Demonstrating Value for Technology Programs

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Organization & Goals

* Workshop will touch on
  * Writing for success
  * Intellectual merit & broader impacts
  * Partnership and support
  * Goals – SMART goals
  * Impact
  * Evaluating for success

Disclaimer

* Views expressed herein are those of the presenters and do not express the opinions of NSF.

* Proposal preparation and submittal always involves an element of risk – decisions regarding how, or whether to rely on this material, is solely the responsibility of the user.

* The purpose of this material is to help develop an appreciation of the role of evaluative perspectives in preparing grant proposals.

A Fundable Proposal

* Clear & Succinct Goals

* Measurable & Meaningful Impact

* Worthwhile Dissemination

* Qualification and Capacity of Principals

* Evaluation Plan

But …. You can do all this right and still possibly not get funded. We're talking here about improving your chances, not guaranteeing the future…..

A bit about how proposals are reviewed……

As you prepare the proposal, try to answer the

FIVE CRITICAL QUESTIONS

These questions underlie the whole proposal but should all be answered in the one-page project summary.

1. What is the Intellectual Merit of the Proposed Activity

What are some of the aspects of intellectual merit?

Recapping Some Intellectual Merit Review Criteria

* What makes this work original, and therefore gives the proposal value?

* Why is it interesting and creative? Why should NSF fund it?

* Why is this work needed?

* Is the concept innovative? New Twists?

* Does it advance teaching and learning?

* Why are *you* the one to be doing this?

2. What are the broader impacts of the proposed activity?

Broader questions of

* Who (target population or treatment group)

* How is the treatment group identified and why

* How many (numbers)

* Characteristics (place, capacity, need)

* What will be different and better as a result

Recapping Some Broader Impact Review Criteria

- ## What is the impact on targeted population?
    - What will be better for students and teachers as a result of doing this work?
- ## How will the grant recipients be transformed by the activity?
    - What will change in the institution because you did this work?
- ## Original contributions to the field of technician education?
- ## What will this proposal do to extend the work beyond the grant recipients?

3. Who are the Partners and Stakeholders? Why are they there?

* How do they relate to and support the broader ATE goals?

* How do they relate to and support your project goals?

* What is the evidence of their commitment? (employ students, provide equipment)

* Quid-pro-quo

* Can the help sustain the work?

4. How will the proposed work be sustained?

* What Constitutes Sustainability?

* What value does sustainability contribute?

* How do you measure / evaluate sustainability?

How do I know when I have it?

* Beneficial and enduring relationships

* Current activities suggest directions for future funded work?

* You become a "go-to" place

* You are an on-going part of crucial and current conversations

5. Why Should the NSF Fund It?

* Will the work advanced the mission of ATE?

* Will the project likely be effective in treating the targeted population? (GPRA) (Note: Your evaluation plan can help show your attention to these questions)

* Will the work advance the mission of NSF?

* Does it benefit business? Employers?

The following two samples may serve to integrate the ideas we've discussed in Part 1. We invite you to look at each and offer any comments… we'll look first at the sample intellectual merit statement ---

Sample Intellectual Merit Statement

Intellectual Merit: According to the Center for Dropout Studies at Hilton University {*not a real place*} over half (58%) of enrolled students do not complete the first semester engineering technology curriculum in community colleges. A substantial body of prior ATE funded work[1] convincingly shows that industry relevant scenario based instruction improves engagement and reduces dropout rates for technology students in a broad range of disciplines.[2] The requested funds will allow us to localize and test industry relevant scenarios originally developed by the Scenario Education Center at Knob Hill Community College (ATE DUE 0123456) for their affect on retention of first semester engineering technology students in our service area. By providing faculty the necessary training and release time, this project will allow us to modify the first semester engineering curriculum using innovative teams of industry and faculty, so it will become more industry relevant and scenario based.

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Sample Broader Impact Statement

Broader Impacts: The proposed project will support development of faculty mentors within our institution who will help our faculty convert the entire program to scenario based instruction by the end of Year 1. Based on this outcome, we will extend our workshops and mentoring activities during Year 2 to assist the three other colleges within out district. By year 3, Models and practices as well as mentorship capacity developed as a result of this project will provide the basis for the State Board for Community Colleges to offer scenario based course development workshops as part of its state funded instructional and program reform initiatives for engineering technology programs statewide.

To Write Good Goals……
Get   S M A R T

What are S M A R T* Goals?

* By using the term SMART in relationship to goal setting we acknowledge the works of Peter Drucker. Use of the term "SMART Goals" is permitted under the Creative Commons licensing for non-commercial fair use.

SMART goals are ….

* **S**pecific – who, what, when, where, why

SMART goals are ....

* **M**easurable – when, how much, how many

SMART goals are ....

* Attainable – within capacity of the requesters

SMART goals are ....

* **R**ealistic – within budget and timeframe

SMART goals are ....

* Tangible – it can be measured or observed, and evaluated

Other thoughts about
Refining Goals
Enabling Objectives
SMART Technique

Discussion

Why?

Why are we doing this?
(Does it relate to the goals set forth in the proposal or ATE goals?)

Examples: "To achieve our diversity objectives"
OR…

" To improve retention and completion
rates in Freshman introductory
programming courses" …

Who?

Who is going to be **doing** *this work?*

Examples: "Selected teams of faculty from our
partner institutions along with volunteers
from our industry advisory committee.."

