

Hero Elementary Outreach Evaluation Report

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Background

Twin Cities Public Television’s (TPT) *Hero Elementary* is a PBS Kids television series and educational media effort focused on improving school readiness in science and literacy for children in grades K–2. *Hero Elementary* resources are designed for use in informal education settings (e.g., summer school, afterschool programs), particularly for students from economically disadvantaged households, Latinx communities, English Language Learners, and students with disabilities. *Hero Elementary* transmedia resources feature “playlists” that explore science themes aligned with the Next Generation Science Standards (NGSS) and include animated episodes, educational games, an interactive science notebook, hands-on activities, and eBooks. The *Hero Elementary* project is funded by the Ready to Learn Initiative, a grant program administered by the U.S. Department of Education to promote the development and distribution of educational media programming and multiplatform resources to promote school readiness for preschool and elementary age children, particularly in low-income communities.

Informal education programs adopting *Hero Elementary* take part in TPT’s *Hero Elementary* educator professional development (PD) programming. PD educator trainings are implemented by TPT-trained PD specialists (“trainers”) who travel to participant sites to provide PD to groups of informal educators and program managers. TPT has also developed an online *Hero Elementary* PD course for educators who do not have the opportunity to engage in a trainer-led onsite training. In addition to pre-implementation training, educators receive ongoing support during their implementation of *Hero Elementary* via webinars and technical support provided by TPT staff. When engaging in *Hero Elementary*, students access their individual online account to use digital and non-digital resources that support learning in the NGSS and the Science and Engineering Practices (SEPs). Students work individually, in groups, and with their classroom’s educators as they use playlist resources.

Informal education organizations serving the *Hero Elementary* target population applied for the opportunity to pilot the program at their sites. Thirteen informal education programs participated in *Hero Elementary* training during the spring and summer of 2019. Six informal education programs began implementing *Hero Elementary* during the summer of 2019, including organizations in Washington, D.C., Minnesota, Maryland, California, Alabama, and Florida. Table 1, below, shows the participating programs, the number of students who used *Hero Elementary* in each program, the number of students enrolled in the participating programs, the number of playlists completed by participants at each site, and the number of weeks each site used *Hero Elementary*.

Table 1. Informal education programs that received Hero Elementary Training and/or Implemented Hero Elementary at time of evaluation report.

Site	Onsite Training	Implemented Hero Elementary	Number of Students who used Hero Elementary	Number of Playlists Completed	Duration
Beacons San Francisco San Francisco, CA	✓				
Boys & Girls Club of North Alabama Huntsville, AL	✓	✓	73	1	3 weeks
Child First Authority Baltimore, MD		✓	20	3	4 weeks
Children's Museum at La Habra La Habra, CA		✓	76	1	4 weeks
Hacienda Portland, OR	✓				
Heavenly Hope/Hoops 4 Hope Waterbury, CT	✓				
Hope Haven Jacksonville, FL	✓	✓	23	4	6 weeks
North Louisiana Volunteers of America Shreveport, LA	✓				
Project Vida El Paso, TX	✓				
Saint Paul Public Schools CDF Freedom Schools Saint Paul, MN	✓	✓	254	4/5*	4 weeks
Smart Girls Guilford County, NC	✓				
YMCA of Metropolitan Washington Power Scholars Academy Washington, D.C.		✓	24	3	5 weeks
YMCA San Francisco San Francisco, CA	✓				

*Note. Saint Paul Public Schools CDF Freedom Schools has two school locations that participated in Hero Elementary implementation. One location completed 4 playlists, and one location completed 5 playlists.

Evaluation Overview

WestEd evaluated TPT's *Hero Elementary* PD activities involving the programs shown above in Table 1 in spring and summer, 2019. The evaluation included qualitative and quantitative data collection and analysis related to 1) TPT's training of trainers, and 2) training of educators and the program managers who helped to facilitate implementation of *Hero Elementary* on site. The evaluation addressed the successes, challenges, and lessons learned related to the following specific *Hero Elementary* PD activities.

- TPT-provided PD for *Hero Elementary* trainers

- TPT-provided PD for an initial group of informal educators and program managers
- Onsite PD for informal educators and program managers provided by trainers
- Online training for informal educators and program managers
- TPT-provided implementation support for informal educators and program managers

Evaluation Questions

The evaluation produced findings related to the following areas of *Hero Elementary* training and implementation support. A full list of evaluation questions can be found in Appendix C.

1) *Hero Elementary* Training

- a. How prepared do trainers feel to conduct PD for partner organizations' informal educators?
- b. What did trainers appreciate about the TPT training? What would they change?
- c. How did educators receive training?
- d. What did educators and program managers appreciate about the training? What would they change?
- e. How prepared do educators and program managers feel to implement *Hero Elementary* at their sites? What additional support do they need? In particular, how prepared do educators and program managers feel related to:
 - skills to effectively implement the *Hero Elementary* program;
 - knowledge of TPT's equity approach and skills to effectively implement equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
 - best practices for technology integration in the classroom/OST environment;
 - program customization options;
 - managing the *Hero Elementary* classroom; and
 - strategies for supporting learning in the NGSS and the Science and Engineering Practices (SEPs)?

2) *Hero Elementary* Implementation Support

- a. What do educators and program managers see as successes and challenges of program implementation?
- b. What are successes, challenges, and lessons learned in the following areas:
 - skills to effectively implement the *Hero Elementary* program;
 - knowledge of TPT's equity approach and skills to effectively implement equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
 - best practices for technology integration;
 - program customization options; and
 - managing the *Hero Elementary* classroom?

To what extent and in what ways are educators using and benefiting from the different types of implementation support? What would they change? What additional support do they need?

Data Sources

The *Hero Elementary* PD evaluation drew upon multiple sources of data, including those from observations, surveys, focus groups, interviews, analytics, and artifacts review. Data-gathering for the training and implementation phases are listed below.

Hero Elementary Training

- Observation of the training for *Hero Elementary* trainers and an initial group of informal education program managers and educators at TPT in winter 2019
- Review of training materials and online resources
- Pre/post *Hero Elementary* training survey administered to program managers who attended the training at TPT in winter 2019
- Pre/post *Hero Elementary* train-the-trainer survey administered to trainers who attended the train-the-trainer meeting at TPT in winter 2019
- Observations of onsite informal educator and program manager *Hero Elementary* PD and review of training materials and online resources
- Pre/post *Hero Elementary* training survey administered to informal educators and program managers before and after onsite trainings
- Interviews with trainers after onsite trainings
- Interviews with informal education program managers after onsite trainings
- Observation/review of *Hero Elementary* online educator training program

Hero Elementary Implementation Support

- *Hero Elementary* implementation survey administered to informal educators during implementation
- Interviews with informal education program managers during *Hero Elementary* implementation
- Interviews/focus groups with informal educators during *Hero Elementary* implementation
- Review of *Hero Elementary* implementation analytics

Thirteen informal education organizations participated in the *Hero Elementary* professional development evaluation. Evaluation data collected at each site related to the *Hero Elementary* Training are summarized in Table 2. Evaluation data collected at each site related to the *Hero Elementary* Implementation are summarized in Table 3.

Table 2. Data Collection activities completed by WestEd evaluators related to Hero Elementary Training

Site	Onsite Training Observation	Trainer Post-Training Interview	Program Manager Post-Training Interview	Pre-Training Educator Survey	Post-Training Educator Survey
Beacons San Francisco <i>San Francisco, CA</i>		✓	✓	✓	✓
Boys & Girls Club of North Alabama <i>Huntsville, AL</i>	✓	✓	✓	✓	✓
Child First Authority <i>Baltimore, MD</i>				✓	✓
Children's Museum at La Habra <i>La Habra, CA</i>					
Hacienda <i>Portland, OR</i>				✓	✓
Heavenly Hope/Hoops 4 Hope <i>Waterbury, CT</i>	✓	✓		✓	✓
Hope Haven <i>Jacksonville, FL</i>	✓	✓	✓	✓	✓
North Louisiana Volunteers of America <i>Shreveport, LA</i>				✓	✓
Project Vida <i>El Paso, TX</i>					✓
Saint Paul Public Schools CDF Freedom Schools <i>Saint Paul, MN</i>				✓	✓
Smart Girls <i>Guilford County, NC</i>				✓	✓
YMCA of Metropolitan Washington Power Scholars Academy <i>Washington, D.C.</i>					
YMCA San Francisco <i>San Francisco, CA</i>				✓	✓

Table 3. Data Collection activities completed by WestEd evaluators related to Hero Elementary Implementation

