Making the right choices: How to get the most Value out of eVALUation!

Steve Schneider, Ph.D., Senior Program Director, STEM

Martin Orland, Ph.D., Senior Program Director,

Evaluation and Policy Research

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Overview of the Common Guidelines
for Education Research and Development

Jointly developed by
U.S. National Science Foundation and Institute of Education Sciences,
U.S. Department of Education

An Introduction

[1]The following presentation is based on material presented at the 2013 Annual Meetings o
the American Educational Research Association by Edith Gummer; for additional informa
and to download the *Common Guidelines*, see NSF 13-126

http://www.nsf.gov/pubs/2013/nsf13126/nsf13126.pdf?WT.mc_id=USNSF_124

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What is meant by "Common Guidelines?"

A cross-agency framework that describes:

Broad types of research and development

The expected *purposes*, *justifications*, and *contributions* of various types of agency supported research to knowledge generation about interventions and strategies for improving learning

Why do we need "Common Guidelines?"

The American education system needs research to produce stronger evidence at a faster pace

More constrained federal resources demand that NSF and ED (other agencies) purposefully build on each other's research and development portfolios

A cross-agency vocabulary and set of research expectations is critical for effective communication

Knowledge Development in Education

Is not strictly linear; three categories of educational research – core knowledge building, design & development, and studies of impact – overlap

Requires efforts of researchers and practitioners representing a range of disciplines and methodological expertise

- May require more studies for basic exploration and design than for testing the effectiveness of a fully-developed intervention or strategy
- Requires assessment of implementation—not just estimation of impacts
- Includes attention to learning in multiple settings (formal and informal)

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Six Basic Types of Educational Research and Development

- Foundational Research
- Early Stage or Exploratory Research
- Design and Development Research

Three types of Studies of Impact

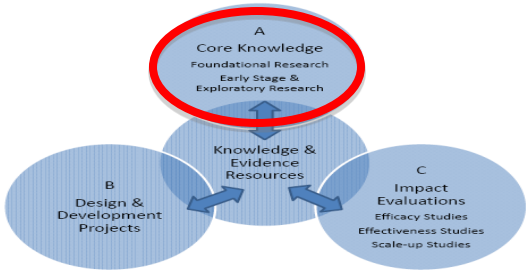
- Efficacy Research
- Effectiveness Research
- Scale-up Research

Foundational Research

Fundamental knowledge that may contribute to improved learning & other education outcomes

Studies of this type:

- Test, develop or refine theories of teaching or learning
- May develop innovations in methodologies and/or technologies that influence & inform research & development in different contexts



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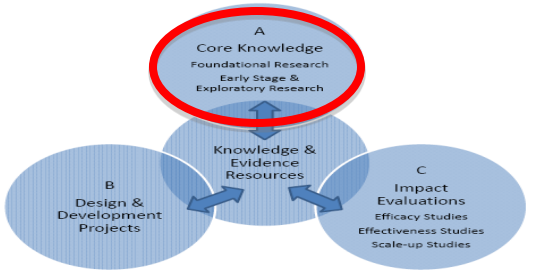
Early-Stage or Exploratory Research

- Examines relationships among important constructs in education and learning
- Goal is to establish logical connections that may form the basis for future interventions or strategies intended to improve education outcomes
- Connections are usually correlational rather than causal



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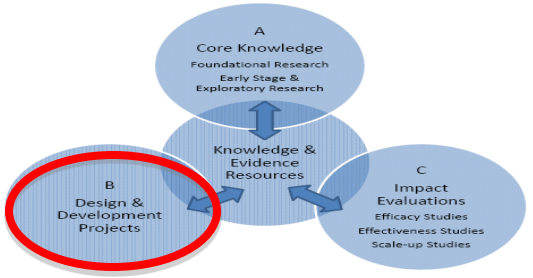
Design and Development Research

- Draws on existing theory & evidence to design and iteratively develop interventions or strategies
  - Includes testing individual components to provide feedback in the development process
- Could lead to additional work to better understand the foundational theory behind the results
- Could indicate that the intervention or strategy is sufficiently promising to warrant more advanced testing



