Virtual Worlds Conference
Dassault Systèmes - Coventry

Executive Summary

The purpose of this report is to evaluate the effectiveness of the STEM Champion Dassault Systèmes Coventry Conference in reaching its aims. These aims were to teach young students about STEM subjects and STEM-based careers using fun and engaging methods, as well to showcase to them the cutting-edge technologies that Dassault Systèmes develops and employs as part of their vast portfolio.

Forty-seven students from three schools in Coventry and Warwickshire attended the "Virtual Worlds" themed conference. Engineering students from the University of Warwick and the University of Bath, and a recent Biomedical Science graduate from University College London led the sessions where they taught students about various STEM (Science, Technology, Engineering and Maths) topics, as well as careers.

The findings of this report show that overall students had a very positive experience at the conference; they found it to be interactive, engaging and fun. The conference was also successful in increasing students' knowledge of STEM and its applications. Particular benefit came from the exposure of the students to Dassault Systèmes' resources and employees who were found to enhance the conference experience.

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Introduction

On Friday 4th October 2019 the STEM Champion Dassault Systèmes Coventry Conference took place. Dassault Systèmes' Coventry Office was host to 47 students from three schools based in Coventry and the surrounding county of Warwickshire - WMG Academy, West Coventry Academy and Stratford Upon Haven School.

The aim of STEM Champion is to tackle the ongoing UK STEM skills shortage by targeting the declining interest in STEM (Science, Technology, Engineering and Maths) among the youngest generation. STEM Champion's methods of doing this revolves around three key elements:

‣ Placing students in an engaging, expressive learning setting; conference-based learning.
‣ Having university students lead learning sessions, resulting in a "For Students, By Students" model.
‣ Placing emphasis on the exciting careers and industrial applications of STEM disciplines, as well as the theory.

Led by a theme of "Virtual Worlds", the conference sought to teach the students about STEM disciplines and a variety of STEM-related careers aided by Dassault Systèmes' technologies. Students were separated into three pre-determined groups, which mixed students from each school, and participated in sessions where they were taught about STEM. University students from University College London, the University of Warwick and the University of Bath taught the sessions as Directors. Respectively, these Directors led sessions called Living Heart (Science session based on the Dassault Systèmes Living Heart Project), Robotic Mechanisms (Technology and Engineering Session based on Dassault Systèmes' SolidWorks Apps for Kids), and STEM Streak

(Careers session based on STEM Champion's developing careers card game, STEM Streak). Each Director taught their content three times; once to each group of students.

An additional role of the Directors was to observe the students and pick out the most enthusiastic, passionate and knowledgeable students to receive one of twelve "Medals of Recognition".

This report aims to evaluate the effectiveness of the conference in achieving STEM Champion's goals of teaching STEM in a fun and engaging way.
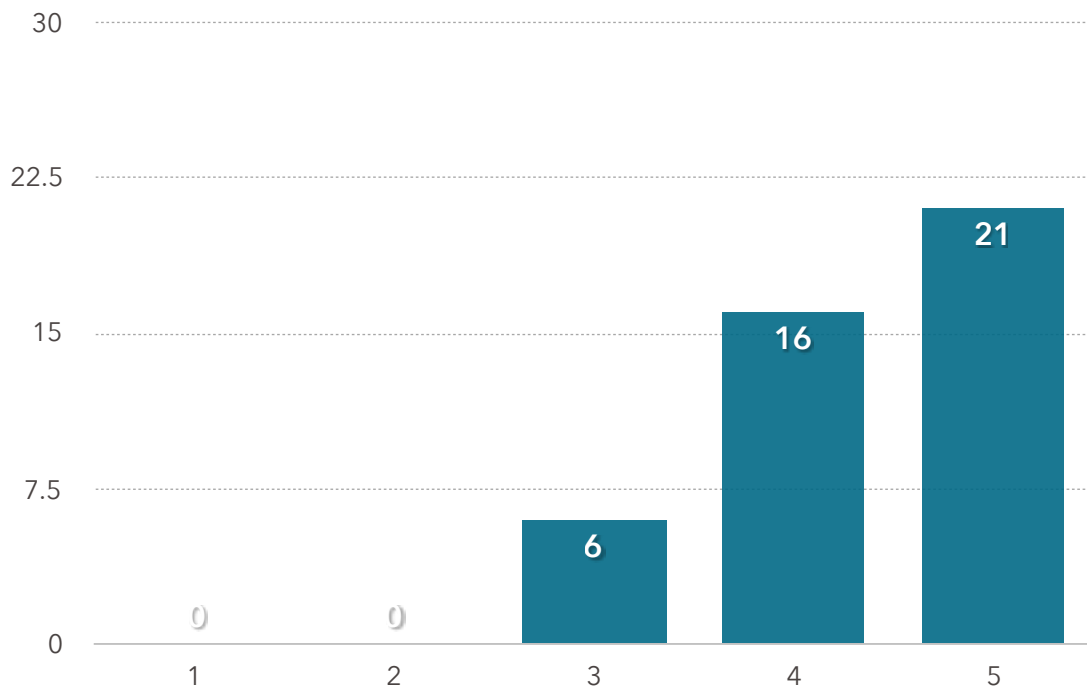
Evaluation Method