Site	Educator Implementation Survey	Program Manager Implementation Interview	Educator Implementation Focus Group/Interview
Beacons San Francisco <i>San Francisco, CA</i>			
Boys & Girls Club of North Alabama <i>Huntsville, AL</i>	✓	✓	✓
Child First Authority <i>Baltimore, MD</i>	✓	✓	✓
Children's Museum at La Habra <i>La Habra, CA</i>	✓	✓	✓
Hacienda <i>Portland, OR</i>			
Heavenly Hope/Hoops 4 Hope <i>Waterbury, CT</i>	✓		
Hope Haven <i>Jacksonville, FL</i>			
North Louisiana Volunteers of America <i>Shreveport, LA</i>			
Project Vida <i>El Paso, TX</i>			
Saint Paul Public Schools CDF Freedom Schools <i>Saint Paul, MN</i>	✓	✓	
Smart Girls <i>Guilford County, NC</i>			
YMCA of Metropolitan Washington Power Scholars Academy <i>Washington, D.C.</i>	✓	✓	
YMCA San Francisco <i>San Francisco, CA</i>			

Data Synthesis

Throughout the evaluation, emerging findings from the data-collection activities were analyzed, triangulated, and shared with the TPT PD team as “just-in-time” learnings and recommendations, as well as synthesized in formative evaluation memos. This report focuses on the summative aspects of the evaluation and provides findings, lessons learned, and considerations that have emerged over the course of PD training and implementation at participating sites.

Findings

Hero Elementary Training

TPT training for *Hero Elementary* trainers and an initial group of program managers and educators

WestEd observed the “train-the-trainer” and program manager training that took place at TPT in February, 2019. Trainers and program managers completed online surveys shortly before and shortly after attending the training. Results from program manager and trainer pre- and post-training surveys were synthesized with learnings from evaluator observation of the two-day training and review of training materials and online resources.

Key findings included increases in program manager and trainer self-reported preparedness in various areas of importance for effective *Hero Elementary* training and implementation, and high levels of engagement and commitment among participants. Participant needs that emerged from the data included further opportunities to become familiar with the different parts of the *Hero Elementary* playlist, more clarity around the specific expectations for educators around *Hero Elementary* implementation, and more clarity for trainers around the specific content to be covered in the field trainings. These needs were addressed by TPT through follow-up training webinars and guidance and through ongoing support for trainers and program managers during training and implementation.

Onsite trainings for educators and program managers

As shown below in Table 1 in Appendix B, 70% of educators were prepared in onsite trainings, 18% were trained online, 7% were trained by their program manager, and 4% were self-taught and implemented without formal training. The following findings related to the onsite educator (including program managers) trainings emerged from triangulating data from pre- and post-training educator surveys, evaluator observations of trainings, and post-training interviews with trainers and program managers.

➤ Educator perspective

Educator preparedness to implement various aspects of Hero Elementary

As shown below in Figures 1 and 2 and in Tables 1 and 2 in Appendix A, after participating in the training, a large majority of respondents indicated that they felt *prepared* or *very prepared* to implement the different playlist components, support student science learning, use the educator platform, integrate technology in the classroom, and manage and customize the *Hero Elementary* program. In addition, following the trainings, the majority of respondents indicated that they felt prepared to implement equity-based teaching strategies for the *Hero Elementary* target groups, including students from economically disadvantaged households, Latinx communities, English Language Learners, and students with disabilities.

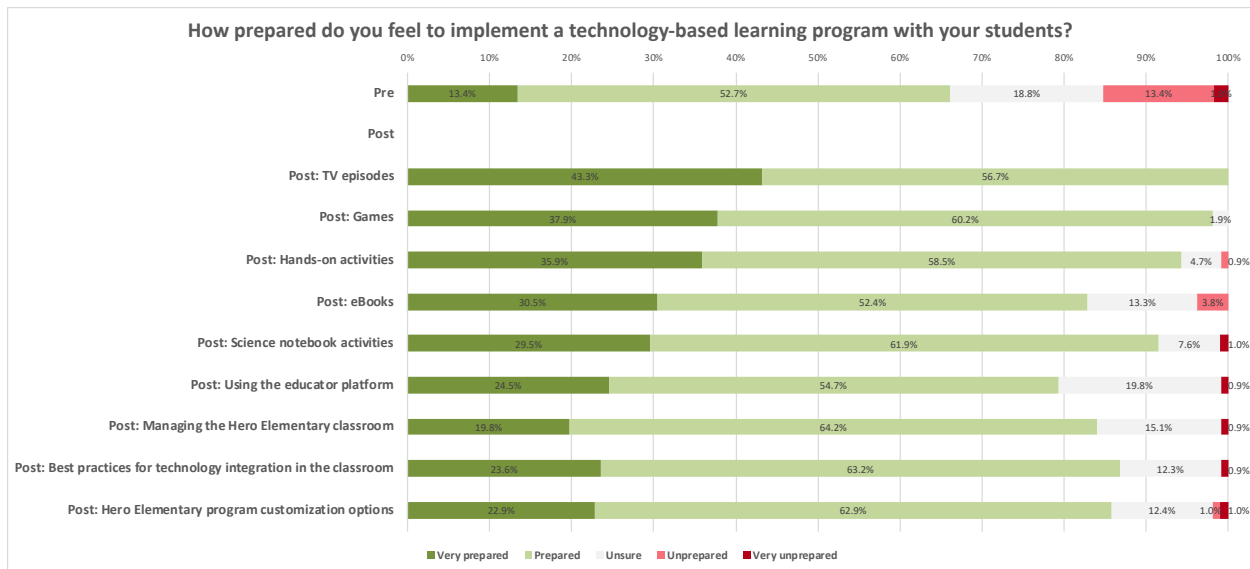


Figure 1. Educator preparedness to implement technology-based learning, as reported pre (n=112) to post (n=102-106) training

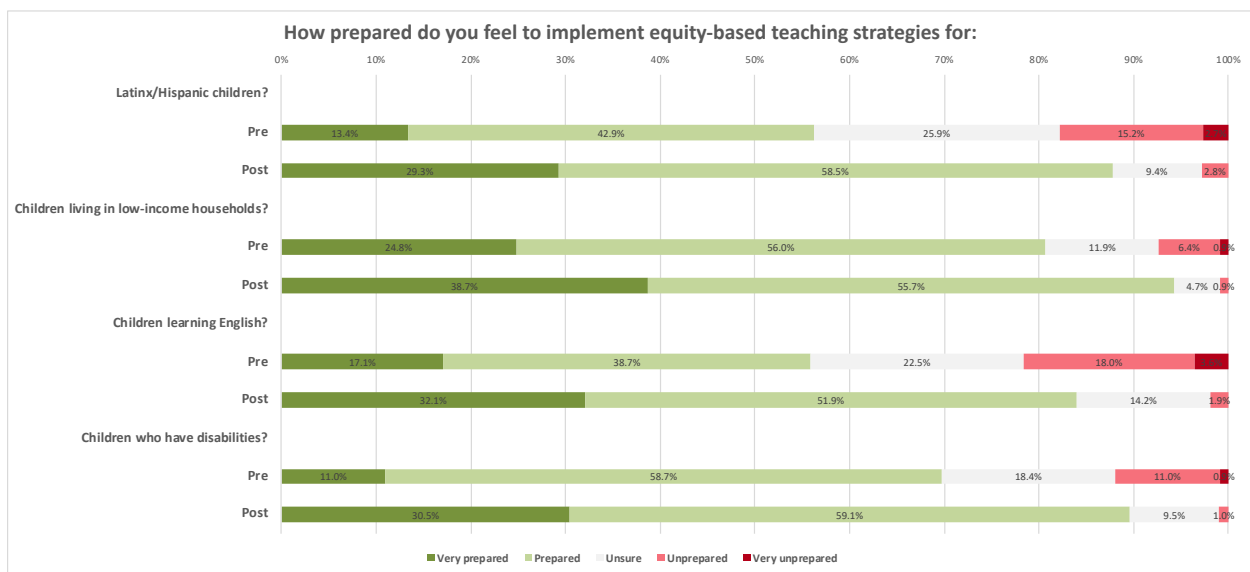


Figure 2. Educator preparedness to implement equity-based teaching strategies, as reported pre (n=112) to post (n=105-106) training

What educators appreciated about the training

In open-ended survey responses, educators shared what they appreciated most about the *Hero Elementary* training. Responses coalesced around the following aspects.

- Training was engaging and hands-on, with the opportunity to experience *Hero Elementary* firsthand
- Interaction with and modeling by knowledgeable and enthusiastic trainers
- Collaboration with other educators
- Clear explanations of program details

That it was engaging and hands-on.