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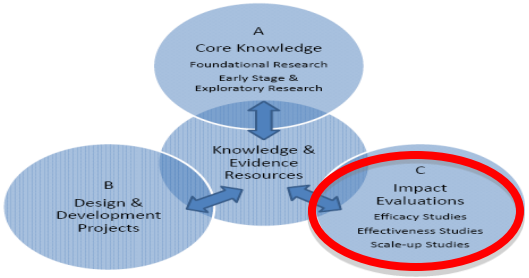
Studies of Impact generate reliable estimates of the ability of a fully-developed intervention or strategy to achieve its intended outcomes

- **Efficacy Research** tests impact under "ideal" conditions
- **Effectiveness Research** tests impact under circumstances that would typically prevail in the target context
- **Scale-Up Research** examines effectiveness in a wide range of populations, contexts, and circumstances



Organization of the Guidelines

- Purpose
- Justification
- Outcomes
- Research Plan
- External Feedback Plan

Important Features of Each Type of Research

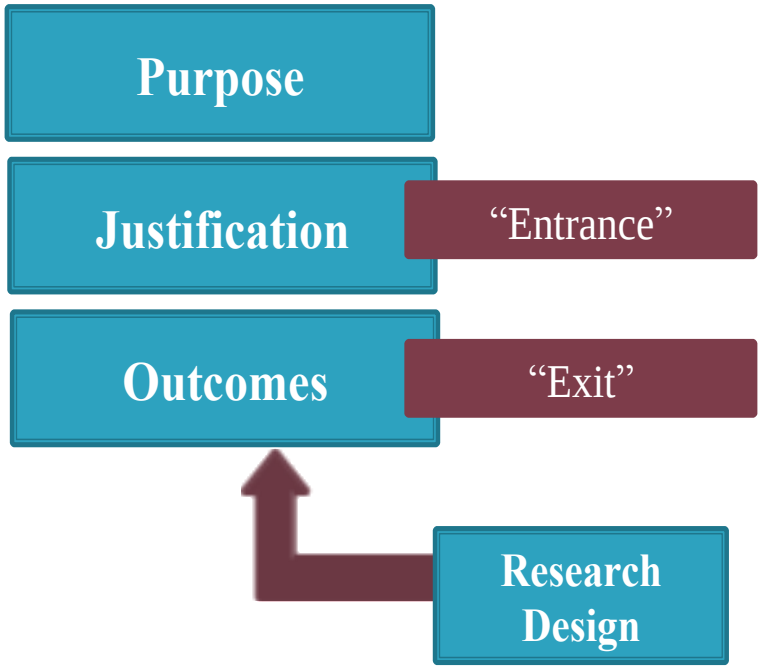
Purpose	How does this type of research contribute to the evidence base?
Justification	How should policy and practical significance be demonstrated? What types of theoretical and/or empirical arguments should be made for conducting this study?

(continued)

Important Features of Each Type of Research

Outcomes	Generally speaking, what types of outcomes (theory and empirical evidence) should the project produce?
Research Plan	What are the key features of a research design for this type of study?

