

**G**OODMAN RESEARCH GROUP, INC.  
Program Evaluation • Consultation • Market Research

*Evaluation of NOVA  
scienceNOW Season 6*  
**Summary**

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## BACKGROUND AND METHODS

NOVA scienceNOW (NsN) is a multimedia project of WGBH that addresses science, technology, engineering, and mathematics subjects via multiple platforms, including the national PBS broadcast, the PBS web site, and outreach activities. The sixth season of the show aired in 2012, with episodes, digital content, and outreach content on the evolution of human traits, the role of science in stopping crime, brain science, food science, animal intelligence, and technologies of the future.

Goodman Research Group, Inc. conducted an external evaluation of the project, as part of the project's award from the Advancing Informal STEM Learning (AISL) division of the National Science Foundation. The evaluation assessed NsN's effectiveness in meeting its broad goals for its public and professional audiences. The key findings that follow relate to these impacts and the evidence provided are the measurable criteria used to assess progress toward achieving the impacts. The overarching evaluation questions were:

- How effective are the Season 6 episodes, digital content, and science cafes in increasing appreciation for, understanding of, and engagement in or pursuit of science?
- How effective are the sciencecafes.org resources and infrastructure in increasing cafe organizers' and speakers' perceived expertise and skills?
- How effective are the sciencecafes.org resources and infrastructure in fostering a community of practice among cafe organizers?
- What has been the long-term NSN engagement of previous evaluation participants, including viewing the series, visiting the general audience and NOVA Education web site, and/or attending science cafes? For those who have been engaged, what are the long-term outcomes?

The Season 6 evaluation featured five key activities. Our methods relied heavily on web-based surveys, hosted on our survey platform. For most of the surveys, the NsN team posted invitations to the survey on the relevant web sites and social media. It is not possible to calculate response rates for these surveys. The five evaluation activities were:

1. A synthesis of previous GRG NSN evaluations, the results of which were provided in a separate report;
2. A follow-up survey of previous NSN evaluation participants (N=320 respondents; 25% response rate);
3. A survey of NSN Season 6 series viewers and web site visitors (N=216 respondents);
4. A survey of science café organizers (N=90 respondents);
5. A survey of science café attendees (N=132 respondents); and
6. A survey of NOVA Education website visitors (N=53 respondents).

## PROFILE OF RESPONDENTS

Across the data collection methods, respondents' average age was in the 40s or 50s. Overall, more women than men responded, but gender composition varied by survey. A vast majority of respondents were White and a majority had at least a college education. Roughly half of the public audience were working or studying in science. Table 1 provides demographic data on the evaluation respondents.

Compared to the public audience, the professional audience of café organizers and NOVA education visitors had a higher percentage of women and a higher level of education overall. Compared to public television viewers<sup>1</sup>, NsN survey respondents had a lower percentage of racial minorities, a higher percentage of 18-34 year-olds (with the exception of NOVA Education survey respondents), and had higher levels of education.

Table 1  
Demographic Profile of Respondents

	Visitor/ Viewer	Café Attendee	Past Participant	Café Organizer	NOVA Education
White	82%	83%	82%	79%	68%
Mean Age	52 yrs.	45 yrs.	45 yrs.	45 yrs.	54 yrs.
Female	44%	59%	58%	65%	81%
Bachelor's degree	64%	9%	8%	93%	91%
Science background	42%	N/A	N/A	51%	N/A

In addition, among science café organizers:

- 56% of respondents had been organizing science cafes for under 3 years, while 44% had been organizing for 3 or more years.
- 33% had organized 5 or fewer cafés; 24% had organized 6-15; 19% had organized 16-25; and 35% had organized more than 25 cafés.
- 33% had cafes with particular STEM content foci.
- The median number of people who attended their café meetings was 45 (ranging from 10-350)
- 42% were affiliated with a college or university; 21% with a museum; 10% with a professional scientific association.

Compared to the American public<sup>2</sup>, NsN survey respondents were more likely to get information about science online and less likely to get it from other sources (e.g., TV), followed news about science and technology more closely, were more interested in new scientific discoveries, felt slightly more informed about new scientific discoveries, felt somewhat more knowledgeable about science, and felt more strongly about the importance of science. See Table 2.