*Being able to log in and navigate the web platform.
Modeling the activities.*

The level of enthusiasm and encouragement of the trainer.

What educators would change about the training

While about half of respondents reported that they would not change anything about the training, some educators made suggestions for improving the training, including:

- The opportunity to hear from peers who have implemented the program
- Spending more time on the educator platform
- Access to more playlists to explore and additional time to spend exploring the different activities

I would love to see and hear from individuals who may have used this program prior to me on a general forum space.

Requests for additional support mentioned by educators

After the training, educators shared that they would like the following additional support before beginning *Hero Elementary* implementation.

- A chance to access the tablets ahead of time, have support with set-up, and time to practice before implementing with students
- More training on the educator platform and how to create student logins
- Access to a technical support hotline

More training about the educator platform.

Being able to explore technology that we will actually be using, so we can get a feel for the program and the material we would be using.

Just receiving the tablet to play with before showing the kids would be helpful.

- Access to videos modeling implementation of an entire playlist

Educator concerns

While educators expressed enthusiasm about implementing an inclusive, technology-based program to increase exposure and engagement of their students around science concepts, they also expressed the following concerns as they prepared to implement *Hero Elementary*.

- Worries about the ability to obtain parental permission and engagement
- Encountering tech issues
- Children being able to understand and complete the activities in a timely manner
- Managing implementation with a large group of students
- Having access to enough tablets to implement the program
- Language barriers of both educators and students who do not speak English

➤ Program manager perspective

What program managers appreciated about the Hero Elementary training

In post-training interviews, program managers mentioned aspects of the training that they appreciated.

- They understood that *Hero Elementary* is a good fit for their programs.
- They appreciated that *Hero Elementary* is inclusive (e.g., diverse characters, features a character on the autism spectrum).
- Trainers did a good job of integrating participants and facilitating dialogue.
- They noticed that educators were engaged, and appreciated both the opportunity to participate in a formal training and being treated like professionals.

Challenges of the training reported by program managers

In post-training interviews, program managers mentioned the following challenges encountered during the trainings.

- Educators communicated to program managers that they would have liked more ideas for how to adapt the resources to make them easier or more challenging.
- Educators indicated that they would have liked more resources for their students who primarily speak Spanish.
- There were quite a few technology issues during the training. Not having the problems solved right away created lost time.
- Having the training a day or a few days before school started was stressful for some participants.

➤ Trainer perspective

What trainers appreciated about the onsite trainings they implemented

In post-training interviews, trainers shared the following positive aspects of the trainings they implemented.

- The annotated field agenda was a very helpful resource.
- The training format allowed participants to engage in a variety of learning modes, to move around, and to engage with others.

Challenges of the onsite trainings reported by trainers

In post-training interviews, trainers mentioned the following challenges encountered during the trainings.

- Technical problems occurred throughout the training and trainers were not able to troubleshoot the issues.
- The trainers lacked knowledge about using educator and student platforms.
- There were occasional language barriers with participants.

What trainers would change about the training

In post-training interviews, trainers made the following suggestions for improving the training.

- Consider ways for trainers to address technical issues quickly during the training.
- Consider adding language to materials that will allow educators and program staff to know that they will need to set aside time to prepare for implementation.
- Use consistent naming conventions for all like resources, such as slides, schedules, and physical documents, and label documents consistently for versions and dates.
- Check that binder pages are in order.
- Consider adding page numbers to binder documents that have more than one page.
- Check that educators who did not attend the training receive new tablets, have access to WiFi, and know how to use a tablet.

Online Educator Training

Educators who were unable to participate in an onsite training facilitated by a trainer had the option of completing *Hero Elementary* training virtually. The implementation survey indicated that 18% of educators who responded to the survey completed *Hero Elementary* training through these online training modules developed by TPT. Educators who completed the online training shared in interviews and focus groups that the training modules were helpful for understanding the necessary information for implementing *Hero Elementary*, but that it was challenging to read through all the text and to stay engaged throughout the training. Educators expressed that it would have been helpful to have the training be more interactive, perhaps including the opportunity to engage virtually with a trainer and/or other educators. Educators

noted that, if they had any unanswered questions following the online training, they could rely on their program manager to fill in any gaps.

WestEd conducted a structured review of the online training course and provided feedback to TPT developers. General recommendations included making the training more interactive and engaging, and less dense and text-heavy, perhaps through the increased use of videos and voiceovers.

Similarly, it was recommended that TPT simplify the language throughout the training, optimize space and size text, and put critical, simplified text into colorful, animated text boxes. In addition, evaluators recommended that the online training site include readily accessible links to important resources that educators need to revisit during implementation, such as the glossary, notebook talks, instructions for making student logins, and parent resources.

[Analysis of Data Collected During *Hero Elementary* Implementation](#)

In interviews conducted after participating programs began implementing *Hero Elementary*, program managers indicated that they felt *Hero Elementary* was a good fit for their students and that they felt competent around program expectations and processes. Program managers provided particularly positive feedback around TPT's co-viewing guide (a document that supports educators as they introduce an episode to students). A few program managers noted a challenge around not having the administrative ability to assign different playlists to different classes.

An implementation survey was administered to educators after they completed at least one playlist with their students. The survey explores various aspects of *Hero Elementary* implementation, including information on frequency/duration of student exposure to *Hero Elementary* programming, educator comfort level with managing the *Hero Elementary* classroom and implementing the different playlist activities and the administrative tasks, and educator experiences and needs relating to implementation support. Data related to similar themes were gathered and triangulated through educator interviews and focus groups, and the findings are incorporated below.

Hero Elementary implementation breadth and depth

As shown below in Figures 3 and 4 and in Tables 2 and 3 of Appendix B, of the educators who completed the implementation survey, (n=27) 37% indicated that they had implemented the program with 11–20 students, and 33% indicated that they had implemented the program with 50+ students. The remaining educators (11%) reported having implemented *Hero Elementary* with 10 students or less or 21–30 students (19%). Nearly half of respondents (45%) indicated that they implemented *Hero Elementary* more than once a week, while nearly 35% of respondents indicated that they implemented the program once a day. Around 15% of respondents reported implementing *Hero Elementary* once a week, and almost 5% of respondents reported implementing the program more than once a day.

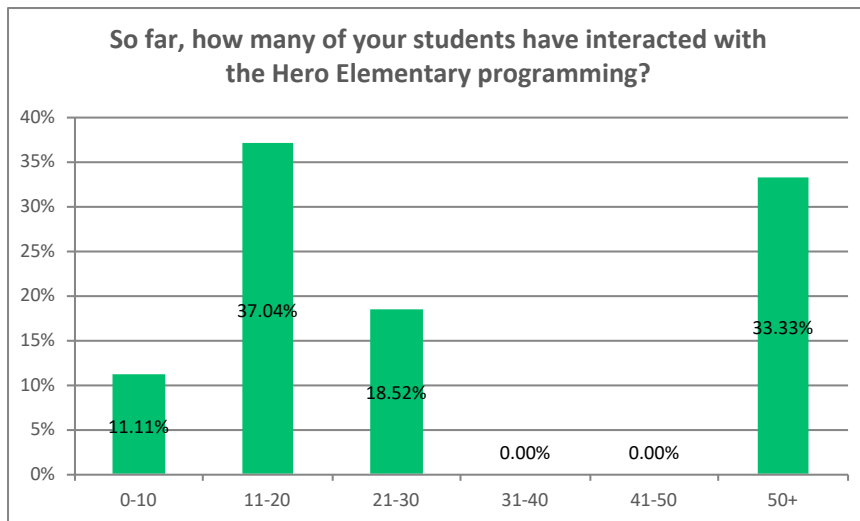


Figure 3. Number of students interacting with Hero Elementary, as self-reported on implementation survey (n=27)

