

# **EXPLORING THE BUILDING INFORMAL SCIENCE EDUCATION DATABASE**

**Amy Grack Nelson & Rebecca Teasdale  
AEA 2014**

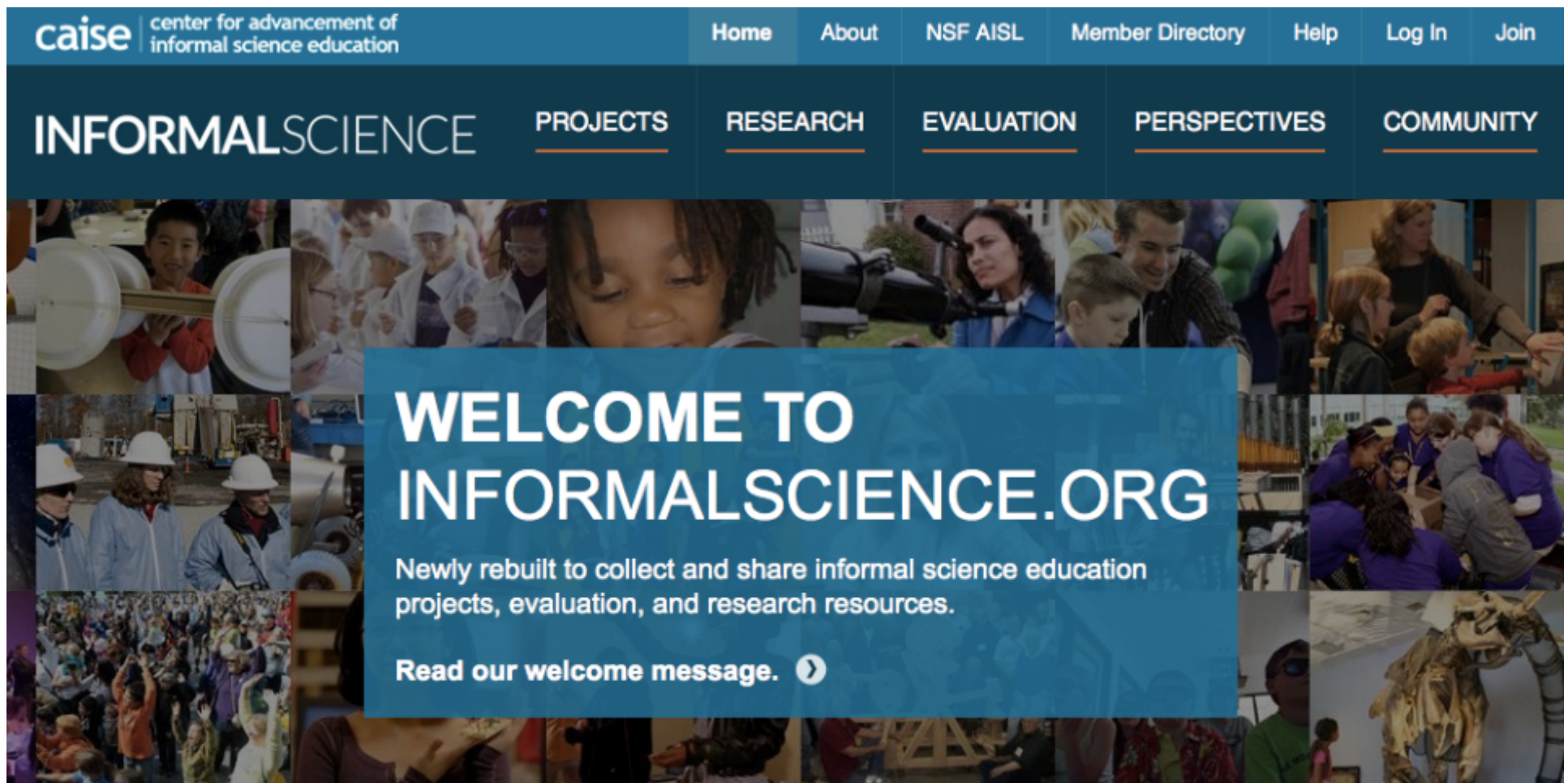
# **A NSF-FUNDED PARTNERSHIP**

University of Pittsburgh

Science Museum of Minnesota

Visitor Studies Association

In what ways might the evaluation and research community use a collection of evaluation reports to generate useful new knowledge about the field of informal science education?



