

HP Grant Participant Measuring Learning Matrix Instructions

(adapted from assessment workshops created by Gloria Rogers, www.abet.org/assessment.shtml; used by permission)

As a grant awardee, you will be asked to create an Measuring Learning plan which will enhance the overall understanding of the value-added in implementing technology in the teaching/learning environment. Attached is the matrix and instructions we are requesting that you complete as well as an example Project Measuring Learning Planning Matrix. The following are things you may want to look for in creating your Measuring Learning matrix:

1. Anticipated change. This is the most critical part of the matrix. Faculty are wonderfully intuitive and those that are involved in this project “just know” that using technology in the classroom will enhance the overall teaching/learning environment. However, it is important that you clearly articulate what you believe will be the affect of our “experiment.” If you anticipate an increase in knowledge, you might say, “students will perform better on _____ concepts.” For anticipated improvement of skills, the statement might be, “students will be able to use technology as a tool for problem solving. In anticipation of a change in attitude, you might report, “students will indicate a more positive attitude toward the subject matter.” If the target is to instill a value, then the statement might be something like, “students will freely choose technology as their tool of choice for problem solving. If you do not have clear statements you might ask yourself some of the following questions:
 - What do you think will change in terms of student learning? (This might include things like “learn better” (move from just “knowing” to being able to apply, analyze, etc.—depth) or “learn more” (cover more concepts—breadth).
 - Do you think what you are proposing will have any other impact on students?
 - What do you think will change about the strategies you currently use to engage student in the learning environment? (Try to get out what changes you may experience. This is also an important outcome of the use of technology. You need to think about ourselves not only as a change agents but also as the object of change. This needs to be documented as it is an important outcome of the project.)
 - Have any of your colleagues been involved in this project? What impact do you think this project will have on them? (These questions are designed to get us to think outward and expand our view of potential change beyond just our own classroom.)
2. Baseline measures: For each anticipated change element, you should indicate the data you already have that can be used as a baseline against which you can measure change. You are encouraged to think creatively. For example if you have not collected any pre-implementation data, is someone else teaching the same course/using the same syllabus? Is there a common test or test items that could be used. If you anticipate a change in attitudes, perhaps a short, well-constructed pre-survey at the beginning of the course. Maybe a trained facilitator would be willing to conduct a pre/post focus group. If it is anticipated that students will value the use of technology, perhaps you could develop some pre/post scenarios and students would have to indicate their preference among alternative actions. Questions you might want to ask:
 - Are these data already available to you? If not, what will it take to get the data needed to establish a baseline?
 - Do you think that these data will provide the kind of results that will answer the questions you might have?
 - In what ways will you involve any of your colleagues in gathering baseline data?

3. Data collection: For this element in the matrix, you are asked to think about what data is the most appropriate to gather as a measure of the anticipated outcome. The data should be consistent with the expected change. For example, if you anticipate a change in what students “know or can do” then student self-report would not be the most meaningful data. You should seek direct assessment data for knowledge and skills—that is, data that provides for the direct examination or observation of student knowledge or skill. One of the common mistakes that is made when grantees are asked about what data they are going to collect is that they want to tell you “how” they are going to collect the data (e.g., test items, surveys, observation, etc.). Keep focused on the data source and not the method. Instead of indicating “test,” ask yourselves what you are going to “test.” A better response would be “student performance.”

Questions to ask:

- Explain how the data are related to the expected change?
- What other data did you consider?
- How difficult will it be to get the data? (It is important that the plan is realistic given the resources available.)

4. Method of data collection: This item is pretty straight forward. What method are you going to use to collect the data? Challenge yourself to be creative and think beyond the traditional survey or test. There are many methods that can be used to collect data. Among them are:

- **Written surveys and questionnaires** (Asking individuals to share their perceptions about the study target—e.g., their own or others’ skills/attitudes/behavior, or program/course qualities and attributes).
- **Exit and other interviews** (asking individuals to share their perceptions about the target of study—e.g., their own skills/attitudes, skills and attitudes of others, or program qualities—in a face-to-face dialog with an interviewer).
- **Commercial, norm-referenced, standardized examinations** (commercially developed examinations, generally group administered, mostly multiple choice, “objective” tests, usually purchased from a private vendor).
- **Locally developed examinations** (objective or subjective designed by local staff/faculty);
- **Archival Records** (biographical, academic, or other file data available from college or other agencies and institutions).
- **Focus groups** (guided discussion of a group of people who share certain characteristics related to the research or evaluation question, conducted by trained moderator)
- **Portfolios** (collections of work samples, usually compiled over time and rated using rubrics).
- **Simulations** (a **competency based** measure where a person’s abilities are measured in a situation that approximates a “real world” setting. Simulation is primarily used when it is impractical to observe a person performing a task in a real world situation (e.g., on the job).
- **Performance Appraisals** (systematic measurement of overt demonstration of acquired skills, generally through direct observation in a “real world” situation—e.g., while student is working on internship or on project for client)
- **External Examiner** (using an expert in the field from outside your program – usually from a similar program at another institution – to conduct, evaluate, or supplement the assessment of your students).
- **Oral examinations** (evaluation of student knowledge levels through a face-to-face dialogue between the student and the examiner—usually faculty).
- **Behavioral Observations** (measuring the frequency, duration and context of subject’s actions, usually in a natural setting with non-interactive methods).

Questions you might want to ask:

- What are some other methods you have considered?
- Why did you choose the methods listed?

- Do you have access to assistance to help you develop your assessment techniques? (This question is designed to encourage you to think about other possible resources. It is an opportunity to reinforce the idea that we often learn as much from what doesn't work as we do from what does.)

5. Timeline: You want to be very intentional about their data collection process. If you fail to get “pre-“data before or at the beginning of the project, it is too late later on and the opportunity is missed. You also need to be encouraged to think ahead. If you would like someone to come in and do focus groups with some of the students, this needs to be planned well in advance to develop meaningful focus group protocols (and comparisons, if appropriate).

Questions you might want to ask:

- What processes have you put into place to be sure that data are collected in a timely fashion?
- What kind of “lead time” do you think you will need to implement the methods?
- Are you going to require assistance in developing some of these methods? If so, have you had discussions with those who will be helping and how does that affect your timeline?

6. Evaluation: This is a key part of the process. Once the data are gathered, who will be looking at the results and making decisions about action? Generally this is only the grantee. However, this is a wonderful opportunity to think about bringing others into the process. Not only can this provide more objective feedback, but also bring other people into the project in ways that actually can promote dissemination of the technology into other areas. For this reason, it is important to include this element in the matrix as it provides an opportunity to engage in a broader discussion of dissemination techniques. Questions you might ask are:

- Have you thought about how involving other faculty might help to broaden “buy-in” for the use of technology in the classroom?
- Are there other faculty members that you think could be beneficial in helping you analyze the broader impacts of the findings?
- What do you think your biggest challenges are going to be in getting others involved in your project? How do think sharing the results of the project might address the challenges?