<sup>1</sup> [http://www.itvisus.com/programs/aowh/partners\\_pbs.asp](http://www.itvisus.com/programs/aowh/partners_pbs.asp)

<sup>2</sup> General Social Survey or the Pew Internet & American Life Project Poll

Table 2  
Science Profile of Respondents

	Visitor/ Viewer	American Public
Internet is primary source of information about science and technology	55%	35%
Follow news about science and technology “very” closely	44%	13%
“Very” interested in new scientific discoveries	96%	41%
“Very” well informed about new scientific discoveries	30%	11%
“Good” or “Very good” understanding of science	85%	58%
“Strongly Agree” that “ <i>Scientific research is essential to improving the quality of human lives.</i> ”	84%	19%
“Strongly Agree” that “ <i>Developments in science help make society better.</i> ”	67%	31%
“Strongly Agree” that “ <i>In order to live their daily lives, people need a good understanding of basic scientific concepts and principles.</i> ”	53%	35%

*An NSN Take-Away*

*Being curious about our world -- whether it's ourselves and how we came to be, or the environment, or other animals -- makes us all scientists. It enriches our lives.*

## ENGAGEMENT WITH NSN

### NsN TV series

TV was by far the most popular way for people to access the NsN TV series: 90% watched the show on TV; 50% on a computer; 10% on a digital platform. Among survey respondents, viewership spiked at Episode 1 (66%) and dipped at Episode 2 (31%). The rest of the episodes had a viewership rate between 47% and 56%.

### NsN Digital Content

Of those respondents to the Visitor/Viewer survey who encountered the link while exploring NsN digital content, 77% had previously accessed NsN digital content. Of those who followed the survey link from elsewhere (i.e., newsletter, social media), 46% had previously accessed NsN digital content. Half of respondents had accessed digital content for the first time within the past year, while 20% had first accessed the digital content four or more years ago. Most respondents accessed NsN digital content monthly (29%) or a few times a year (30%) and most spent 10 minutes or less exploring digital content (63%); 9% had accessed the content for upwards of 30 minutes

### Science Cafés

Most respondents (56%) to the Science Café survey had first attended a science café in 2011-2012; 18% had first attended in 2009-2010; 16% in 2007-2008; and 6% before 2007. Half (51%) of respondents had attended a “Season 6” science café.

## sciencecafes.org

More than one-third (37%) of café organizers had first visited sciencecafes.org within the past year. About two-thirds typically visited a few times a year (64%) and typically spent up to 10 minutes on site (63%). The median number of sciencecafes.org resources accessed by organizers in past year was 3; the most commonly accessed resource was Find a Café (52%), followed by resources for presenters (37%). Four in ten organizers (38%) followed sciencecafes.org on Facebook and 12% followed on Twitter.

## NOVA Education

More than one-fifth (22%) of NOVA Education respondents had first visited the site some time in 2012; 28% in 2011; and 48% in 2010. About four in ten (42%) visited at least several times a month; 30% once a month; and 26% a few times a year. Two thirds (66%) engaged with NOVA Education via the newsletter, Spark, and 9% each engaged via Facebook and the Engaging Science blog.