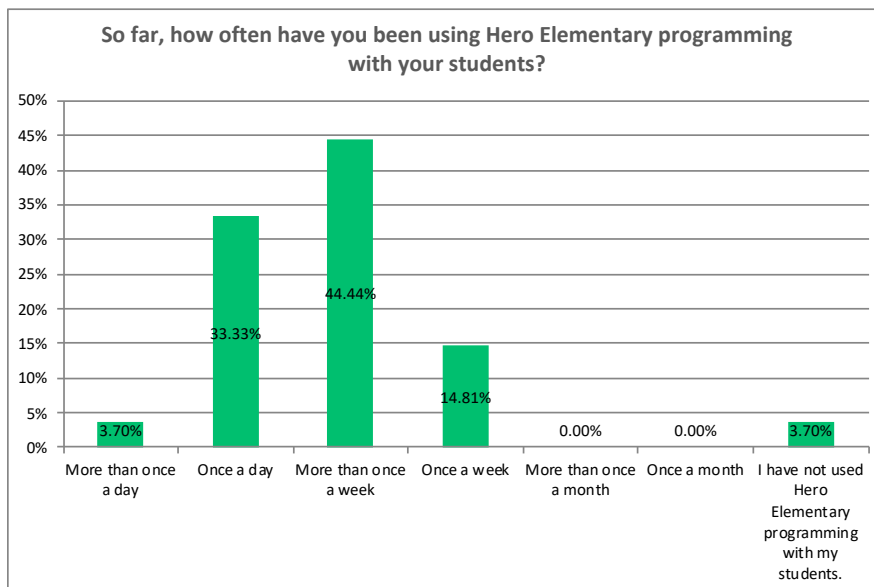


Figure 4. Frequency of students interacting with Hero Elementary, as self-reported on implementation survey (n=27)

First playlist implemented

As shown below in Figure 5 and in Table 4 of Appendix B, a large majority of respondents (77%) indicated that they implemented the “Pushes and Pulls” playlist first. Reasons provided for implementing this playlist first included:

- Pushes and Pulls was the only playlist that trainers went over completely in the training
- Pushes and Pulls was the most complete playlist
- Pushes and Pulls appears first in the list of playlists
- Educator interest and alignment with other activities at the site
- The playlist was chosen by program managers for all educators to implement at the same time

This was the playlist we were trained on.

It was chosen for me by my director.

It supported our STEM activity already planned for the children.

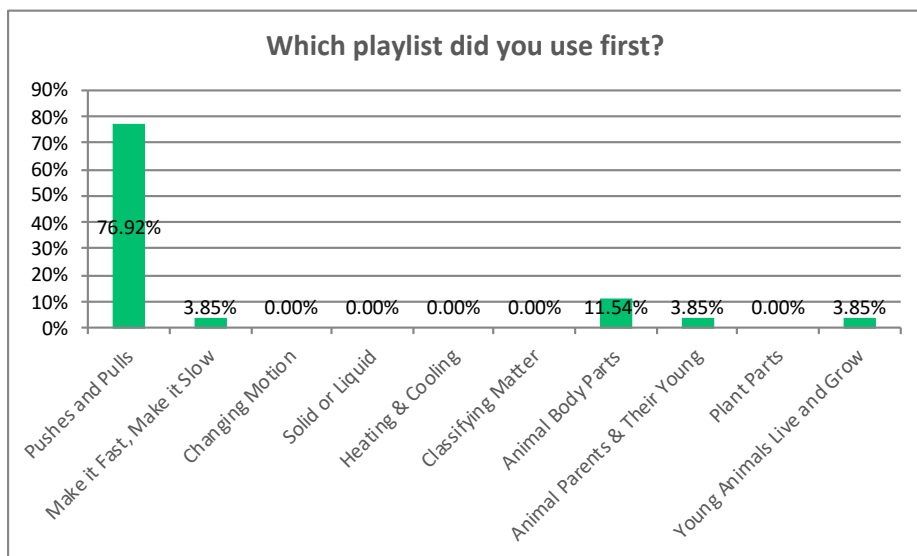


Figure 5. First playlist used by educators, as self-reported on implementation survey (n=26)

Educator comfort with implementing various Hero Elementary components

Figure 6, below, and Table 5 in Appendix B summarize data from the educator implementation survey about educators' self-reported comfort level with implementing the different aspects of *Hero Elementary* programming and administration. As shown in the figure, the majority of respondents indicated that they were comfortable or very comfortable with all of the playlist activities and administrative tasks, except creating QR codes and using the parent playlist.

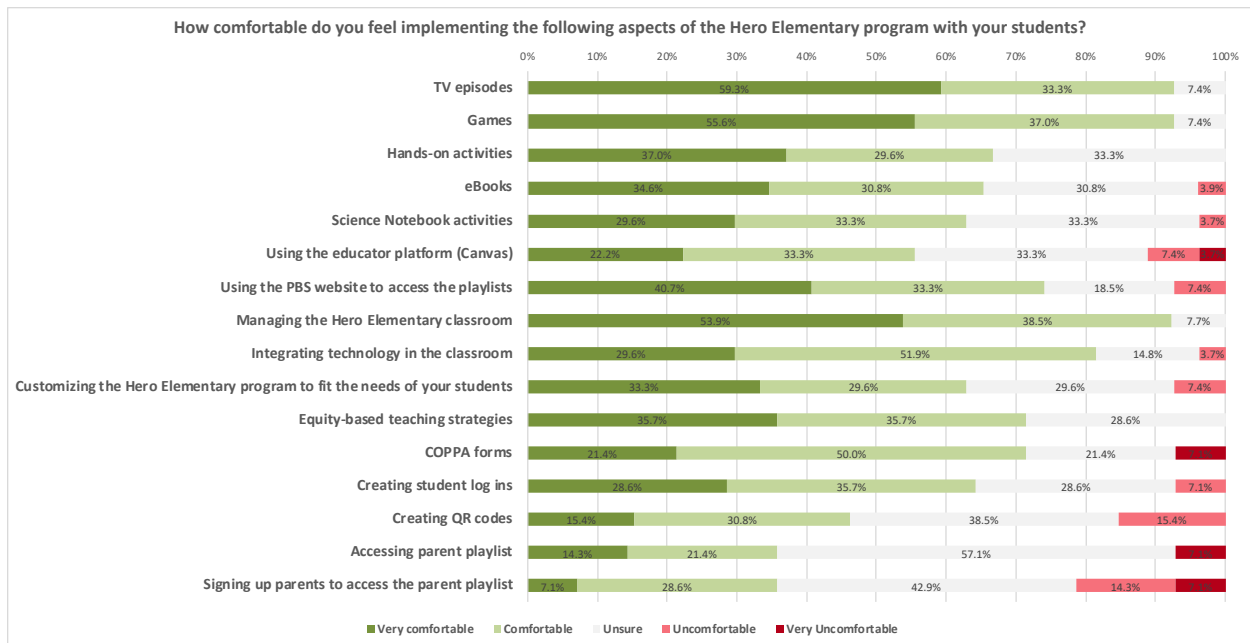


Figure 6. Educator comfort level implementing aspects of Hero Elementary, as self-reported on implementation survey (n=13-27)

In open-ended responses, educators indicated that they need further support or training in the following areas:

- eBooks
- Hands-on activities
- Parent engagement
- Training new staff
- Using Canvas
- The notebook

The notebook section of the app was confusing to kids.

How to access and navigate the teachers portal.

Using eBooks on Safari, playing the second games, completing group work online together.

Appreciation of implementation resources (Co-viewing Guide, Notebook Talk, Hands-on activities instructions)

➤ Co-viewing Guide

As shown below in Figure 7 and Table 6 of Appendix B, while 50% of respondents indicated that they had not used the Co-viewing Guide, about 46% of respondents reported that the guide was extremely helpful or very helpful. Ways in which the Co-viewing Guide was useful, mentioned in open-ended responses, included that it addressed the learning needs of visual learners (both educators and students) and allowed students to engage actively with the episodes, instead of passively watching.

Allowed me to orientate the students toward the learning objectives of the unit and to start the students thinking about the "Superpowers of Science" in a concrete way. The children really enjoyed them.

It was extremely helpful for our visual learners so they could easily interpret the lessons in advance of watching the episodes with children.

