Adding “Value” to Evaluation in Educational Settings: Opportunities for Evolving Roles of Evaluators in an Education Research and Development Paradigm

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Moving away from “external program evaluator” paradigm to “improving the quality, coherence, and pace of knowledge development”

Opportunities for evaluators to support:
• understanding & articulating nature of innovation in R&D cycle
• supporting dissemination
• enhancing systemic strategic planning and continuous improvement
• working collaboratively with project staff using different types of evaluation techniques
Front-end Support for Evaluation of Education Innovations:
How Can Evaluators Contribute as Partners in the Pursuit of Funding?

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Evaluation 2014
Denver, Colorado
The Common Guidelines for Ed R&D

**US ED and NSF** – *Shared understanding of the roles of types of research in generating evidence*

✓ Context is grant-funded research and development (R&D) in STEM education
✓ Focus is on development of “innovations”
✓ Result is a typology detailing six research purposes
✓ Intention is to develop **particular models** and contribute to **collective understandings**
“The NSF Conundrum”

Historically, distinctions between “research” and “evaluation” have been unclear, as...

• “Principal Investigators” limited their work to delivery of the program or strategy
• “External Evaluators” became de facto researchers, testing the PI’s innovation
• Evaluation budgets were unofficially limited
• Evaluators were overworked and lost money
• Research was not of high quality
The Guidelines – Potential Clarity

**Research**
Structured study of the intervention or strategy, the *innovation*

- Foundational
- Early-Stage/Exploratory
- Design & Development
- Efficacy
- Effectiveness
- Scale-up

**Evaluation**
Study of the implementation and impact of the research

- Program Evaluation
- External Review
- Monitoring
- Performance Reporting

*A new way to clarify distinctions and functions?*
The Guidelines – Potential Clarity

Research

Structured study of the intervention or strategy, the innovation

Foundational
Early-Stage/Exploratory
Design & Development
Efficacy
Effectiveness
Scale-up

Two Purposes

1. Iteratively improve the innovation in question

2. Contribution to broader understandings about education

Most funders expect research to do both!
What can evaluators contribute?

**Perspective** – *Evaluators are perfectly positioned to inform planning and proposal development*

- Clarify research vs. evaluation
- Define appropriate research type
- Explicate theory of action

...*above and beyond simply providing evaluation content for proposals*
Clarify Research vs. Evaluation

Use the Common Guidelines to structure conversation about functions requiring data

- Review requirements of the RFP
- Translate requirements into shared understandings
- Explicate terms and concepts
- Differentiate roles and responsibilities
Define the Research Type

Evaluators should be equipped to facilitate conversations to achieve consensus on...

• “Maturity” of the innovation being developed
• Purpose of the research
• State and influence of existing research
• Future research agenda and goals
• Required qualifications for research and evaluation functions
Explicate the Theory of Action

All types of research move from a clear theory of action or logic; evaluators can help...

• Facilitate logic modeling
• Delineate elements of the innovation
• Define outcomes and relationships
• Formulate specific hypotheses or bases for testing
• Define and describe the “theoretical and empirical basis” for the proposed research
Hang onto your questions...

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Support for Dissemination: A Role for Evaluators

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Expectation for Dissemination Plan in Proposals

NIH Science Education Partnership Award (SEPA)

... specific plan must be provided to disseminate nationally any findings... via web postings, presentations at scientific meetings, workshops... reports, publications, project websites, social media and other dissemination or marketing venues.... All SEPA proposals must include a project website development plan...

