

# Repositories You Shouldn't Be Living Without

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THE FINDINGS GROUP, LLC  
RESEARCH & EVALUATION

# Introduction (Why are we here?)

- Bringing together a fantastic group of people who have resources to share
- Resources you shouldn't be living without!
- Format:
  - Each repository will have 7 minutes to present and demonstrate their repository
  - 3 minutes immediately following for questions on that repository
- At end: General Q & A





# Pre-College Computing Activities

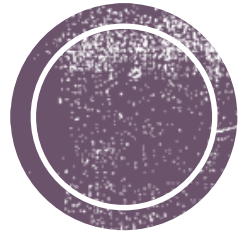
**Monica McGill**

# csedresearch.org

- Our 5-year grant, *Establishing and Propagating a Model for Evaluating the Long Term Impact of Pre-College Computing Activities*, has two phases:
- Phase I: September 2016 – May 2018
  - Identify, review, and analyze past and current pre-college computing activities and their impact on participants to determine the major influencing variables
- Phase II: October 2017 – August 2021
  - Create and implement a formal process for collecting data related to pre-college computing activities, including major influencing variables, necessary for educational researchers to be able to evaluate and analyze the long-term impact of these activities.



CSforALL



**CSforALL Consortium**

**Leigh Ann DeLyser**  
**CSforALL**

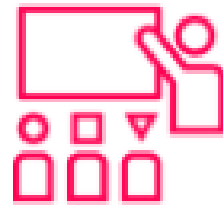
# CsforALL



Support local change



Grow the movement



Strengthen  
implementation and  
reduce inequity



# Repository?

[www.csforall.org/members](http://www.csforall.org/members)





# Future Work



- 🔗 Give members the ability to log in and edit their profiles.
- 🔗 Integrate a content-alignment searchable portal (aligned to the K12 CS framework)
- 🔗 Increase the categories used for filtering.







# EngageCSEdu

**Beth Quinn**

**national center for**

**women &**

**INFORMATION  
TECHNOLOGY**

**Broadening  
participation in  
computing  
by convening,  
equipping, &  
uniting change  
leaders**

## **RECRUIT AND RETAIN STRATEGICALLY**



NCWIT Academic Alliance Strategic Change Model



**QUESTION:**

**What can individual faculty do in their classes to engage & retain ALL students?**



# Engagement Practices

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Engagement Practices are teaching practices that faculty can use to help broaden participation in computing. They are especially impactful in early courses when students are deciding whether to pursue a computing major.



grow inclusive student community



make it matter



build student confidence &  
professional identity

**Organized around 3 Principles**



# A collection of 600+ faculty-developed, open source materials for introductory CS courses



Peer-reviewed  
(run like a journal)

All materials must use 1  
of the 11 “Engagement  
Practices”

Quick links to  
resources on EPs



A quick tour





# Project Quantum

**Miles Berry**





# Project Quantum

**Miles Berry**

# Test questions

The Commission recommends the establishment of a national item bank of assessment questions to be used both for formative assessment in the classroom, to help teachers evaluate understanding of a topic or concept, and for summative assessment, by enabling teachers to create bespoke tests for assessment at the end of a topic or teaching period.

**Final report of the  
Commission on Assessment  
without Levels**

September 2015



Chaired by John McIntosh CBE



# Why use MCQs?

- ⌘ Versatility
- ⌘ Reliability
- ⌘ Validity
  
- ⌘ Easy to mark
- ⌘ Easy to analyse



# Project Quantum

- 🔗 formative
- 🔗 online
- 🔗 automatically marked
- 🔗 high quality\*
- 🔗 to support teaching
  - ✿ guiding content
  - ✿ measuring progress
  - ✿ identifying misconceptions.





# Free



The beaver family have three mobile phones but none of the batteries have any charge. It takes 1 hour to fully charge a mobile phone but this does not need to be done all in one go.

