

Proposal Preparation and Evaluation Support for Current & Prospective NSF ATE Applicants

July 10, 2009

Webinar Procedures

- If you are listening by phone, please mute your phone by pressing #5.
- If you have questions during the presentation, please submit them in the **Chat Window**. 
- At the end of the session we will answer as many questions as we can. Please type your questions in the **Chat Window**.





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Participants

Mark Viquesney (Moderator, Me)

1 Participant

Chat

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15/29 Welcome to MATEC NetWorks Webinar

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Welcome to MATEC NetWorks Webinar

MATEC NetWorks is an NSF funded ATE Center supporting faculty in Semiconductor, Automated Manufacturing, and Electronics education

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Presenter—TSI

Welcome



Peter Saflund
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MATEC

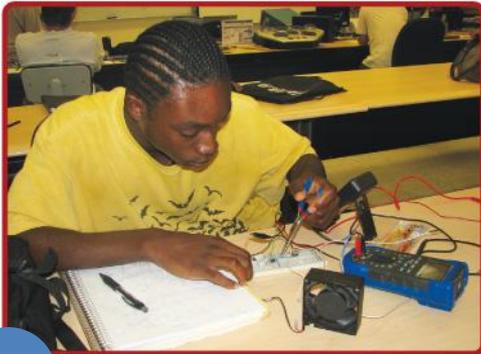
 NETWORKS



HI  TEC



HIGHTECHU



 WORKREADY
ELECTRONICS



Day Two Goals & Evaluation

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

- **A**ttainable – within capacity of the requesters

SMART goals are

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

SMART goals are

- **T**angible – it can be measured or observed, and evaluated

S M A R T

Goal Writing Questions

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.”

Example: (Pretty good as it is? How can this be improved?)

Goal 1: IPSKE and its partners will research and publish industry-derived competencies and competency-based modular curricula to support a new program in plasma light saber manufacturing.

Objective 1.1 During Year 1: Convene three statewide industry focus groups to modify and augment the NAM core competencies to include light sabers

Objective 1.2 With the guidance of instructional design consultants, develop and pilot test at least 3 competency based modules by the end of Year 1 with partner schools and industry review panel

Objective 1.3 Based on pilot test results, finalize module development process and produce remainder (9) of modules during Year 2 for use in partner schools.

Objective 1.4 During Year 3: Evaluate modify and improve modules based on partner school feedback and industry review. Finalize modules and present to state community college meeting and national association of light saber manufacturers with goal of adoption as standard model curriculum for light saber manufacturing technician certification.

Other thoughts about
Refining Goals
Enabling Objectives
SMART Technique

Discussion with audience & facilitators?

How can an evaluator help you write goals that increase your chances of getting funded?

And.....

Once funded how can an evaluator help you better manage and complete your project?

What is Evaluation

How Can Evaluation Help You?

What is Evaluation?

Evaluation is systematic determination of merit, worth, and significance of something or someone using criteria against a set of standards.

What external standards apply to ATE grants?

<http://www.wmich.edu/evalctr/jc/>

- Utility
- Feasibility
- Propriety
- Accuracy

What internal standards apply to ATE grants?

Largely (but not entirely) normative referenced: i.e. according to your proposal

Utility

To ensure that an evaluation will serve the information needs of intended users

Propriety

To ensure that an evaluation will be conducted legally, ethically, and with due regard for the welfare of those involved in the evaluation, as well as those affected by its results

Feasibility

To ensure that an evaluation will be realistic, prudent, diplomatic, and frugal

Accuracy

To ensure that an evaluation will reveal and convey technically adequate information about the features that determine worth or merit of the program being evaluated

Reflecting Standards In the Narrative

- * ARE THE ACTIVITIES YOU'RE DESCRIBING ACCURATELY RELATED TO THE GOALS YOU STATED? TO ATE GOALS?
- * DO THE ACTIVITIES TIE TIGHTLY TO ACHIEVING THE STATED PROJECT GOALS? HOW WILL YOU KNOW?

Reflecting Standards In the Narrative

- * What outcomes impacts are expected? Will you look for any unexpected outcomes? (Feasibility and propriety)
- * Will the activity make a difference to the targeted groups? How will you know? (Utility)
- * How can or will the work be scaled to achieve the broader impacts you described? (Utility)

Dialog with your Evaluator

- WHAT DO YOU HOPE TO LEARN FROM YOUR WORK?
- WHO ELSE CAN BENEFIT FROM THIS KNOWLEDGE?
- HOW WILL WHAT YOU EXPERIENCED BE COMMUNICATED TO OTHERS?
 - HOW WILL YOU KNOW IF AND HOW IT HAS AFFECTED THEM?
- What values and measures will you use to define success with:
 - Targeted populations
 - Changes (improvements) in teaching or assessment practice
 - Changes in institution
 - Capacity
 - Access
 - Behavior
 - Other

Evaluation for Management

- Find evidence for & document successful progress toward stated goals

Evaluation for Management

- * Provide basis for decision support -
doing more of what works and less of
what doesn't

Evaluation for Management

- Investigate and help prove project's major claims
 - Claims may be explicit or implicit
 - Claims are different from goal achievement

Evaluation for Management

- Provide insight and recommendations to inform current and possible future work

Building Understanding

Project leadership

Stakeholders

Evaluator



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?

What activity are we proposing?

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.

So What?

Did anything change?

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.

Now What?

What do we do with what we've learned?

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.

What If ?

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.

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

WHAT IF ?

WHAT ?

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

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

Now WHAT ?

So What ?

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

Determine Impact and then bring to scale

Wrapping it up

www.evaluate.org

Evaluate | t | e Next Events

Demonstrating Value for
Technology Programs –
Session B3

Tuesday, July 21, 3:30
PM – 5:00 PM

HI-TEC Conference,
Scottsdale

www.highimpact-tec.org

Developing Evidenced-
based Assessment
Processes: Keep it
Simple – with Gloria
Rogers

Tuesday, October 20
TIME Center, Baltimore

www.evaluate.org

Thank You for Attending

Please take a minute to fill out our evaluation for this Webinar.

<http://www.hostedsurvey.com/takesurvey.asp?c=ProposalDay2>

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