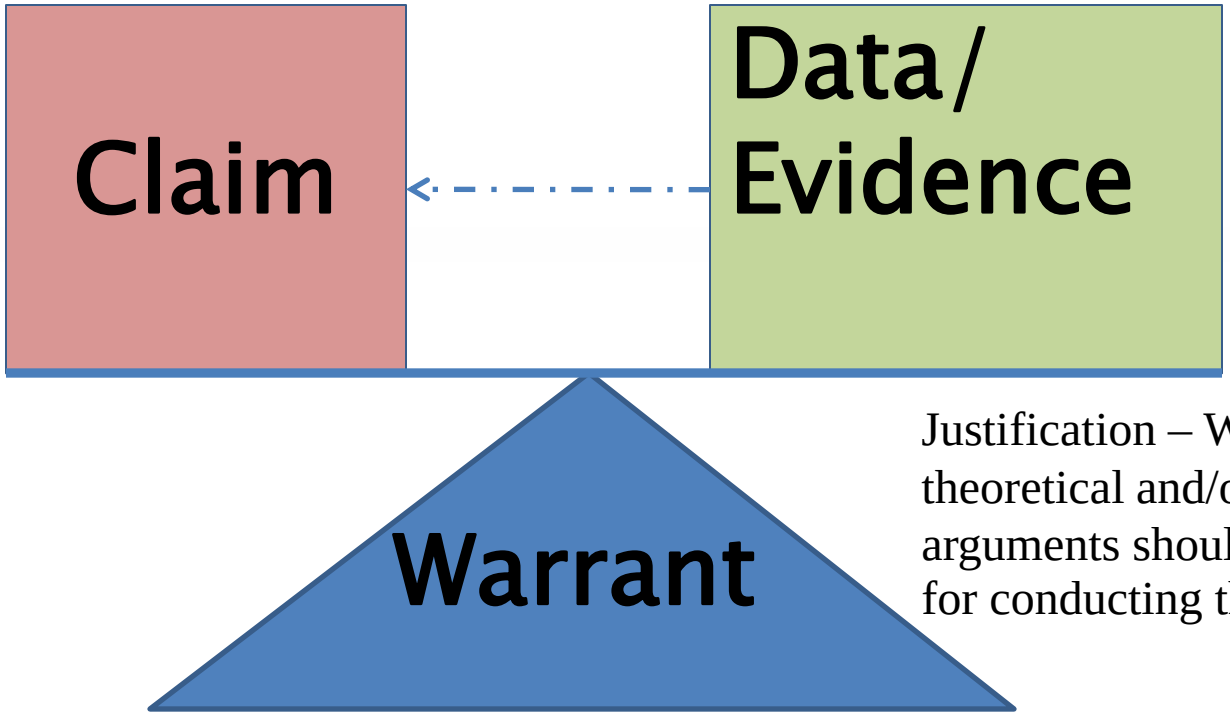
Graphic representation Entrance and Exit Guidelines



Toulmin Model

Purpose – new or improved interventions or strategies to achieve well-specified learning goals or objectives

Outcomes – measures with evidence of technical quality



Justification – What types of theoretical and/or empirical arguments should be made for conducting this study?

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Important Features… *(continued)*

External Feedback Plan	Series of external, critical reviews of project design and activities Review activities may entail peer review of proposed project, external review panels or advisory boards, a third party evaluator, or peer review of publications External review should be sufficiently independent and rigorous to influence and improve quality

