EVALUATION REPORT

April 6th - 7th

1,200 Middle School Students Impacted through STEAM Fiesta

550 High School Competitors

30 Exhibitors (8 High Schools, 22 Corporate)

18 STEAM Exploration Workshops

4 Rural Areas Participated Marfa, Presidio, Fabens, Clint

Prizes

$22,000 Money Awarded

$13,000 Scholarships

$87,638 Private Sector Support

$16,000 In Kind Non-Monetary Support
Table of Contents
Introduction........................................................................................................2
Methodology for Surveys................................................................................2
Student Survey Results....................................................................................3
Teacher Survey Results....................................................................................7
Conclusion.........................................................................................................8

Introduction

STEAM (Science, Technology, Engineering, and Math) education is becoming increasingly recognized as a key driver of career opportunity, innovation, and economic impact. Data shows that the need for STEAM knowledge and skills will grow and continue to increase in the future. When we look STEAM related jobs specifically, economic projections point to a need for 1 million more STEAM professionals than the US will produce at the current rate over the next decade. One of the most key factors that limits the United States’ ability to stay ahead of the STEAM curve is the lack of introduction to these educational areas at an early age. Early exposure can help foster students’ STEAM interest.

WSB has recognized the challenge and has been facilitating the STEAM competition for the last nine years. The 2017 STEAM Fiesta is coordinated annually by Workforce Solutions Borderplex and the STEAM Fiesta Committee. Over the last nine years, this event has transitioned from the STEM Challenge for regional high school students, into a multidimensional, two-day event for middle and high school students in the entire Borderplex Region. The event was hosted at ESC 19 Chito Samaniego where both area employers and community stakeholders welcomed more than 1,750 middle and high school students to learn and showcase their achievements in STEAM. The event featured competitions in Robotics, Gaming/IT, Coding, the Prudential Math Challenge, Growing on Mars, and the STEMentorship.

WSB recognizes that education is the most critical building block of a strong economy and community. Events such as the STEAM Fiesta helps to further align and create connections between employers, school districts, and higher education institutions.

Methodology for Survey Result

WSB staff conducted a survey with the purpose of gathering information on opinions and factors that may influence students when choosing a career path. The questionnaire was completed by 735 students. Research survey questionnaire was developed consisting of questions based on feedback from STEAM Fiesta Leaders. The survey methodology used was a non-probability sampling frame. The target population consisted of STEAM Fiesta student attendees and participants. Students were asked to fill out the questionnaire either on a tablet using Survey Monkey or on a hardcopy questionnaire. All survey results were entered on the Survey Monkey questionnaire.
Student Survey Results

There was a total of 735 students that completed the survey.

The graphs below indicates the students survey results.

What grade are you in?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th</td>
<td>3%</td>
</tr>
<tr>
<td>7th</td>
<td>7%</td>
</tr>
<tr>
<td>8th</td>
<td>64%</td>
</tr>
<tr>
<td>9th</td>
<td>4%</td>
</tr>
<tr>
<td>10th</td>
<td>10%</td>
</tr>
<tr>
<td>11th</td>
<td>5%</td>
</tr>
<tr>
<td>12th</td>
<td>6%</td>
</tr>
<tr>
<td>No Response</td>
<td>1%</td>
</tr>
</tbody>
</table>

74% (seventy-four percent) of the students that completed the survey were Middle School. 25% were in high school and 1% did not provide a response.

Is this your first time attending the STEAM Fiesta?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>87%</td>
</tr>
<tr>
<td>No</td>
<td>13%</td>
</tr>
</tbody>
</table>

92% (nine-two percent) of the students that completed the survey stated that they learned about the STEAM fiesta 2017 event through teachers. 8% (eight-percent) of the survey respondents indicated that they learned about event through friends, e-mail and posters/announcements.

How did you learn about STEAM Fiesta?

Teachers 92%  
E-mail 1%  
Posters 4%  
Friends 3%

The majority, 87% (eighty-seven percent) indicated that it was the first time attending STEAM Fiesta event, the remaining 13% were students that attended previously a STEM fiesta event.
The highest motivator for students to participate in the competitions with a 29% (twenty-nine percent) rate was Fun/Friends, the second highest motivator was College Competitiveness with a 27% (twenty-seven percent) and the third highest motivator was Resume College Application with a 9% (nine percent) rate.

The majority of students surveyed, 78% (seventy-eight) stated that they became interested in STEAM related classes in middle school (6-8th grade). 17% of the students responded they became interested in STEAM related classes in high school. The remainder of students surveyed stated they were exposed during 4-5th grade, K-3rd, or did not respond at all.

91% (ninety-one percent) of the students responded that the school support STEAM related activities. 9% (nine percent) did not think the school support the STEAM related activities.
Are you worried about paying for college?

The majority of students, 64% (sixty-four percent) stated they are worried about paying for college, 35% (thirty-five percent) stated they are not worried. 1% stated they were not planning to attend college.

Have you received information about resources to help pay for college?

The majority of students surveyed, 57% (fifty-seven percent) stated they had received information about resources to help pay for college. STEAM staff was able to pass out information on FAFSA Nights to all students who took the survey.

Has anyone in your family completed their college education.

