STEM Resource Clearinghouse Focus Group Results
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Background: 81 librarians participated in an online survey related to the development of the *STEM Resource Clearinghouse*. Forty respondents agreed to participate in follow-up focus groups to provide more in-depth feedback. The project received an IRB exemption from the Space Science Institute's IRB, and all focus group participants signed an Informed Consent Form to participate in the interviews. Participants in the focus group included children's librarians, library directors, library board members, teen librarians, and technology librarians. The focus groups (4 total) were conducted on March 10th and March 14th, 2016, by Anne Holland, Public Engagement Manager, National Center for Interactive Learning, Space Science Institute. Group 1 had 5 participants, Group 2 had 10, Group 3 had 11, and Group 4 had 14 participants.

Instrument: The following questions were utilized to structure the conversations, though participants were not constrained to just discussing these items.

1. *Tell us more about the barriers you face in implementing hands-on activities in your library?*

2. *If you personally (or a colleague) is hesitant to deliver hands-on programming, what resources would support you in these efforts?*

3. *How much time do you normally have to prep for delivering activities? Do you ever have time to participate in training such as webinars (typically an hour)? What about longer offsite training?*

4. *If you use community driven sites (such as Pinterest) to gather resources, how do you determine if an activity is accurate/useful?*

5. *Would you benefit from tutorials on how to use other existing Clearinghouses? For example, the NASA Wavelength site? Do you feel there are barriers for accessing existing information?*

6. *Would you find it beneficial if our Clearinghouse had a product review area where users (such as yourselves) could rate and discuss commercial products separate from our free products?*

7. *What do you look for in a hands-on activity? Does subject matter? How do you search for them? What keywords do you currently use?*

Responses to structured questions: The following is a summary of responses across all 4 sessions for each of the planned questions. Responses that are not directly tied to these prompts will be highlighted in the next section.

1. *Tell more about the barriers you face in implementing hands-on activities in your library?*

Complete responses to this prompt:

Program size (as space can only accommodate so many people);

People "giving up" on programs after being turned away due to capacity issues;

Cost associated with programing;

Staffing hurdles, lack of training, fear of STEM subjects;

Staff insistence that STEM programming has to be high tech;

School districts requiring adherence to NGSS or common core standards;

Staff just needs to hear that programs can be easy/fun and still be STEM (like cooking) especially need to hear this from someone who isn't their boss!;

What is STEM learning vs STEM exposure?

All participants agreed that space, funding and "fear of STEM" were the biggest barriers.

2. *If you personally (or a colleague) is hesitant to deliver hands-on programming, what resources would support you in these efforts?*

Complete responses to this prompt:

Training (in-person);

Webinars;

Certification credits (both official and *STAR_Net* based);

Regional workshops (vs just going to large conferences);

Those resources being introduced to library schools;

Kits that we could just grab activities out of;

Volunteers (and fact sheets for them);

Focus on a "best practice" approach;

Event support (Maker events, NASA events);

Tie-in to underserved communities-introductions!

The most common response to this prompt was that while webinars are great once librarians are "in", in-person training is key to get buy-in. Unless staff physically does the activity themselves, they're afraid to try it. A few people mentioned "imposter syndrome", meaning the librarians, even though they're fully capable of doing these things, don't feel like it's something they're good at. Seeing other librarians doing the activity at their side can help to alleviate this. Multiple respondents suggested we attend state and regional conferences, as well as doing in-person training at libraries if possible. For small libraries, the biggest barrier to getting training is that staff can't leave. If we bring the training to them (or at least to within close driving distance) they WILL come. All respondents (with one exception) agreed that kits would be a great way to bridge the training gaps. Staff are more comfortable with plug and play activities, and the word "kit" makes it seem easier, even if it's the same things that they are afraid of using from our existing website!

3. *How much time do you normally have to prep for delivering activities? Do you ever have time to participate in training such as webinars (typically an hour)? What about longer offsite training?*

Complete responses to this prompt:

If it's summer reading they plan months ahead of time;

For storytime-the 5 minutes before, still prepping when the kids are showing up!
Hour long webinars are fine;

Longer offsite training is great (well-staffed library);

Offsite training is not feasible (smaller library), due to time constraints;

1-page activities would be great for the easier ones.

This question prompted a brief discussion about the existing STAR_Net activities. The librarians in the focus groups who are high on the ladder of STEM engagement love the format. The newer participants (across 3 of the 4 groups) commented that the language in the STAR_Net activities was pretty terrifying for people who hadn't received in-person training. Especially the area that says "6 months before the activity". They for the most part believed that if they had been at a training, the format would have been explained and the

instructions would have seemed less insurmountable, but of all the focus group participants, only librarians who had been trained in person had successfully conducted these activities.

4. *If you use community driven sites (such as Pinterest) to gather resources, how do you determine if an activity is accurate/useful?*

Complete responses to this prompt:

I try it on my kids first and if nothing blows up we're good to go!;

This is a real problem-we often hear that something wasn't accurate afterwards from scientist parents;

I never thought of vetting things;

I look for a logo of a reputable organization;

This is why we only use activities provided by our state library;

We are banned from using Pinterest so we don't do much that's new because I've run out of things that are approved;

I wish we could crowd source with real scientists and have them tell us if we're sounding foolish;

The most common response to this prompt (across all 4 groups) is that they just try the activity and if anyone says it's bad, they fix it. They discussed how this is a bad model, but they're librarians, not scientists, and don't know how to tell if something is appropriate. All 4 groups said something to the extent of "that's why we're excited for this Clearinghouse; it's a great way for us to get an idea of the great ideas, so we can be more comfortable to build our own."