# **TO ANSWER OUR QUESTION**

Developed a coding framework

Applied coding framework to 521 reports posted to [informalscience.org](http://informalscience.org) through May 2013

Authors carried out syntheses based on our coded reports

# **LIMITATIONS OF THE SAMPLE**

Reports are voluntarily posted

May not represent the breadth of studies occurring in the field

Mostly ISE based

Only goes up to reports posted through May 2013

We are limited to what people include in their reports

# ABOUT OUR SAMPLE

It is a rich resource! The best sample to date of evaluation in informal education.

Provides insight into the field we wouldn't otherwise have

Access to a wide range of evaluation practices, methods, and findings

How did we make sense of what was in the reports?

# **THE BISE CODING FRAMEWORK**

# DEVELOPING THE CODING FRAMEWORK

## Reviewed

- Evaluation reporting literature
- CAISE Portfolio Inquiry Group's codebook
- NSF ISE Online Project Monitoring System's (OPMS) Baseline Survey

Preliminary coding to identify emergent codes

Feedback during VSA 2011

Input from synthesis authors

Refinement during the coding process



# Coding Categories

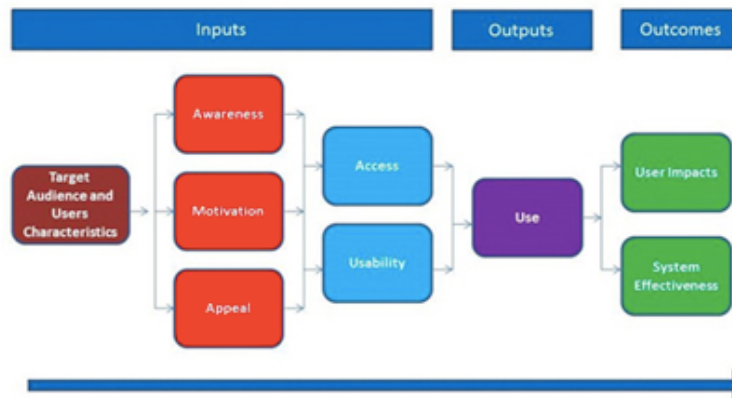
Below are the overarching coding categories in the BISE Coding Framework. The following pages include the codes under each category and corresponding definitions. The coding categories with an asterisk (\*) are report level codes that were coded in both NVivo and an Excel spreadsheet. Coding categories without an asterisk were only coded within NVivo

REPORT NUMBER*	EVALUATION TYPE*	INTERVIEW PROTOCOL PROVIDED*
INTERNAL FOLDER*	EVALUATION PURPOSE/QUESTIONS	SURVEY INSTRUMENT PROVIDED*
TITLE*	PROJECT SETTING*	OBSERVATION INSTRUMENT PROVIDED*
YEAR OF WRITTEN REPORT*	SAMPLE SIZE*	TIMING & TRACKING INSTRUMENT PROVIDED*
AUTHOR*	SAMPLE FOR THE EVALUATION	FOCUS GROUP PROTOCOL PROVIDED*
EVALUATION ORGANIZATION*	AGE OF INDIVIDUALS SAMPLED	OTHER INSTRUMENTS PROVIDED*
EVALUATOR TYPE*	SPECIAL TYPES OF ADULTS SAMPLED	PRE/ POST MEASURES
NSF NUMBER*	SAMPLED A SCHOOL GROUP	FOLLOW UP
OTHER FUNDING SOURCE*	ACCESSIBILITY ISSUES*	STATISTICAL TEST*
FUNDING START DATE*	LANGUAGE TRANSLATION*	RECOMMENDATIONS
FUNDING EXPIRATION DATE*	DATA COLLECTION METHODS	SYNTHESIS SAMPLE*
EVALUAND*	INSTRUMENTS PROVIDED*	

What did we learn from our project?

**BISE BLOG & SYNTHESIS PAPERS**

## POSTS IN THE BUILDING INFORMAL SCIENCE EDUCATION CATEGORY



## Building A Guiding Framework For Website Evaluation Design Using The BISE Database

Posted on May 18, 2014 by Carey Tisdal in [Building Informal Science Education](#) | General

The aim of this study was to develop a heuristic, or theoretical model, to guide my own thinking and to use in discussions with stakeholders (e.g. web designers, program developers, audiences) that could help define comprehensive and useful evaluation questions for framing website evaluation studies. [...]

## LATEST POSTS



Welcome To InformalScience.Org

Hello.

