

NFB STEM2U Regional Program – Baltimore Evaluation

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Introduction

As part of a grant from the National Science Foundation, the National Federation of the Blind (NFB) is conducting regional STEM workshops, entitled NFB STEM2U, for blind youth [youth], grades 3 – 6. During this first regional workshop in Baltimore, the NFB operated three different programs simultaneously: one program for youth, a second program for their parents/caregivers, and a third program for a group of teachers who work with visually impaired students. A fourth program, for Port Discovery museum staff, was conducted earlier to prepare the museum staff to assist with the youth program.

The youth program involved small groups of youth working with blind teen mentors to complete STEM-related activities both onsite at the NFB headquarters and at Port Discovery children's museum. Both the parent/caregiver and teacher programs focused on connecting parents and teachers to the NFB network and the resources it offers. Additionally, the parent/caregiver program shared ideas on how parents/caregivers could advocate for their child's rights in the school setting, while the teacher program focused on alternative techniques they could use to help students succeed in STEM learning. The museum staff program increased museum staff members' awareness of issues faced by blind visitors to the museum, and provided strategies to assist blind museum visitors explore STEM concepts.

The evaluation questions for this program were:

1. What happens in the regional programs for each of the audiences?
2. What are perceptions of each audience in terms of appropriateness, value, and intentions emerging from the regional program?
3. In what ways does each audience see the program affecting their work (adult audiences) or their potential educational and career paths (youth)?
4. How does this experience affect the individual and their understanding of blind youth and STEM?

The Lifelong Learning Group was contracted to conduct an evaluation for the grant, focusing on the affective outcomes of the project through youth and adult perceptions of the efficacy and value of the training and experience from their various perspectives.

Methods

Data for this program evaluation were collected from five different audiences using three methods. Data for the youth program, which involved activities both onsite at the NFB headquarters and at Port Discovery children's museum, were collected from the youth, their parents/caregivers, and the teen mentors. Data for the parent/caregiver, teacher, and museum programs were collected from those specific audiences.

During the course of the regional programs, the evaluation team observed the parent, teacher, and youth programs in order to note the flow and intersections of the sessions and how different components serve the desired outcomes from a design perspective. During each program, evaluators did pulse interviews, asking participants questions in order to track connection to the program.

At the conclusion of the program, the younger participants were invited to respond to questions about the program using an oral questioning route. The teen and adult participants were invited to respond to computer-based questionnaires tied to each of the programs (teen mentors, parent/caretaker, teacher, and science-museum staff) at the final program meeting and via e-mail from the NFB staff.

Data were analyzed collectively. During analysis, categories of participant responses about their knowledge were developed inductively through the coding process (i.e., they emerged from the data itself rather than being prescribed). Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS); descriptive statistics were used to present overall patterns in the data.

Findings

The NFB STEM2U regional workshop in Baltimore consisted of three separate programs and involved five different audiences. In this section, findings will be discussed by program and audience.

To better understand the youth program, data were collected from 16 of the 17 youth participants (94% participation rate), three of the seven teen mentors (43% return rate), and eleven of the 17 parents/caregivers (65% return rate).

Youth were divided into their four corresponding school grades, 3 – 6, with most of the students in either third or sixth grade. The majority of youth participants were good students (8 were either A or B students in science) who favor science or math class (10 of 16). None of the parents/caregivers, teachers, and museum staff consider themselves blind. No additional demographic data were obtained for the parents.

Of the twelve teachers that participated in the teacher training, seven completed the questionnaire, for a 58% return rate. The teachers attending the training were teachers of the blind and visually impaired, they taught or supported the lead teacher in all grades (k-12) and subjects, including science, math, and language arts.

Data were also collected from eleven museum staff who attended a training presented by NFB staff and three museum staff who did not attend the training but assisted with the program the day of the museum visit. The majority of museum staff considered themselves to be museum educators or visitor services specialists, with varying degrees of tenure in the informal science/museum field.

Youth Program

Youth were satisfied with the program. They liked the meals, STEM activities, and museum visit. A complete breakdown of their ratings can be found in Appendix B. The majority would do the program again (11 of 16) and would tell a friend they really liked the NFB STEM2U program (11 of 16). These youth shared they enjoyed several aspects of the program, including:

- Making the racer
- Working with the mentors
- Spending time at the museum
- Helping friends; talking to the other kids
- Being independent
- Going out to dinner with the other parents/students
- Learning

Students believed they improved their skills or content knowledge in the following areas:

- Independence
- STEM (solving engineering problems, green engineering, using recyclable materials to create something, wind power)
- Teamwork
- Blindness skills, especially cane skills
- Moving through the rope bridge exhibit at Port Discovery
- Fitting in

Youth believed these skills would help them in school, when they do hands-on activities with groups of children in science class. One child shared, “[I have a] better perspective on science processes. Science classes at school are visual. Now because I understand the processes my school science will make more sense.” Additionally, these activities helped the youth accept that it’s ok if they don’t get something right on the first try, as long as they try again.

During the program, youth learned about electricity and steam powered engines; one youth shared he learned about computer technology talking to someone at Friday night dinner. Youth believe this STEM content will help them with their schoolwork.

Blindness and life skills were also something youth learned at the workshop; several youth shared they learned about good cane technique, “Canes can be used in different ways, surface doesn’t always have to be flat,” and that “Canes can tell you what’s in front of you.” Youth also shared they thought their experience as part of a team, experimenting and making changes until something works, would help them throughout life, as well as school.

During the program, parents were queried regarding their expectations for the program for their ward. Two dominant themes were consistent: science content and “blending in” with their peers. An adult shared, “he loves STEM. He’ll thrive in this environment” and another shared her child “loves technologies and math activities he could participate in and learn.” For many of these parents/caregivers, a strong motivation in bringing their child was social. Some mentioned opportunities to develop traits such as increased self-confidence through having “fun with his typically developing peers” and more specifically, “doing things with other children with the same disability” and “being another kid in the room-not the blind kid. It’s an equalizer.” These comments support the post-program questionnaire findings.

Following the program, parents/caregivers were asked to rate several elements of the NFB STEM2U program in regards to their child’s skill development; mean ratings for each element were above average on a 5 point scale. Parents were most likely to believe the program helped their children develop skills to be successful in society and least likely to develop blindness skills (braille, cane travel, self-advocacy). See Table 1.

