

# SOCIAL MEDIA TO SUPPORT SCIENCE LEARNING & ENGAGEMENT: NOVA WONDERS

## OVERVIEW:

This project explored the potential of social media to promote informal science learning online, specifically Facebook & Twitter. We developed a measure of informal science learning on social media and ran a six week “live” experiment on NOVA’s social media during the NOVA Wonders broadcast to explore how best to moderate a social media space to enhance informal learning. We found that certain styles of posting and engagement on the part of the social media facilitator can make a big difference in learning and engagement. These findings have implications for how media producers and educators can use social media to promote learning.

## THE PROBLEM:

Social media impact is commonly assessed with analytics like 'engagement,' 'reach,' & 'impressions,' that do not measure learning. So how do science communicators know whether effort spent on social media is truly helping their audiences learn or engage?

## THE POTENTIAL:

Research suggests that social media has the potential to promote informal science learning, due to its inherent connectedness, reduced barriers to entry, the ability to personalize learning, and its “egalitarian design,” which distributes social power. Furthermore, research shows that social media can promote learning in classrooms, using a semi-structured, community-based approach.

## RESEARCH QUESTIONS:

- Can social media help users learn or engage more deeply with science topics?
- How can we measure learning on social media? (platform-provided metrics lack these)
- Can we design social media to better promote meaningful learning outcomes?

## MEASURES:

We used a combination of platform-derived metrics and a new qualitative measure of informal learning, the *Codebook of Social Media Informal STEM Learning*, based upon the strands of informal STEM learning and the NSF impact categories.

## Annotated Codebook of Social Media Informal Learning:

- *Awareness & Engagement:* excitement | awareness | curiosity | networking
- *Understanding:* knowledge gain | restatement | application
- *Attitude:* change in opinion | trust/distrust in science

## OUR TEAM:

NOVA Team: Julia Cort, Pamela Rosenstein, Dante Graves, Ralph Bouquet, Sukee Bennett

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Research Team: Mika Kaczmar, Vanessa Guenther, Taylor Heisley-Cook, Jon McKoy, Mariano Nava, Mandy McClean

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**DESIGN COMPARISONS:**

We ran an experiment to test whether different approaches to managing a social media space had an impact on learning. We assessed whether there were different learning outcomes associated with:

- *Resource type: image, article, video*
- *Post style: full facts, teaser question, tune-in reminder, participation ask, informal tone*
- *Facilitation style: high or low facilitation (NOVA social media managers to engage the community with increased questions/responses during live streams of NOVA Wonders)*

**FINDINGS:**

Small changes in social media design can have a big impact on learning and engagement online.

**Traditional Engagement: small content decisions can make a big impact on engagement**

- *Resource type: Short videos outperform all other NOVA social media posts*
- *Post style: Teaser questions by far outperformed all other types of posts, receiving the most total engagements. Teaser questions also received the most comments.*
- *Facilitation: High facilitation far outperformed the other traditional media posts*

**Learning: Facilitation impacts learning outcomes****The power of high**

**facilitation:** We noticed that high-facilitation in general was able to produce different types of understanding and engagement than traditional, low-facilitation social media.

**Curiosity & making**

**connections:** With a more active facilitator, audiences were asking more questions and connecting what they learned to other knowledge and experiences.

**Building a larger following & attitude**

**sharing:** Traditional social media was much more effective at bringing in potential additional followers, as it was much better at promoting “networking” through shares when a social media follower was excited by the content. Traditional low-facilitation approaches also elicited more attitude sharing about content.

**TIPS:**

- **WANT PEOPLE TO SHARE ATTITUDES OR OPINIONS? USE TRADITIONAL / LOW FACILITATION APPROACHES**
- **WANT TO FOSTER CONNECTIONS TO OTHER EXPERIENCES: USE HIGH FACILITATION**
- **WANT TO BUILD YOUR NETWORK? USE TRADITIONAL / LOW FACILITATION APPROACHES**
- **WANT TO FOSTER CURIOSITY? USE HIGH FACILITATION**

**IMPLICATIONS:**

This study suggests that informal learning is possible on social media. With small changes to post style, resource type, and facilitation, learning outcomes can be influenced for social media users. This helps social media producers move away from focusing strictly on platform-derived analytics and instead consider how to more deeply engage their audiences.