## FINDINGS RELATED TO IMPACTS AND INDICATORS

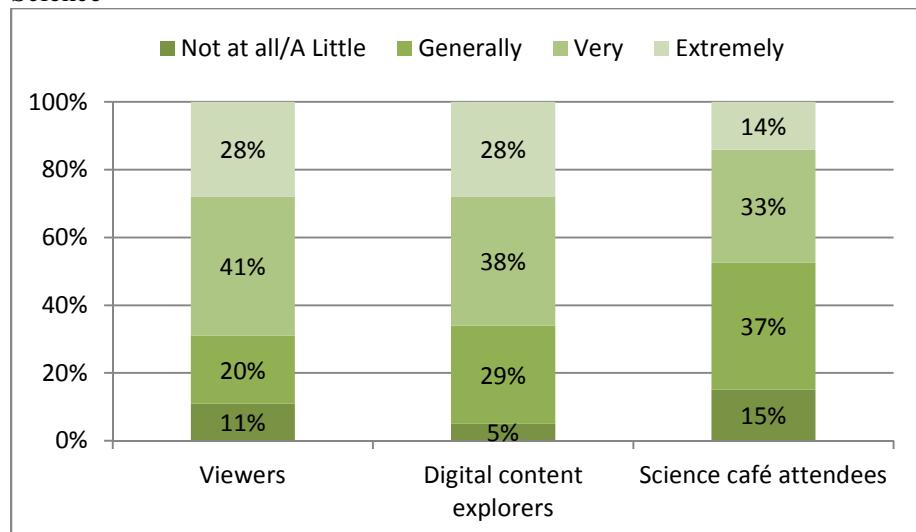
### The Season 6 episodes, digital content, and science cafes were effective in increasing appreciation for, understanding of, and engagement in science.

- A vast majority of viewers (89%), digital content visitors (85%) and science café attendees (85%) were at least generally motivated to learn more about current events in science (see Figure 1). TV viewers and digital content explorers were more highly motivated than science café attendees.

*An NSN Take-Away*

*I love learning any science topic and seeing my kids get inquisitive as watch the shows.*

Figure 1  
Percentage of Respondents Motivated to Learn More about Current Events in Science

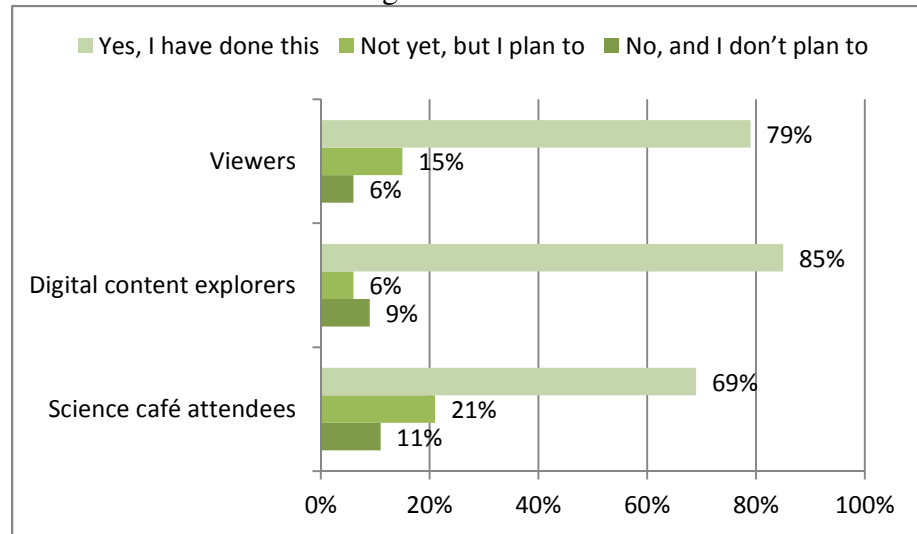


- A vast majority of viewers, digital content visitors, and science café attendees reported actually trying to stay more up-to-date on cutting edge science since first interacting with NsN (see Figure 2). Digital content explorers were most engaged in staying current, followed by TV viewers, then science café attendees.

*An NSN Take-Away*

*I thought science was only for the smart kids. I learned - and I was thrilled to learn - that I can play too. YOU MAKE IT UNDERSTANDABLE. And delightful.*

Figure 2  
Percentage of Respondents Staying More Up-to-date on Cutting Edge Science since First Interacting with NsN