The beaver family only have two mobile phone chargers in the house.  
**What is the shortest time they need to fully recharge the three phones?**

- A 3 hours
- B 2 hours
- C 1 hour and a half
- D 1 hour



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Original question produced by the Bebras Community, [bebras.org](https://bebras.org)

A	B	C	D	TOTAL
23 %	44 %	25 %	8 %	369



Given the following program, what would be displayed if the user typed in 1?

```
choice = input ("Choose 1 or 2: ")  
if choice == 1 :  
    print("You chose 1.")  
else:  
    print("You chose 2.")
```

- A You chose 2.
- B Invalid input
- C (Nothing at all)
- D You chose 1.



Given the following program, what would be displayed if the user typed in 1?

```
choice = input ("Choose 1 or 2: ")  
if choice == 1 :  
    print("You chose 1.")  
else:  
    print("You chose 2.")
```

- ☐ A You chose 2.
- ☐ B Invalid input
- ☒ C (Nothing at all)
- ☐ D You chose 1.

A	B	C	D	TOTAL
25 %	16 %	10 %	49 %	465

**Q29**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

The Internet and the World Wide Web are not the same thing.

Identify the definition of World Wide Web.

A All of the information and data on the Internet  
B Specially formatted pages on connected machines  
C A collection of pages held in the Internet's database  
D All the pages held in a search engines index

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q20**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

Identify the Scratch block that can **NEVER** evaluate to 5.

A length of five  
B letter 5 of 5  
C x position  
D answer

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q43**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

The space left blank on a page, especially around columns and images is called .....

A non-printing space  
B white space  
C empty space  
D blank space

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q47**

Which of these would it probably be OK to mention on a school blog post?

A: Your full name  
B: your password for the school network  
C: your favourite flavour of ice cream  
D: where you're going on Saturday

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q25**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

Identify advantage of connecting a printer to a school network.

A The printer will print faster  
B The printer can use coloured ink  
C The printer can be used by multiple users  
D The printer will use less power

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q27**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

One way to move between pages is to follow items with a special format.

18 February 2015, 13:59  
• Although won't be open for England  
• The 2015 World Cup mascot reveal all time for our country  
• See [Owlhouse's theme to watch](#)

Identify the name for this type of text.

A PageRef  
B HyperRef  
C PageLink  
D Hyperlink

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q8**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

What are these group of blocks called?

A Selection  
B Functions  
C Repetition  
D Events

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q21**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

A flowchart is a way to visually represent an algorithm. The flowchart below uses the following building blocks.

Assume a always begins greater than b.

Which of the following statements best describes the behavior of the algorithm depicted in the flowchart?

A. It displays the sum of a and b (a + b)  
B. It displays the difference between a and b (a - b)  
C. It displays the product of a and b (a \* b)  
D. It runs in an infinite loop

Original question from code.org CC BY-NC-SA

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q41**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

Image resolution is ...

A The amount of detail the image has  
B The maximum screen size on which it can be displayed  
C Dots that make the image on a screen  
D The amount of memory needed to display the image

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q48**

SWITCHED ON  
Computing

All these are reasons why a primary pupil should not have her own YouTube account, but which would make it **illegal** for her to do so?

A Viewers might post offensive or otherwise inappropriate comments on a video  
B Primary pupils might not understand the rules about copyright content  
C YouTube's terms and conditions don't allow under 13s to have accounts  
D The time spent making content for YouTube could be spent more productively on other, more appropriate activities

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q9**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

Identify the best description of what a costume is in Scratch.

A A change of cloths for a sprite  
B A different sprite  
C Multiply sprites  
D A different appearance of a sprite

A B C D

EXPLANATIONS

ADD TO FEEDBACK

**Q42**

COMPUTING AT SCHOOL  
EDUCATE · ENGAGE · ENCOURAGE

Pixels are ...

