Visitor Studies 101: Evaluating Impact and Understanding Audiences

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Visitor Studies

- Visitor studies are social science inquiries that use empirical or other **systematic** methods to collect, analyze, and interpret information about visitors to either
  - 1) add to general information and theory (**research**) or
  - 2) to inform decisions in specific situations (**evaluation**).

Museum Visitor Studies

Basic Research	Evaluation	Market Research
⇓	⇓	⇓
Learning styles	Visitor experiences	Demographics
Social interactions	Visitor understanding	Psychographics
Gender differences	Exhibition layout	Target audience
Effect on community	Interpretive method	Community attitude
Cultural differences	Design of components	Non-visitors
Emotive responses	Effect on community	Satisfaction
Learning	Learning	
⇓	⇓	⇓
Generates and Tests Theories	Determines Successes and Shortcomings	Identifies Market Segments

Graphic from Randi Korn

Basic Phases of Evaluation

Front-end: used at earliest planning stage to find out what potential audience knows about your subject and their interest level

Formative: during development phase to test ideas and prototypes with target audience

Remedial: before opening, to fix weaknesses

Summative: after opening, impact on visitors

Evaluation for Program & Exhibition Development

Development Phase

Audience Input		Professional Input
Front-end Evaluation ⇒	**1. Planning** Revisions ⇓ Goals and Objectives	Content Development ⇐
Formative Evaluation ⇒ Remedial Evaluation ⇒	**2. Preparation** Revisions ⇓ Final Design	Design and Development ⇐ Trouble shooting ⇐
Summative Evaluation ⇒	**3. Post-Installation** Revisions ⇓ Responsible Program	Critical Appraisal ⇐

Graphic from Randi Korn

Front-end or background study

- What does the audience bring
  - Prior knowledge to build on
  - Misconceptions to address
- Methods
  - Qualitative: group or individual depth interviews
  - Quantitative: survey, questionnaire
- Guides development of project goals and objectives
  - What you will do
  - For whom
  - Proposed impacts

ISE Audiences tend to be…

- Well educated generalists
- In a study at AMNH
  - 5% felt very well informed about new scientific discoveries
  - 55% feel moderately well informed
  - 40% feel poorly informed about new scientific discoveries

Dinosaurs Exhibition

- How interested *are* visitors really?
- Do they know about recent research?
  - In fossil analysis
  - In laboratory technologies
- What do teachers need to help them meet science curriculum standards?

Formative evaluation

- Most important, least formal methodology
  - Can be systematic or “quick and dirty”
- Test your assumptions: explanatory text (exhibit labels), learning technology, graphics
  - What do users think it means?
  - Do they know what to do?
  - Does it match what you intended?
  - If not, there’s still time to change it!

Remedial evaluation

- After the program is finished, tweak & improve
- Remedial evaluation requires:
  - Money set aside for evaluation and potential retrofitting
  - Ability to admit to making mistakes

Summative Evaluation: Impact

- Once the exhibition or program is up and running: has it accomplished its goals?
- What is the *impact* on the target audience?
- May be required by funding organizations

“Evaluation” can be threatening

- It doesn’t mean you are *judging* or being judged (is program good or bad?)
- It *does* mean you are thinking about your program’s impact on the audience/user during all phases of program development
- Front-end, formative and remedial evaluation means summative will bring few surprises
- Thinking evaluatively leads to better programs

In-House vs. External Evaluator

- In-house advantage
  - Familiar with culture of team or organization
  - Familiar with project subject
- External advantage
  - Objectivity
  - Independence from producers
  - Required by federal agencies (e.g., NSF)

Outcomes-Based Planning & Evaluation

- A systematic way to plan a program and to measure if it has achieved its goals.
- STEM impacts to measure*:
  - Awareness, knowledge, understanding
  - Engagement or interest
  - Attitude
  - Behavior
  - Skills
  - Other

* “Framework for Evaluating Impacts of Informal Science Education Projects”

