and/or skills resulting from the training, and thus can serve to provide valuable information about the effectiveness of the curriculum.

Caution must be used in interpreting the pre- and post-test results in terms of implications for the curriculum. The pre/post-test must also be piloted to determine whether it is valid. For example, significant increases in scores between the pre-test and the post-test can serve as an indication that the workshop achieved its objectives and the curriculum was effective; lack of substantial increase in scores, however, requires further analysis and interpretation. A lack of change or decrease could reflect a poorly designed test rather than indicate a problem with the curriculum.

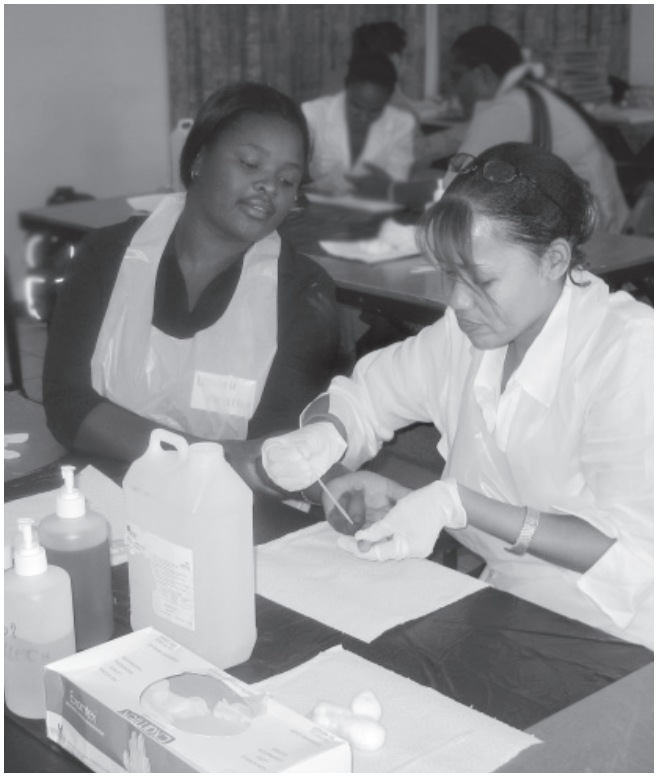
A simple method of gauging the validity of the test is to discuss the responses to the test during the training and after participants have completed it on their own. This will enable facilitators to see if the questions themselves were unclear or whether there were gaps in the way the material was covered during the training. Refer to I-TECH's Guidelines for Pre- and Post-Testing for more detailed information about designing, validating, and interpreting pre/post tests.

Facilitator Evaluation of Curriculum Materials

The pilot evaluation should include structured and systematic feedback from the trainers using the curriculum and supporting training materials. This assessment should include the trainers' experiences in using the materials, their feedback on the thoroughness and appropriateness of the content, and their suggestions for activities, stories, case studies, and examples that can be incorporated into future editions of the curriculum.

Tool 1: Written evaluation

A written evaluation should be completed by each facilitator at the end of each session he/she facilitates. This evaluation form should ask the facilitator to reflect on what worked well in the session and what did not work well. The evaluation can also ask the facilitator to comment specifically on how he or she used the facilitator manual and the slides for that specific session. Although it may seem like a lot of work for the facilitators to complete an evaluation after each session of the training, it is important to capture their thoughts and very specific feedback while it is still fresh and clear in their minds.



Participants should complete a written evaluation at the end of the final day of the workshop.

Tool 2: Daily debrief meetings

Trainers and observers (see next section) should hold a short debriefing at the end of each day. The purpose of this debrief is to discuss the day's activities (what worked well, what needs to be changed/improved) as well as to prepare for the following day. A simple form can be used to guide the discussion and a note taker should be designated to ensure that key points are captured. Debriefings can be extremely effective in identifying issues or concerns with the curriculum as well as strategies to address these concerns.