A Dots that make the image on a screen  
B A file size of an image  
C A file type for an image  
D A small part of the saved image

A B C D

EXPLANATIONS

ADD TO FEEDBACK









# **CSONIC & CS Impact Network**

**Kathy Haynie & Tom McKlin**

# STEM Evaluation Repository

- Purpose
  - Crowd-sourced – best resources from experienced STEM and CS evaluators
  - Large variety of STEM evaluation resources – “one stop shopping”
    - Introductory evaluation resources; evaluation planning resources
    - Evaluation tools (instruments, measures, scales, protocols)
    - Reports or deliverables
    - Other existing repositories and databases (serves as Meta-repository)
    - Existing communities, professional groups, listservs
  - Psychometric and validity information; reviews, ratings
  - Underlying model of promoting collaboration – tied to communication mechanisms
- Context: AEA STEM TIG, Google, CSONIC, and the CS Impact Network
- Stage 1 (now) – Input form (Google) and searchable via Awesome Tables
- Stage 2 (2018) – Searchable, linked database on custom platform (TBD)



# Search #1: Validated Measures

## Validated Measures Demo

- Resource type = Evaluation tools: instruments, measures, scales, protocols
- Psychometric, reliability, or validity info available = Yes

▪ Select “Undergraduate  
Student Experience of Major  
Survey”

(psychometric info  
available upon request)



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## Survey-in-a-Box: Student Experience of the Major



DOWNLOAD 2.43 MB

Use the Survey-in-a-Box: Student Experience of the Major (SEM) to identify strengths and areas for improving your department's efforts to retain students. The Survey-in-a-Box contains a full survey, with specific modules that can be used together or independently; an instruction manual; guidelines for getting human research approval when needed; information on how to administer paper and online versions of the survey; suggestions for action based on survey results; and much more. For more information on the Extension Services program, visit <https://www.ncwit.org/project/extension-services-undergraduate-programs>.

### Resources & Tools

NCWIT Resources

Recursos en Español

Member Activity & Change Tracker (ACT)

NCWIT Academic Tracking Tool



# Search #2: STEM Repositories

## Live Demo!

- Resource type = Existing STEM-relevant repositories and databases
- Select: Assessment Tools in Informal Science (PEAR web)
  - Beautiful interface: browse by age, domain, assessment type, custom criteria



**Assessment Tools in  
Informal Science (ATIS)**  
Ratings & Reviews



## About this Website

This is a searchable website of assessment tools for informal science learning. The goal is to provide practitioners, evaluators, researchers and policy makers with the information to choose appropriate tools for assessing program quality and outcomes for children and youth. Supported by the Noyce Foundation, PEAR (Program in Education, Afterschool and Resiliency) located at Mclean Hospital and Harvard Medical School, reviewed existing tools and published the findings in a report titled Toward a Systematic Evidence-Base for Science in Out-of-School Time: The Role of Assessment. This website is based on the findings of that report and will be continuously updated in collaboration with the Youth Development Researchers at 4-H.

# Contributing Resources (Stage 1)

[AEA Site](#), [stem-tig-repository](#)



STEM Education and Training

[Home](#) [Library](#) [Directory](#) [Participate](#) [TIG Information](#) [TIG Leadership](#) [STEM Evaluation Repository](#) [Join Our e](#)

## STEM Evaluation Repository

This repository is the result of a partnership between the American Evaluation Association's STEM TIG, Oak Ridge Associated Universities, Evaluation Wrecking Crew, and other collaborators. Together, this group is building a repository of STEM education-related evaluation resources, as well as an opportunity for you to submit a resource that would be useful to other STEM evaluation practitioners.

Our repository aims to consolidate new knowledge from STEM evaluation practitioners, while also identifying and linking to existing resources. We hope this crowdsourced and curated collection of resources will increase access to and awareness of relevant STEM evaluation resources.

**View Submitted Resources:** To see what has already been shared by your evaluation colleagues, click on the **interactive searchable and filterable interface** (also embedded below). The **full dataset can be downloaded as a spreadsheet**.