NSF Discovery Research K-12 Solicitation

A proposal must include a creative communication strategy for reaching a broad audience for the findings of the project, including, where appropriate, scholars, practitioners, policymakers and public audiences. While the potential results of the proposed research are expected to be of sufficient significance to merit peer-reviewed and broader publication, approaches that reach broader audiences are strongly encouraged. Proposals should identify the key elements of a communication plan....
Typical Dissemination Plan

...dissemination mechanism will ensure materials, support, and research findings are accessible to teachers and the general public. The team will establish a project website that will host curriculum materials and other information about the project. We will present materials at science and science education conferences and via publications in peer-reviewed journals. We will strengthen existing collaborations and seek partnerships to ensure materials are used in a range of settings.
Long History of Educational Dissemination Efforts

- Large scale NSF investment in education
- National Diffusion Network
- ERIC Clearinghouse
- NSF large-scale curric development
- ESEA demonstration projects
- Research and Development Utilization (RDU) program
- Reauthorization of RELs
Dissemination is More than a Journal Article

Knowledge Dissemination:

transfer of knowledge within and across settings, with the expectation that the knowledge will be "used"

Increased awareness $\Rightarrow$ understanding $\Rightarrow$ action

Incorporating Dissemination into Project Planning

- Review effective dissemination methods
- Make a Plan
- Evaluate impact
Review Effective Dissemination Strategies

• Attending to knowledge disavowal - tendency to preserve ongoing norms

• Attending to schools’ systemic issues

• Matching product / program demands with teachers’ core values and beliefs
# Make a Plan

**Our Project is:**

Our Project will disseminate the following:

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Message Time</th>
<th>Person Responsible</th>
<th>Cost</th>
<th>Method</th>
<th>Criteria for Success</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awareness</strong></td>
<td>Different message for each stakeholder group based on level of dissemination</td>
<td>Plan for timing, staffing, cost</td>
<td></td>
<td>Methods must meet stakeholder needs</td>
<td></td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plan to measure success of implementation</td>
</tr>
</tbody>
</table>
### Sample Dissemination Plan

#### Table 1: Tools and measurement of success of the dissemination activities

<table>
<thead>
<tr>
<th>Mechanisms/tools</th>
<th>Measurements of success</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic and Scientific community</strong></td>
<td></td>
</tr>
<tr>
<td>Web site</td>
<td>No. of visitors and trends (Visits for all visitors; Absolute Unique Visitors; Pageviews; Map Overlay; New vs. Returning; Time on Site for all visitors, Traffic Sources Overview)</td>
</tr>
<tr>
<td>Working Papers</td>
<td>No. of working papers and No. of downloads</td>
</tr>
<tr>
<td>Publications in peer-reviewed journals</td>
<td>No. of publications and their citation, impact factor of journals</td>
</tr>
<tr>
<td>Presentations in Scientific Conference</td>
<td>No. of presentations</td>
</tr>
<tr>
<td>Final Conference</td>
<td>No. of participants from the academic and scientific community at project events, feedback collected</td>
</tr>
<tr>
<td><strong>Policy makers</strong></td>
<td></td>
</tr>
<tr>
<td>Web site</td>
<td>No. of visitors and trends (Visits for all visitors; Absolute Unique Visitors; Pageviews; Map Overlay; New vs. Returning; Time on Site for all visitors, Traffic Sources Overview)</td>
</tr>
<tr>
<td>Project presentation</td>
<td>No. of downloads of dissemination products</td>
</tr>
</tbody>
</table>

[http://www.feem-project.net/epiwater/docs/epi-water_DL_7-1.pdf](http://www.feem-project.net/epiwater/docs/epi-water_DL_7-1.pdf)
Typical Methods of Dissemination

- Report
- Memo
- White paper
- Monograph
- Brief
- Email
- Newsletter
- Website

- Conference presentation
- Workshop
- Roadshow
- Media
- Editorial
Dissemination for Action

Try new methods and tools:
- Video
- Podcast
- Slide Share
- Storify
- Pearltrees

Use the power of your network to disseminate your work:
- Link with networks
- Alliances with other projects
- Link with professional associations
Present your paper at a conference:

Gain 17-26 downloads

Use Website Analytics to Monitor Dissemination
Blog and Tweet: Increase Downloads

Melissa Terras:

...the correlation between talking about my research online and the spike in downloads of my papers

Track Effectiveness of Publicity Activities

Demonstrate short and long-term impacts of research.

http://blogs.lse.ac.uk/impactofsocialsciences/2012/05/18/who-gives-a-tweet-860-downloads/
Tweet about your work