Logic Model

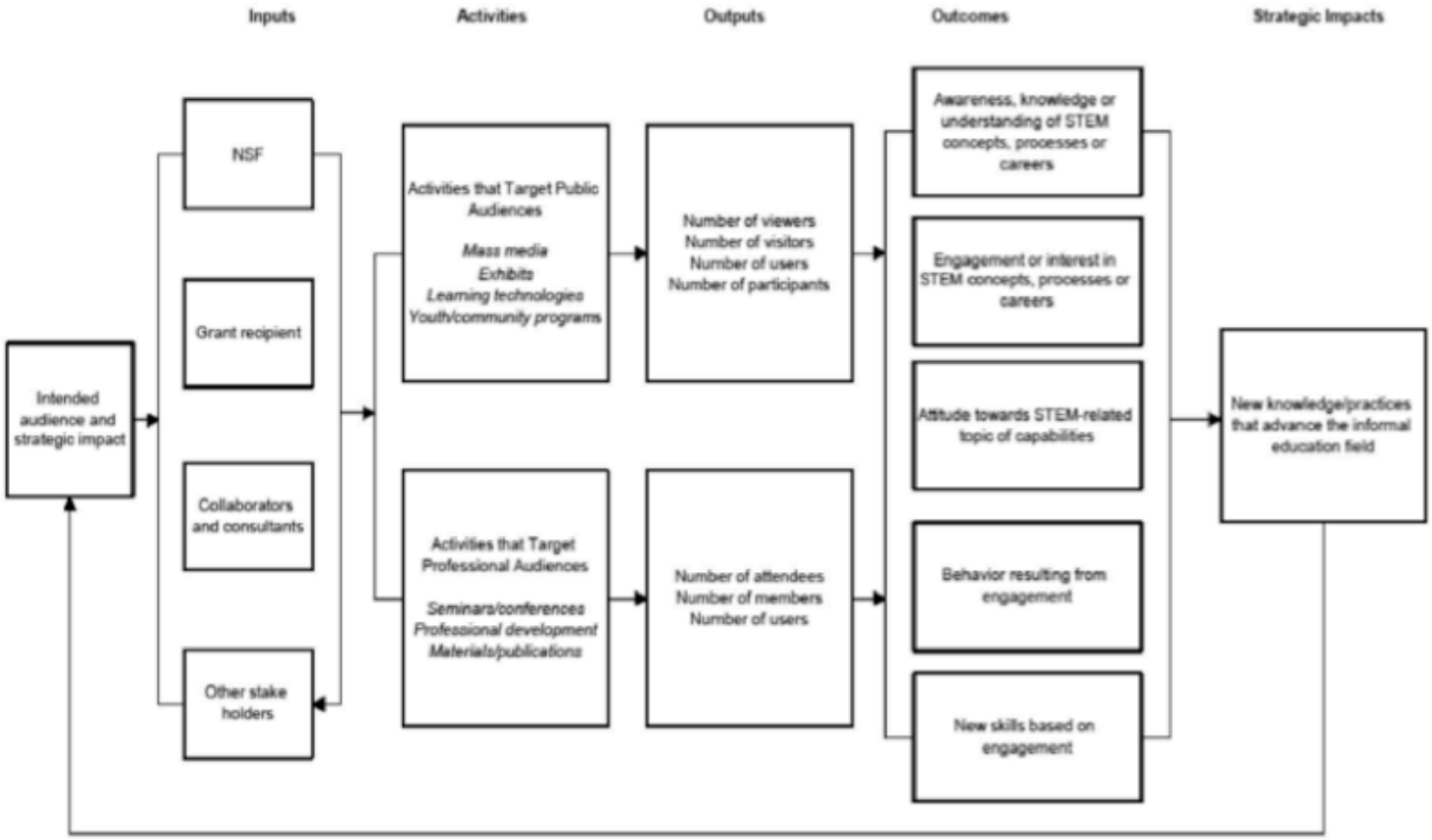
A planning and evaluation tool that helps:

- Identify specific individuals or groups (target audience) with a defined need
- Decide on clear program benefits (outcomes) to meet that need
- Design program services to reach that audience and achieve the desired outcomes
- Develop ways to measure those program benefits (indicators)