5. *Would you benefit from tutorials on how to use other existing Clearinghouses? For example, the NASA Wavelength site? Do you feel there are barriers for accessing existing information?*

Complete responses to this prompt:

Others might use it but I won't;

I'd rather have a half-page "how-to" than a long video;

I'm hoping your site will mean I don't need to know how to use others;

I'd rather have direct links in your activities to the places I should be going to on these other sites rather than having to navigate myself.

The commonality across the groups is that while they're sure someone would use these tutorials, none of the participants thought they would use them. They either were gun-shy and would prefer just to use ours, or are already well-versed in the other sites. All agreed that a tutorial for the Clearinghouse (perhaps in the form of a short webinar) would be much more useful when introducing the resources to their staff.

6. *Would you find it beneficial if our Clearinghouse had a product review area where users (such as yourselves) could rate and discuss commercial products separate from our free products?*

Complete responses to this prompt:

No, this seems odd that you might promote for-profit companies;

I'd rather rate your resources;

I don't want to see something and get excited about it then see that it costs money to purchase. The expectation is that if it's on the STAR_Net site then it must be free.

The resounding answer to this was no. The *STAR_Net* brand is valued because we're free. They don't want us promoting other things that will require money (unless it's clearly a promotional post on the blog)

7. *What do you look for in a hands-on activity? Does subject matter? How do you search for them? What keywords do you currently use?*

Complete responses to this prompt:

I don't care about the subject, I just want it to be fun;

I care more about the "big" subject area (like Astronomy) more than specifics;

We look for keywords like "messy", "fun", and "STEM" more than specific subject areas;

I look for words like NASA-doesn't matter the topic NASA is a draw;

We look for things that are vetted for summer reading and use them year-round;

I want to search by things I have on hand - we sometimes get donations and I don't know what to do with them;

I want to see that others have used it;

I want to have a video so I can see what to actually do rather than just cruddy black and white pictures;

As a children's librarian, I'd like to see STEM activities tied to common storytime books;

I'd like to be able to search by how easy an activity is to do - sometimes I only have time to read a page of instructions;

I don't need the extra info.

The most common response for this prompt was that unless they're looking for a very specific thing, the content area isn't the most important search criteria. They want fun activities that get patrons moving and thinking. It was also universally agreed upon that we should tie STEM activities to common children's books. Everyone also agreed that they'd like to search by how "easy" the activity is. They appreciate the in-depth activities, but also want some "one-pagers".

Responses that didn't correspond to planned prompts (by group # for clarity):

Group 1:
- Some of the librarians find material on feedly and mashable; they find that these are less "artsy" and tend to come from better sources.
- When labeling programs, they use grade levels until they are older, then use "tween, teen, adult"
- This group discussed activities needing a "hook". What is it that makes it accessible both to librarians and patrons? Answers were: remember librarians are storytellers, librarians are educators (compared themselves to 3rd grade teachers; they aren't scientists, but they're still educating kids on science); librarians like an element of theater to activities; need to tie activities to storytime books.

Group 2:
- Encouraged us to highlight new activities on social media and our newsletter (referred to the "featured activity" section of the STAR_Net newsletter as something a few of them had used)
- Also referred to themselves as educators (had a lengthy discussion about David Lanke; 3 members of this group were at our conference last summer)
- Discussed the need for other librarians to be ambassadors for these products. It's fine for SSI/Cornerstones to do training and promote these resources, but they really want to see librarians helping with the effort.

Group 3:

- Discussed how important it is to always remind librarians that it's ok not to know the answer. They don't have to be able to explain the details of hard concepts to introduce them to patrons. (Partnerships being important was also discussed here)
- This group spent much more time than the other groups talking about the need for training at state and regional conferences. 5 participants reported that their state (or regional for one participant) annual conferences did not have a single STEM related program. The participant from Colorado was the only one who had attended a STEM program at a state level conference (SSI programs as well as Maker programs)
- The above conversation led to a discussion about how Maker Spaces are being promoted so heavily, even to libraries who aren't doing STEM programming, and that it turns libraries off from doing STEM. They discussed kits as a good alternative to the financial and training constraints imposed by professional maker spaces.

Group 4:

- This group focused on two items not discussed in the other groups. The first was ways to use "gateway" programs to lead the STEM-reticent into doing STEM programming. The idea is that if we tag these things correctly (and use the right meta-data) that if someone searches for a craft-based program, or something like "cooking", they'll find one of our activities that has a STEM lean to it, and be willing to try new things after they get a taste. This implies that we're also targeting an audience that has never heard of us, and will stumble upon us through google, so we need to make sure things are clear to them.
- The other item this group spent a good deal of time on professional development for library staff. They discussed the need for a "connectory" part of the Clearinghouse, where library staff could find STEM professionals to partner with. They also spent some time discussing the idea of micro-credentialing, and how badges or certificates from *STAR_Net* could be used as staff pitches STEM programs, transitions to new positions, or just shows that they're taking the initiative to continue their training. I asked them if they thought *STAR_Net* as an entity was "good enough" to provide the credentials, and they all agreed that the name recognition was there for the people who they would want to share the accomplishments with. One librarian did point out that her state has its own continuing education requirements, and she'd love to see if the project could tie into that so she could do something she actually cared about for her credits.

Takeaways:

Overall, it was very clear that there is a need for a *STEM Resource Clearinghouse*, and that the project's tentative plans align well with the needs of this community. Everyone agreed that further testing and revision would be essential to make sure this is a successful program.