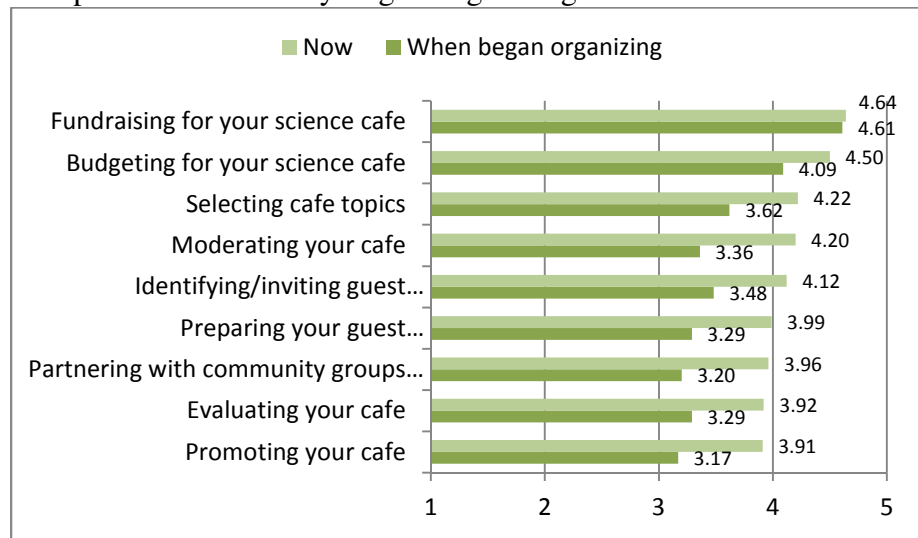


- A considerable majority of viewers (67%), digital content visitors (61%) and science café attendees (73%) noticed a connection between NsN and their daily lives. Topics that resonated most strongly with viewers included food/cooking, animal-human relationships, and space. Among digital content explorers, most respondents gave examples of places where they make connections, such as “Physics is everywhere!” or “school assignments and current events.” For café attendees, most connections related to specific topics explored during science cafes, the most popular of which were food, the environment, and health.
- A vast majority of previous evaluation participants had continued engagement with NsN over the long(er)-term. Eighty-three percent of respondents who had participated in a Season 1-5 NsN evaluation had been involved with NsN in the last year. Sixty-five percent had watched one or more Season 6 episodes. Their outcomes were consistent with those noted above:
  - 86% rated NsN at least “generally effective” in increasing their motivation to learn more about current events in science
  - 73% tried to stay more up-to-date on cutting edge science topics
  - 51% of respondents noticed a connection between NsN content and their everyday life.

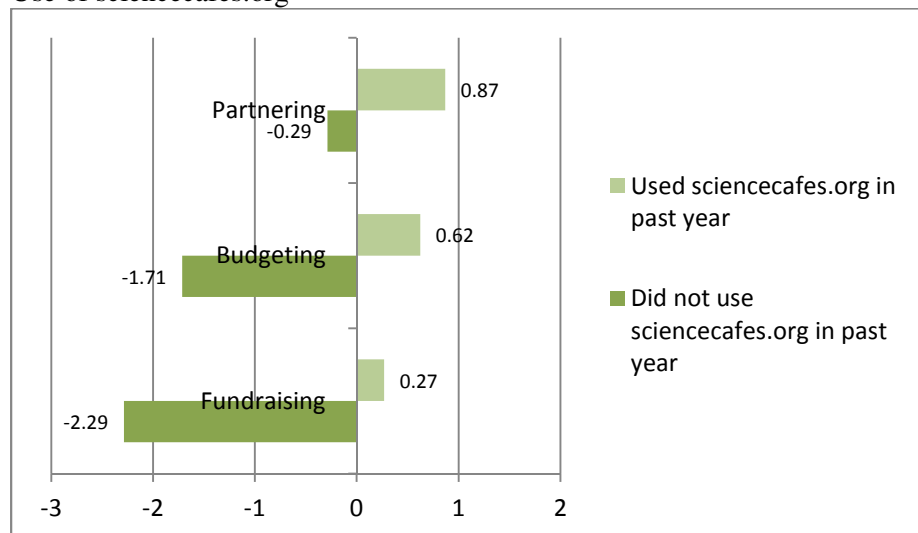
**Sciencecafes.org resources and infrastructure were effective in increasing cafe organizers' perceived expertise and skills.**

- Organizers' retrospective pre-post confidence in their organizing skills showed a perceived improvement in 7 of 9 skills related to developing and implementing science cafes (see Figure 3). Café organizers who had used sciencecafes.org resources in the past year reported gains in their self-confidence in budgeting for their cafés, fundraising for their cafés, and partnering with community groups to reach their audiences, while those who did not use the resources reported declining confidence (see Figure 4).

