Vermont Early Literacy Initiative -- Science, Technology, Engineering & Mathematics (VELI-STEM) Project

Evaluation Report:
Analysis of Librarian Baseline Self-Assessment Survey Data

March 2016

OVERVIEW: An on-line VELI-STEM Librarian Baseline Self-Assessment Survey was distributed via email to the primary point of contact for each of the 25 VELI-STEM libraries, prior to any training activities with the librarians. The purpose of administering the survey was to establish a baseline measure of librarian pre-project proficiency in key constructs of the delivery of STEM programming to 3-7 year old children, against which to compare data collected at the end of the VELI-STEM project, in order to gauge the extent of achievement of two project outcomes:

1. Participating VELI-STEM librarians become better able to recognize opportunities to incorporate ongoing STEM learning experiences for 3-7 year old children and their families throughout their library-based and community-based practice.
2. Participating VELI-STEM librarians become more intentional in highlighting STEM literacy in Story Times and all other child and family focused programming.

FINDINGS:

Response Rate
- 23 responses received from the 25 surveyed VELI-STEM librarians (92% response rate)

STEM Knowledge & Skills
- In their assessment of their current STEM skill and knowledge levels on a scale of 1-5 (with 1 being not at all proficient and 5 being fully proficient), the 23 librarians scored an average of 3.6 on the combined knowledge & skill items, with individual item scores ranging from 3.1-3.9, indicating a moderately strong foundation upon which to build greater proficiency levels in each area and all areas combined:
  - ➢ 3.9 on their ability to identify opportunities to incorporate ongoing STEM learning experiences for 3-7 year old children and their families
  - ➢ 3.8 on their sense of the different settings in which STEM learning experiences can be provided
  - ➢ 3.4 on their prior access to STEM training and other resources
  - ➢ 3.1 on their regular provision of opportunities for 3-7 year old children to use basic science practices

STEM Concepts & Delivery

- In their assessment of their current understanding of particular STEM concepts and their delivery of those STEM concepts on a scale of 1-5 (with 1 being not at all proficient and 5 being fully proficient), the 23 librarians scored an average of 3.2 on the combined concepts and delivery items, with individual item scores ranging from 3.2-2.3, indicating a moderately strong foundation upon which to build greater proficiency in each area and all areas combined:
  - ➢ 3.7 on STEM Water and Air concepts
  - ➢ 3.6 on STEM Force and Motion concepts
  - ➢ 3.5 on what it means to engage children in science-learning opportunities within a context of science engineering practices
  - ➢ 3.2 on STEM Sound and Light concepts
  - ➢ 3.0 on how to transfer their acquired STEM knowledge and skills to early childhood educators in their library's community
  - ➢ 2.9 on how to conduct STEM outreach and informational exchanges with their library's broader community
  - ➢ 2.3 on how to encourage children to develop and use a range of science practices as described in the Next Generation Science Standards

In Their Own Words

The librarians also were provided an opportunity to provide comments, observations and suggestions, with key themes including:

- Excitement about the project

- Passion for learning

- Preference for hands-on and play-based approaches to learning and to delivery of STEM concepts

- Enthusiasm for engaging young children in STEM learning

- Keen interest in equipping parents, guardians, child care providers, early educators, and others to support children in STEM experiences

- Interest in building and fostering connections with the community, including town officials, around STEM learning for youth.[1]

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[1] A full transcript of all comments and suggestions will be shared internally in a separate document with the VELI-STEM Leadership Team, for their determination of any necessary follow-up.