Resource Title	Resource Type +	Publicly Available/Access... +	Cost/Fee +
Description	Psychometric, Reliability, ... +	Full text of items available? +	STEM Content Discipline +
Context or Setting +	Program Type +	Domain or Type of Outco... +	Assessment/Response T... +
Additional Keywords	Rating +	Item-Level Information	

1 - 25 / 47

Matching Resources - Click Listing to View Details

### Evaluation Worksheet

Type: Evaluation planning resources

**Empowerment evaluation: a collaborative approach to evaluating and transforming a medical school curriculum**

Type: Online article

**Applied Learning Student Questionnaire (ALSQ)**

About this resource:

- **Publicly Available/Accessible?:** Yes
- **Publication Year:** 2017
- **Resource Version or Date:** Public version, 8/28/2017
- **Source(s):** Google, Pre-Uni/K12 Outreach
- **Author(s):** Jason Ravitz, Juliet Tiffany-Morales, Torie Bates ("Kathy") Haynie

[CSONIC Site](#), <https://csonic.org>



[HOME](#) | [SHOW ME HOW TO](#) | [LET'S WORK TOGETHER](#) | [ACCESS INSTRUMENTS](#) | [LOG IN](#)

## Contribute a Resource

To contribute a STEM evaluation resource [go here](#).

Our repository aims to consolidate new knowledge from STEM evaluation practitioners, while also identifying and linking to existing repositories to avoid duplication of effort. We hope this crowdsourced and curated collection of resources will increase access to and awareness of relevant STEM evaluation resources.



# Stage 2 STEM Repository

- Full-scale, customized, searchable database platform
  - Custom built input/submission form (including batched resources)
  - Cleaner look, searchable website
- Developed/hosted at ORAU
  - estimated fall 2018
- New functionalities:
  - Ratings & reviews (similar to ATIS)
  - Usage analytics and tracking
  - Community file storage for submitted documents
  - Inclusion of cultural competency / appropriate audience information
  - Additional fields for language, construct(s)
  - Integrate with Better Evaluation site
    - links to their methodologies, resources, eDiscussions
    - BE adds Computer Science theme, links to our resources



