Youth as NSDL Users…and Researchers! Youth-Centered Design and the NSDL

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NSF

NSDL
THE NATIONAL SCIENCE DIGITAL LIBRARY

Overview

- Education Development Center, Inc.
- Portfolio of youth media and technology projects:
  - The FunWorks (thefunworks.org)
  - Girls Communicating Career Connections (gc3.edc.org)
  - Middle School Portal 2: Math and Science Pathways (msteacher2.org)
    - Youth Virtual Learning Experiencs (smartr.edc.org)
  - NSDL Youth Resources

Overview of Projects

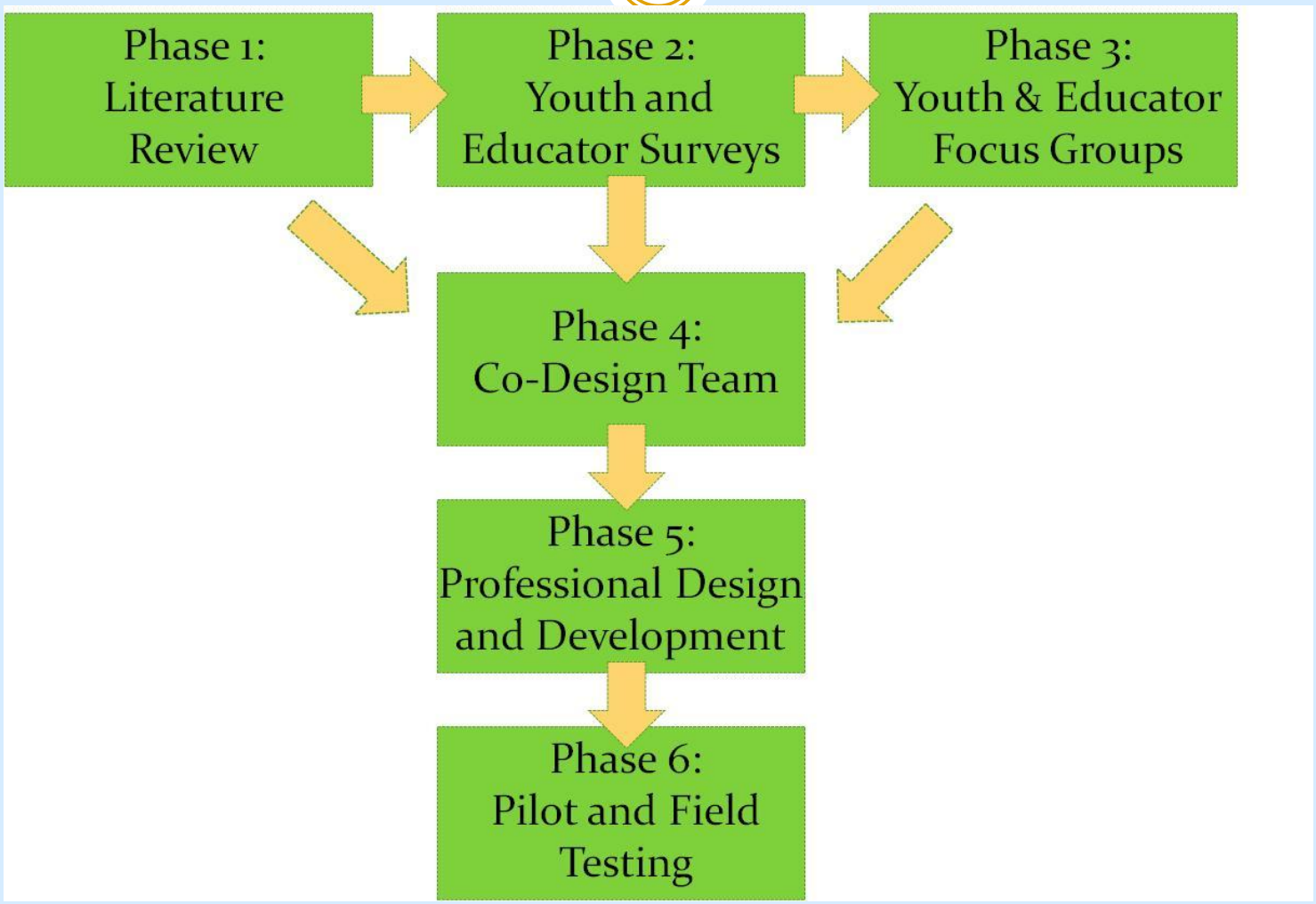
MSP2 VLEs: SMARTR

- Develop increased STEM content knowledge in youth
- Increase youth ability to explore, discover, problem solve, think critically about STEM
- Increase youth awareness of the educational pathways that lead to STEM careers
- Increased awareness of new technological literacies/encourage productive/responsible use of technology