Table 1 Parent’s ratings of program skill elements, on a 5 point scale
1(Strongly Disagree) to 5 (Strongly Agree)

	Mean
Skills to be successful in society	4.2
Science skills	4.09
Social skills	4
Blindness skills	3.91

N=11

Parents/caregivers believed their children found the opportunity to have fun with other blind children while learning science content essential to the success of the program. Table 2 includes mean scores for parent’s/caregiver’s beliefs of what their child felt were the most important elements of the program. Parents/caregivers valued the youth program for encouraging their child’s independence. One parent/caregiver shared his/her child was “immersed in a setting that was encouraging, supportive, safe, and fun.” The program “challenged his comfort zone while allowing him to be well taken care of. . . the perfect balance.” Parents indicated that interacting with independent teen mentors and listening to successful blind scientists was valuable. During the program, one caretaker acknowledged change in the child noting the child expressed a desire and intention to speak in their next IEP meeting, which had not happened before. One parent shared, “Interacting with successful blind adults who could share how they learned to be independent and how they overcame barriers to become scientists” was valuable. Another parent noted that her child came away saying “that he wants to be more independent at home. That spoke volumes to me and I’m grateful that we both had the opportunity to participate.”

Youth interviewed shared similar responses. They believed the NFB STEM2U program helped them understand it was OK to be blind and how to improve their cane skills. They felt they increased their independence by participating in this program. Additionally, they felt it was important that they learned stuff by trial and error and spend time at museums. One youth shared s/he realized if you can’t see, you learn to take better advantage of the information that you get from other senses.

Table 2. Parent’s belief of what children found important, on a 5 point scale
1 (Not At All Important) to 5 (Extremely Important)

	Mean
Have fun	4.82
Spend time with other blind children	4.36
Learn science content	4.27
Spend time with teen mentors	4.18
Visit a Science Museum	4.09
National Federation of the Blind Reputation	3.45

N=11

If they were going to change anything, they would try to make it easier to move through the NFB building and Port Discovery museum. They found this confusing. They would also like an easier way to find tables and suggested placing numbers (in braille) on the tables.

Parents/Caregivers Program

Overall, parents were satisfied with the NFB STEM2U program. Of the 17 parents that attended the program for parents/caregivers, eleven completed the web-based questionnaire (65% return rate). Post-program mean scores were determined for several program elements, including staff, schedule, and meals. These statements were typically rated a 4 or higher on a 5 point scale. Staff went above and beyond to accommodate parents, earning a perfect score of 5. Mean scores for each element can be found in Appendix B.

The satisfaction, however, does not necessarily match the expectations with the outcomes. In the on-site interviews, three program expectations emerged: 1) support/network; 2) science/teaching science resources; and 3) parenting of blind youth resources. Many of the parents/caretakers entered with the desire to learn how to better work with their child around STEM, including lessons they can do at home with the child. Several noted the “bonding is good” while one person commented on very personal changes: “I’m finding I didn’t deal well with the grieving process [of my child’s loss of vision]” and “This is helping me be less over-protective.” ,

Parents were least satisfied with the program content, which might be due to misunderstanding of topics to be covered. A parent who reviewed the teacher handouts shared, *“Because my school system did not send a teacher, because I have already had to give my local school lots of information about what’s available, and because as [my child] advances in science I expect that trend to continue - the information about making images accessible, tools available, video description and 3D printing in the classroom would have been extremely valuable. I appreciate the links to that information, but first hand presentations would have been outstanding.”* Another parent shared, *“More cooperative programming where parents and children learn together would have been useful, as well as more in-depth sessions on how to evaluate STEM classes at school and supplement at home. Perhaps a science/math teacher who has a lot of experience with VI students could add to the program.”* One parent summed up his/her thoughts on the program, *“I attended [the] program to learn about how to adapt science learning to fit my child’s needs, but the vast majority of the parent programming was directed toward general blindness info/advocacy. Other programs could fit these needs. STEM2U should focus on teaching parents how to incorporate STEM into their child’s life.”*

Parents were asked to rate their level of agreement with statements measuring what they learned on a scale of 1 (strongly disagree) to 5 (strongly agree). These mean ratings indicate that parents learned to connect with the NFB, their child’s rights, and how to advocate for their child within the school system. They were less likely to learn alternative techniques their child could use to succeed in STEM learning. These findings reflect the on-site interviews in which parents noted the desire to receive/learn tools and resources to assist their child in learning STEM and to better parent blind youth.

Table 3. Parents learning in NFB STEM2U parent program
1 (Strongly Disagree) to 5 (Strongly Agree)

	Mean
How to connect with the NFB network to acquire information for myself and my child (ren).	4.64
Their rights and the rights of my child in the school setting	4.27
How to advocate for my child if their rights are violated in the school setting	4.18
Alternative techniques their child could use to succeed in STEM learning	3.64

N=11

Parents valued the NFB STEM2U program for providing opportunities to network with parents of other blind children. They felt the program was important for several reasons, including providing their child with fun opportunities to learn science content with other blind children, and opportunities to interact with blind teen mentors. Although networking opportunities were rated low when parents were asked to rate several elements on importance, when these same parents responded to an open-ended question to share what they valued most, half of the parents identified networking as being the most personally valuable element of the program, one parent shared, “Getting to know other people who are in similar situations.” Table 4 includes mean scores for how parents rated the importance of various elements of their program.

Table 4. Parent’s rating of the importance of NFB STEM2U workshop elements
1 (Not At All Important) to 5 (Extremely Important)

	Mean
Child learn science content	4.82
Child had fun	4.64
Child spent time with other blind children	4.64
Child develop independence	4.55
Child spent time with teen mentors	4.55
National Federation of the Blind Reputation	4.45
Opportunity to network with other blind parents	4.09

N=11

There were some comments offered to the evaluators during the on-site interviews with the parents that they were learning and valued the program, but it was not as focused on the skills, ideas, and practice for helping their child to be independent. Further, the evaluators noted that

the presentations were very heavy on the formal education system with little or no integration into the informal learning environment, such as how to use science centers, zoos, parks, museums, etc. with their child.

Teacher Program

Of the 12 teachers attending the program, seven completed the web-based questionnaire. Overall, teachers were satisfied with all elements of the NFB STEM2U program. Post-program mean scores were determined for several program elements, including staff, schedule, and meals. These statements were typically rated a 4 or higher on a 5 point scale. Mean scores for each element can be found in Appendix B.

Teachers were asked to reflect on how this program might change their teaching methods. All areas measured were impactful, with teachers most likely to change their use of accessible lab equipment and hands-on science lessons. See Table 5.

Teachers rated the program highly effective in helping them understand how to connect with the National Federation of the Blind network for additional professional development, developing an understanding of the characteristics of the successful blind person, and learning alternative teaching techniques to help their students succeed in STEM learning.

Table 5. Program impact on teacher’s teaching methods
1 (No impact) to 5 (Completely Changed)

	Mean
Expand your knowledge of accessible lab equipment	4.29
Use of accessible lab equipment	4.00
Use of hands-on science lessons	4.00
Ability to describe STEM content	3.86
Use of manipulatives to reinforce science content	3.71
Monitor young student’s behavior in science labs	3.43

N=7

All participants believed the workshop would change their teaching, including showcasing tools to support students in STEM which ultimately will “make my students more independent during STEM activities.” One shared, “STEM2U reinforced that my students who have the interest and intellectual ability can tackle anything they want to in STEM, their only limitation is my own creativity and willingness to problem solve. I am bolstered in my efforts to help my students succeed.” In terms of outcomes, one teacher shared, “I will work more with teaching alternate access to the major computer platforms. I will be a better describer of graphics and pictures. I will work on describing videos.” One teacher commented, “I really see the need and importance of introducing my students to successful blind adults in the field of science, engineering, math, or technology. I also hope to use NFB as a teaching resource as future needs arise for my students.”

