

DragonflyTV
Formative Evaluation
Of Three Shows

Report for
Twin Cities Public Television

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**EXECUTIVE SUMMARY OF
FORMATIVE EVALUATION OF "DRAGONFLYTV" SERIES**
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With support from the National Science Foundation and Best Buy, Twin Cities Public Television has produced a science series for children. Entitled "DragonflyTV," the series presents real kids engaged in real science to promote the process of science inquiry in viewers. This formative evaluation gathered feedback from 5th and 6th graders in response to three 28 minute videos, presented one per week. The following were the general research goals:

- To evaluate change in student ability to design an experiment;
- To measure change in interest in doing one's own science investigation;
- To determine differences in student ratings of the importance of four procedures in science investigation;
- To look for impact on attitude toward the corporate sponsor's involvement in helping kids learn;
- To assess appeal of the series of three shows overall and of individual segments.

Sample and procedure. Almost 300 5th and 6th grade students participated, drawn from Springfield, PA; Miami Beach, FL; and Elk Grove, CA. The sample comprised half females and two-fifths minorities. Students completed a pre-viewing survey; viewed one show per week for three weeks followed immediately by rating surveys, and then completed a post-series survey. A subsample of 48 randomly chosen students was interviewed individually both before and after the series to assess understanding of the design and implementation of experiments.

Results

Impact of Viewing DragonflyTV on Ability to Design an Experiment

Viewing *DragonflyTV* significantly improved students' ability to think about the design and implementation of an experiment. After seeing only three shows, over half (58%) of 48 interviewed students showed increased understanding of experimental design; understanding remained the same for 27% and decreased for 15%. After seeing the shows, students were significantly more likely to suggest comparing more than two items in their experiment; better able to explain a data collection procedure; more likely to suggest writing down or charting data; and better able to make interpretations. When asked if they learned anything new about how to design an experiment from watching the series, one-quarter did not think so, but 37% said they learned to use graphs, charts or tables and about 10% each noted the importance of writing things down; having an adult with you; going to different places to experiment and being well organized.

Impact of DragonflyTV on Interest in Doing Own Investigation

Viewing *DragonflyTV* significantly influenced children's interest in doing their own science investigation. Over one-third of students were more interested in doing a science experiment after viewing the *DragonflyTV* shows than they were before seeing the series. Minority viewers were affected the most with 41% showing increased interest. At least 30% of viewers "very much" liked the idea of their own experiment after viewing three shows.

Impact of DragonflyTV on Perceived Importance of Four Procedures in Investigation

Viewing *DragonflyTV* significantly influenced children's rating of the importance of charting one's findings. One-third of non-viewers felt making a chart was "very important," whereas one-half of viewers thought so. Viewing did not have a significant impact on students' understanding of the importance of writing down what happens in an experiment, repeating an experiment or doing everything the same each time you do an experiment. The latter three strategies were less emphasized in the particular episodes viewed, whereas making charts was a significant aspect of the shows. "Writing down what happens" was already considered "very important" by 70% of respondents before seeing any episodes, and one-third of the non-viewers felt that way about the other research strategies.

DragonflyTV's Influence on Opinion of Corporate Sponsor, Best Buy

Viewing *DragonflyTV* positively influenced children's opinion of the involvement in education of the corporate sponsor, Best Buy. Children who watched *DragonflyTV* were three times more likely than non-viewers to agree that Best Buy is "very likely to care about helping kids learn new things." The average opinion of how much Best Buy "cares about helping kids learn" improved: On a scale of 1 to 4, where 4 meant "very likely," children who did *not* watch *DragonflyTV* ranked Best Buy at 2.4, the same rating as Target and Wal-Mart. But children who had watched three episodes of *DragonflyTV* gave Best Buy an average rating of 3.2, approximately 30% higher than non-viewers.

Appeal and Clarity for Shows 1, 2 and 3

DragonflyTV appealed to a significant majority of students. More than 80% of 5th graders and 70% of 6th graders gave positive ratings for ten major segments within the three episodes. Overall, 5th graders liked the major segments of *DragonflyTV* significantly more than 6th graders, and there were significant variations in the ratings for individual segments. Students rated Dogs and the Know How-Cutting Rock as the most appealing segments. Girls favored Otters and Forecasting Weather, whereas boys favored Tornado Model and Know How -Thief/fog. Both girls and boys were least interested in Know How-Airport Birds. Those who already watch science television rated segments higher than those who do not watch science television.

When asked what they liked or disliked about the series of shows, viewers most often mentioned particular segments because they liked or disliked the content (e.g., like dogs; dislike rocks).

Overall, viewers felt the content of the segments was clear to them, giving clarity ratings that were as high or higher than the appeal ratings. Generally, 5th graders and those who watch science television rated parts as clearer than 6th graders and those who do not watch science television.