NSDL Youth Resources

- Determine what youth and educators identify and conceptualize as “high-quality” online STEM content
- Identify youth intended uses of this content
- Identify key vocabulary youth use to find STEM resources
- Provide NSDL collection owners with a way to identify and add quality content for youth

Youth-Centered Design Methodology



Phase 1: Literature Review

MSP2 VLEs: SMARTR

- Youth online technology use
- Youth general technology use
- Youth interest and motivation to learn about STEM subject/topic areas
- Participatory research and design with youth

NSDL Youth Resources

- Available tools for creating and evaluating youth online technology use
  - Concept Inventories
  - Rubrics
- Available tools for identifying youth search criteria
  - Controlled Vocabularies
- Available guidelines for "quality" STEM resources
  - National standards
- Participatory research and design with youth

Phase 2: Surveys

MSP2 VLEs: SMARTR

- National online survey
- 6 week open availability (May-June 2009)
- Reached through previously established partnerships

- 440 youth participants
- 617 educator participants

NSDL Youth Resources

- National online survey
- 6 week open availability (April-May 2010)
- Reached through previously established partnerships

- 45 youth participants
- 154 educator participants

Phase 3: Focus Groups

MSP2 VLEs: SMARTR

Youth Participants
- 1 focus group
  - Education Development Center, Inc. (Newton, MA)
- 5 youth

Educator Participants
- 1 focus group
  - NSTA Conference 2009 (New Orleans, LA)
- 6 educators

NSDL Youth Resources

Youth Participants
- 4 focus groups
  - Dover, DE
  - Omaha, NE
  - Winthrop, MA
  - Rockland, ME
- 3-11 youth per site

- 3 focus groups
  - Omaha, NE
  - Winthrop, MA
  - Rockland, ME
- 6-7 educators per site

Phase 4: Co-Design Team(s)

MSP2 VLEs: SMARTR

- South End Technology Center, Boston, MA
- 9 youth participants
- 10 week process—afterschool
  - April-June 2009
  - 2 times per week (Tuesday/Thursday)
  - 2 hours per meeting

NSDL Youth Resources

- TBD
- Concurrent youth *and* educator teams

Youth participants

- Currently written as a 2 week (2 times per week) process

Educator participants

- Currently written as a 4 week (2 times per week) process

Phase 4: Co-Design Team(s)