**Figure 3**  
Café Organizers' Mean Confidence in Organizing Skills Now Compared to When They Began Organizing



**Figure 4**  
Mean Difference between Retrospective Pre and Post Confidence Ratings, by Use of sciencecafes.org



**Science café resources and infrastructure were also effective in fostering a community of practice among organizers.**

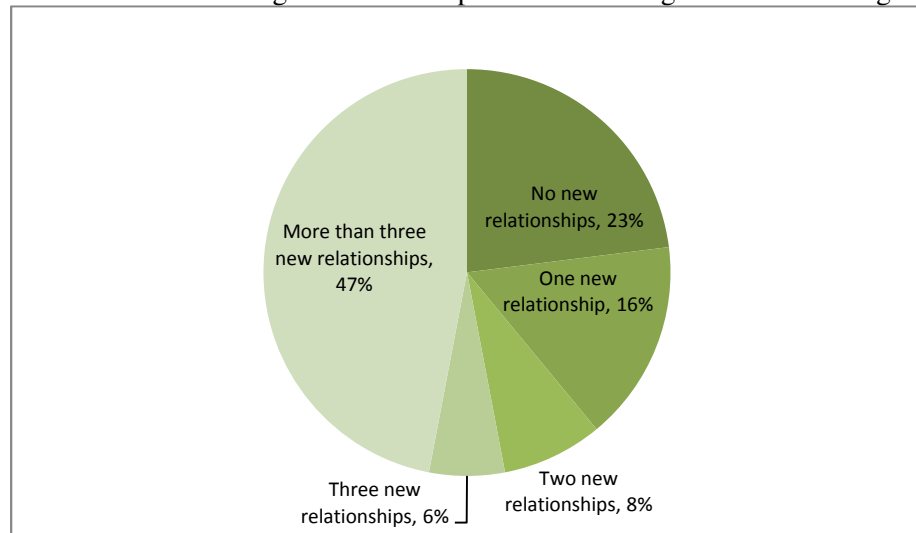
- A majority of science café organizers had formed new collegial relationships as a result of their participation in the sciencecafes.org community, with 61% of organizers reporting at least *two* new collegial relationships (see Figure 5). Most (78%) organizers felt like part of the community. Compared to organizers with less exposure to sciencecafes.org, organizers who had more exposure were more likely to:
  - tell others that they were part of the science café community;
  - encourage other organizers to use sciencecafes.org resources; and
  - feel like they contribute to the science café community.

*An NSN Take-Away*

*To be able to start conversations with others regarding material I've seen. I find it much more satisfying to have conversations regarding topics of science rather than (what seems to be the usual) 'did you see last night's episode of An NSN Take-Away*

*The topics are varied, so it's difficult to generalize, but all NOVA scienceNOW programs leave me with a far greater appreciation for the time, skill, and devotion that is required to come to the truth of things, and do so in a way that would not be available without programs like this.*

Figure 5  
Number of New Collegial Relationships Formed Through sciencecafes.org



**NOVA Education appeared effective in increasing teachers' awareness and use of standards-based classroom resources in science, technology, and engineering.**

- There were not a high number of respondents to the NOVA Education survey. Nonetheless, more than 90% of them reported use of the video, audio segments, and interactives available on the NOVA education site and a majority found the resources useful (see Figure 6). Ninety-two percent of respondents reported that NOVA education resources were at least “generally effective” in increasing their use of standards-based classroom resources in science, technology, and engineering (see Figure 7).



