

## FVC EVALUATION HEADLINES

In order to assess the *FIRST* Vex Challenge, the Center for Youth Development at Brandeis University collected surveys and focus group data from FVC team leaders and participants at each of the six FVC pilot tournaments. The findings below are based on surveys from 103 team leader and 577 participants representing 113 teams (approximately 86% of those participating), as well as information from focus group discussions with an average of 6-8 teams at each tournament. Major findings include the following:

### FVC BROUGHT NEW TEAM LEADERS AND PARTICIPANTS INTO *FIRST*

- **Despite being marketed primarily within the *FIRST* community, the FVC pilot tournaments brought substantial numbers of new team leaders and participants to *FIRST*:** 40% of team leaders and 67% of team members had no prior involvement in *FIRST* programs.
- **FVC also successfully involved substantial numbers of teams/participants from low income communities:** approximately one third of the teams reported that a majority of their team members from low income families.

### TEAM LEADERS ASSESSED FVC POSITIVELY

- **Most team leaders assessed the FVC experience positively.** Virtually all team leaders agreed that their team members enjoyed building the robot (100%) and competing in the tournaments (98%); most (80% or more) felt that the guides and materials were helpful, the tournaments were well organized, and that when they had questions, staff at *FIRST* were helpful in getting the answers. Overall, 92% of the team leaders reported being “Satisfied” or “Very Satisfied” with their FVC experience; 88% said they wanted to lead a team next year.
- **Team leaders also reported a positive impact on participants.** Ninety percent or more reported that the program had increased participants understanding of basic science principles; how technology could be used to solve real world problems; and team members’ understanding of the engineering design process. Over 90% also reported gains in participants’ teamwork and problem-solving skills, and 90% reported an increased interest among team members in science and technology careers.
- **Fewer team leaders (though still a majority) were satisfied with the Kits.** Sixty-two percent of team leaders agreed that the Starter Kit had enough parts to build a competitive robot . When asked how the Kits could be improved, team leaders commonly requested more parts in the Starter Kit (in particular, more metal parts); better quality parts (gears, chains, clutch, etc.); and better pricing on or inclusion of major accessories (programming kit, batteries, etc.).

### PARTICIPANTS ALSO ASSESSED FVC POSITIVELY

- **Team members also assessed their experience positively.** Over 90% of team members reported that they liked being on a team, **building** the robot and competing at the tournament “a little” or “a lot.” Eighty-nine percent of participants rated their experience as “good” or “excellent;” 73% reported that it was “more fun and interesting” than their other after-school activities; and 74% reported wanting to participate again next year. Of those who do not

expect to return, just over half reported that they would be too old and/or graduating from high school.

- **Most participants reported a positive impact on their knowledge, interests, and skills.** Ninety percent or more report increased understanding of the value of working on a team, how science and technology can solve problems, and the engineering design process. More than 80% or more report increased interest in science and technology careers. Over 90% also report that they learned about working in a team, using trial and error, working with team members to solve a problem, and managing their time.
- **Focus group participants also voiced a strong, positive response to the FVC experience.** They liked the opportunity for more or earlier hands-on experiences than possible on many FRC teams (where older, more experienced youth often do the major work); the ability to quickly redesign and revise the robot; and the experience of working on a team.
- **Eighty-eight percent of participants indicated an interest in getting involved in even more challenging robotics programs as a result of being in FVC,** and of those familiar with the *FIRST* Robotics Competition (FRC), 78% report that involvement in FVC has made it “a little more likely” or “much more likely” they will participate in FRC.

#### **MOST TEAM LEADERS RATED FVC AS “AFFORDABLE,” THOUGH COST CONTINUES TO BE CITED AS A BARRIER**

- **The large majority of team leaders (84%) rated FVC as “affordable” or “very affordable.”** Seventeen percent indicated that it was “not very affordable” (evenly split between “rookie” and “veteran” team leaders) and none reported that it was “not affordable at all.” The average reported cost of participation was \$1835.
- **While most team leaders rated FVC as affordable, when asked about barriers to participation in the team leader survey, the most common response (45% of responses) was “cost.”**

#### **TEAM LEADERS AND TEAM MEMBERS SEE FVC AS VALUABLE LEAD-IN TO FRC**

- **The large majority of team leaders see FVC as a useful addition to the mix of *FIRST* programs.** Of the coaches who have been involved in other *FIRST* programs (FRC or FLL), 96% would recommend that other *FIRST* teams become involved in FVC. Sixty-five percent of those team leaders recommend FVC as an introduction to FRC; 59% as a bridge program from FLL to FRC; and 52% recommend teams do both FVC and FRC. Only 15% would recommend doing FVC instead of FRC.
- **Most team members also see FVC as a complement to the *FIRST* Robotics Competition.** Of those team members familiar with FRC, 59% reported that they would like to do both FVC and FRC in the future; 26% reported they would chose FRC only; and 15% reported wanting to do FVC only.

#### **TEAM MEMBERS GENERALLY LIKED THE PROPOSED LEAGUE APPROACH**

- In general, team members liked the idea of participating in multiple tournaments, though there were concerns about the time involved and the timing. Team members wanted to make sure that there was sufficient time between league matches; that missing one event or losing at one event would not disqualify a team from future events; and that the league timetable did not preclude participation in FRC.