Formative Evaluation of
SciGirls Video: Puppets

Report for
Twin Cities Public Television

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With support from the National Science Foundation, Twin Cities Public Television is producing a new PBS series about tween girls for a tween audience. Each live action half-hour episode follows a group of two to four “SciGirls” as they investigate their own science questions or take on an engineering challenge. Whereas the on-screen real SciGirls change with each episode, the series is unified by the animated world of Izzie and her BFF Jake. Izzie and Jake have their own story in every episode and look to the real SciGirls for help. To guide further development of the series, Multimedia Research implemented a formative evaluation of a rough cut video with 63 girls just entering fifth grade.

Appeal
The main story of the video is the engineering of a parade-size pig puppet with moving parts, and viewers pointed to this aspect of the video as what they liked the most. The fifth grade viewers liked the making or engineering of the pig puppet (38%); seeing the process of the girls’ teamwork (29%); having the real and animated stories intertwined (13%); seeing real girls do a believable project (10%); learning something interesting (10%); and seeing all the puppets (5%). Less appealing aspects pointed out by many fewer viewers concerned the girls’ disagreeing with each other (17%); the animated story (16%); the puppet story (11%); and the web clips about the girls’ interests and home life (10%).

Quantitative appeal ratings revealed that eight out of ten girls liked the SciGirls: Puppets video and would watch another show in the series. A majority rated the story as interesting (68%) and the video as visually interesting (56%). On average, viewers felt that the story pace moved neither too fast nor too slow.

Viewers also rated quantitatively how much they liked or did not like various production features of the video:

- Viewers really liked that the girls worked together as a team (94%) and that the girls did a real-life project (89%). These results reflect SciGirls’ front-end findings in the STEM research literature that “girls prefer to experience science in group settings” and that “girls look for compelling real-life contexts for science.”
- Viewers enjoyed that the girls talked a lot about their ideas (75%) and that they worked with adult helpers (76%). One-third (37%) liked that the girls sometimes disagreed with each other, but on average, the viewers felt this behavior was only “okay.”
- Interstitials in the video showed website presentations of the SciGirls’ other interests and their lives at home. Two-thirds of the fifth grade viewers liked these segments and liked hearing about the backgrounds of the SciGirls. Minority viewers in particular enjoyed learning about the lives of the onscreen girls who represented a diversity of ethnic groups.
Animated Characters

Three-quarters (75%) of the fifth graders liked the animated character Izzie, noting that she was funny or fun (38%), had a confident attitude (16%), was nice or cheerful (16%), and was helped by the SciGirls (14%). A majority of viewers (63%) felt that Izzie’s story made them more interested in watching the show.

Those who liked Jake (43%) thought he was funny; another 13% thought Jake was funny but had reservations about his actions with respect to Izzie; 13% described Jake simply as okay; and 32% did not like the way he treated Izzie in this particular story.

Impact

A majority thought the video was clear (83%) and felt that they learned from it (60%). Viewers reported learning about how to make a puppet (30%), learning some of the details of the pig puppet’s mechanicals (29%), and learning something about teamwork (21%).

Three-quarters of the viewers (76%) agreed that they could build a project like the girls in the show did. The viewers identified with the onscreen girls, recognized that construction of the pig puppet was “doable,” and as a result felt interested, comfortable and confident in their own ability to implement the same sort of project.

In conclusion, the rough cut video overall is competitive with other popular PBS shows, as eight of ten girl viewers expressed interest in seeing more shows. The research-based strategies for attracting ‘tween girls to science and engineering topics were successfully implemented in the video, and the audience responded positively to them as planned.