Although teachers agreed that they would have higher expectations of their blind students after the workshop (mean score 4.0), they indicated they already had high expectations of their students (mean score 4.29) prior to the workshop.

Teachers believed the most important elements of the teacher program were networking with other teachers and learning hands-on activities to do with students. One teacher shared she “appreciated the collaboration with other teachers in the field, who like me, often work in isolation.” Another appreciated “getting to do hands-on activities that could be easily replicated when working with my students.” The program also provided a “safe place to reveal inadequacies that exist for me as a teacher. The learning opportunities that came out of that were most helpful.”

If teachers could change anything, they would like more opportunities to observe NFB teacher’s teaching science content, visit the museum to observe how to engage blind youth in an informal learning environment, and interact with parents and students,. One teacher shared, “I really wish we were able to interact with the students or mentor students in the program. I believe we, as educators, could learn a lot from them as we ventured into new and often unstable territory with teaching STEM subjects.”

Museum Staff Training

Museum staff believe their training increased awareness (8 of 11 staff) of the issues faced by blind visitors to the museum and changed their ability to properly offer assistance to a blind visitor(mean score of 4.18). Staff shared, “Watching the movies. . . seeing people blind being interviewed and watching them maneuver through their day really helped me understand them. They were less mysterious and more like me.” Table 6 illustrates the impact the museum program had on staff.

Staff shared several ways their work at the museum might change due to the training, including:

- “I really learned about how to help someone who is blind, such as not placing your hand on theirs but rather let them put their hand on top of yours.”
- “It has made me focus on specific details and concepts about our museum so that I can better describe it to people instead of just pointing at something and not describing it.”
- “I feel like I have inside knowledge on how blind people feel and what they experience. I understand I don't have all the answers but I feel more like a friend and less like a stranger. I'm sure that alone will help me interact with more sensitivity, warmth.”

Table 6. Program impact on museum staff’s abilities

1 (No impact) to 5 (Completely Changed)

	Mean
Changed your ability to properly offer assistance to a blind visitor	4.18
Changed your ability to determine if assistance is needed by a blind visitor	4.00
Altered your confidence level in working with blind visitors in your museum	3.90
Expanded your knowledge of accessibility and universal design and how it pertains to museums	3.90
Changed your comfort level with blind visitors in your museum	3.60
Altered your everyday museum program and exhibit experiences	3.20
Changed your ability to describe STEM content to blind visitors	3.20
Changed your ability to describe STEM content to all visitors	3.00

Museum staff cited the following examples of tools, resources, services and/or environmental features that currently exist at the museum that facilitate full participation by blind visitors:

- Braille signs in the Nano exhibit and restrooms
- Audio description in the Nano exhibit
- Interactive aspects, which encourage teamwork, exist in several of the exhibit areas including Kidworks and the Royal Farm Store
- “The different floor textures help [the blind] navigate through the museum's different exhibits (carpets for general area, tiled floor for eating areas, etc.)”

Additionally, museum staff believed the museum is considering additional braille signage, new programs which are not as reliant on visual cues, and adding audio to exhibits.

Conclusions and Recommendations

Overall, participants were satisfied with the program. Youth liked the STEM activities, museum visit, and the meals. Parents/caregivers and teachers believe the staff went above and beyond to accommodate their needs.

Youth valued their program for providing opportunities to be independent and be with peers. They developed their blindness skills (especially cane skills), science process skills, and team building skills. Youth believed these skills would help them both in and out of school. Parents/caregivers believe the youth program helped their child develop science skills and the skills necessary to be successful in society. Youth intend to use the team building and science process skills they learned in their workshop in their science classes. They also believe that the life and blindness skills they learned/reviewed during the workshop would be useful throughout life.

Parents/caregivers and teachers valued the opportunity their respective programs provided for networking with others in similar situations. Additionally, parents learned to connect with the National Federation of the Blind, their child’s rights, and how to advocate for their child within the school system.

Teachers expanded their abilities to use accessible lab equipment and hands-on STEM lessons with their students. Teachers intend to connect with the NFB network for additional professional development and expand their use of accessible lab equipment and hands-on STEM activities with their students.

Museum staff valued their training for increasing their awareness to the issues faced by blind visitors. Museum staff value all visitors and this training provided them additional skills to assist blind visitors. During the training, museum staff increased their skills to effectively describe science content and assist blind visitors throughout the museum. Museum staff feel more confident in helping blind visitors and intend to add additional braille signage and new programs which are not as reliant on visual cues.

Recommendations

For future workshops, consider revising the parent/caregiver program. Parents desire access to STEM content in order to better advocate for their child as they advance in the sciences. Parents would like to better understand best practices in STEM classes for the blind, how to evaluate their

child's STEM classes, and supplemental activities they can do at home to assist their child with STEM. Further, this program does include a focus on informal STEM learning, and the parent/caregiver workshop should provide participants with tools for engaging more deeply with their child in these non-school, STEM learning contexts.

Consider providing teachers opportunities to observe NFB teachers and museum staff teaching science content to the children. These teachers rarely, if ever, have an opportunity to observe best practices in STEM for blind youth. Following the observation, consider providing opportunities for structured reflection opportunities that includes the teacher participants with those they observed, the NFB teachers and museum staff. These structured reflections could provide learning opportunities for all involved.

Appendix A: Instruments

NFB STEM2U Student Post-Evaluation Questions

I'm going to read you a series of questions and responses. First I'll read the question, then I'll read all the answers, so you know what choices you have. Then I'm going to read the answer choices one at a time and ask you to stand up (by your chair) when I read the answer you agree with. Does that make sense? When you stand up to answer the question, I need to count, so stay standing until I tell you to sit down. Do you have any questions about what we are going to do?

Demographics

1. OK, the first question is—What grade are you in? Your answer choices are First, Second, Third, Fourth, Fifth, Sixth, Seventh, and Eighth. Is there anyone who isn't sure what grade you are in?

Stand up if you are in first grade. Second. Third. Fourth. Fifth. Sixth. Seventh. Eighth.

2. That went well, the second question is What is your favorite subject? I'm only giving you four choices, so you need to pick your favorite from one of these four—English, Math, Science and Social Studies. Think about it for a moment.

OK, stand up if your favorite subject of the four is English. Math. Science. Social Studies. Now I need you to sit in your seat. The next set of questions may have longer answers and each of you may have a different answer. So after I ask the question, if you'd like to answer it, please say your name and I'll call on you. Does that make sense?