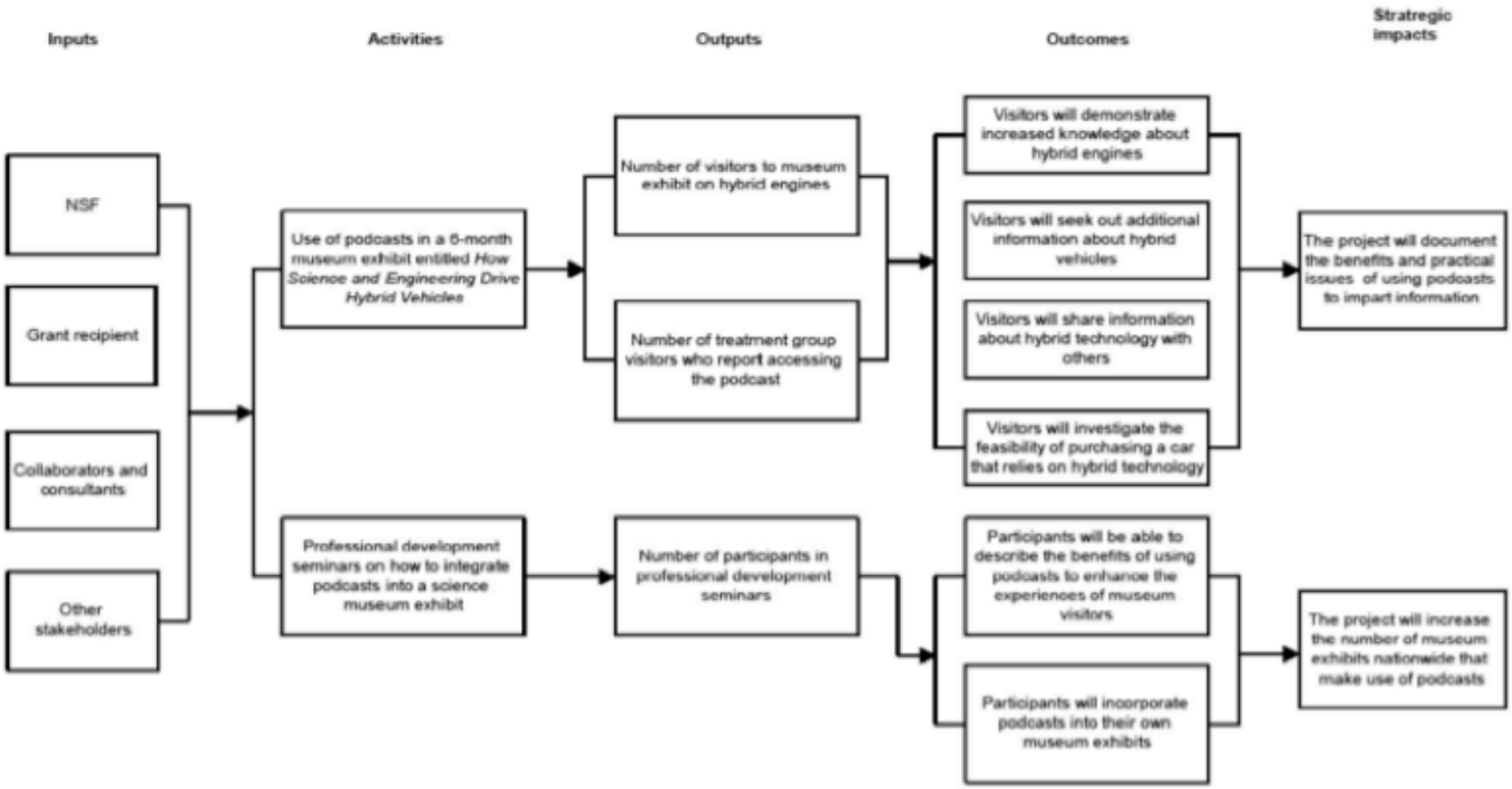
Logic Model

- Visual representation of project rationale
- A roadmap for assessing program implementation and impact
  - Inputs
  - Activities
  - Outputs
  - Outcomes
  - Strategic impact

Logic Model for the ISE Program



Example of Project Logic Model: *How Science and Engineering Drive Hybrid Vehicles*



Experimental Methodology

- Randomized Control Trials (RCT)
- Randomized post-only design
- Using comparisons
- When comparison not possible:
  - Exhibit's main idea
  - Connection between TV program and self
  - Professionals remembering an experience
  - Self-reporting new knowledge

Naturalistic Methodology

- In-depth interviews
- Focus groups
- Tracking and timing
- “Think out loud”
- Concept maps

Methods

- Quantitative
  - Surveys, questionnaires, tracking and timing
- Qualitative
  - Group or individual in-depth interviews
- Mixed method design
- Systematic samples, verifiable data

ISE Audiences Are Diverse

- Impact reports should be inclusive
  - Demographics (age, disability, language)
  - Prior knowledge and interests
  - Experiences may not be linear, predictable
- Sampling
  - Random (representing potential audience)
  - Purposive (targeting segments of public)
- Report negative findings (no impact)

Ethical Treatment of Respondents

- Purpose of study
  - How data will be used & by whom
- Anonymity & confidentiality
  - Permission to interview kids
  - Written release for photos & video
- Institutional Review Boards (IRB)

Data Analysis and Report Writing

- Statistical and database applications
- Content analysis of qualitative data
- Best if evaluator is part planning process
- Evaluation is one piece of your report to funder