April 21, 2014

A Research Agenda For Learning In Natural History Settings



June 26, 2014

Small Matters



June 19, 2014

## CATEGORIES

[Building Informal Science Education](#)



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About

Overview

CAISE

Evaluator Competencies

**BISE**

## Building Informal Science Education

Building Informal Science Education (BISE) is an NSF funded project that hopes to build and advance evaluation in informal science. Focusing on evaluation reports posted to [informalscience.org](http://informalscience.org), the team is exploring what the field might learn as we begin to look across different informal learning projects. These projects include a wide variety of media, including among many others, film and broadcast projects, science center and museum exhibitions, programs in zoos and aquariums, afterschool programs in community based organizations.

The team has analyzed different subsets of these reports, and is working to create a number of white papers to document its findings. In addition, the project hopes to build evaluative capacity in the field, creating a database for project teams to find evaluators (and examples of their work) for their new projects more easily. Find the database [here](#).

This project helps VSA to address its core mission to build and share a research base in informal learning and use evaluation outcomes to improve informal learning.

### White Papers

Below, please find, over the next few months, the presentation of three white papers written by VSA members and informal science evaluators and researchers. These papers represent the authors' analysis at synthesizing some area of the BISE database, testing whether anything can be learned from conducting "secondary analysis and syntheses of the existing evaluation findings in the database" ([Crowley blog](#)). While [informalscience.org](http://informalscience.org) was originally intended as a way for NSF-funded projects to share their summative reports, the informal learning field saw the potential for such a resource for all informal environments. The full set of reports in the [informalscience.org](http://informalscience.org) database now includes front-end, formative, remedial, and summative evaluations as well as audience studies and studies where the type of evaluation is unclear.

### Websites: A Guiding Framework for Focusing Website Evaluations

*Carey Tisdal*

The aim of this study was to explore 22 Web site evaluation reports, or sections of larger evaluation reports centering on a Web site, to identify, define, and provide examples of the range of evaluation focus areas to inform the design of Web site evaluation studies. The sample included a group of reports contributed to the [Informalscience.org](http://Informalscience.org) online database. Prior to this study, staff members at the Science Museum of Minnesota organized and coded the database of evaluation reports as part of the Building Informal Science Education (BISE) project funded by the National Science Foundation (NSF). In this analysis, grounded theory methodology and the constant comparative method (Glaser & Strauss, 2009)

# SYNTHESIS PAPERS

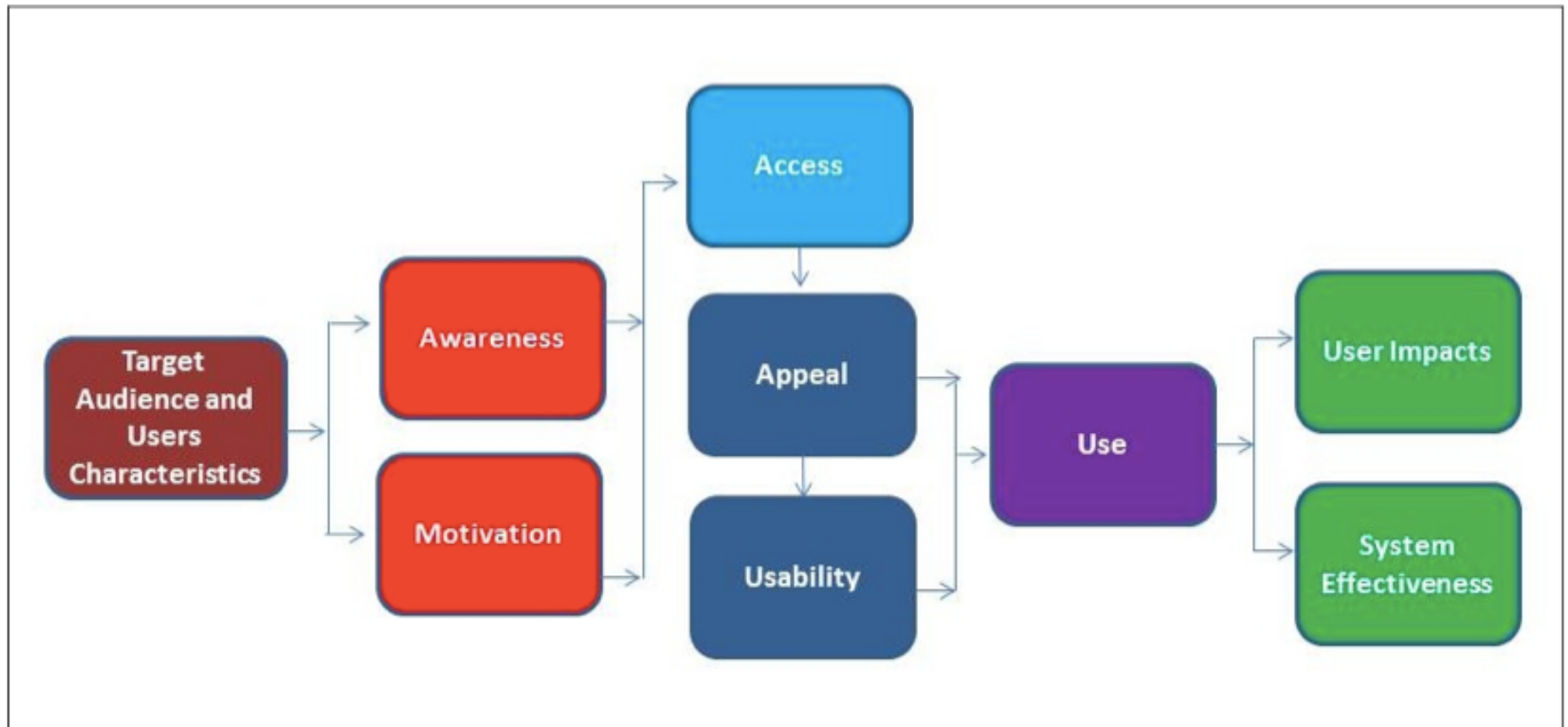
How are **media projects** typically evaluated and how do they show changes in design, knowledge outcomes, and increases in interest and engagement in STEM?