- **Skills**

3. What skills (things you can do) are you better at because of activities you did here at the NFB STEM2U program?

- **Value/Intention**

4. How will what you learned here help you in your science or math class?
5. How will what you learned here help you outside of school, in your everyday life?

- **Importance**

6. What was most important about the time you spent at the NFB STEM2U program? (This can be open ended or like the multiple choice questions above based on children's experiences at the NFB STEM2U program; i.e., time at the museum, building the car?)

- **Satisfaction**

7. What was the best part of the NFB STEM2U program? Why?
8. What was the worst part of the NFB STEM2U program? Why?

Now we are going to move again. Like I did when we started, I'll read the question, then I'll read all the answers, so you know what choices you have. Then I'm going to read the answer choices one at a time and ask you to stand up (by your chair) when I read the answer you agree with. I hope you are you still with me, we'll be finished soon. These questions

9. Did you like what you ate? Your answer choices are
 - a. I really didn't like it and I would never eat it again
 - b. I didn't like it but I would eat it if there was nothing else
 - c. It was OK

- d. I liked it and would eat it again
- e. I really liked it and I want to eat it again soon

Stand up if you really didn't like it. Didn't like it. It was OK. You liked it. You really liked it.

10. Did you like where you slept?

- a. I really didn't like it, I didn't sleep well
- b. I didn't like it, but I slept
- c. It was OK
- d. I liked it and I slept well
- e. I really liked it and I want to come back and sleep here again

Stand up if you really didn't like it. Didn't like it. It was OK. You liked it. You really liked it.

11. How did you feel about the STEM activities (anything to do with designing your recycled racer)?

- a. I really didn't like the activities, I never want to do them again
- b. I didn't like it
- c. It was OK
- d. I liked it
- e. I really liked it and I want to do more STEM activities

Stand up if you really didn't like it. Didn't like it. It was OK. You liked it. You really liked it.

12. How did you feel about your time exploring the museum?

- a. I really didn't like it, I never want to do it again
- b. I didn't like it
- c. It was OK
- d. I liked it
- e. I really liked it and I want to go back to the museum tomorrow

Stand up if you really didn't like it. Didn't like it. It was OK. You liked it. You really liked it.

13. Would you tell a good friend who is blind and likes science and math to sign up for this program?

- a. I really didn't like it, so I wouldn't tell a friend to sign up for it
- b. I didn't like it
- c. It was OK
- d. I liked it
- e. I really liked it and I think others will like it.

Stand up if you really didn't like it. Didn't like it. It was OK. You liked it. You really liked it.

14. Would you do it again?

- a. I really didn't like it, I never want to do it again
- b. I didn't like it, but I might do it again.
- c. It was OK
- d. I liked it, but I don't want to do it again
- e. I really liked it and I don't want to leave

Stand up if you really didn't like it. Didn't like it. It was OK. You liked it. You really liked it.

15. And for the last question, let's do this a little differently. This time, instead of standing, just raise your hand when you hear the answer you most agree with. And remember, like with all the other questions, if you feel uncomfortable answering, you can choose not to. Now I'd like to know the kind of grades you usually get in science? Once again, I need you to raise your hand to help me understand your answer. Your answer choices here are A, B, C, D. Is there anyone who doesn't get grades? Or gets grades by numbers instead of letters?

Raise your hand if you usually get an A in Science. B. C. D.

Thank you very much!

NFB STEM2U Parent Post-Program Evaluation

To help the organizers of the NFB STEM2U program better understand your experience, please take 10 minutes to answer the following questions.

The following set of questions deal with your satisfaction of various aspects of the NFB STEM2U program

How satisfied were you with the application process for the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied.

- 1. I was very dissatisfied with the application process for the NFB STEM2U program
- 2. I was dissatisfied with the application process for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the application process for the NFB STEM2U program
- 4. I was satisfied with the application process for the NFB STEM2U program
- 5. I was very satisfied with the application process for the NFB STEM2U program

What did you think about the pre-visit information for the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied.

- 1. I was very dissatisfied with the pre-visit information for the NFB STEM2U program
- 2. I was dissatisfied with the pre-visit information for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the pre-visit information for the NFB STEM2U program
- 4. I was satisfied with the pre-visit information for the NFB STEM2U program
- 5. I was very satisfied with the pre-visit information for the NFB STEM2U program

What did you think about the meals for the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied.

- 1. I was very dissatisfied with the meals for the NFB STEM2U program
- 2. I was dissatisfied with the meals for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the meals for the NFB STEM2U program
- 4. I was satisfied with the meals for the NFB STEM2U program
- 5. I was very satisfied with the meals for the NFB STEM2U program

What did you think about the sleeping arrangements for the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied

- 1. I was very dissatisfied with the sleeping arrangements for the NFB STEM2U program
- 2. I was dissatisfied with the sleeping arrangements for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the sleeping arrangements for the NFB STEM2U program
- 4. I was satisfied with the sleeping arrangements for the NFB STEM2U program
- 5. I was very satisfied with the sleeping arrangements for the NFB STEM2U program

What did you think about the schedule for the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied.

- 1. I was very dissatisfied with the schedule for the NFB STEM2U program
- 2. I was dissatisfied with the schedule for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the schedule for the NFB STEM2U program
- 4. I was satisfied with the schedule for the NFB STEM2U program
- 5. I was very satisfied with the schedule for the NFB STEM2U program

What did you think about the social time activities during the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied.

- 1. I was very dissatisfied with the social time activities for the NFB STEM2U program
- 2. I was dissatisfied with the social time activities for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the social time activities for the NFB STEM2U program
- 4. I was satisfied with the social time activities for the NFB STEM2U program
- 5. I was very satisfied with the social time activities for the NFB STEM2U program

What did you think of the staff for the NFB STEM2U program? Enter a 1 if you were Very Dissatisfied, 2 for Dissatisfied, 3 for Neither Dissatisfied or Satisfied, 4 for Satisfied, and 5 for Very Satisfied.

- 1. I was very dissatisfied with the staff for the NFB STEM2U program
- 2. I was dissatisfied with the staff for the NFB STEM2U program
- 3. I was neither dissatisfied or satisfied with the staff for the NFB STEM2U program
- 4. I was satisfied with the staff for the NFB STEM2U program
- 5. I was very satisfied with the staff for the NFB STEM2U program

In the next set of questions you will be asked to consider how important aspects of the NFB STEM2U program were to you.

How important is it to you that your child learn science content? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important for my child to learn science content
- 2. It is Unimportant for my child to learn science content
- 3. It is Neither Unimportant or Important for my child to learn science content
- 4. It is Important for my child to learn science content
- 5. It is Extremely Important for my child to learn science content

How important is it to you that your child experience independence by visiting a science museum? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not AT All Important that my child experience independence by visiting a science museum
- 2. It is Unimportant that my child experience independence by visiting a science museum
- 3. It is Neither Unimportant or Important that my child experience independence by visiting a science museum
- 4. It is Important that my child experience independence by visiting a science museum
- 5. It is Extremely Important that my child experience independence by visiting a science museum

How important Is it to you that your child experience fun activities as part of the program? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important..