Figure 6  
Percentage Distribution of Respondents' Usefulness Ratings of NOVA Education Resources

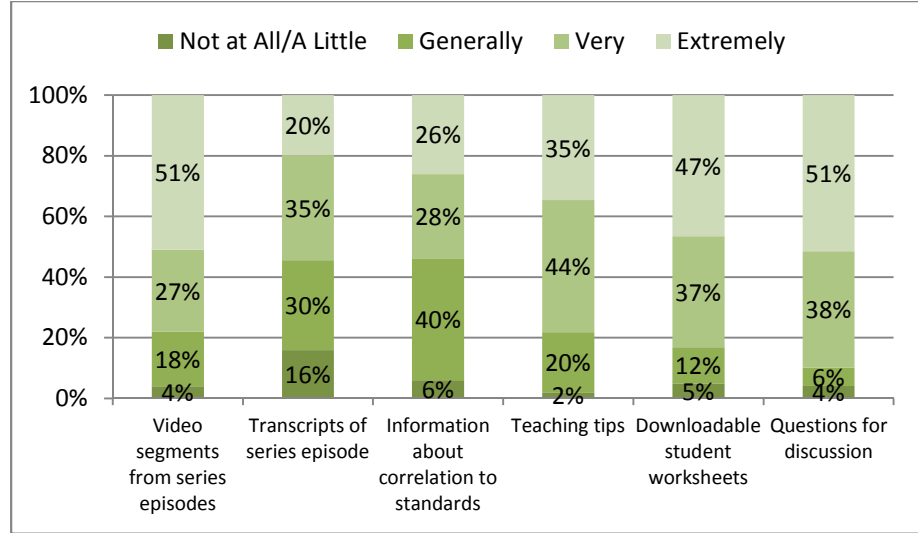
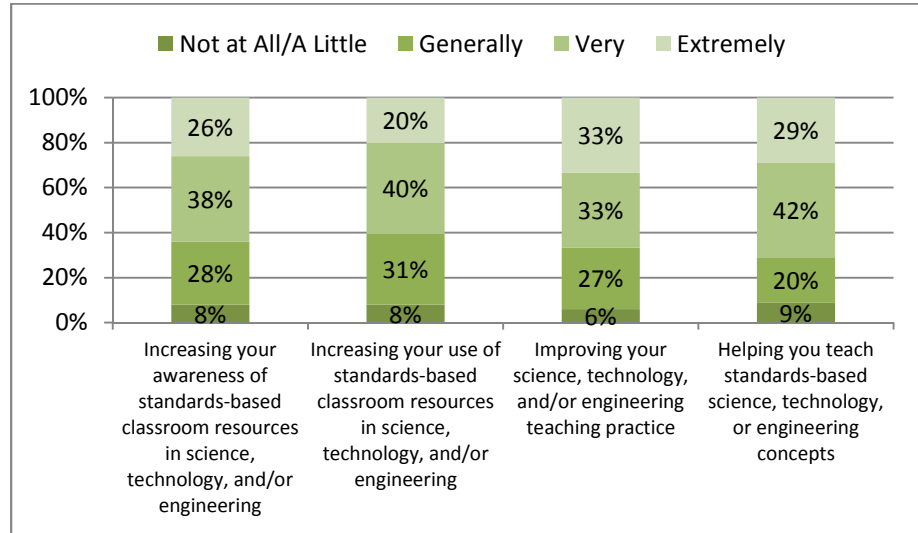


Figure 7  
Percentage Distribution of Respondents' Effectiveness Ratings of NOVA Education

