



DragonflyTV Evaluation Report Spring 2003

Executive Summary

ROCKMAN *ET AL*



DragonflyTV Evaluation Report Executive Summary

In the Spring of 2003, ROCKMAN *ET AL* conducted an evaluation that was designed to explore children's viewing behavior, outcomes of viewing, the impact of the program's structural features, viewers' content preferences, and factors that motivate greater participation by viewers. Nearly six hundred children and twenty-five adults in three major U.S. cities participated in this study. Evaluation activities included:

- Five sets of student surveys: one administered prior to viewing episodes of DragonflyTV, one following each of the three programs viewed as part of the evaluation, and one administered after students had seen all three episodes;
- A series of observations of students viewing DragonflyTV in which attention patterns were recorded and analyzed;
- Two rounds of student interviews including one prior to viewing episodes of DragonflyTV and a second round conducted after all three episodes had been viewed;
- Interviews with teachers in each classroom participating in our study after all three episodes had been viewed; and,
- Focus groups with extra-curricular science clubs.

All evaluation activities were designed with four themes in mind: content preferences, structural features, learning outcomes and participation. Major findings from this evaluation are presented below.

Content Preferences

There are many factors that play a role in determining audience appeal, but content clearly seems to be dominant among them. There was a unmistakable preference for the episode on propulsion (Episode 205) with 81% of students saying they were interested in the episode, and 91% stating that they'd like to do experiments like the one shown in that episode. Students found the segment on model rockets to be particularly appealing, often referring to this as one of their favorite things about DragonflyTV in the final round of student interviews.

We found some evidence that content preferences vary by grade and gender. Surveys revealed a significantly higher level of general interest in the topics on DragonflyTV among fourth graders. Fourth grade students also reported a slightly higher, but statistically significant, liking of the episode about mammals (Episode 211) and the episode about the Human Body (Episode 206). Girls reported a slightly higher, but statistically significant

liking of the episodes on mammals and the human body. Interviews with students and teachers confirmed that younger children and girls seem to be generally more interested in animals.

The investigation segments, highlighting kids doing their own research, were clearly favored over other types of segments featured on DragonflyTV. It is also interesting to note that the most favored segment from all three episodes was the ice cream scientist featured in Episode 206 (*Human Body*), suggesting that children like hearing from and learning about adult scientists, if the subject matter is of interest to them.

Structural Features

When viewing an episode of DragonflyTV, it is hard to deny the program's vibrant look and sound. The show features a contemporary production style, varied camera angles, quick pacing, and an assortment of music and audio clips. These features help DragonflyTV capture viewers' attention and stimulate engagement.

The number of students' eyes-on-screen throughout each program remained high. Even when there were disruptions in the classrooms, most children kept their eyes on the screen. Overall, 5th grade students seem to keep eyes-on-screen more than 4th graders. Fourth graders' attention was clearly higher during the episode on *Mammals* than it was during the episodes that followed. This finding, combined with what we learned through survey data (i.e. 4th graders liked the *Mammals* episode significantly more than 5th grade viewers) supports the notion that there tend to be more eyes on screen when the topics are of interest to the viewers.

Throughout each observation, children seemed to be enjoying the music. There were many cases where the children would sing along (or mouth the words) with songs that they knew. In other instances we saw feet tapping and what might be described as dancing in their seats. We noticed that certain songs have the ability to pull in children's attention in cases where it had wandered away from the television. The music-video-like montages of photos held their attention well and seemed to add to their overall enjoyment of the program. Survey data supported the notion that the music had a favorable impact on viewers.

We noted that students were most attentive during points in the programs where data was being collected and recorded. Children appeared interested in following along with the kid-researchers shown on the program as they were gathering data, and were attentive to the charts and graphs they created to display their findings.

Learning Outcomes

Generally speaking, teachers reported that their students wanted to do more research and more investigations as a result of viewing DragonflyTV. Furthermore, most teachers felt their students were better prepared to do science projects after viewing several episodes of DragonflyTV. Student survey data also supports the finding that students are more interested in doing science projects and focus group participants said that the show gave them ideas for doing their own science projects (and information on how to do them better).

It seemed clear to many teachers that children understood more about the scientific process and scientific inquiry as a result of watching DragonflyTV. Over 90% of students surveyed indicated that DragonflyTV helped them to understand how to do a science experiment. The children we spoke with in interviews and focus group sessions also emphasized the value of learning different ways to graph data for analysis and presentation purposes. In student surveys we also saw a jump in the number of students indicating that it was very important to write down whatever happens in an experiment.

Participation in DragonflyTV

Nearly 70% of students surveyed indicated a desire to be on DragonflyTV. In terms of incentives for applying to be on DragonflyTV, only a few additional students indicated that they'd like tangible incentives (e.g. money or prizes) than those indicating that the intrinsic educational value—to learn new things, or to share what they've learned with others—was incentive enough. Students indicated that they'd also be motivated by competition, by being on television, and by having peers doing it as well.

Children seemed to realize the important role that adults must play behind the scenes in many of the investigations shown on DragonflyTV. They believed that adults likely served not only as supervisors, but also motivators. Teachers and extra-curricular group leaders echoed children's statements about the importance of adults' involvement in helping to guide successful investigations and subsequent applications to be on DragonflyTV. The general sentiment among teachers was that greater awareness about the show and the application process was necessary to generate more idea submission. While children's ability to participate on DragonflyTV seems to be hindered most by the lack of adult motivators and mentors, adults seem to be hindered by lack of program awareness and time.

Survey data suggests that more-involved kids are most likely to want to be on DragonflyTV. Regression analysis showed that there is a positive, statistically significant relationship between student involvement in outside activities and how much they want to be on DragonflyTV. Our analysis also

showed that students' desire to be on the show varies significantly by grade, with 4th grade students stating they want to be on the show more than 5th grade students.

Other Findings and Conclusions

The “reality” of DragonflyTV seems to be one of its greatest strengths. Teachers like the fact that it shows real kids and students seem better able to relate to it as a result. One teacher remarked that she liked DragonflyTV because it didn't seem like a canned show. "I liked the Bill Nye show, but I liked DragonflyTV better because it was a real show with real kids."

Students' general opinions about science improved as a result of viewing DragonflyTV. The extent to which students understood the content presented on DragonflyTV emerged as a better predictor of positive changes in students' attitude toward science in general than the extent to which they liked the program, perhaps indicating that DragonflyTV succeeds in reaching students who have traditionally been turned off by science programming that they've found to be confusing or difficult to understand.

In sum, results from this evaluation demonstrate that DragonflyTV not only entertains, but also educates its viewers. The program succeeds at appealing to children in the target age group (nine to twelve) and manages to promote greater awareness of the steps associated with the scientific process. Teachers were extremely excited about the program and were eager to incorporate it into their instruction and students were turned on by the fact that they could learn something from a program that they enjoyed.