- 1 It is Not At All Important for my child to experience fun activities as part of the program
- 2. It is Unimportant for my child to experience fun activities as part of the program
- 3. It is Neither Unimportant or Important for my child to experience fun activities as part of the program
- 4. It is Important for my child to experience fun activities as part of the program
- 5. It is Extremely Important for my child to experience fun activities as part of the program

How important is the NFB reputation to you when choosing programs for your child? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important..

- 1. The NFB reputation is Not At All Important when choosing a program for my child
- 2. The NFB reputation is Unimportant when choosing a program for my child
- 3. The NFB reputation is Neither Unimportant or Important when choosing a program for my child
- 4. The NFB reputation is Important when choosing a program for my child
- 5. The NFB reputation is Extremely Important when choosing a program for my child

How important is it to you that your child participates in programs with other blind youth? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important..

- 1. It is Not At All Important that my child participates in programs with other blind youth
- 2. It is Unimportant that my child participates in programs with other blind youth
- 3. It is Neither Unimportant or Important that my child participates in programs with other blind youth
- 4. It is Important for my child to participate in programs with other blind youth
- 5. It is Extremely Important for my child to participate in programs with other blind youth

How important is it to you that you participate in programs with parents of blind youth? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important..

- 1. It is Not At All Important for me to participate in programs with parents of blind youth
- 2. It is Unimportant for me to participate in programs with parents of blind youth
- 3. It is Neither Unimportant or Important for me to participate in programs with parents of blind youth
- 4. It is Important for me to participate in programs with parents of blind youth
- 5. It is Extremely Important for me to participate in programs with parents of blind youth

How important is it to you that your child participates in programs with blind teens as group leaders? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important for me that my child participates in programs that have blind teens as group leaders
- 2. It is Unimportant for me that my child participates in programs that have blind teens as group leaders
- 3. It is Neither Unimportant or Important for me that my child participates in programs that have blind teens as group leaders
- 4. It is Important for me that my child participates in programs that have blind teens as group leaders
- 5. It is Extremely Important for me that my child participates in programs that have blind teens as group leaders

In the next set of questions you will be asked to consider how important aspects of the NFB STEM2U program were for your child.

How important do you think it is to your child that s/he learn science content? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important to my child that s/he learn science content
- 2. It is Unimportant to my child that s/he learn science content
- 3. It is Neither Unimportant or Important to my child that s/he learn science content
- 4. It is Important to my child that s/he learn science content
- 5. It is Extremely Important to my child that s/he learn science content

How important do you think it is to your child that s/he visit a science museum? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important to my child that s/he visit a science museum
- 2. It is Unimportant to my child that s/he visit a science museum
- 3. It is Neither Unimportant or Important to my child that s/he visit a science museum
- 4. It is Important to my child that s/he visit a science museum
- 5. It is Extremely Important to my child that s/he visit a science museum

How important do you think it is to your child that fun activities were part of the program? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important to my child that fun activities were part of the program
- 2. It is Unimportant to my child that fun activities were part of the program
- 3. It is Neither Unimportant or Important to my child that fun activities were part of the program
- 4. It is Important to my child that fun activities were part of the program
- 5. It is Extremely Important to my child that fun activities were part of the program

How important do you think the NFB reputation is to your child? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. The NFB reputation is Not At All Important to my child
- 2. The NFB reputation is Unimportant to my child
- 3. The NFB reputation is Neither Unimportant or Important to my child
- 4. The NFB reputation is Important to my child
- 5. The NFB reputation is Extremely Important to my child

How important do you think it is to your child that s/he participate in programs with other blind youth? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important to my child that s/he participate in programs with other blind youth
- 2. It is Unimportant to my child that s/he participate in programs with other blind youth
- 3. It is Neither Unimportant or Important to my child that s/he participate in programs with other blind youth
- 4. It is Important to my child that s/he participate in programs with other blind youth
- 5. It is Extremely Important to my child that s/he participate in programs with other blind youth

How important do you think it is to your child that s/he participates in programs with blind teens as group leaders? Enter 1 for Not At All Important, 2 for Unimportant 3 for Neither Unimportant or Important, 4 for Important, 5 for Extremely Important.

- 1. It is Not At All Important to my child that s/he participate in programs that have blind teens as group leaders
- 2. It is Unimportant to my child that s/he participate in programs that have blind teens as group leaders
- 3. It is Neither Unimportant or Important to my child that s/he participate in programs that have blind teens as group leaders
- 4. It is Important to my child that s/he participate in programs that have blind teens as group leaders
- 5. It is Extremely Important to my child that s/he participate in programs that have blind teens as group leaders

At the NFB STEM2U program, my child developed blindness skills (braille, cane travel, self-advocacy). Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: My child developed blindness skills at the NFB STEM2U program
- 2. I disagree with the statement: My child developed blindness skills at the NFB STEM2U program
- 3. I neither disagree or agree with the statement: My child developed blindness skills at the NFB STEM2U program
- 4. I agree with the statement: My child developed blindness skills at the NFB STEM2U program
- 5. I strongly agree with the statement: My child developed blindness skills at the NFB STEM2U program

At the NFB STEM2U program, my child developed science skills. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: My child developed science skills at the NFB STEM2U program
- 2. I disagree with the statement: My child developed science skills at the NFB STEM2U program
- 3. I neither disagree or agree with the statement: My child developed science skills at the NFB STEM2U program
- 4. I agree with the statement: My child developed science skills at the NFB STEM2U program
- 5. I strongly agree with the statement: My child developed science skills at the NFB STEM2U program

At the NFB STEM2U program, my child developed social skills. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: My child developed social skills at the NFB STEM2U program
- 2. I disagree with the statement: My child developed social skills at the NFB STEM2U program
- 3. I neither disagree or agree with the statement: My child developed social skills at the NFB STEM2U program
- 4. I agree with the statement: My child developed social skills at the NFB STEM2U program
- 5. I strongly agree with the statement: My child developed social skills at the NFB STEM2U program

At the NFB STEM2U program, my child developed skills to be successful in society. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, my child developed skills to be successful in society.
- 2. I disagree with the statement: At the NFB STEM2U program, my child developed skills to be successful in society
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, my child developed skills to be successful in society
- 4. I agree with the statement: At the NFB STEM2U program, my child developed skills to be successful in society
- 5. I strongly agree with the statement: At the NFB STEM2U program, my child developed skills to be successful in society

At the NFB STEM2U program, I learned my rights and the rights of my child in the school setting. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, I learned my rights and the rights of my child in the school setting.
- 2. I disagree with the statement: At the NFB STEM2U program, I learned my rights and the rights of my child in the school setting.
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, I learned my rights and the rights of my child in the school setting.
- 4. I agree with the statement: At the NFB STEM2U program, I learned my rights and the rights of my child in the school setting.
- 5. I strongly agree with the statement: At the NFB STEM2U program, I learned my rights and the rights of my child in the school setting.