Comparison, in brief: JUSTIFICATION

Exploratory/ Early Stage Research

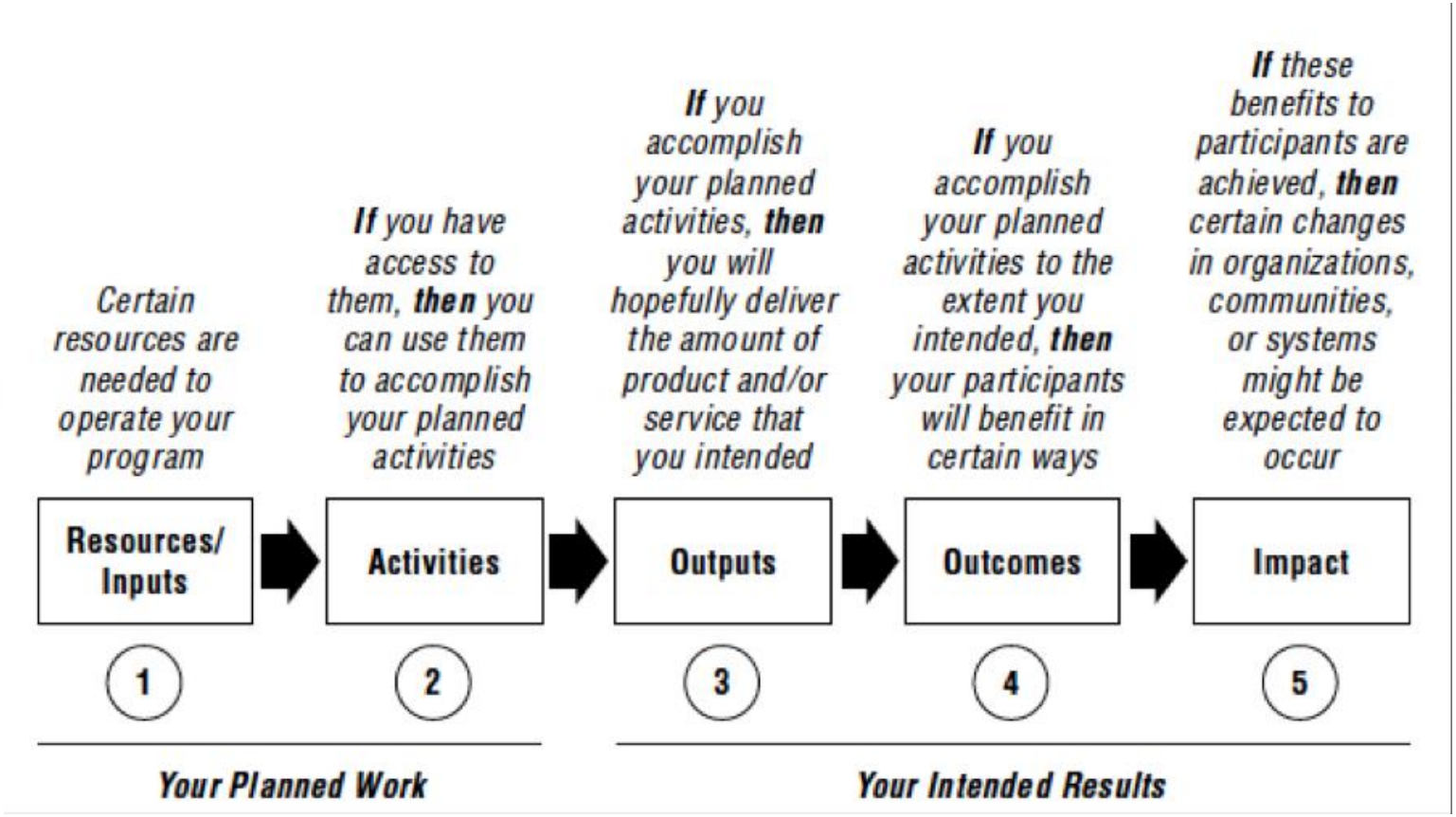
- A clear description of the ***practical education problem*** and a compelling case that the proposed research will inform the development, improvement, or evaluation of education programs, policies, or practices
- A strong ***theoretical and empirical rationale*** for the project, ideally with citations to evidence

Comparison, in brief: JUSTIFICATION

Design and Development Research

- A clear description of the ***practical problem*** and the initial concept for the planned investigation, including a well-explicated ***logic model***
- In the logic model, identification of ***key components of the approach***, a description of the relationships among components, and ***theoretical and/or empirical support***
- Explanation of how the approach is different from current practice and why it has the potential to improve learning

Developing a logic model (Kellogg, 2004, p.3)



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Comparison, in brief: JUSTIFICATION

Efficacy Research	▸ Clear description of the intervention/ strategy and the ***practical problem*** it addresses; how intervention differs from others; and connection to learning ▸ ***Empirical evidence of promise*** from a Design and Development pilot study, or support for each link in the logic model from Exploratory/Early Stage research, ***or evidence of wide use*** ▸ Justification for examining impact under ideal circumstances, rather than under routine practice conditions

Comparison, in brief: OUTCOMES

Exploratory/ Early Stage

- ***Empirical evidence*** regarding associations between malleable factors and education or learning outcomes
- A ***conceptual framework*** supporting a theoretical explanation for the malleable factors' link with the education or learning outcomes
- A ***determination***, based on the empirical evidence and conceptual framework, of whether Design and Development research or an Efficacy study is warranted, or whether further Foundational or Exploratory/Early-Stage research is needed

Comparison, in brief: OUTCOMES

Design and Development Research

- A ***fully-developed version*** of the intervention or strategy
- A well-specified ***logic model***
- Descriptions of the ***major design iterations***, resulting evidence, and adjustments to logic model
- Measures and data demonstrating project's ***implementation success***
- ***Pilot data on the intervention's promise*** for generating the intended outcomes