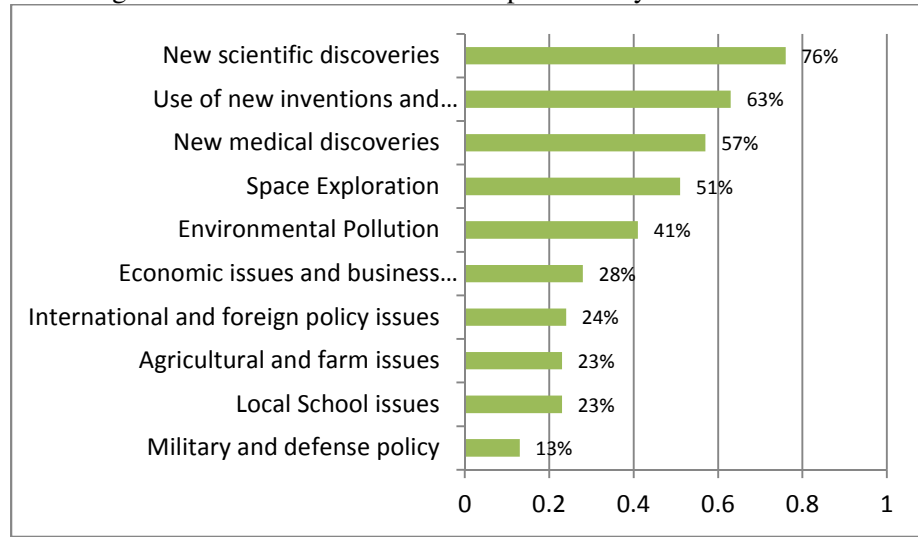


## FINDINGS RELATED TO PROCESS AND IMPLEMENTATION

**Survey respondents' interests in issues and resources provide direction for future programming.**

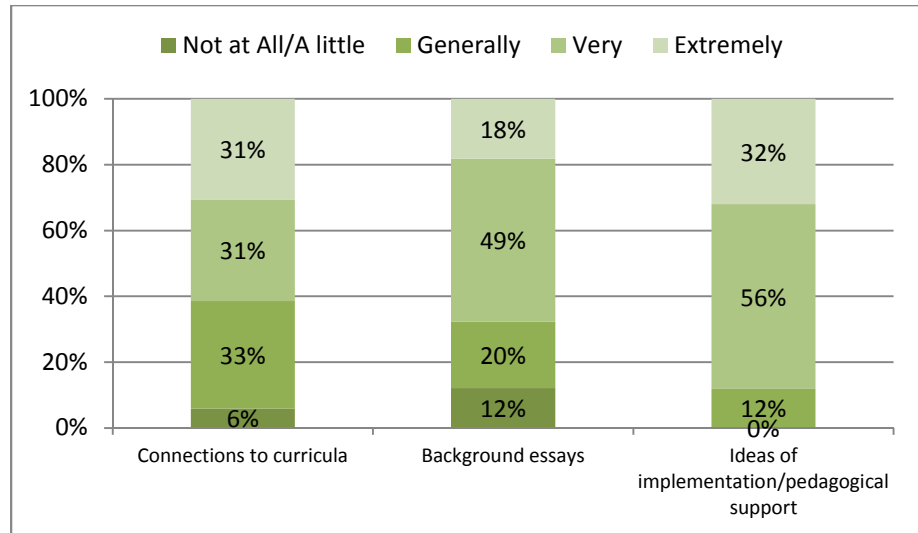
- Those who had been engaged with NsN over the longer term were most interested in issues related to new scientific discoveries and use of new inventions and technologies (see Figure 8).

Figure 8  
 Percentage of Past NsN Evaluation Participants “Very Interested” In Issue



- NOVA Education respondents were most interested in the addition of ideas for a range of ways to use the media as part of a lesson, classroom, or homework activity (see Figure 9).

Figure 9  
 Percentage Distribution of Respondents’ Perceived Usefulness of Potential NOVA Education Resources



**Social media continues to be a promising mechanism for engaging new audiences.**

- A majority of respondents to the Viewer/Visitor survey had followed the link from Spark, Facebook, or Twitter. A slight majority of them (54%) had not previously accessed NsN digital content.

**Interest in accessing NsN digital content from mobile devices may change as NsN attracts a younger audience.**

- Younger viewers aged 18-34 were more likely to have accessed NsN digital content from a mobile device and were more interested in doing so than were viewers 35 and older.
  - Overall, 20% of respondents had accessed NsN digital content from a mobile device, compared to 42% of 18-34 year-olds.
  - Overall, 16% of respondents were very or extremely interested in accessing NsN digital content from a mobile device, compared to 27% of 18-34 year-olds.

In summary, the evaluation provides evidence in support of NsN's effectiveness in achieving its intended impacts for viewers, digital content explorers, science café attendees and organizers, and NOVA Education visitors. The evaluation also raises considerations for future direction.

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