At the NFB STEM2U program, I learned how to advocate for my child if their rights are violated in the school setting. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, I learned how to advocate for my child if their rights are violated in the school setting.
- 2. I disagree with the statement: At the NFB STEM2U program, I learned how to advocate for my child if their rights are violated in the school setting.
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, I learned how to advocate for my child if their rights are violated in the school setting.
- 4. I agree with the statement: At the NFB STEM2U program, I learned how to advocate for my child if their rights are violated in the school setting.
- 5. I strongly agree with the statement: At the NFB STEM2U program, I learned how to advocate for my child if their rights are violated in the school setting.

At the NFB STEM2U program, I learned how to connect with the NFB network to acquire information for myself and my child (ren). Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network to acquire information for myself and my child (ren).
- 2. I disagree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network to acquire information for myself and my child (ren).
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network to acquire information for myself and my child (ren).
- 4. I agree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network to acquire information for myself and my child (ren).
- 5. I strongly agree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network to acquire information for myself and my child (ren).

At the NFB STEM2U program, I learned alternative techniques my child can use to succeed in STEM learning. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, I learned alternative techniques my child can use to succeed in STEM learning
- 2. I disagree with the statement: At the NFB STEM2U program, I learned alternative techniques my child can use to succeed in STEM learning
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, I learned alternative techniques my child can use to succeed in STEM learning
- 4. I agree with the statement: At the NFB STEM2U program, I learned alternative techniques my child can use to succeed in STEM learning
- 5. I strongly agree with the statement: At the NFB STEM2U program, I learned alternative techniques my child can use to succeed in STEM learning

What was the most valuable aspect of the NFB STEM2U program for you, as a parent?

What do you think was the most valuable aspect of the NFB STEM2U program for your child?

If there was one thing you would change about the NFB STEM2U program, what would that be?

Are you blind or low vision?

Yes

No

One last question, is there anything else you would like to share about your experience with the NFB STEM2U program?

Thank you so much for answering our questions. Have a great day!

NFB STEM2U Teacher Post-Program Evaluation

To help the organizers of the NFB STEM2U program better understand your experience, please take 10 minutes to answer the following questions.

The following set of questions deal with your satisfaction of various aspects of the NFB STEM2U program

Please rate your level of satisfaction with the Pre-Visit Information of the NFB STEM2U Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- I was very dissatisfied with the Pre-Visit Information of the NFB STEM2U Program.
- I was dissatisfied with the Pre-Visit Information of the NFB STEM2U Program.
- I was neither dissatisfied nor satisfied with the Pre-Visit Information of the NFB STEM2U Program.
- I was satisfied with the Pre-Visit Information of the NFB STEM2U Program.
- I was very satisfied with the Pre-Visit Information of the NFB STEM2U Program.

Please rate your level of satisfaction with the Sleeping Arrangements of the NFB STEM2U Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with the Sleeping Arrangements of the NFB STEM2U Program.
- 2. I was dissatisfied with the Sleeping Arrangements of the NFB STEM2U Program.
- 3. I was neither dissatisfied nor satisfied with the Sleeping Arrangements of the NFB STEM2U Program.
- 4. I was satisfied with the Sleeping Arrangements of the NFB STEM2U Program.
- 5. I was extremely satisfied with the Sleeping Arrangements of the NFB STEM2U Program.

Please rate your level of satisfaction with NFB STEM2U Program Schedule of the NFB STEM2U Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with NFB STEM2U Program Schedule of the NFB STEM2U Program.
- 2. I was dissatisfied with NFB STEM2U Program Schedule of the NFB STEM2U Program.
- 3. I was neither dissatisfied nor satisfied with NFB STEM2U Program Schedule of the NFB STEM2U Program.
- 4. I was satisfied with NFB STEM2U Program Schedule of the NFB STEM2U Program.
- 5. I was extremely satisfied with NFB STEM2U Program Schedule of the NFB STEM2U Program.

Please rate your level of satisfaction with the meals of the NFB STEM2U Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with the meals of the NFB STEM2U Program.
- 2. I was dissatisfied with the meals of the NFB STEM2U Program.
- 3. I was neither dissatisfied nor satisfied with the meals of the NFB STEM2U Program.
- 4. I was satisfied with the meals of the NFB STEM2U Program.
- 5. I was very satisfied with the meals of the NFB STEM2U Program.

Please rate your level of satisfaction with the Social Time activities provided at the NFB STEM2U Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with the Social Time of the NFB STEM2U Program.
- 2. I was dissatisfied with the Social Time of the NFB STEM2U Program.
- 3. I was neither dissatisfied nor satisfied with the Social Time of the NFB STEM2U Program.
- 4. I was satisfied with the Social Time of the NFB STEM2U Program.
- 5. I was very satisfied with the Social Time of the NFB STEM2U Program.

Please rate your level of satisfaction with Staff of the NFB STEM2U Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with Staff of the NFB STEM2U Program.
- 2. I was dissatisfied with Staff of the NFB STEM2U Program.
- 3. I was neither dissatisfied nor satisfied with Staff of the NFB STEM2U Program.
- 4. I was satisfied with Staff of the NFB STEM2U Program.
- 5. I was very satisfied with Staff of the NFB STEM2U Program.

What was the most important aspect of the NFB STEM2U program for you, as a teacher?

What do you believe was the most important aspect of the NFB STEM2U program for the students?

In the next set of questions, you will be asked to reflect on the NFB STEM2U programs impact on your teaching.

To what extent, if at all, will the NFB STEM2U Program change your ability to monitor young students' behavior in the Science Lab? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it will completely change the way you monitor your students' behavior.

- The NFB STEM2U Program had no impact on my ability to monitor young students' behavior in the Science Lab.
- The NFB STEM2U Program had little impact on my ability to monitor young students' behavior in the Science Lab.
- The NFB STEM2U Program had some impact on my ability to monitor young students' behavior in the Science Lab.
- The NFB STEM2U Program had a great deal of impact on my ability to monitor young students' behavior in the Science Lab.
- The NFB STEM2U Program will completely change the way I monitor young students' behavior in the Science Lab.

To what extent, if at all, will the NFB STEM2U Program change your use of accessible lab equipment to blind students? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it will completely change your use of accessible lab equipment with blind students.

- The NFB STEM2U Program had no impact of my use of accessible lab equipment with blind students
- The NFB STEM2U Program had little impact on my use of accessible lab equipment to blind students.
- The NFB STEM2U Program had some impact on my use of accessible lab equipment to blind students.
- The NFB STEM2U Program had a great deal of impact on my use of accessible lab equipment to blind students.
- The NFB STEM2U Program will completely change my use of accessible lab equipment to blind students.

To what extent, if at all, will the NFB STEM2U Program change your use of hands-on science lessons with blind students? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it will completely change the way you monitor your students' behavior.