What recommendations and advice are provided through **summative evaluations of exhibitions**?

Museums are increasingly engaging with their communities in understanding and addressing the **complex questions of our society**. How is this effort manifested in museum practice, and what is the impact of this work?

# FRAMEWORK FOR WEB SITE EVALUATION

Across the website-related reports in the BISE database, what was the range of evaluation focus areas?



# GUIDING QUESTIONS FOR REPORTING

Have I identified the **type of evaluation**?

Is the **purpose of the evaluation** clear?

If I used **evaluation questions** as part of my evaluation process, have I included them in the report?

Have I described the **data collection methods**? If possible, can I include **data collection instruments** in the report?

Do I provide sufficient information about the **sample characteristics**?

Have I reported **sample size** for each of my data collection methods?

If I provided **recommendations** to the client, did I include them in the report?

How can I explore the reports myself?

# PROJECT RESOURCES



# EXCEL FILE & NVIVO DATABASE

The screenshot displays the NVivo 10 software interface. The top menu bar includes File, Home, Create, External Data, Analyze, Query, Explore, Layout, and View. The left sidebar shows a tree view of sources, with 'Internals' expanded. The main workspace is divided into two panes. The top pane, titled 'Out-of-school Time Program', contains a table with columns: Name, Nodes, References, Created On, Created By, Modified On, and Modified By. The bottom pane shows a detailed view of a source, with a text area containing the following content:

interviews were undertaken with a sub-set of survey respondents in order to obtain detailed, information on specific impacts attributed to the program.

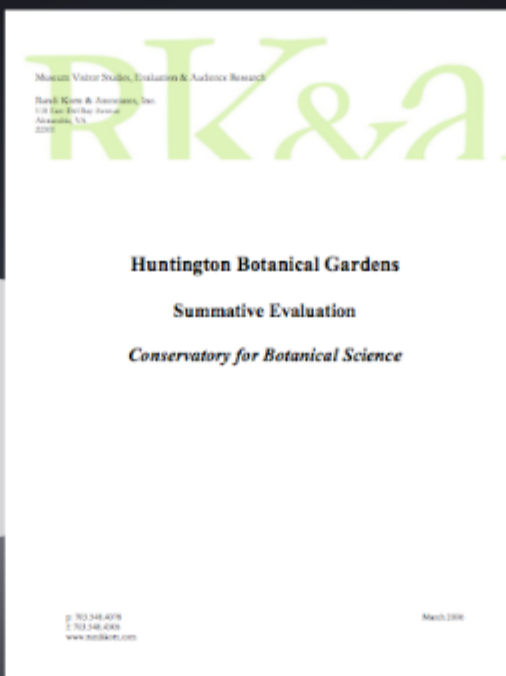
**Survey**

Based on the evaluation priorities set with the SCL Program staff, ILI developed a structured questionnaire to be administered to alumni as a web-based survey. The questionnaire consisted of primarily closed-ended and scale questions, with some open-ended questions to gather feedback in the participants' own words. Additional demographic information about the participants, their roles within the SCL, and their length of participation were collected for comparative analysis and trend identification. (See Appendix A for survey questions.)