Comparison, in brief: **OUTCOMES**

Efficacy Research

- ***Detailed descriptions*** of the study goals, design and implementation, data collection and quality, and analysis and findings
- ***Implementation documented*** in sufficient detail to judge applicability of the study findings; when possible, relate these factors descriptively to the impact findings
- ***Discussion of the implications*** of the findings for the logic model and, where warranted, make suggestions for adjusting the logic model to reflect the study findings

Implications for Decision-Making Within Each Agency

Guidelines will inform decision-making for agencies (individually and jointly) across different topic areas

- **Analyze the developmental status of awards and progress within various portfolios**
- **Identify areas of education research and development needing additional resources/emphasis**
- **Encourage more and better research on the development, implementation, and scaling of new strategies and interventions**

Implications for Peer Reviewers

Guidelines provide guidance regarding what high-quality research design looks like

- **Gives reviewers a tool to assess the quality of the research design (for individual proposals and across a group of proposals)**
- **Support reviewers in their role as "critical friends" who offer actionable feedback to PIs**
- **Help ensure that agencies fund robust research and development efforts**

Implications for Future Agency-Funded Principal Investigators

Guidelines can help PIs conceptualize & communicate how the proposed research & development fits into a broader evidence-building agenda

- **Suggest components to include, within a single proposal and a given type of research**
- **Identify important considerations in planning a project, including building the research team**
- **Establish expectations about needed improvements in how we—as a field—develop, conduct, and apply research and scale effective practices**

Will these Guidelines preclude innovative projects?

No. The Guidelines are intended to help PIs in proposal preparation. The key point of the Guidelines is to ensure that projects are explicit about their research questions, methods and analytic approaches in their proposals. These criteria should be relevant for all types of education R&D efforts.

Implications for Practitioners

Guidelines can help practitioners develop a better understanding of what different types of education research should address and might be expected to produce

- **Helps practitioners understand what to expect from different types of research findings**
- **Supports more informed decisions based on nature of the evidence**
- **Provides a shared sense of what is needed as practitioners engage with researchers to improve education practices**

Do the Guidelines preclude or privilege any research methodologies?

No. The Guidelines do not preclude or favor any research methods, but they do underscore the importance of ensuring that the methods are well described, justified, and appropriate to the research questions that are posed.

Qualitative and quantitative approaches may be used in all of the six research genres that are described in the Guidelines.

Guidelines Connection to Evidence

Guidelines apply to proposals, but they foreshadow what will come from the research and development effort.

Each section of the Guideline is connected to evidence of some aspect of the proposal and the proposed work.

Throughout the Guidelines provide explicit and implicit messages about what counts as evidence and what needs to be considered.

Questions?

Common Guidelines for Education Research and Development:
http://www.nsf.gov/pubs/2013/nsf13126/nsf13126.pdf?WT.mc_id=USNSF_124

FAQ's for Common guidelines
http://www.nsf.gov/pubs/2013/nsf13127/nsf13127.pdf

Additional Information

http://www.nsf.gov/pubs/2013/nsf13127/nsf13127.pdf

NSF-ED Joint Committee

The Joint Committee began meeting in January 2011 with representatives from both agencies.

Co-Chairs:

Janice Earle, NSF (EHR) and Rebecca Maynard, ED (Institute of Education Sciences, 2011-2012; Ruth Curran Neild, ED (Institute of Education Sciences, 2012-2013)

Ex Officio:

Joan Ferrini-Mundy Assistant Director, NSF (EHR) and John Easton, Director, Institute of Education Sciences

Members:

ED: Elizabeth Albro, Joy Lesnick, Ruth Curran Neild, Lynn Okagaki, Anne Ricciuti, Tracy Rimdzius, Allen Ruby, Deborah Speece (IES); Karen Cator, Office of Education Technology; Michael Lach, Office of the Secretary; Jefferson Pestronk, Office of Innovation and Improvement

NSF: Jinfa Cai, Gavin Fulmer, Edith Gummer (EHR-DRL); Jim Hamos (EHR-DUE); Janet Kolodner (CISE and EHR-DRL); Susan Winter (SBE)