- The NFB STEM2U Program had no impact on my use of hands-on science lessons with blind students.
- The NFB STEM2U Program had little impact on my use of hands-on science lessons with blind students.
- The NFB STEM2U Program had some impact on my use of hands-on science lessons with blind students.
- The NFB STEM2U Program had a great deal of impact on my use of hands-on science lessons with blind students.
- The NFB STEM2U Program will completely change the way I use hands-on science lessons with blind students.

To what extent, if at all, will the NFB STEM2U Program change your use of manipulatives to reinforce content with blind students? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it will completely change the way you monitor your students' behavior.

- The NFB STEM2U Program had no impact on my use of manipulatives to reinforce content with blind students.
- The NFB STEM2U Program had little impact on my use of manipulatives to reinforce content with blind students.
- The NFB STEM2U Program had some impact on my use of manipulatives to reinforce content with blind students.
- The NFB STEM2U Program had a great deal of impact on my use of manipulatives to reinforce content with blind students.
- The NFB STEM2U Program will completely change the way I use manipulatives to reinforce content with blind students.

To what extent, if at all, will the NFB STEM2U Program change your ability to describe STEM content to blind students? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it will completely change the way you monitor your students' behavior.

- The NFB STEM2U Program had no impact on my ability to describe STEM content to blind students.
- The NFB STEM2U Program had little impact on my ability to describe STEM content to blind students.
- The NFB STEM2U Program had some impact on my ability to describe STEM content to blind students.
- The NFB STEM2U Program had a great deal of impact on my ability to describe STEM content to blind students.
- The NFB STEM2U Program will completely change how I describe STEM content to blind students.

At the NFB STEM2U program, I learned alternative techniques I can use to help my students succeed in STEM learning. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, I learned alternative techniques I can use to help my students succeed in STEM learning
- 2. I disagree with the statement: At the NFB STEM2U program, I learned alternative techniques I can use to help my students succeed in STEM learning
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, I learned alternative techniques I can use to help my students succeed in STEM learning
- 4. I agree with the statement: At the NFB STEM2U program, I learned alternative techniques I can use to help my students succeed in STEM learning
- 5. I strongly agree with the statement: At the NFB STEM2U program, I learned alternative techniques I can use to help my students succeed in STEM learning

At the NFB STEM2U program, I developed an understanding of the characteristics of a successful blind person. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I Strongly Disagree with the statement: At the NFB STEM2U program, I developed an understanding of the characteristics of a successful blind person.
- 2. I Disagree with the statement: At the NFB STEM2U program, I developed an understanding of the characteristics of a successful blind person.
- 3. I Neither Disagree or Agree with the statement: At the NFB STEM2U program, I developed an understanding of the characteristics of a successful blind person.
- 4. I Agree with the statement: At the NFB STEM2U program, I developed an understanding of the characteristics of a successful blind person.
- 5. I Strongly Agree with the statement: At the NFB STEM2U program, I developed an understanding of the characteristics of a successful blind person.

At the NFB STEM2U program, I learned how to connect with the NFB network for additional professional development. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I strongly disagree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network for additional professional development.
- 2. I disagree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network for additional professional development.
- 3. I neither disagree or agree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network for additional professional development.
- 4. I agree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network for additional professional development.
- 5. I strongly agree with the statement: At the NFB STEM2U program, I learned how to connect with the NFB network for additional professional development.

After the NFB STEM2U program, I have high expectations for my blind students in STEM subjects. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I Strongly Disagree with the statement: After the NFB STEM2U program, I have higher expectations for my blind students in STEM subjects.
- 2. I Disagree with the statement: After the NFB STEM2U program, I have higher expectations for my blind students in STEM subjects.
- 3. I Neither Disagree or Agree with the statement: After the NFB STEM2U program, I have higher expectations for my blind students in STEM subjects.
- 4. I Agree with the statement: After the NFB STEM2U program, I have higher expectations for my blind students in STEM subjects.
- 5. I Strongly Agree with the statement: After the NFB STEM2U program, I have higher expectations for my blind students in STEM subjects.

Prior to the NFB STEM2U program, I had high expectations of my students during STEM classes. Enter a 1 if you Strongly Disagree, 2 if you Disagree, 3 if you Neither Disagree or Agree, 4 if you Agree, and 5 if you Strongly Agree.

- 1. I Strongly Disagree with the statement: Prior to the NFB STEM2U program, I had high expectations for my blind students in STEM subjects.
- 2. I Disagree with the statement: Prior to the NFB STEM2U program, I had high expectations for my blind students in STEM subjects.
- 3. I Neither Disagree or Agree with the statement: Prior to the NFB STEM2U program, I had high expectations for my blind students in STEM subjects.
- 4. I Agree with the statement: Prior to the NFB STEM2U program, I had high expectations for my blind students in STEM subjects.
- 5. I Strongly Agree with the statement: Prior to the NFB STEM2U program, I had high expectations for my blind students in STEM subjects.

Will anything you observed or learned during the NFB STEM2U program change the way you teach?

Finally, we'd like to find out a little bit about you and your teaching environment. Are you blind or visually impaired?

- Yes
- No

What subject(s) do you teach? (check all that apply)

- Science - general/integrated
- Life Sciences / Biology
- Physics
- Chemistry
- Earth Sciences / Astronomy
- Math
- Computer Science / Technology
- History
- Language Arts
- Other, please specify any other subjects _____

What grade levels do you teach? (check all that apply)

- Primary grades (K-3)
- Middle grades (4-8)
- High School grades (9-12)

Including this school year, how long have you been teaching?

- This is/was my first year
- 1-5 years
- 6-10 years
- 11-15 years
- More than 15 years

Is there anything else you would like to share about your experience with the NFB STEM2U program?

Thank you for answering our questions. Have a great day!

NFB STEM2U Museum Staff Post-Program Evaluation

To help the organizers of the NFB STEM2U program better understand your experience with the museum staff training, please take 10 minutes to answer the following questions.

The next two questions deal with your satisfaction of various aspects of the NFB STEM2U museum staff training program

Please rate your level of satisfaction with NFB STEM2U Museum Staff Training Program Schedule. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with the NFB STEM2U Program Schedule.
- 2. I was dissatisfied with the NFB STEM2U Program Schedule.
- 3. I was neither dissatisfied nor satisfied with the NFB STEM2U Program Schedule.
- 4. I was satisfied with the NFB STEM2U Program Schedule
- 5. I was extremely satisfied with the NFB STEM2U Program Schedule.

Please rate your level of satisfaction with Staff and Volunteers of the NFB STEM2U Museum Staff Training Program. Enter a 1 if you were Very Dissatisfied, 2 if you were Dissatisfied, 3 if you were Neither Dissatisfied or Satisfied, 4 if you were Satisfied, and a 5 for Very Satisfied.