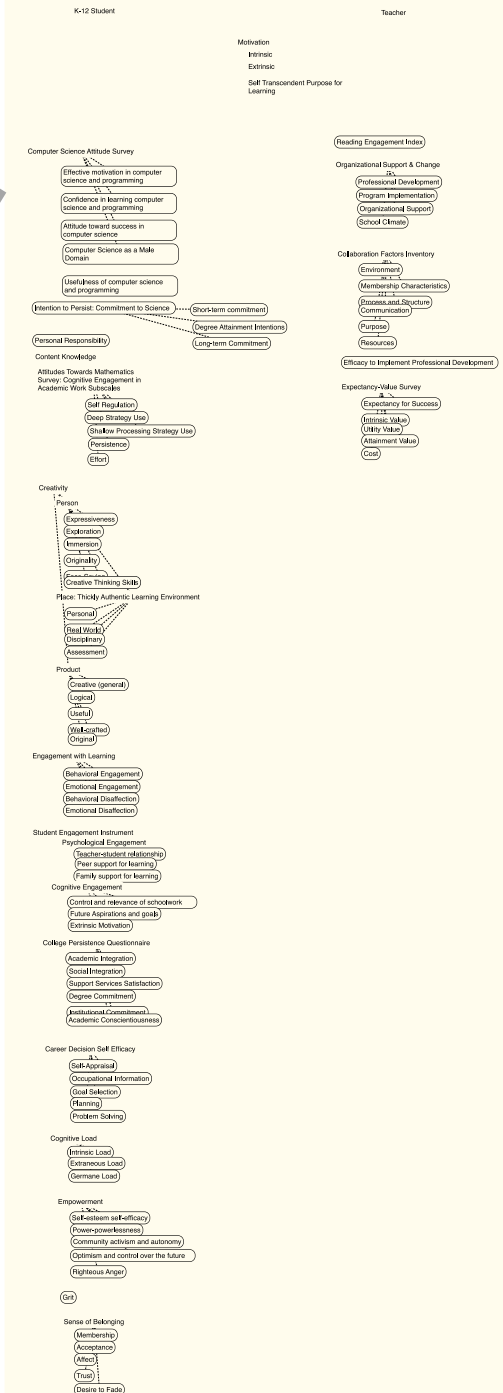
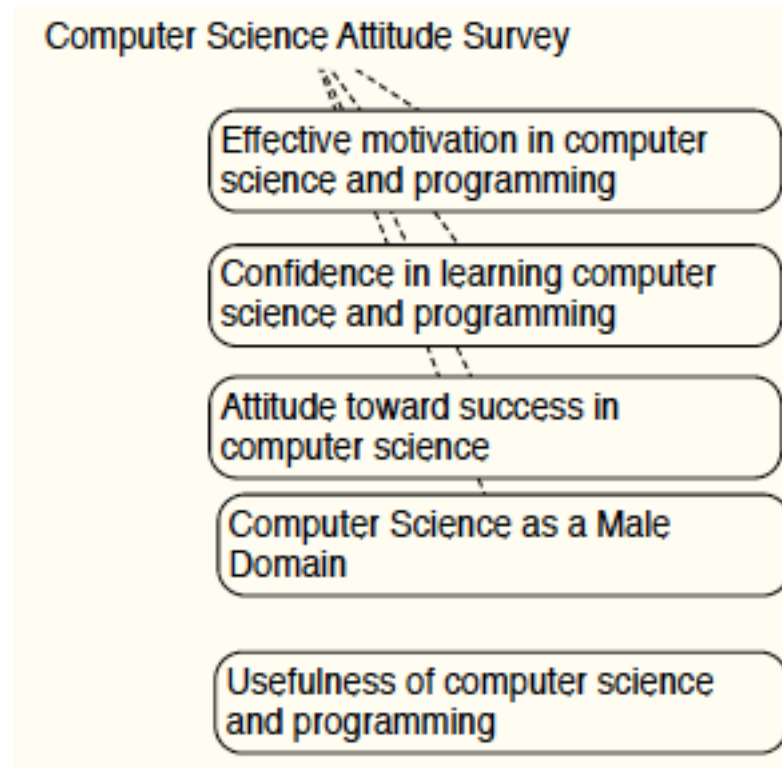
**BetterEvaluation**

*Sharing information to improve evaluation*



# Construct Map (McKlin)

- Introductory work
- Developing taxonomy of psycho-social constructs
- Support researchers in identifying key constructs for their work
- Awareness of construct use and overuse



# Giving Feedback

Feedback on contributing a resource or searching awesome tables:

Dr. Ann Martin, Oak Ridge Associated Universities

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Dr. Kathy C. Haynie, Haynie Research and Evaluation

[kchaynie@stanfordalumni.org](mailto:kchaynie@stanfordalumni.org)







**Q & A**

# Acknowledgments

- The authors would like to acknowledge that this material is based upon work supported by the US National Science Foundation under Award Nos. DUE-1625335, DUE-1625005, 1645894.
- Additional funding for this work provided by Google.
- Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation





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**Tom McKlin (tom@thefindingsgroup.org)**

# Websites



- **Pre-college computing:**  
<https://csedresearch.org/>
- **Consortium** <http://csforall.org>
- **NCWIT** [www.ncwit.org](http://www.ncwit.org) and [www.engage-csedu.org](http://www.engage-csedu.org)
- **Project Quantum:** [bit.ly/projectquantum](http://bit.ly/projectquantum) and [bit.ly/quantumquestions](http://bit.ly/quantumquestions)
- **CSONIC**  
<http://comm.eval.org/stemeducationandtraining/stem-tig-repository/viewrepository>
- [csonic.org](http://csonic.org)