



This material is based upon work supported by the National Science Foundation under Grant No. 0802245. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Karl Kapp

October 2011

Curriculum development projects are designed to either create new content that has not been previously taught, such as a new technology or present content to students in a new format with new activities or approaches.

11 IMPORTANT THINGS TO KNOW ABOUT EVALUATING CURRICULUM DEVELOPMENT PROJECTS:

- 1. Understand the underlying model, pedagogy, and process used to develop the curriculum.** There are several curriculum development models including the DACUM model (Developing A Curriculum), the Backward Design Method, and the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model of instructional design. Whatever approach is used, make sure you understand its methodology and underlying philosophy so that it can help guide the evaluation and so you understand the development steps and review whether or not they are being followed.
- 2. Establish a baseline.** If possible, establish student performance before the curriculum was available. It could be student grades or performance from the year before the introduction of the new curriculum or it could be job performance or some other indicator of how students performed before the new curriculum was introduced. This helps to establish the level of change or increased learning created as a result of the new curriculum.
- 3. Clearly identify the outcomes expected of the curriculum.** What should students know or be able to do when they have completed the curriculum? Take the time to understand the desired outcomes and how the curriculum content, activities, and approach support those outcomes. The outcomes should be directly linked to the goals and objectives of the project—look for possible disconnects or gaps.
- 4. Employ pre/post test design.** One method to establish that learning has occurred is to measure student knowledge of a subject before the curriculum is introduced and then measure their knowledge once they have completed the curriculum. This helps to establish any pre-knowledge the students may have had of the topic and can be used to demonstrate that learning has occurred. If you are comparing two curriculums, you may want to consider using one group as a control group that would not use the new curriculum and compare the performance of the two groups in a pre/post test design.
- 5. Employ content analysis techniques.** Content analysis is the process of analyzing documents (student guides, instructor guides, online content, videos and other materials) to determine the type of content, frequency of content, and internal coherence (different elements of the curriculum are consistent with one another) and external coherence (the interpretation in the curriculum fits the theories accepted in and outside the discipline).
- 6. Participate in the activities.** One effective method of understanding the impact of activities and exercises is to participate in them yourself. This helps determine the quality of the instructions provided for the activities, the level of engagement the learners will have with the activities, and the learning outcomes that result from the activities.

-
- 7. Ensure assessment items match instructional objectives.** One of the critical areas of curriculum development is the assessment of student progress. This is typically measured through written tests. An effective method of ensuring that the written tests are assessing the student's grasp of the objectives of the course and curriculum is to match the assessment items to the instructional objectives. Each assessment item should be directly related to an instructional objective. Create a chart to match objectives to assessment items to ensure all the objectives are assessed and that all assessment items are pertinent to the curriculum.
 - 8. Review guidance and instruction provided to teachers/facilitators in guides.** Determine if the materials are properly matched between instructor guide, student manual, slides, and in-class activities. Determine if the instructions are clear and complete and that the activities are feasible.
 - 9. Interview students, faculty and, possibly, workforce representatives.** Take the time to debrief both students and faculty about the quality, engagement, and learning outcomes of the instruction. Faculty can provide insights into the usefulness and effectiveness of the materials and students can provide input into level of engagement, learning effort, and overall impression of the curriculum. If the curriculum is tied to a technical profession, involve representatives from industry to review and examine the curriculum. This should be done as part of the development process but, if not, consider having a representative review the curriculum for alignment with industry expectations.
 - 10. Use Kirkpatrick's Four Levels of Evaluation.** A common model for evaluation of curriculum is called the Kirkpatrick Levels of Evaluation. These levels measure initial learner reactions, knowledge gained from the instruction, behavior changes that might result from the instruction and overall impact on the organization, field or students. This is a highly effective model for curriculum evaluation.
 - 11. Pilot the instruction.** A highly desirable element in curriculum development is to conduct pilot sessions as part of the formative evaluation to ensure that the instruction functions as designed. After the pilot, collect end-of-day reaction sheets/tools (Level One Data) and trainer observations of learners. Having an end-of-program product such as an Action Planning tool to implement changes around curriculum focus issue(s) is also a useful measure.

RESOURCES

For detailed discussion of Content Analysis, see Chapter 9 of Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational Research: An Introduction* (8th ed.). Boston: Pearson.

DACUM Job Analysis Process: <http://static.nicic.gov/Library/010699.pdf>

Backward Design Method: http://pdonline.ascd.org/pd_online/ubd_intro/wiggins98chapter1.html

ADDIE Model: http://www.nwlink.com/~donclark/history_isd/addie.html

Kirkpatrick's Four Levels of Evaluation: <http://www.nwlink.com/~donclark/hrd/isd/kirkpatrick.html>

Karl Kapp is a professor of instructional technology at Bloomsburg University. He may be reached at kkapp@bloomu.edu and www.karlkapp.com.