Increase downloads X11
Other Methods – No Metrics Yet Identified

Facebook
LinkedIn
Pinterest
Example of Dissemination Impact

Interesting and innovative ways that other industries are sharing and measuring the impact of dissemination efforts

http://journalauthors.tandf.co.uk/pdfs/socialmedia-infographic.pdf
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Emerging Evaluation Approaches for Innovations in STEM projects

AEA Conference 2014 – Panel Session
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Friday Institute

• Not a “think tank” but a “do tank” at the College of Education at NC State University where we
  – conduct research
  – develop educational resources
  – provide professional development programs for educators
  – advocate to improve teaching and learning
  – help inform policy-making.
Friday Institute Mission

Advancing education through innovation in teaching, learning and leadership, we bring together students, teachers, researchers, policy-makers, educational professionals, and other community members to foster collaborations in improving education.
FI Eval Team

Staff: 2 Leads, 10 Researchers, 4 GRAs, 4 CED Faculty

Projects: ~22 (...if RttT counts as 1)

Awards: Current $6.3M; Proposals $5.3M
The Friday Institute Evaluation & Policy Team conducts large-scale research and evaluation studies of innovations in school, districts, and community college settings in North Carolina that inform state and local decisions about educational policies, programs, and funding.
FI Eval Team Drivers

- Equity and excellence in education in NC
- Utilization-focused evaluations
- Partnerships with education leaders
Traditional Evaluation

Formative: Feedback on implementation of program strategies. Summative: Judgment about the impact of the program.

Partners/Projects
- NCSU Faculty NSF Research
- USED/NCDPI Race to the Top
- NCDPI Digital Learning
- Golden LEAF/LEAs 1:1
- NC Virtual Public School
- Workforce Development
Traditional Evaluation

Lessons Learned
• Utilization-focused
• Pragmatic
• Collaborative
• Relationship-based
• Aligned with client needs/timelines

...so we wanted to explore more innovative approaches
Innovative Approaches for Evaluation of STEM Initiatives in NC

• Scale Evaluation
• Developmental Evaluation
• Capacity Building Evaluation
Scale Evaluation

“Scaling up” involves adapting an innovation that has been successful in one setting to effective use in a wide range of settings (Dede, 2005), so scale evaluation is measuring to what extent and how well that happens.

Partners/Projects

- NSF MSP Students
  Discover: NCSU FI, Biological Sciences, The Science House, Kenan Fellows; Museum of Natural Sciences; LEAs
Scale Evaluation

Lessons Learned

• Really resonates with educators and policy-makers
• Identifying the innovation can be difficult
• Innovations need to be studied in nested learning contexts
• Works well with a design-based implementation approach
• Mixed methods with qualitative emphasis
Developmental Evaluation

Design-based evaluation with continuous feedback on emerging program goals and outcomes.

Partners/Projects

• NCSU Computer Science Dept and Hunt Library
• NCSU The Science House STEM Outreach
• Kenan Fellows STEM Teacher Internship Program
Developmental Evaluation

Lessons Learned

• Evaluation for strategic planning
• Co-creating the evaluation
• Requires a lot of trust
• For defining or redefining the model
• Emerging contexts
Capacity Building Evaluation

Research-based framework for building evaluation capacity for practitioners, funders, and policy makers to support utilization-focused evaluation efforts.