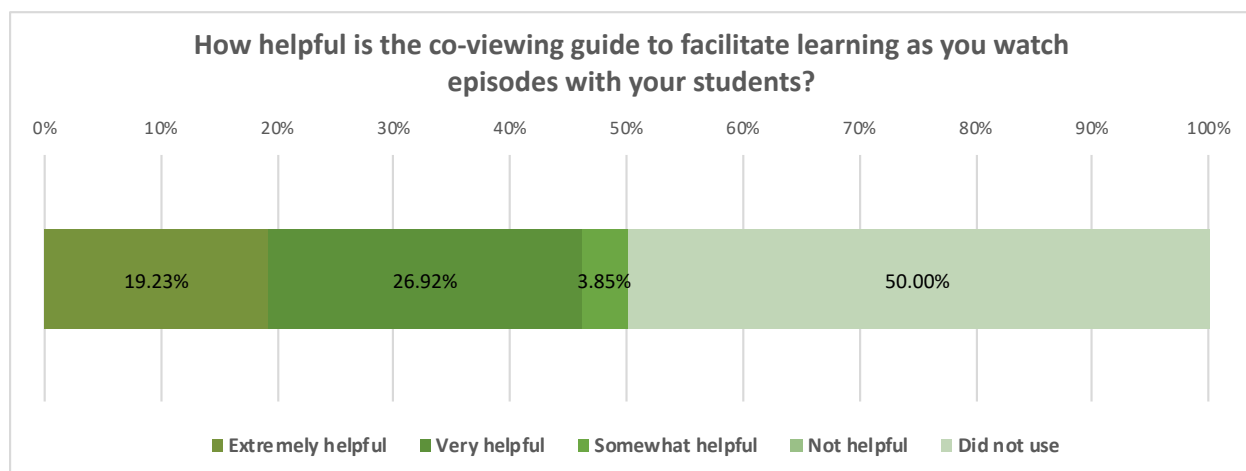


Figure 5. Helpfulness of Co-viewing Guide, as self-reported on implementation survey (n=26)

➤ Notebook Talk

As shown below in Figure 8 and in Table 7 of Appendix B, most respondents did use the Notebook Talk (supporting material for using the notebook resources) and were evenly divided in their opinions of its usefulness, between extremely/very helpful (37%) and somewhat helpful (37%). Educators reported that the main way in which the Notebook Talk was helpful was that it facilitated dialogue and reflection with students about what was being learned.

It is a guide and I don't have to put in any guess work.

We can go back and talk about some of the things we had done already. It opens up dialogue.

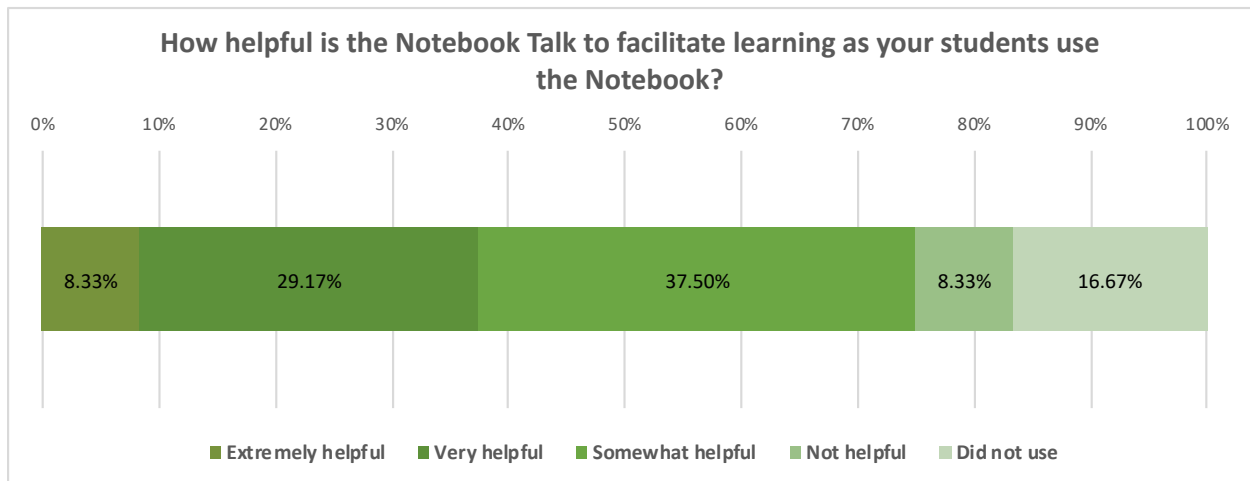


Figure 6. Helpfulness of Notebook Talk, as self-reported on implementation survey (n=24)

➤ Hands-on activity (HOA) instructions

As shown below in Figure 9 and in Table 8 of Appendix B, the majority of respondents (58%) also reported that the hands-on activity (HOA) instructions were extremely or very helpful. Educators reported specific ways in which the instructions were helpful, including that they were clear and that they helped educators keep the activities interesting for students. One challenge mentioned that was related to the HOA instructions involved the desire for guidance on how long the activities would take.

The hands-on activity instructions help instructors keep activities interesting!

I appreciate the simplicity of gathering materials. I did not have to go to the store and purchase anything I did not already have.

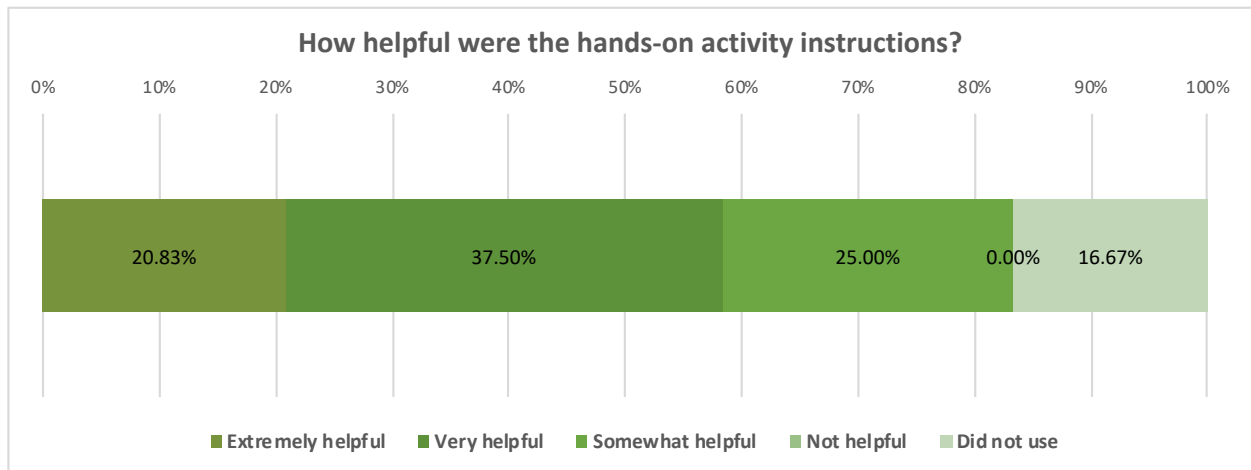


Figure 7. Helpfulness of hands-on activity instructions, as self-reported on implementation survey (n=24)

Feedback on implementing the notebook and HOAs

➤ Notebook

Educators provided feedback on the successes and challenges of using the science notebook with their students. Survey respondents reported successes with the notebook, including:

- It allows students to document and reflect on what they are learning
- They found that students remain engaged and enjoy drawing and using the different notebook tools

The notebook is a good opportunity for my students to discuss the awesome themes and learning they have discovered while navigating Hero activities.

It provided individual children the opportunity to document their understanding, questions and interpretation of the lessons.

Intuitive and fun for the kids to use.

Educators also noted a number of challenges with implementing the notebook, including:

- Tools were difficult for some younger children to use
- Keeping students focused on meaningful tasks in notebook, rather than just playing
- The need for a kid-friendly guide to using the notebook

Feedback on implementing hands-on activities (HOAs)

At the time the survey was given, only 11 of the educators who responded to the implementation survey indicated that they implemented at least one HOA with their students. In interviews, educators reported that they had been successfully implementing HOAs with modifications, as well as their own HOAs/demonstrations connected to the content. Successes of the HOAs reported by educators included:

- The activities were engaging and fun for kids
- The activities were simple to implement
- The HOAs make the *Hero Elementary* program more robust by providing hands-on experiences outside of the digital platform that reinforce science learning and critical thinking
- The activities used easily accessible materials and were age-appropriate

The games were very engaging, especially the pushes and pulls game where they slide lids on the table. I was very skeptical about if these activities would keep our kids' attention, but they turned out to be highly engaging for the kids.

Very detailed, used easily accessible materials, supported science themes, age-appropriate for our students.

Challenges of implementing the HOAs reported by educators included:

- Having the time to set up and clean up
- Gathering and printing materials
- Activities were not as engaging and challenging for older children
- They were sometimes difficult to manage with larger groups of children

Having to clean up and go to the next lesson. Not enough time.

The lessons seem to be geared toward the younger PreK through kindergarten kids.

We did not have the supplies we needed in order to complete the hands-on activities.

Suggestions made by educators for improving the HOAs included:

- Provide more of a challenge for students
- Develop videos that model HOA setup and implementation
- Include questions to ask the students in the instructions
- Ensure that activities do not overlap with each other in theme and execution
- Provide a binder with laminated materials so they do not have to be printed by educators

Maybe have videos with them so we can see them in action.

I do wish there was more of a challenge. For example, the Start, Stop, Go! activity did not challenge the children.

Challenges of implementing Hero Elementary
Educators reported that the following issues were the hardest part of implementing *Hero Elementary*.