MSP2 VLEs: SMARTR



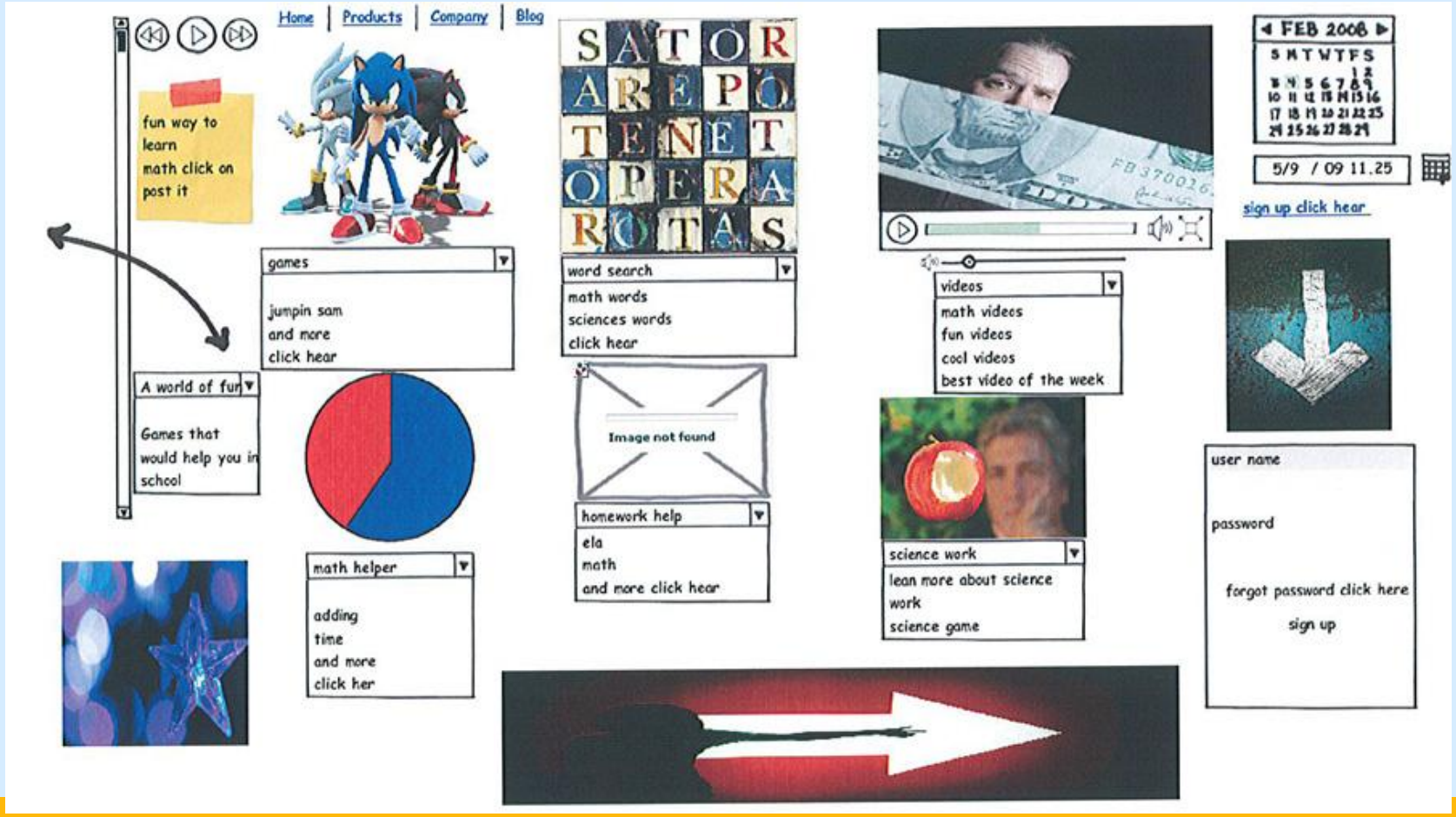






Phase 4: Co-Design Team(s)

MSP2 VLEs: SMARTR



Phase 5: Professional Design and Development

MSP2 VLEs: SMARTR

Phase 6: Pilot and Field Testing

- Identify potential partner sites/groups of youth and educators for pilot/field testing
- Create feedback mechanism(s) for testers
- Incorporate usage/design feedback into product

Thank You!

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NSDL Youth Resources: Findings and Challenges

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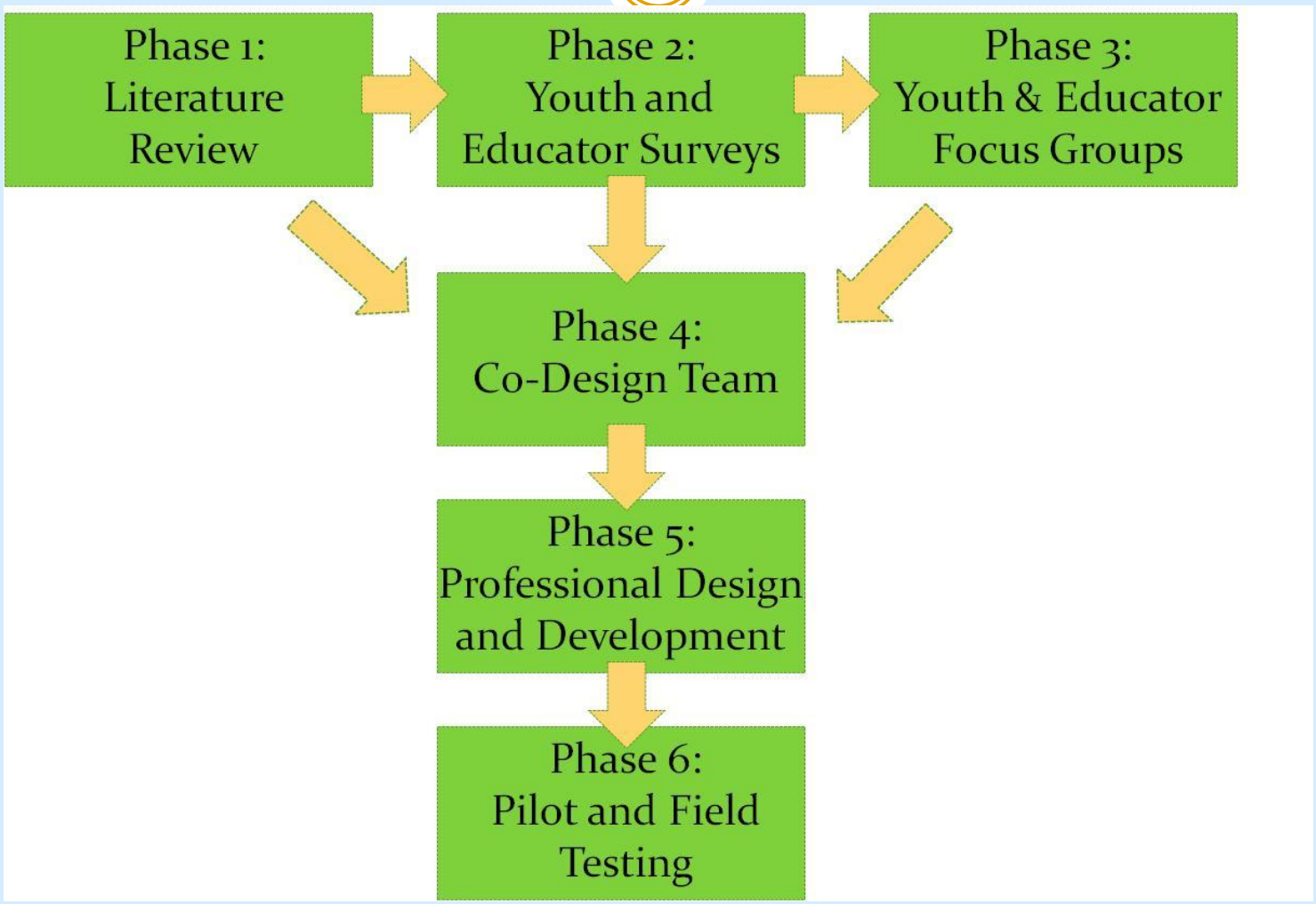
Overview