OR "Regional teams of attendees from our
summer institute"
(or maybe both groups)…….

Corollary question: Is this work budgeted or credibly
accounted for?

What?
When?

What will ***happen*** *over what* ***timeframe?***

Example: "will develop a minimum of three industry Relevant scenarios and principled assessments to pilot starting Fall 2010 …….

To Whom?
With what results?

Example:

…."with Freshmen programming students. We anticipate Improvement in formative assessment scores, retention and completion rates and final grades compared with non-scenario based classes."

" To improve retention and completion rates in freshman programming courses" …

….. selected teams of faculty from our partner institutions along with volunteers from our industry advisory committee and Regional teams of attendees from our summer institute…..

….. will develop a minimum of three industry relevant scenarios (DUE - 0603297) and principled assessments (REC-0129331) to pilot starting Fall 2010 …..

….. with freshmen programming students. We anticipate improvement in formative assessment scores, retention and completion rates and final grades compared with non-scenario based classes."

WHY?

Why are we doing this?
What goal does the activity relate to?
Example: One of our project goals is to improve student engagement by improving teaching methods through use of problem based learning

What activity are we proposing?

What?

Example: We will conduct three summer institutes for 15-20 teachers each to help them develop facility with problem based learning.

Evaluator Input: In addition to the usual workshop evaluation questions, have attendees develop a module and a related assessment to use in their fall classes.

Project and evaluator documents use of modules looking for behavioral changes on the part of teachers and evidence of increased student engagement and better student performance attributable to the modules.

Did anything change?

So What?

Example: Of 48 teachers attending the summer institutes, we received data from 40 via surveys and observed 8 classes.

Evaluator Input: Using models of behavioral change and models of student engagement, we observed documentable changes in teacher - student interaction and student engagement as compared to standard lecture classes.

Project leaders provide additional comparative data based on prior student metrics such as mid-term drop rates, class GPA, student observation reports from teachers, or other documentary evidence.

What do we do with what we've learned?

Now What?

Example: Are the teachers committed to using this methodology more fully? Are there other departments that may be interested?

Evaluator Input: Are these results comparable to other results in the literature? In the evaluator's experience? What do the results suggest for the future?

Project leaders disseminate findings through a variety of media, including their state instructional list serve and a legislative committee on higher education and workforce development.

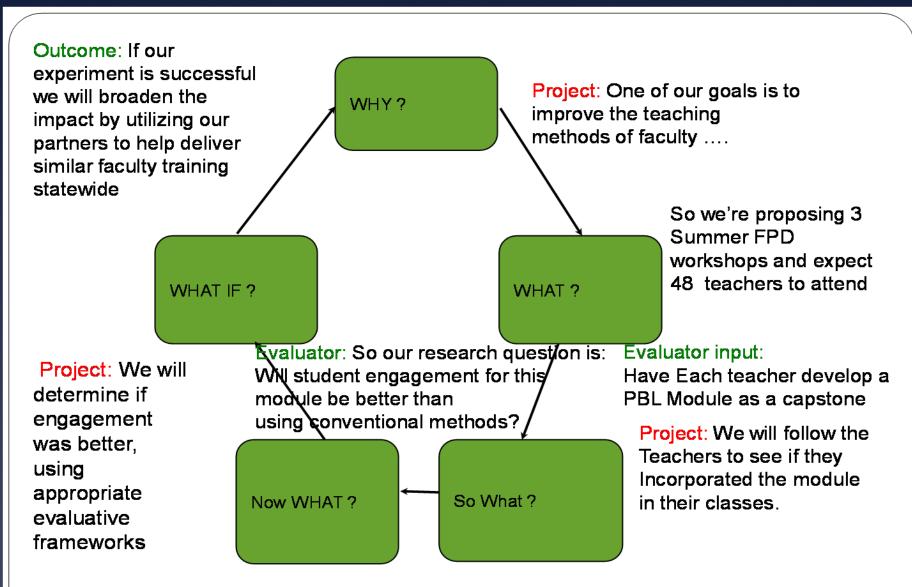How could this be disseminated further? How can it scale?

Example: The governor's education and workforce development committee is very interested. The teachers enthusiastically presented their work at the state technology teachers meeting. Several employers who were involved made a trip to the capitol to praise the work.

What If ?

Evaluator Input: These are all indicators of broader impact. Each one should be thoroughly documented by the project and mentioned in the annual PI and annual evaluator report.

Project leaders learn that the governor's committee has recommended funding of a statewide pilot program for problem based learning, hoping to replicate their successful model. The PI has been invited to advise the state panel on a series of state funded faculty workshops.

Evaluator: Helps project team completely and accurately document the role this project played in developing a state initiative on problem based learning.

Project leadership sees opportunity for additional research.

Outcome: If our experiment is successful we will broaden the impact by utilizing our partners to help deliver similar faculty training statewide

WHY ?

Project: One of our goals is to improve the teaching methods of faculty ....

So we're proposing 3 Summer FPD workshops and expect 48 teachers to attend

WHAT IF ?

WHAT ?

Project: We will determine if engagement was better, using appropriate evaluative frameworks

Evaluator: So our research question is: Will student engagement for this module be better than using conventional methods?

Evaluator input: Have Each teacher develop a PBL Module as a capstone

Project: We will follow the Teachers to see if they Incorporated the module in their classes.

Now WHAT ?

So What ?

Determine Impact and then bring to scale

www.evalu-ate.org

Wrapping it up