The 2002 retrospective study was administered using a mail-back paper survey. The present study, however, used a web-based questionnaire. In addition, it used a three-pronged recruitment strategy in an effort to increase the response rate and reach of the survey. Invitations were sent

The bottom status bar indicates: AG 33 items Nodes: 15 References: 21 Read-Only Page: 1





105.pdf

Name	88.pdf	▲	Date Modified	8:02 AM	88	Size	Kind	Document
90.PDF			Oct 31, 2013, 8:02 AM		717	KB	PDF Document	
91.PDF			Oct 31, 2013, 8:02 AM		1	MB	PDF Document	
92.PDF			Oct 31, 2013, 8:02 AM		907	KB	PDF Document	
93.PDF			Oct 31, 2013, 8:02 AM		1.2	MB	PDF Document	
94.PDF			Oct 31, 2013, 8:02 AM		416	KB	PDF Document	
95			Jul 2, 2014, 6:03 PM		511	KB	PDF Document	
96.docx			Jul 2, 2014, 9:53 AM		109	KB	Micros...ument	
97.docx			Oct 31, 2013, 8:02 AM		164	KB	Micros...ument	
98.PDF			Oct 31, 2013, 8:02 AM		380	KB	PDF Document	
99.pdf			Oct 31, 2013, 8:02 AM		1.9	MB	PDF Document	
100.PDF			Oct 31, 2013, 8:02 AM		1.5	MB	PDF Document	
101.PDF			Oct 31, 2013, 8:02 AM		4.3	MB	PDF Document	
102.pdf			Oct 31, 2013, 8:02 AM		348	KB	PDF Document	
103.pdf			Oct 31, 2013, 8:02 AM		487	KB	PDF Document	
104.PDF			Oct 31, 2013, 8:02 AM		5.3	MB	PDF Document	

Macintosh HD &gt; Users &gt; Amy &gt; Desktop &gt; BISE FOR VSA &gt; Final Informalscience.org Reports &gt; 105.pdf

# **WAYS TO USE THE RESOURCES**

Understand how evaluations are carried out for various types of ISE projects

Inform the development of an evaluation

Learn from similar types of projects – recommendations, improvements, impacts

# EXAMPLE: FOLLOW UP STUDIES

asuring Behavioral Out x

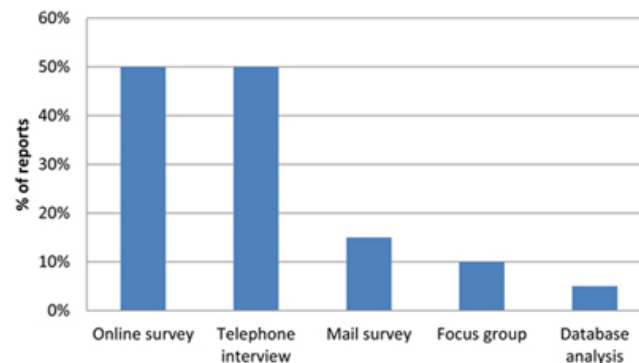
informalscience.org/perspectives/blog/measuring-behavioral-outcomes-using-follow-up-methods

caise center for advancement of informal science education

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## Measuring Behavioral Outcomes Using Follow-Up Methods

Posted on April 18, 2014 by Rebecca Teasdale in [Building Informal Science Education](#) | [General](#) | [Comments \(0\)](#) | [Permalink](#)

How do evaluators of informal science projects use follow-up data collection methods to examine behavioral impacts? I explored this question while serving as an evaluation intern at the Science Museum of Minnesota in the fall of 2013. My project drew on the evaluation reports uploaded to InformalScience.org and the [coding framework](#) developed and implemented through the Building Informal Science Education (BISE) project.

[The Sample I Used](#)

## LATEST POSTS

Building Capacity For Evaluation In Informal STEM Education



October 16, 2014

Updates From The Field: Jackson Hole Wildlife Film Festival

October 15, 2014

The New Mexico Informal Science Education Network



October 14, 2014

## CATEGORIES

# OTHER EXAMPLES

*How many **summative evaluations** are in the database?*

*How many **summative evaluations of the exhibitions** are in the database?*

*What reports include **timing and tracking instruments** for summative exhibition evaluations?*

*What kinds of **evaluation questions** do people ask for in summative evaluations of exhibitions?*

*What are typical **sample sizes** for timing and tracking during these kinds of evaluations?*

# **QUESTIONS ABOUT OUR RESOURCES?**

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