- Not having enough staff to manage the age ranges and individual needs of students
- Parent engagement, and getting permissions signed and returned within the brief window of a summer program
- Limited WiFi

The most challenging part of the HERO program for our site was the lack of parent engagement.

Using the platform. A lot of the links wouldn't work for the students and they got bored using the few links that did work.

Not being able to implement the majority of the programs on the chrome books with the age group it's targeted for.

- Target age group not being able to operate Chromebooks and needing more tablets to provide to all students
- Having to print materials
- Having HOA materials on hand
- Using QR codes, saving work, and logging off
- eBooks were difficult for children with lower literacy levels
- A few educators mentioned that they would not use *Hero Elementary* in the future because it was either not aligned with their science standards or did not incorporate enough literacy learning

Despite these challenges, as shown below in Figure 10 and in Table 9 of Appendix B, 91% of educators who responded to the implementation survey indicated that *Hero Elementary* is a good fit for their site and students. Educators also provided suggestions for improving the most difficult aspects of *Hero Elementary* implementation listed above, including:

- Provide more hands-on training
- Obtain additional funding to hire staff
- Do not include parents in the platform, or offer a better parent-engagement strategy with ideas and resources for involving parents through more extension activities and ideas/activities/resources to implement offline
- Coordinate with sites to ensure that WiFi is available
- Implement the program on iPads/tablets, not Chromebooks

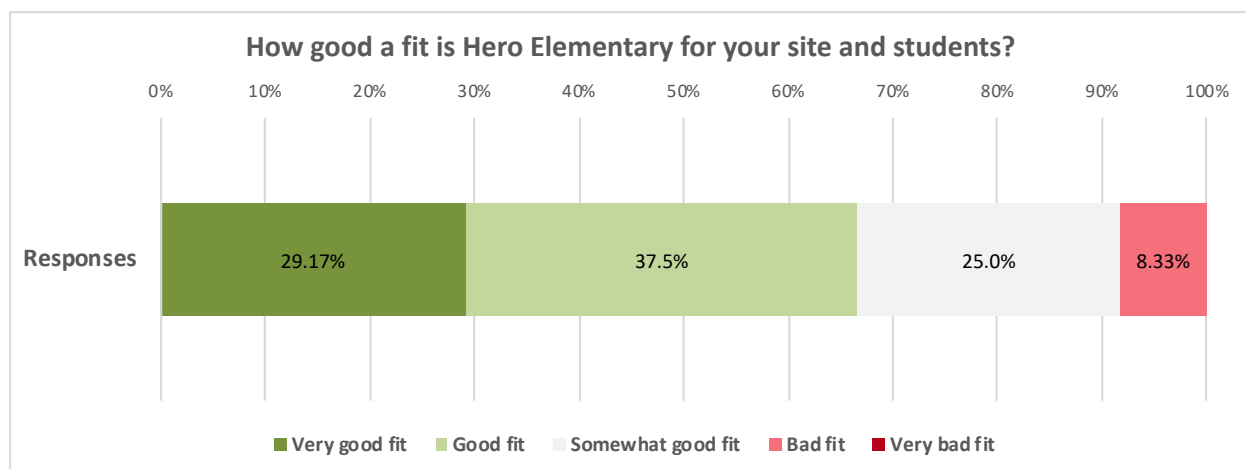


Figure 8. Educator perceptions of *Hero Elementary* fit for program, as self-reported on implementation survey (n=24)

Implementation support received by educators

As shown below in Figure 11 and in Table 10 of Appendix B, educators reported receiving various *Hero Elementary* implementation supports. The types of supports reported by the largest number of respondents included emails from TPT staff (60%) and support from their program managers (50%).

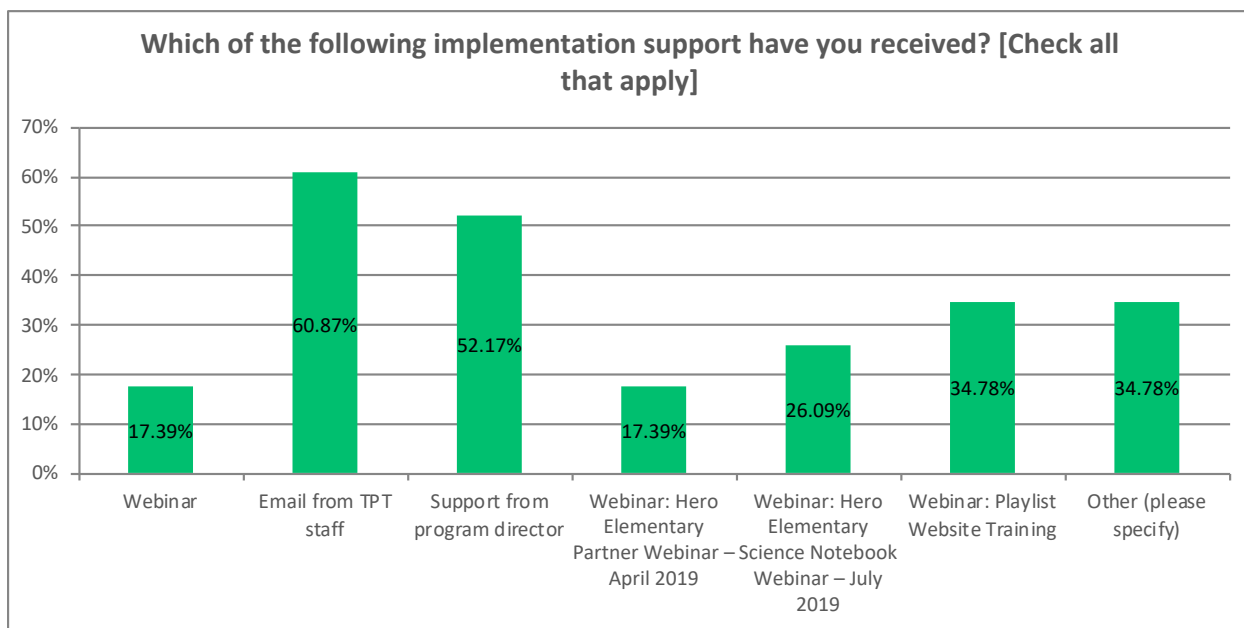


Figure 9. Hero Elementary support received by educators, as self-reported on implementation survey (n=24)

Educators shared that they need the following additional implementation support:

- Being able to use more than one playlist at a time
- Follow-up after trainings
- A structure for each implementation session; examples of scheduling and implementing playlists
- A more user-friendly interface for adding students; more training on how to add students and educators
- A teacher binder of printed materials
- Better instructions on how to implement the program from beginning to end so that educators are not left with having to figure it out as they go
- Guidance on what to do when playlists don't work

Reflections and Considerations

Overall, the results of the summative evaluation suggest that the *Hero Elementary* professional development for educators, trainers, and program managers is effective in building participants' capacity to deliver *Hero Elementary* in their informal learning environments, including in afterschool and summer programming. Analysis of data collected during the evaluation showed that, despite challenges they encountered during their professional development, educators, trainers, and program managers felt prepared to carry out their roles in implementing *Hero Elementary*. In addition, despite technical difficulties that may have occurred at their sites when they began to implement *Hero Elementary*, educators and program

managers felt that *Hero Elementary* was valuable for their students and was aligned with their site goals.

Educator Preparation

Aggregated data from educator post-training surveys indicated that, after experiencing *Hero Elementary* professional development, a majority of educators felt prepared to implement the many aspects of *Hero Elementary*, including:

- skills to effectively implement digital and non-digital activities in the *Hero Elementary* playlists;
- TPT's equity approach and equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
- best practices for technology integration in the informal education classroom;
- program customization options;
- managing the *Hero Elementary* classroom; and
- strategies for supporting learning in NGSS and the Science and Engineering Practices.

Improvement Over Time

Data gathered through educator focus groups and interviews, and program manager and trainer interviews, were aligned with these survey results. One trend noted during data collection and analysis is that *Hero Elementary* professional development appeared to become more effective over time, indicating that the professional development improved as it became increasingly developed and refined. A review of findings from WestEd's formative evaluation memos produced in June and August shows that educators' self-report of preparedness to implement *Hero Elementary* after their training was notably higher after the August training when compared with educators' responses after the June training. For each category of preparedness measured in the post-training survey (e.g., using the hands on activities, integrating technology in the classroom), a higher percentage of educators noted feeling prepared after the August training when compared to the responses of those who took part in the June training. Additionally, an informal review of trainers' feedback from the June and August educator professional development trainings suggests that problems and issues that may have hindered the effectiveness of trainings were fewer in the August training, when compared to findings reported in the June memo. For instance, during the June trainings, trainers reported that a number of potentially serious issues occurred, including trainers not being familiar with particular aspects of *Hero Elementary*; no administrators being in attendance; missing materials for implementing the hands-on activities; and some participants finding the order of topics presented confusing. Issues mentioned by trainers after the August trainings were less likely to compromise the effectiveness of the trainings. Though these findings are based on informal observations, they do suggest that the diligent efforts by TPT to refine the professional development in light of formative evaluation feedback was effective.