- Education Development Center, Inc.
- NSDL projects:
  - Gender & Science Digital Library (gdsl.org)
  - Effective Access Research Project
  - The FunWorks (thefunworks.org)
  - Girls Communicating Career Connections (gc3.edc.org)
  - Middle School Portal 2: Math and Science Pathways (msteacher2.org)
    - Youth Virtual Learning Experiencs (smartr.edc.org)
  - NSDL Youth Resources

NSDL Youth Resources

- NYR's goals for youth:
  - Determine what youth and educators identify and conceptualize as "high-quality" online STEM content
  - Identify youth intended uses of this content
  - Identify key vocabulary youth use to find STEM resources
  - Provide NSDL collection owners with a way to identify and add quality content for youth
- NYR products:
  - Develop a **content-selection rubric** for our partners and other collection owners with a critical need to add youth-appropriate content to their collections
  - Create a **controlled vocabulary** for the cataloging of youth resources for the NSDL

Youth-Centered Design Methodology



Surveys: Youth Findings

Table 12. Ways in Which Youth Decide to Look at Sites During a Search

	N	%
I read through the descriptions and click on the one I think will have the most useful information	23	51.11%
I just click on the first site in the list	9	20.00%
I click on sites until I see a picture that looks interesting	1	2.22%
I click on sites that look interesting and will have useful information	1	2.22%
TOTAL	**34**	**75.56%**

Surveys: Youth Findings

Table 13. Information Youth Look for to Determine Whether a Site is Useful - Youth Using Search Engines

	N	%
Text (words) describing the topic I'm looking for	27	60.00%
Photos of the topic I'm looking for	4	8.89%
Videos of the topic I'm looking for	2	4.44%
Games on the topic I'm looking for	2	4.44%
Any photos	1	2.22%
Any videos	1	2.22%
Any games	1	2.22%
TOTAL	**38**	**84.44%**

Focus Groups: Unexpected Educator Findings

- **Educators who use online resources to support their teaching but are unaware of the NSDL**
  - Summary
  - Group discussion:
    - Have others found same/similar/different things?
    - What are the implications for usage development?
    - Suggested strategies for addressing
- "Wikiphobia"

Focus Groups: Unexpected Youth Findings

- **Youth uninterested in exploring online resources of their own accord**
  - Summary
  - Group discussion:
    - Have others found same/similar/different things?
    - What are the implications for usage development?
    - Suggested strategies for addressing
- "Wikiphobia"

Next Steps

- Identify a site for youth *and* educator co-design teams
- Implement Phase 4 of Youth-Centered Design Methodology using task agenda created from survey and focus group information
- Phase 5: Product creation
- Phase 6: Pilot and field testing

Thank You!

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