To help to evaluate the event, quantitative and qualitative feedback was collected from the students in the form of surveys. Directors collected in completed student surveys during the last committee session so the students could give their thoughts on the day that they had just experienced. Interviews were also conducted with students, teachers and Dassault Systèmes employees throughout the day, so that each group could give their thoughts on the experience STEM Champion provides, as well as the importance of STEM education as a whole. This offered various perspectives on the day's events.

Findings

47 surveys were handed out to the students, of which 44 responded to the qualitative questions as follows:

- **82% (36) of the students knew more about STEM than they did before the conference.**

- **57% (25) of the students were interested in pursuing a career in STEM.**

- **91% (40) of the students preferred the experience of the conference over the traditional classroom experience.**

- **89% (39) of the students enjoyed the format of the conference.**

- **77% (34) of the students learned from the discussions with peers and mentors.**

- **93% (41) of the students found the session activities relevant and interesting.**

- **65% (28) of the students knew more about Dassault Systèmes than they did before the conference.**

- **34% (15) of the students would be interested in working in Dassault Systèmes.**

Student responses when asked "On a scale of 1 to 5, with 5 being high, how much did you enjoy this conference?"

Scale	Count
1	0
2	0
3	6
4	16
5	21

Student responses when asked "On a scale of 1 to 5, with 5 being high, how much would you like to participate in this conference again"

Scale	Count
1	2
2	3
3	6
4	9
5	23
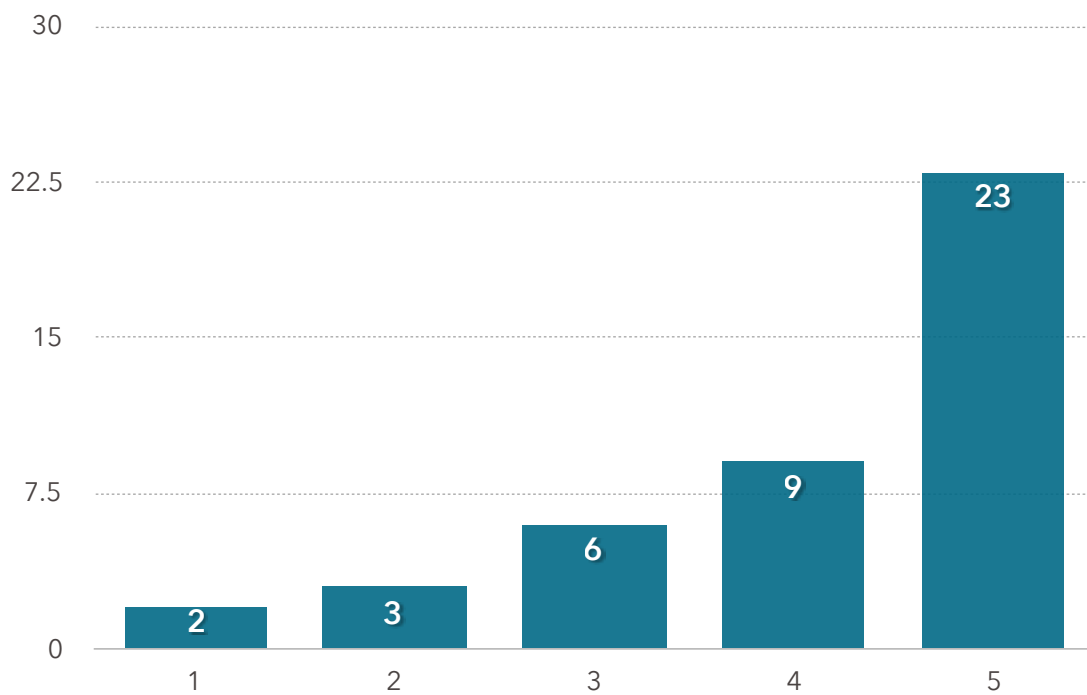
When students were asked about their favourite parts of the conference, the top responses were:

- Technology and Engineering Session – **32%** (14 respondents)
- STEM Streak – **25%** (11 respondents)
- Living Heart – **25%** (11 respondents)
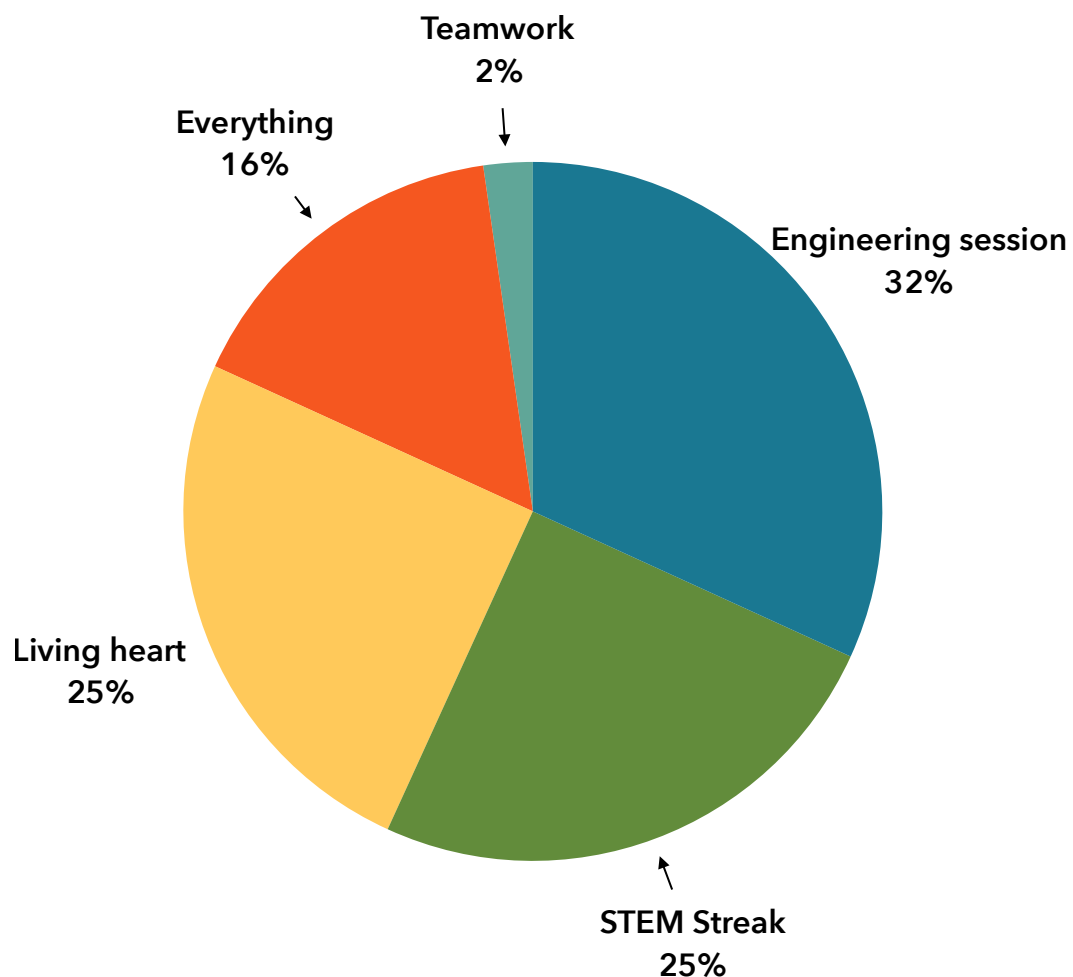
When students were asked how the conference was different to a classroom the top responses were:

- More interactive – **39%** (17 respondents)

- Relaxed talking environment – **16%** (7 respondents)

- Learned more – **14%** (6 respondents)
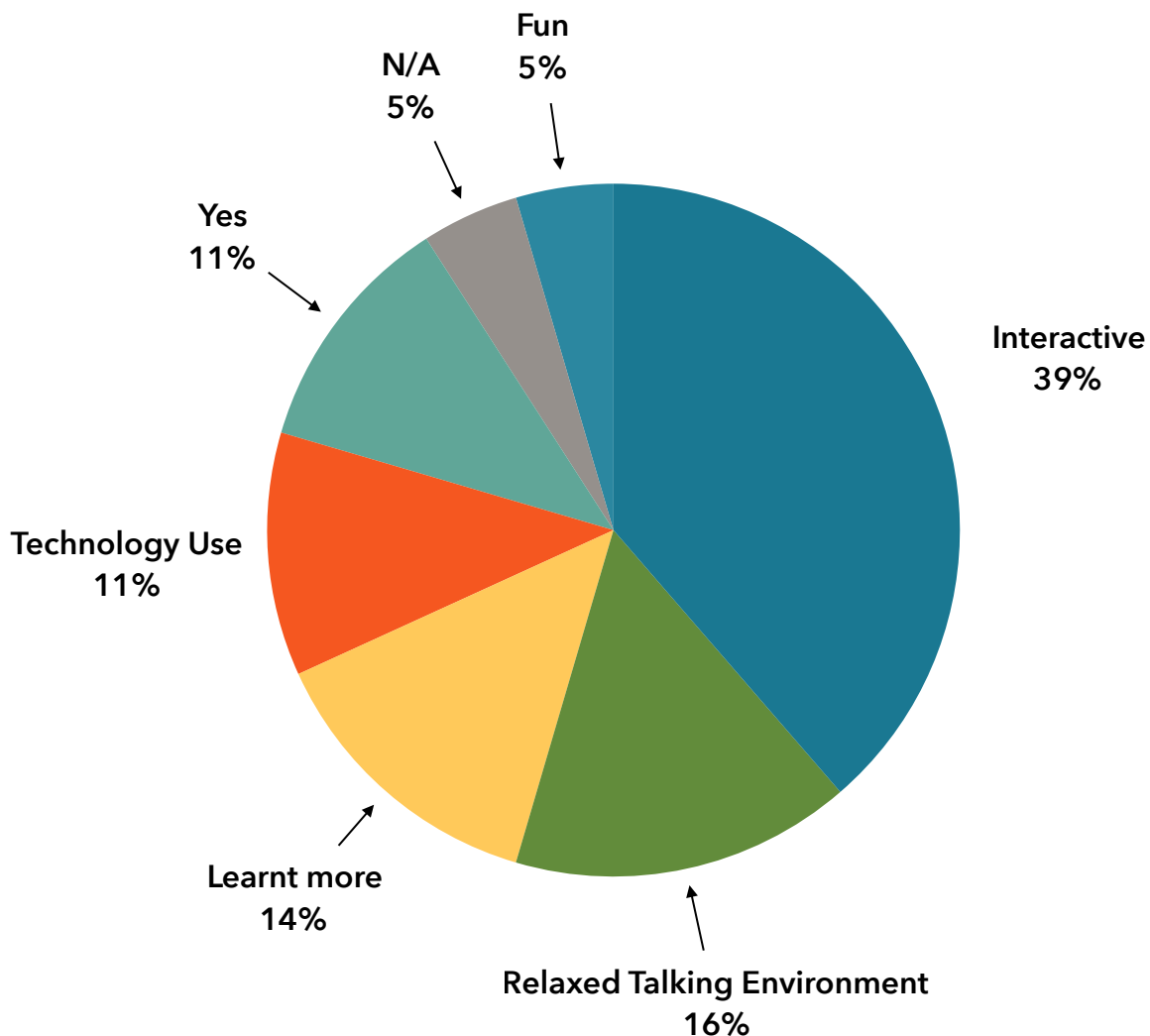
Student quotes:

 "It's definitely shown me that the people who are succeeding have a lot of passion in what they do, so that's motivated me to really pursue my goals"

"…coming here has confirmed that I really enjoy engineering, and that it is something that I want to do."

Teacher quotes:

"… the activities allowed learning without thinking about it as learning."

"STEM Champion have done a really good job of bringing industry and the education sector together. They can sometimes have trouble linking and you've acted as a very good intermediary between the two."

Dassault Systèmes employee quotes:

"The STEM Champion format really engages the children and gets seeing different perspectives that they wouldn't be seeing in school."

"The schools and us have been brought together in a way that's really positive."

Discussion and Recommendations

An overall look at the student survey responses, as well as direct quotes from students and teachers, suggests that the aims of the event were met making the conference a success. Awareness of STEM was increased, indicated by the 82% of students that knew more about STEM than they did before the conference.

Heavy emphasis was placed on ensuring that students enjoyed their learning experience, and the interactive nature of the activities seemed to be a driving factor in the learning and enjoyment of the day, with 68% of students selecting one of the three sessions as the highlight of their day.

Company exposure proved to be another benefit of the event, with two-thirds of students having learned more about Dassault Systèmes and 34% even considering working with the company in the future.

The overall format of the conference was also a positive point in the feedback of the conference; 86% of the students enjoyed the conference, and a similar number preferred the experience of the conference to the traditional classroom experience. Interactivity and variety in what's taught are shown to be great merits of conference-based learning.

Appendices

Appendix A

Students evaluation survey distributed at Virtual Worlds Coventry Conference.

Delegates' Survey

Year Group: ....

1. Do you know more about STEM than you did before this conference?   Yes / No / Not Sure

2. Are you more interested in pursuing a career in STEM than you were before this conference?   Yes / No / Not Sure

3. Did you prefer the experience of this conference over the traditional classroom experience?   Yes / No / Not Sure

4. Did you enjoy the format of this conference?   Yes / No / Not Sure

5. Do you think you learned from discussions with peers and mentors?   Yes / No / Not Sure

6. Do you feel that the session activities were relevant and interesting?   Yes / No / Not Sure

7. Do you know more about Dassault Systèmes than you did before the conference?   Yes / No / Not Sure

8. Would you be interested in working for Dassault Systèmes in the future?   Yes / No / Not Sure

9. On a scale of 1 to 5, with 5 being high, how much did you enjoy this conference?

   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

10. On a scale of 1 to 5, with 5 being high, how much would you like to participate in this conference again?

    ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

What was your favorite part of the conference?

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Was there anything you did not enjoy about the conference?

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How do you think this conference provided a different experience than the traditional classroom environment?

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Did you enjoy playing STEM Steak? Why/why not?

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How do you think STEM Streak could be improved?

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....

I am aware that by filling and handing back this survey, I am giving STEM Champion permission to use some of the content/data anonymously to further research and/or funding proposals. If I **DO NOT** give permission, I will tick the below box:

☐   I **DO NOT** give permission to the above