<table>
<thead>
<tr>
<th>Foundation Drivers for Change in Schools</th>
<th>1. Engaging Moral Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPE Capacity to Apply Project Evaluation</td>
<td>Engaging teachers’ beliefs, the need or motivation to undertake formative project evaluation (Fullan, 2005)</td>
</tr>
<tr>
<td>Desired change is the adoption of formative project evaluation practices (Fullan, 2005, p. 5)</td>
<td>2. Understanding the Change Process</td>
</tr>
<tr>
<td></td>
<td>Engendering ownership of evaluation work (Fullan, 2005, pp. 7-10; Hall &amp; Hord, 1984; Horsley &amp; Loucks-Horsley, 1998; Rogers, 1995; Waters, Marzano, &amp; McNulty, 2003)</td>
</tr>
<tr>
<td>Collective and ongoing policies, strategies, resources, and other actions to increase organizational power to implement project evaluation. (Newmann, King, &amp; Young, 2000, as cited in Fullan, 2005, p. 40)</td>
<td>B. Resources – planning documents, instruments, management tools, and time</td>
</tr>
<tr>
<td>Shared Identity</td>
<td>C. Professional Community (Wenger, McDermott, &amp; Snyder, 2002)</td>
</tr>
<tr>
<td>Motivation to work together on evaluation (Fullan, 2005)</td>
<td>D. Program Coherence (Newmann, Smith, Allensworth, &amp; Bryk, 2001)</td>
</tr>
<tr>
<td>• NSF MISO – NCSU STEM Outreach</td>
<td></td>
</tr>
<tr>
<td>• GLF District STEM Programs</td>
<td></td>
</tr>
<tr>
<td>• Mid-Skills Advanced Manufacturing Programs at NCCCS</td>
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</tr>
</tbody>
</table>
Capacity Building Evaluation

Lessons Learned

• Builds trust
• Facilitates systemic evaluation
• Common instruments help build a community of practice
• Flows through common evaluation process: logic models → evaluation questions → data sources → data analysis → interpretation
Stay Tuned...

- Just starting this work in earnest
- Have secured funding for all of these approaches at different levels
- Scale evaluation seems to be the one that resonates most
Using Collaborative Evaluation Approaches to “Assess the Impact of Education Interventions and Strategies”

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Joint Committee Types of Research

- Foundational
- Early Stage or Exploratory
- Efficacy
- Effectiveness
- Scale-Up
NSF-Funded 3-Year Mathematics Program

Purpose of the program was to explore how to develop a professional development program for teachers for a specific instructional approach.

• Year 1:
  ✤ Selected 20 Cohort 1 Teachers - Same School
• Year 2:
  ✤ Worked with 15 Cohort 2 Teachers – Same School
• Year 3: Studied Results
• Year 4: (no cost extension)
  ✤ Identified 40 Teachers from Different Schools in one LEA
Collaborative Evaluation

is an approach that engages program stakeholders actively in the evaluation process. When stakeholders collaborate with evaluators, their understanding increases and the utility of the evaluation is often enhanced.

(O’Sullivan, 2004; O’Sullivan & Rodriguez Campos, 2012)
Collaborative Evaluation Cycle

Clarify Evaluation Request

- USE RESULTS TO IMPROVE PROGRAM
- Conduct Evaluation Fair
- SUMMARIZE DATA
- COMMUNICATION
- Implement the Evaluation
- Design Evaluation
- CREATE INSTRUMENTS
- EVALUATION PLAN

USE RESULTS TO IMPROVE PROGRAM

Conduct Evaluation Fair

SUMMARIZE DATA

COMMUNICATION

Implement the Evaluation

Design Evaluation

CREATE INSTRUMENTS

EVALUATION PLAN
Initial Evaluation Design:

• Years 1, 2, and 3:
  ✤ Survey Teachers about Summer Training
  ✤ Attend Staff & Advisory Committee Meetings
  ✤ End of Year Outcome Survey
Efficacy:

- Developing Intensive Summer Professional Development
  ✪ Survey results of Summer Training led to decision to conduct a Focus Group to help interpret findings
Effectiveness:

- Determining if Professional Development Led to Changes in Teacher Behaviors & Attitudes

- End of Year Teacher survey results led to decision to use Theory of Action sessions to refine program outcomes
Scale Up:

- Year 4 Replicating Approach with teachers at different schools within the same school district

- End of Year Teacher survey combined with focus group to determine areas of consensus around outcomes
Collaborative Evaluation Advantages

- Collaborative evaluation requires evaluators to be responsive to program needs, so adapting to changing paradigms is natural.

- Flexibility of the collaborative evaluation approach allowed for changes in the evaluation design as the need emerged.

- Project staff were able to use the external evaluator in different roles that helped them with their efficac, effectiveness, and scale-up research efforts.
References
