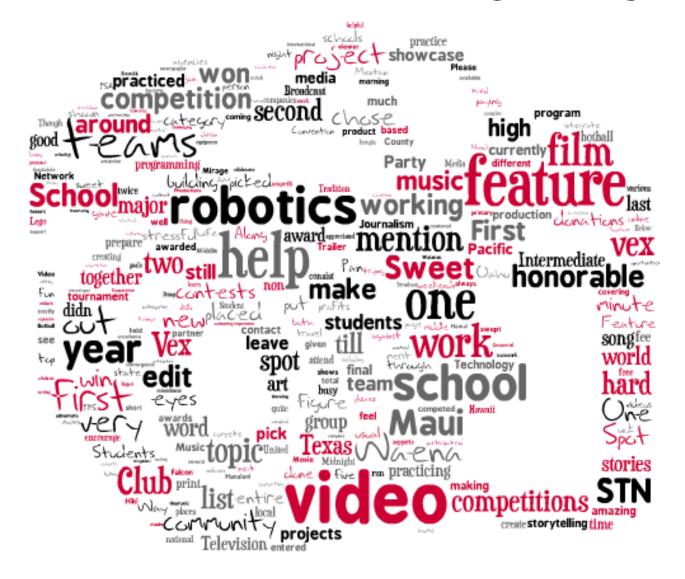# STEM Project Impact Statement

FE₂

Falcon Entertainment & Engineering

Media

Our club has 27 members and meets everyday, except Wednesday, after school from 2:00-4:30. Many weekends are spent together finishing projects and practicing our skills.

We work on projects for school, state and national competitions, and community partners.

Robotics

Our robotics club consists of 17 students who also participate in media. We meet for two 8 week sessions a year. The first is in the Fall where we participate in VEX. In the Spring we do Botball.

Our meetings are held at our adviser's home on Tuesdays, Thursdays, and Fridays from 5:00pm-8:00pm, and Saturday from 1:00-5:00.

Self-Directed Learning

Both in media and robotics, students are not limited by what they already know. They constantly challenge themselves and each other to develop new skills. Our class is set up so that students know that if they want to do something, they can always figure out how. It is okay to learn by trial and error and accessing tutorials is an expectation.

An example of being self-directed is happening right now. We are just starting our build for Botball, so our focus is on the function of the robots. What do we want them to be able to do? With this in mind, students are coming to robotics and going straight to their groups to strategize the game and plan their robots. They watch hours of YouTube videos on previous competitions and try to assimilate the best of what they see into our current plans.

Another example of how students are self-directed in their learning occurred just recently. A group was interested in desaturating a video and leaving just one color visible. No one knew how to do this, so the students searched online for tutorials. They had no success until they read a message board that identified this effect as the "Pleasantville Effect". After finding the name of the effect, they were able to locate a tutorial on YouTube that guided them step by step through the process. When they had finished, they taught the effect to the rest of the class (and the facilitator), and that tool was added to the group's skill set.

A mantra in our class is "If it is important enough to do, don't ask should I do it, go find out HOW to do it." This is such a powerful skill for students to have. They are no longer waiting for the teacher to tell them what to do, they are planning how they want their finished product to look, and figuring out how to make their dreams a reality.

Critical Thinking & Problem Solving

Critical thinking and problem solving are skills the students are always working on and with. Because of the nature of what we do, creating videos and robots, we are never sure what the final product will be when we begin. The first step in any project is to try and establish a focus. What are really trying to do?

Next, we need to look at the constraints.

- When is the product due?
- Who is our audience?
- Who is best qualified and available to commit to finishing the project?
- What other challenges are apt to come up?
- We then need to set up a timeline which includes checkpoints.
- What resources do we need?

When we have come up with a project framework, the students begin working. Along the way to a finished product, there are always situations that force problem solving and critical thinking.

An example of this occurred just recently when we were on a shoot. They were covering the GMO march and it was quite noisy and chaotic. We had no idea of what the march would be like prior to arriving. When we got there, they scouted out the area, met back as a group, and determined which groups would do what. To add to this, it began to rain.

Students were faced with finding people to interview, protecting the equipment, getting good sound quality, making sure lighting was good, making sure to be efficient with their filming, and so many other things. They really had to act on the spot and pay attention to what they were doing and what was going on around them so that they could create the best story. This does not even touch on the actual editing--creating a compelling story that is both informative and unbiased--a difficult task for even professionals.