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Observer Evaluation of Workshop and Use of Curriculum Materials

The observer(s) plays an invaluable role during the piloting of a curriculum. Since observers are not directly involved in the implementation of the workshop, they are able to carefully monitor elements, such as use of the materials by trainers and participants, the interaction between participants and trainers, and participants' level of engagement. They can also be tasked with capturing stories, cases, and examples used by trainers to incorporate into the curriculum and providing general overall feedback on each session.

The observer can make notes directly on a copy of the facilitator's guide during the presentation of each session. Observers should note if an activity did not work with the group or if the facilitator skipped a specific activity or session. The observer can also note which activities took more time than anticipated or which ones led to interesting discussions about topics of importance to the learning objectives of the curriculum. If participants appear confused at certain times during the training session, the observer can note at what point this confusion occurred. Likewise, if the facilitator deviates from the curriculum to clear up a point of confusion, the observer should note this as well.

It is helpful to develop an "Observation Guide" for the observer to fill out at the end of each session of the training. This form is a helpful tool to remind observers what to look for, such as the timing and flow of the session, the use of the facilitator and participant manuals, participant involvement, and the quality of the content in the session.

Observers should also participate in the daily debrief meeting with the facilitators to review the successes and challenges of the day's sessions and to share their observations. Lastly, the observers should summarize their detailed comments each day so that they can be easily fed back into the curriculum review process.

Evaluating Non-Classroom Training Tools

Your curriculum may include components that take place outside of the classroom, like field visits or preceptorships. You may also have created specific tools, like trigger tape scenarios, to enhance your curriculum. Each of these additional pieces should be evaluated individually through separate evaluation forms or group discussions with facilitators and participants. You should also include specific questions about these experiences or tools in the final participant-evaluation forms, observation guides, and facilitator-feedback forms.

Revising the Curriculum

After the pilot training is complete, it is time to review all that you have learned and use it to make changes to the curriculum. As mentioned earlier, this is the most important part of the entire pilot-evaluation process. The first step is to compile and analyze all the data collected. The pre- and post-test should be scored and results entered into a spreadsheet by question; this will enable you to determine if there were particular content areas that were not well understood by participants (this assumes that the pre/post-test has been validated). Participant evaluation results, both written and from the focus groups, should be summarized and analyzed to identify key themes and issues, and recurring comments about what worked and what did not. Observer and trainer feedback on specific sessions should be compiled in one place and relevant feedback from the trainer-debrief sessions should be summarized.

Once you have a good sense of what the data are telling you, the next step is to revise the curriculum and the supporting materials based on the feedback. This can be an extensive process depending on the type of feedback received; it may be necessary to prioritize all the suggested changes to address the most important issues first depending on available time and resources. Revising the curriculum may include:

- Modifying slides or handouts;
- Enhancing and expanding facilitator's notes;
- Developing new activities or methodologies, such as case studies;
- Adding, deleting, or reordering content;
- Rewriting sections of the facilitator manual;
- Simplifying the level of language used;
- Adding more clinical depth;
- Developing additional resources, such as a Participant Reference Manual or Pocket Guide;
- Rethinking the length of time of the workshop, or making difficult decisions about what can be covered in the time available for training.

Be sure that the revision includes any changes or updates to local, national, or regional guidelines relevant to the training content.

If extensive changes are made to the curriculum during the revision process, it is helpful to conduct a second pilot evaluation. This involves repeating the methodologies described here during the first presentation of the revised curriculum. For a large, technical curriculum that is expected to be adopted widely in training health care workers, the time and energy spent evaluating the curriculum will pay off in the long run with a more effective training and better prepared health care workers.

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About I-TECH
I-TECH, a collaboration between University of Washington and University of California, San Francisco, is a global AIDS training program working at the invitation of Ministries of Health and the U.S. government to increase human and institutional capacity for prevention, care, and treatment in countries hardest hit by the AIDS epidemic. I-TECH was founded in 2002 by HRSA in collaboration with the Centers for Disease Control and Prevention.

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