80% of the students surveyed stated they had a family member who completed college. 20% (twenty percent) stated they will be the first in their family to attend college.

Do you plan to stay in El Paso?

41% (forty-one percent) stated they were not sure if they plan to stay in El Paso. 29% (twenty-nine percent) stated they are not planning to stay, and a combination of 30% (thirty percent) stated they were planning to stay either after high school or after college.
Reasons why students indicated they would want to leave the Borderplex area after graduation:

The top 3 reasons:

1) There are better wages in other areas
2) Limited career options in El Paso
3) Life style

What career/job do you want to have?

Students surveyed indicated the top ten career/jobs they would like to have in the future.

➢ Engineer
➢ Mechanical Engineer
➢ Computer Science
➢ Doctor
➢ Aerospace Engineer
➢ Architect
➢ Surgeon
➢ Nurse
➢ lawyer
➢ Robotic Engineering

What did you enjoy the most about this year’s STEAM Fiesta?

Students surveyed indicated that the top three activities they enjoyed the most in this year’s STEAM fiesta event were:

➢ Robotics
➢ Virtual Reality and;
➢ Technology

Students Feedback and Recommendations

➢ Something about medicine or the human body
➢ It’s good the way it is
➢ Possible variety of career choices
➢ more exhibits
➢ Physical activities
➢ Medical systems
➢ more art
➢ More presentations
➢ college information
➢ more art
➢ more coding or software activities
➢ More inspirational speeches
➢ nothing really, it was good
➢ something in the medical field and law area
➢ Math and Science skills
Teacher Survey Results

There was a total of 40 teachers that completed STEAM Fiesta Teacher Survey.

What grades do you primarily teach?

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-5th Elementary</td>
<td>14%</td>
</tr>
<tr>
<td>6th To 8th Middle School</td>
<td>43%</td>
</tr>
<tr>
<td>9th to 12th High School</td>
<td>43%</td>
</tr>
</tbody>
</table>

43% (forty-three percent) of the teachers that completed the survey indicated that primarily grade they teach is 9th to 12th. 43% (forty-three percent) teach 6th to 8th grade and the remaining 14% (fourteen percent) teach K to 5th grade.

What STEAM subject do you teach?

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>15%</td>
</tr>
<tr>
<td>Technology</td>
<td>29%</td>
</tr>
<tr>
<td>Engineering</td>
<td>26%</td>
</tr>
<tr>
<td>Art</td>
<td>7%</td>
</tr>
<tr>
<td>Math</td>
<td>12%</td>
</tr>
<tr>
<td>Don't teach any of the...</td>
<td>11%</td>
</tr>
</tbody>
</table>

29% (twenty-nine percent) of the teachers that attended STEAM fiesta event teach Technology. 26% (twenty-six percent) Engineering. 15% (fifteen percent) science. 19% (nine-teen percent) teach Math or Art. The remaining 11% (eleven percent) do not teach any of the course mentioned above.

Do you feel your school overall supports STEAM related activities?

75% (seventy-five percent) of the teachers responded that their school supports STEAM related activities, the remaining 25% (twenty-five percent indicated that school supports STEAM activities but could do more.

Did STEAM Fiesta change your mind about your future career?

54% (fifty-four percent) of the students who completed the survey indicated that the STEAM Fiesta event changed their mind about their future career.
100% of the teachers that attended STEAM fiesta event feel that STEAM Fiesta enhances awareness and interest in STEAM careers

Conclusion

Extensive research has shown that STEAM related competitions and fairs have a positive effect in helping students make the connection between math and science classes and their future career options. An increased level of early exposure will help to make the requisite math courses needed for many STEAM careers more relevant to students. Critical math and science courses are often criticized by students as being too abstract and not relevant to the real world.

The 2017 STEAM Fiesta event help expose the students to STEAM career opportunities and allows them to make real word connections by bringing together employers, school districts, and higher education institutions. The purpose of the survey aims to gauge student interest and identify possible barriers that can influence a student when choosing a career path. The survey results evaluation can aid to further develop strategies and opportunities that will assist youth to engage in STEAM related activities and career paths.

Contact
For more information on STEAM Fiesta, contact Joseph Sapien, STEAM Lead at Joseph.Sapien@borderplexjobs.com or call 915-887-2221

Teacher Feedback and Recommendations

➢ Maybe more on visual arts
➢ More activities pertaining to programming and computer science
➢ I would like to see Biomedical/ Science
➢ More hands-on activities and workshops!!
➢ Great job! Maybe more info about software?
➢ Everything is fine
➢ None, it was very nice!
➢ College opportunities in our area and grade/course requirements by stem field
➢ Auto design competitions solar cars
➢ More hands-on building of computers, like a workshop
➢ All went well I would recommend more technology that the kids can play with. Vitality was great all was excellent! more activities for kids to do in sessions electronics where they get to do circuit and keep them hook awesome!
➢ Activities need to be shortened, students do the activities, or watch the presentation and then get bored. Their interest does not last if these cycles were. They were wanting to get out and not wait for the volunteers.
➢ More workshops throughout, more hands on, invite engineering companies to show their technologies
➢ Environmental engineering
➢ Have some adults or parents get involve it is awesome!