Teamwork

Every element of our program requires teamwork. In fact, between media and robotics we spend so much time together that we are more of a family than a team. When working on projects, this really helps. Part of the goal is to have each person be able to do a little of everything, but to really find something that he or she excels at and loves. When a student finds his or her passion and is able to be the go to person for that skill, it makes the group stronger and the individual more confident.

Knowing each other and what we can do allows us to work efficiently and make sure we are able to complete quality projects. An example of how teamwork is integral occurred when we competed in Student Television Network's Annual Convention this past March in Los Angeles. We participated in the Sweet Sixteen contest in which we had 16 hours to complete a 16 minute news show on the topic of integrity. The students had to brainstorm ideas, make calls to local places for interviews, work together to shoot, write, and edit stories. All the groups came back together to edit and put the show together. Different students took on different tasks from creating the lower thirds to doing the voice overs. Each person had a job and when he or she finished, each found someone to help and some other way to be useful. This type of teamwork happens all the time. Everyday I see students collaborating, teaching each other, and figuring out how they can be helpful. They are an amazing family.

Community Involvement & Collaboration

Maui Waena's media program is a perfect way to combine the classic community collaboration with the modern use of technology and video production. Ever since the club was established, we have been quite active in the community.

We have been able to support our school community by creating a monthly show for the students. The students cover school events and issues, create music videos, and also feature stories about people in the community. Media students have also designed and printed shirts for the school's wrestling team, math counts, track, and Friends of Maui Waena (a newly formed non-profit created to support our learning community). The students also run the school online newspaper, www.falconnews.net.

Students have been fortunate to have many learning opportunities provided by MEDB and the Hawaii Creative Media Program. Over the past 3 years students have been able to take classes in video production, Photoshop, Dreamweaver, SolidWorks, GIS, animation, ibook authoring, along with an assortment of workshops held at the STEM Conference. These opportunities have introduced students to various technology and industry professionals.

Supporting the community has also been a primary goal of Maui Waena students. We have been given the opportunity to create projects for local non-profit agencies. Students created a 12 minute membership drive video for the Maui United Way in which they highlighted 5 of MUW's partner agencies. This was such an honor, but more importantly, it opened the student's eyes to different services and agencies available in their community. The end result was them feeling a part of something bigger and made them more aware of how they can help others. They created a similar video for the Maui YMCA and the Maui Pitbull Rescue. We are currently working with the Maui Sexual Assault Center to create their website and logo. All of these community service learning projects make the students feel connected and capable of impacting the world they live in.

We have also had the opportunity to put on Summer Camps for elementary school students, and recently ran a camp on Internet safety for Lanai students. Both of these gave the students a chance to share their knowledge with others.

Resource Integration

In our Media Club, we use an assortment of programs and tools to help us in our everyday videos. Some resources and tools we use in our Media Program are Adobe After Effects, Final Cut 7 & Final Cut X, Google Drive, Photoshop, Flash, and InDesign. Final Cut Pro and Adobe After Effects are two things we use to edit our videos and create effects for our videos. We use Adobe After Effects to create some high quality effects for our videos which we edit using Final Cut Pro 7 & X.

We use Google Documents very often to write down notes and scripts. Google Documents is a very important program for us to use because we always use it to write presentations, essays, scripts and many other important things. This program helps us a lot because if we need to write a script or a group project, all we need to do is share it with others and they can edit the project synchronously and asynchronously.

Another program, Adobe Photoshop helps us a lot because we can make lower-thirds for our Feature Stories and graphics for many other videos. This program is really important because if we want to create any type of picture, this is what we use. We also use this program to design t-shirts, posters, and other images. Adobe Flash is used to create animations, although there are only a few students who have managed to teach themselves this program.

For robotics we use all of our video and image programs for documentation and also use C and Robots C programming languages.

As far as hardware goes, we use iMacs and Macbook Pros. For video we use HD cameras, wireless mics (lavalier), and handheld mics.

All of our programs and hardware are effective and efficient, but we are always trying to learn more and upgrade our equipment and knowledge. We would really love to learn SolidWorks and get a 3D printer.

Learn More About Us

Watch our videos
https://vimeo.com/channels/394074

Learn more about our technology club--FE2
http://www.mwistechclub.com/

Student run online newspaper
http://www.falconnews.net/

Collaborative website made with Lanai students for internet safety class
http://internetsafety808.net/

Student created website for the Maui Sexual Assault Center
http://mauisexualassualtcenter808.wordpress.com/education/