[Many Paths to Educator Training](#)

Though it was known early on that participant sites would implement *Hero Elementary* in a variety of different ways, it was not anticipated that educators would be trained in methods other than via in-person trainings or the online course. Synthesis among data sources, however, suggested that there were a variety of ways educators were trained across various participating sites. The majority of educators were trained in-person or online, but a group of educators was trained by their program manager who had taken the online course. Others reported being “self-taught,” having explored the student resources and documents on the educator website on their own or with a colleague.

[Program Customization](#)

Our data also showed that there was a wide variety of ways participating sites customized the implementation of *Hero Elementary* to work for their program’s schedule, student characteristics, or capacity. For instance, because of a shortened summer school schedule, one site chose to only implement one playlist over the course of one month, with students only using *Hero Elementary* two hours a week. Other participating sites chose to have students engage in *Hero Elementary* five days a week and have students complete multiple playlists over the summer. Educators at one afterschool site adapted many of the resources to provide access to their students who have mild to severe cognitive disabilities. Afterschool staff at this site worked with a special education teacher to make modifications to the resources. In addition, the afterschool program implemented the program with an extra staff member in the class so educators could implement the program with a five-to-one student-to-educator ratio. If a student was off-task or frustrated, the extra staff member will step in to support that group. Yet another site is adapting *Hero Elementary* resources to better support their Spanish-speaking students and families. The fact that the diverse sites that participated in the evaluation were able to successfully adapt *Hero Elementary* to work for their particular programs suggests that, as it becomes available to a broader audience, the program can be successfully adopted in widely diverse informal environments, including those in urban and rural locales, and those serving children with diverse backgrounds and abilities. At the same time, it is recommended that the TPT developers continue to pay attention to these variations and their sources via ongoing information gathering. These activities will yield important learnings to inform future professional development and outreach, as well as development of further guidance around suggested implementation approaches and dosage.

[Online Training Course](#)

Over the course of the evaluation, it was observed that the online training for educators and program managers was refined and improved. An effective online training course also bodes well for the continued growth of *Hero Elementary*. Online training can be used by an unlimited number of participants, including those who do not have access to on-site training due to cost or lack of availability. It is suggested that TPT continue to test and refine the online training course, and consider a less text-heavy and more interactive approach with more videos

modeling different aspects of *Hero Elementary* implementation. An easy and user-friendly online course could help ensure that educators receive consistent and adequate preparation in all of the aspects of *Hero Elementary* implementation. Survey and interview findings indicated that online preparation should include an option to take a section focused on the technical, administrative aspects of *Hero Elementary* implementation. The course may also include an optional section on parent engagement.

[Feedback During Implementation](#)

Evaluation activities included following up with educators and program managers to see how the professional development was supporting implementation, and if participants had further feedback for developers about the professional development, now that they were actually implementing *Hero Elementary*. Data analysis suggests that technical difficulties continue to impede full *Hero Elementary* implementation. Site-specific difficulties include ensuring adequate access to WiFi and a sufficient number of tablets for students. To the extent that some of these issues can be addressed through on-site troubleshooting, a detailed guide for educators on how to address technical difficulties would be very helpful to include with the professional development. In addition, as mentioned above, the data suggest that educators may need additional training on the technical aspects of administering the program, as perceived glitches may sometimes stem from confusion on the part of educators about the correct procedures. Developing efficacy in technical troubleshooting is particularly important for trainers, as evaluation findings indicated that discomfort in this area of the professional development on the part of trainers often resulted in very cursory overviews of important administrative procedures during in-person trainings.

[Summary](#)

Twin Cities Public Television has created a comprehensive professional development program for educators, trainers, and program managers implementing *Hero Elementary*. Over the course of 2019, they created and refined the program as students and educators used *Hero Elementary* resources. Though issues continue to be addressed by developers related to training and implementation, our findings suggest that the program is poised to provide consistently successful professional development to informal educators, trainers, and program managers, allowing them to implement *Hero Elementary* with their diverse K–2 student groups. It is notable that many educators who took part in the evaluation reported that *Hero Elementary* brings unique resources to the informal environment with its focus on diversity and inclusion. As one educator commented: “I appreciate the equity focus. I am hopeful that students will identify with the characters and that this will empower them to be confident in their curiosity and education.” With continued revisions and expansion, *Hero Elementary*’s professional development and resources could provide a highly useful and much needed addition to the K–2 informal education landscape.

Appendix A: Pre/Post-Onsite Educator/Program Manager Survey Results

Table 1. Educator preparedness implementing technology programming with students, as reported pre (n=112) to post (n=102-106)

How prepared do you feel to implement a technology-based learning program with your students?					
	Very prepared	Prepared	Unsure	Unprepared	Very unprepared
Pre	13.39%	52.68%	18.75%	13.39%	1.79%
Post					
Post: TV episodes	43.27%	56.73%	0.00%	0.00%	0.00%
Post: Games	37.86%	60.19%	1.94%	0.00%	0.00%
Post: Hands-on activities	35.85%	58.49%	4.72%	0.94%	0.00%
Post: eBooks	30.48%	52.38%	13.33%	3.81%	0.00%
Post: Science notebook activities	29.52%	61.90%	7.62%	0.00%	0.95%
Post: Using the educator platform	24.53%	54.72%	19.81%	0.00%	0.94%
Post: Managing the Hero Elementary classroom	19.81%	64.15%	15.09%	0.00%	0.94%
Post: Best practices for technology integration in the classroom	23.58%	63.21%	12.26%	0.00%	0.94%
Post: Hero Elementary program customization options	22.86%	62.86%	12.38%	0.95%	0.95%

Table 2. Educator preparedness implementing equity-based teaching strategies with students, as reported pre (n=112) to post (n=105-106)

How prepared do you feel to support your students' learning related to Next Generation Science Standards (NGSS) content?					
	Very prepared	Prepared	Unsure	Unprepared	Very unprepared
Pre	9.01%	54.05%	23.42%	12.61%	0.90%
Post: Next Generation Science Standards (NGSS) content?	17.14%	69.52%	9.52%	2.86%	0.95%
Post: Superpowers of Science?	25.96%	66.35%	5.77%	0.96%	0.96%

Appendix B: Hero Elementary Implementation Educator Survey Results

Table 1. Educator training source, as self-reported on implementation survey (n=27)

How did you receive your Hero Elementary Training?		
Answer Choices	Responses	
Online using Canvas by myself	18.52%	5
In-person with a trainer	70.37%	19
My program manager trained me	7.41%	2
A fellow educator trained me	0.00%	0
I did not receive Hero Elementary Training	3.70%	1
Other (please specify)	0.00%	0
Total		27

Table 2. Number of students interacting with Hero Elementary, as self-reported on implementation survey (n=27)

So far, how many of your students have interacted with the Hero Elementary programming?						
Answer Choices	Responses					
0-10	11.11%	3				
11-20	37.04%	10				
21-30	18.52%	5				
31-40	0.00%	0				
41-50	0.00%	0				
50+	33.33%	9				
Answered		27				

Table 3. Frequency of students interacting with Hero Elementary, as self-reported on implementation survey (n=27)

So far, how often have you been using Hero Elementary programming with your students?			
Answer Choices	Responses		
More than once a day	3.70%	1	
Once a day	33.33%	9	
More than once a week	44.44%	12	
Once a week	14.81%	4	
More than once a month	0.00%	0	
Once a month	0.00%	0	
I have not used Hero Elementary programming with my students.	3.70%	1	
Answered		27	

Table 4. First playlist used by educators, as self-reported on implementation survey (n=26)

Which playlist did you use first?		
Answer Choices	Responses	
Pushes and Pulls	76.92%	20
Make it Fast, Make it Slow	3.85%	1
Changing Motion	0.00%	0
Solid or Liquid	0.00%	0
Heating & Cooling	0.00%	0
Classifying Matter	0.00%	0
Animal Body Parts	11.54%	3
Animal Parents & Their Young	3.85%	1
Plant Parts	0.00%	0
Young Animals Live and Grow	3.85%	1
Answered		26