- 1. I was very dissatisfied with Staff for the NFB STEM2U Program.
- 2. I was dissatisfied with Staff for the NFB STEM2U Program.
- 3. I was neither dissatisfied nor satisfied with Staff for the NFB STEM2U Program.
- 4. I was satisfied with Staff for the NFB STEM2U Program.
- 5. I was very satisfied with Staff for the NFB STEM2U Program.

What was the most important aspect of the NFB STEM2U Museum Staff Training program for you?

In the next set of questions, you will be asked to reflect on the NFB STEM2U programs impact on your work at the museum.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program changed your comfort level with blind visitors in your museum? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely changed your comfort level with blind visitors in your museum.

- The NFB STEM2U Program had no impact on my comfort level with blind visitors in my museum.
- The NFB STEM2U Program had little impact on my comfort level with blind visitors in my museum
- The NFB STEM2U Program had some impact on comfort level with blind visitors in my museum
- The NFB STEM2U Program had a great deal of impact on my comfort level with blind visitors in my museum
- The NFB STEM2U Program completely changed my comfort level with blind visitors in my museum

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program altered your confidence level in working with blind visitors in your museum? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely altered your confidence level in working with blind visitors in your museum.

- The NFB STEM2U Program had no impact on my confidence level in working with blind visitors in my museum.
- The NFB STEM2U Program had little impact on my confidence level in working with blind visitors in my museum.
- The NFB STEM2U Program had some impact on my confidence level in working with blind visitors in my museum.
- The NFB STEM2U Program had a great deal of impact on confidence level in working with blind visitors in my museum.
- The NFB STEM2U Program completely altered my confidence level in working with blind visitors in my museum.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program expanded your knowledge of accessibility and universal design and how it pertains to museums? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely expanded your knowledge of accessibility and universal design and how it pertains to museums.

- The NFB STEM2U Program had no impact of my knowledge of accessibility and universal design and how it pertains to museums.
- The NFB STEM2U Program had little impact on my knowledge of accessibility and universal design and how it pertains to museums.
- The NFB STEM2U Program had some impact on my knowledge of accessibility and universal design and how it pertains to museums.
- The NFB STEM2U Program had a great deal of impact on my knowledge of accessibility and universal design and how it pertains to museums.
- The NFB STEM2U Program completely changed my knowledge of accessibility and universal design and how it pertains to museums.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program will alter your everyday museum program and exhibit experiences? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it will completely change the way your everyday museum program experiences.

- The NFB STEM2U Program had no impact on our everyday museum program experience.
- The NFB STEM2U Program had little impact on our everyday museum program experience.
- The NFB STEM2U Program had some impact on our everyday museum program experience.
- The NFB STEM2U Program had a great deal of impact on our everyday museum program experience.
- The NFB STEM2U Program completely changed our everyday museum program experience.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program changed your ability to describe STEM content to blind visitors? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely changed your ability to describe STEM content to blind visitors.

- The NFB STEM2U Program had no impact on my ability to describe STEM content to blind visitors.
- The NFB STEM2U Program had little impact on my ability to describe STEM content to blind visitors.
- The NFB STEM2U Program had some impact on my ability to describe STEM content to blind visitors.
- The NFB STEM2U Program had a great deal of impact on my ability to describe STEM content to blind visitors.
- The NFB STEM2U Program completely changed how I describe STEM content to blind visitors.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program changed your ability to describe STEM content to all visitors? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely changed your ability to describe STEM content to all visitors.

- The NFB STEM2U Program had no impact on my ability to describe STEM content to all visitors.
- The NFB STEM2U Program had little impact on my ability to describe STEM content to all visitors.
- The NFB STEM2U Program had some impact on my ability to describe STEM content to all visitors.
- The NFB STEM2U Program had a great deal of impact on my ability to describe STEM content to all visitors.
- The NFB STEM2U Program completely changed how I describe STEM content to all visitors.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program changed your ability to determine if assistance is needed by a blind visitor? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely changed my ability to determine if assistance is needed by a blind visitor.

- The NFB STEM2U Program had no impact on my ability to determine if assistance is needed by a blind visitor.
- The NFB STEM2U Program had little impact on my ability to determine if assistance is needed by a blind visitor.
- The NFB STEM2U Program had some impact on my ability to determine if assistance is needed by a blind visitor.
- The NFB STEM2U Program had a great deal of impact on my ability to determine if assistance is needed by a blind visitor.
- The NFB STEM2U Program completely changed my ability to determine if assistance is needed by a blind visitor.

To what extent, if at all, do you believe the NFB STEM2U Museum Staff Training Program changed your ability to properly offer assistance to a blind visitor? Enter a 1 if it had no impact, 2 if it had little impact, 3 if it had some impact, 4 if it had a great deal of impact, and a 5 if it completely changed my ability to properly offer assistance to blind visitors.

- The NFB STEM2U Program had no impact on my ability to properly offer assistance to a blind visitor.
- The NFB STEM2U Program had little impact on my ability to properly offer assistance to a blind visitor.
- The NFB STEM2U Program had some impact on my ability to properly offer assistance to a blind visitor.
- The NFB STEM2U Program had a great deal of impact on my ability to properly offer assistance to a blind visitor.
- The NFB STEM2U Program completely changed my ability to properly offer assistance to a blind visitor.

Identify and explain 2 examples of tools, resources, services and/or environmental features that currently exist at your museum that can facilitate full participation by blind visitors.

Identify and explain at least one tool, resource, or service that you believe your museum is considering adding that can facilitate full participation by blind visitors.

Will anything you observed or learned during the NFB STEM2U Museum Staff Training Program change your work at your museum? If so, please share specific examples.

Finally, we'd like to find out a little bit about you and your museum environment. With which museum do you work?

- Port Discovery
- Museum of Science
- COSI

Are you blind or low vision?

- Yes
- No

How would you describe your role at your museum (check all that apply)

- Educator
- Exhibits Design/Development
- Marketing
- Finance
- Visitor Services

Including this year, how long have you worked in the informal learning/museum field?

- This is/was my first year
- 2-5 years
- 6-10 years
- 11-15 years
- More than 15 years

Is there anything else you would like to share about your experience with the NFB STEM2U program?

Thank you for answering our questions. Have a great day!

Appendix B: Participant Satisfaction Ratings

Mean satisfaction ratings on a 5 point scale
1 (Very Unsatisfied) to 5 (Very Satisfied)

	Youth N=16	Parents/ Caregivers N=11	Teachers N=7	Museum Staff
Meals	3.125	4.36	4.43	N/A
Sleeping Accommodations*	3.62	4.18	4.14	N/A
STEM Activities	4.31	N/A	N/A	N/A
Museum Visit	4.25	N/A	N/A	N/A
Staff	N/A	5.0	4.86	4.7
Application Process	N/A	4.55	N/A	N/A
Pre-Visit Materials	N/A	4.45	4	N/A
Social Opportunities	N/A	4.18	N/A	N/A
Program Schedule	N/A	4.09	4.29	4.5

*Three children did not stay in the building