Table 5. Educator comfort level implementation aspects of Hero Elementary, as self-reported on implementation survey (n=13-27)

How comfortable do you feel implementing the following aspects of the Hero Elementary program with your students?						Total
	Very comfortable	Comfortable	Unsure	Uncomfortable	Very Uncomfortable	
TV episodes	59.26%	33.33%	7.41%	0.00%	0.00%	27
Games	55.56%	37.04%	7.41%	0.00%	0.00%	27
Hands-on activities	37.04%	29.63%	33.33%	0.00%	0.00%	27
eBooks	34.62%	30.77%	30.77%	3.85%	0.00%	26
Science Notebook activities	29.63%	33.33%	33.33%	3.70%	0.00%	27
Using the educator platform (Canvas)	22.22%	33.33%	33.33%	7.41%	3.70%	27
Using the PBS website to access the playlists	40.74%	33.33%	18.52%	7.41%	0.00%	27
Managing the Hero Elementary classroom	53.85%	38.46%	7.69%	0.00%	0.00%	13
Integrating technology in the classroom	29.63%	51.85%	14.81%	3.70%	0.00%	27
Customizing the Hero Elementary program to fit the needs of your students	33.33%	29.63%	29.63%	7.41%	0.00%	27
Equity-based teaching strategies	35.71%	35.71%	28.57%	0.00%	0.00%	14
COPPA forms	21.43%	50.00%	21.43%	0.00%	7.14%	14
Creating student log ins	28.57%	35.71%	28.57%	7.14%	0.00%	14
Creating QR codes	15.38%	30.77%	38.46%	15.38%	0.00%	13
Accessing parent playlist	14.29%	21.43%	57.14%	0.00%	7.14%	14
Signing up parents to access the parent playlist	7.14%	28.57%	42.86%	14.29%	7.14%	14

Table 6. Helpfulness of Co-viewing Guide to educators, as self-reported on implementation survey (n=26)

How helpful is the co-viewing guide to facilitate learning as you watch episodes with your students?						
	Extremely helpful	Very helpful	Somewhat helpful	Not helpful	Did not use	Total
Responses	19.23%	26.92%	3.85%	0.00%	50.00%	26

Table 7. Helpfulness of Notebook Talk to educators, as self-reported on implementation survey (n=24)

How helpful is the Notebook Talk to facilitate learning as your students use the Notebook?						
	Extremely helpful	Very helpful	Somewhat helpful	Not helpful	Did not use	Total
Responses	8.33%	29.17%	37.50%	8.33%	16.67%	24

Table 8. Helpfulness of hands-on activity instructions to educators, as self-reported on implementation survey (n=24)

How helpful were the hands-on activity instructions?						
	Extremely helpful	Very helpful	Somewhat helpful	Not helpful	Did not use	Total
Responses	20.83%	37.50%	25.00%	0.00%	16.67%	24

Table 9. Educator perceptions of Hero Elementary fit at site, as self-reported on implementation survey (n=24)

How good a fit is Hero Elementary for your site and students?				
Answer Choices	Responses			
Very good fit	29.17%	7		
Good fit	37.50%	9		
Somewhat good fit	25.00%	6		
Bad fit	8.33%	2		
Very bad fit	0.00%	0		
Comments	0.00%	0		
	Answered	24		

Table 10. Hero Elementary support received by educators before and during implementation, as self-reported on implementation survey (n=24)

Which of the following implementation support have you received? [check all that apply]		
Answer Choices	Responses	
Webinar	17.39%	4
Email from TPT staff	60.87%	14
Support from program director	52.17%	12
Webinar: Hero Elementary Partner Webinar – April 2019	17.39%	4
Webinar: Hero Elementary Science Notebook Webinar – July 2019	26.09%	6
Webinar: Playlist Website Training	34.78%	8
Other (please specify)	34.78%	8

Appendix C: Evaluation Questions

Training

Trainers

How prepared do trainers feel to conduct PD for partner organizations' informal educators? In particular, how do trainers rate their level of preparation around:

- adult learning strategies;
- equity approaches and equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
- best practices for technology integration in K-2 learning environments;
- strategies for supporting learning in the NGSS and the SEPs in K-2 learning environments;
- guiding educators through each XP in the playlist and providing PD around:
 - episodes
 - games
 - notebook activities
 - hands-on activities
 - eBooks;
- skills to effectively implement the *Hero Elementary* program;
- *Hero Elementary* program-customization options; and
- managing the *Hero Elementary* classroom?

What did trainers appreciate about the TPT training? What would they change?

What additional support and/or resources would trainers appreciate before they conduct their first training?

Program Managers

What are the characteristics of program managers and the sites and populations they serve? Which trainings/webinars have program managers participated in?

What did program managers appreciate about the trainings? What would they change? Do they feel the trainings effectively prepared them for implementation? In what areas do they need additional support?

How prepared do program managers feel related to:

- skills to effectively implement the *Hero Elementary* program;
- knowledge of TPT's equity approach and skills to effectively implement equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
- best practices for technology integration in the classroom/OST environment;

- program customization options;
- managing the *Hero Elementary* classroom; and
- strategies for supporting learning in NGSS and the SEPs in the classroom/OST environment?

Educators

What are the characteristics of educators?

How did educators receive *Hero Elementary* training? What are educators' perceptions of the training (in person, online)? What would educators change about the training (in person, online)?

How prepared do educators feel in the following areas after participating in training:

- skills to effectively implement the *Hero Elementary* program;
- knowledge of TPT's equity approach and skills to effectively implement equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
- best practices for technology integration in the classroom/OST environment;
- program customization options;
- managing the *Hero Elementary* classroom; and
- strategies for supporting learning in the NGSS and the SEPs in the classroom/OST environment?

To what extent do educators plan to connect *Hero Elementary* to their existing learning activities? In what ways?

To what extent do educators feel prepared to implement the program following *Hero Elementary* training? What are they feeling good about? What are they worried about? What do they feel they still need?

***Hero Elementary* Implementation Support**

Educators

With how many students are educators implementing *Hero Elementary*? How often are educators implementing *Hero Elementary*?

How comfortable are educators in the following areas:

- skills to effectively implement the *Hero Elementary* program;
- knowledge of TPT's equity approach and skills to effectively implement equity-based teaching strategies for Latinx/Hispanic children, children living in low-income households, children who are learning English, and children with disabilities;
- best practices for technology integration in the classroom/OST environment;
- program customization options;

- managing the *Hero Elementary* classroom; and
- strategies for supporting learning in the NGSS and the SEPs in the classroom/OST environment

Are educators making connections to other OST and classroom learning activities? How so?

To what extent and in what ways are educators using and benefiting from the different types of implementation support (LMS online engagement, monthly webinars, tech support)? What would they change?

What is educator comfort level with implementing various aspects of the *Hero Elementary* program? In what areas do they need further support and training?

What playlist components have educators used with their students? Have they skipped any components? If so, why? Have they made modifications to the program?

Which playlist did educators use first, and why?

Which playlist component do educators think is the easiest to implement? Which is the hardest? Why? What is educators' favorite playlist component to implement?

How helpful do educators find the Co-viewing Guide?

How helpful do educators find the Notebook Talk?

What is working well with the Notebook? What is challenging about using the Notebook?

What HOAs have educators implemented?

How helpful are the HOA instructions?

What has worked well with the HOAs? What has been challenging about the HOAs?

How good of a fit do educators perceive *Hero Elementary* to be for their site and students?

What support has been the most helpful to educators in implementing *Hero Elementary*? What would educators add to the training and support?

What do educators think has been the most exciting thing about implementing *Hero Elementary*? What has been the most challenging about implementing *Hero Elementary*?

Have educators experienced technical difficulties in implementing *Hero Elementary*?

Have parents taken part in *Hero Elementary*? How?

Program Managers

How are programs using *Hero Elementary*? How many educators, students, classrooms/groups of students are using *Hero Elementary*? With what frequency? With what students in what types of groupings?

Which of the *Hero Elementary* playlist components do program managers think are the most successful for implementation at their sites? Which components are the most challenging to implement?

What are some of the challenges educators are having? How are program managers supporting educators in implementing *Hero Elementary*?

What do program managers think has been the most exciting about using *Hero Elementary*? Most challenging?

What support has been helpful to program managers as they implement *Hero Elementary*?

What resources would they have liked to have had before implementing?

To what extent do program managers feel *Hero Elementary* aligns with their site/program goals?

To what extent do program manager feel *Hero Elementary* serves diverse students at their site?

Have parents participated in *Hero Elementary*? How?

Do program managers plan to use *Hero Elementary* in the future? Why/why not?



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