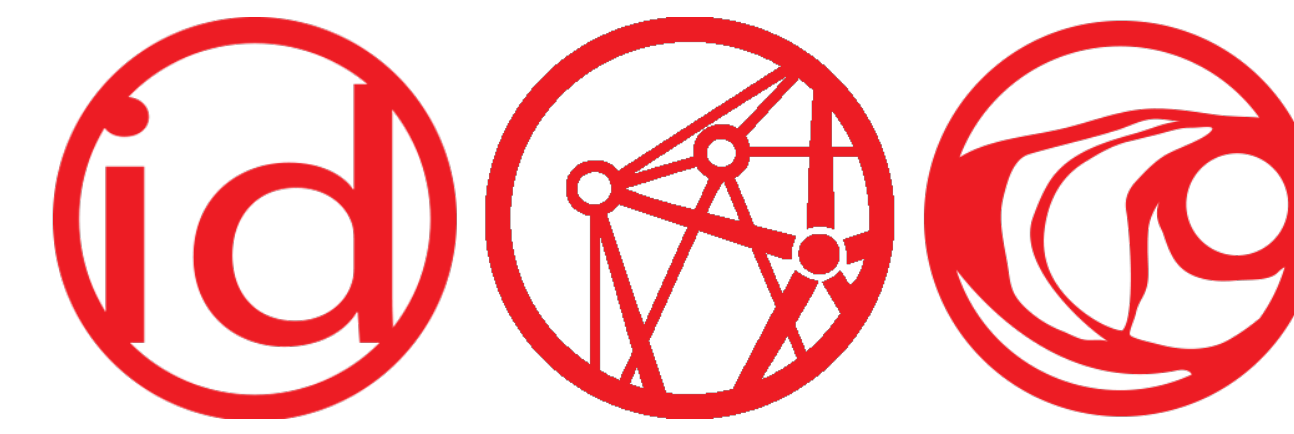


STEAM Social Innovation Lab

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ABSTRACT

We often say students are the future, but how can educators teach students how to change the world, starting in school? The STEAM Social Innovation Lab was born out of a three-and-a-half-week January Term class or Mini-Term, at Industrial Design, Engineering, and Arts (IDEA) High School which is an Elements of Education Partner School. In this course, students explored the issues facing STEAM industries to understand the historical and institutionalized social dynamics that have shaped today's STEAM career fields.

Though Mini-Term was just the beginning, it laid the foundation for successful implementation of a Social Innovation program in a high school environment.

This poster highlights the key elements that led to that success. These elements include:

- (1) Describing key areas of study
- (2) Identifying key Issues in own community
- (3) Developing solution Proposals
- (4) Pitching solutions to community leaders and partners
- (5) Implementing solutions (ongoing)

INTRODUCTION AND PURPOSE

The goal of IDEA High School's Social Innovation Lab was to empower students with the tools and knowledge to make the changes they wanted to see in the world.

During Mini-Term, our core question was, "How do we drive social innovation in STEAM industries?" Academics were focused on four key areas to provide students with a solid foundation in exploring issues and designing solutions: social justice, data science, social innovation, and project management. We started with social justice, specifically identity work, to help students understand their own social positioning and how that impacts their views of world issues. Next, students explored the ways in which data science can help them better understand the issues facing our industries and school communities. Then, we explored the emerging field of social innovation to understand how to use elements of human-centered design to create effective programs. Finally, students learned how project and program management tools can support them in developing and managing the initiatives they created.

Interwoven with these academic lessons were critical conversations about the ways we and our school simultaneously perpetuate and disrupt the global issues that issues that today's STEAM career fields are facing.

As an output from these learnings, students identified four key areas for school improvement: bias in education, racism and oppression, representation, and Climate Change. With a mindset of "Think Global, Act Local," students created school-level goals that would both extend into larger industry impact and further the mission of their schools. Then, taking it one step further, they designed four projects that the school could initiate within the next six months that would have significant impact in achieving our goals.

The Mini-Term course ended with a successful student presentation of these goals and proposed solutions to key school, district, and community stakeholders as well as a commitment by school and district leaders to support the student body in achieving these goals.

SOCIAL INNOVATION IN PRACTICE

Social innovation has many definitions, One of the most common is "A social innovation is a novel solution to a social problem that is more effective, efficient, sustainable, or just than current solutions" (Phills et al, 2008). Social innovation is both a type of solution and an emerging field encompassing a philosophy around a dire need for changemaking to solve global issues. In school environment, we see social innovation encompassing three major elements, 1) Students identify issues they and their communities care about, 2) Teachers act as coaches to provide students the tools to propose and implement solutions, and 3) Students, through their actions, are empowered to see themselves as changemakers.

A drive to see changes in our schools and industries sparked the initial plan of using Mini-Term to be the incubator for our STEAM Social Innovation lab. The Mini-Term platform provided the unique opportunity to have intensive and focused time with students to guide and support them with this work.

Social Innovation labs are popping up around the world, often as part of universities, non-profits or businesses. Few social innovation labs are designed especially for high school students and none that we know of make a distinct connection between schools and industry. Schools may have student advisory panels, but they often are not seen as implementors of the solution.

The STEAM lens is a key component of lab. As our students eloquently put, our themed schools are not separate from the industries we draw from as lens for learning. The industry impacts our schools, but we also believe as creating future members, our students can have positive impacts of the industries they will join.

An emphasis of the lab is that students take the lead in identifying issues and planning/implementing the projects they take on to address the issues. Students need more than a voice. We also have a responsibility to give them the opportunity to create the change themselves.

METHOD(S)

The School of Industrial Design, Engineering and Art emphasizes project-based learning (PBL) through a whole-child, community centered, full-inclusion educational model. This model, along with the professional knowledge and experiences of the co-teachers, guided the instructional methods we used during the Mini-Term to establish the Social Innovation Laboratory.

Our first priority during the Mini-Term was to support our students in understanding the social dynamics existing in the world they live in and for them to understand their own positioning within those social structures. Before even this could occur, however, we had to create a safe environment for these difficult conversations to occur. We achieved this environment by establishing classroom norms, structures, and protocols for engaging in difficult conversations.

Our academic lessons were structured for inquiry-based approaches to learning. We set learning goals for each of our four academic areas, and then facilitated learning sessions with a sub-goal or target that would build toward the larger goal.

As much as we focused inwardly on establishing our Social Innovation Lab and equipping students with tools to successfully create social change, we also wanted to show them other ways in which the skills and knowledge they were learning could be applied. To support this, we conducted integrated mini-projects with other Mini-Term courses and held info sessions with professionals that use these skills everyday in their own careers.

Finally, the students applied their skills and knowledge in an integrated manner by presenting their goals and solution proposal to a panel of community and district leadership. Through this deliverable, students left the course with confidence in their ability to ignite social change and pride in their accomplishments.

RESULTS AND DISCUSSION

The students successfully crafted and presented their data informed goals and plans for program implementation to key school and community stakeholders. The students were given the go ahead to being their implementation plans of their crafted goals. Students showed incredible leadership skills.

The level of discussion and reflective insights that was developed during the Mini-Term was astonishing, vulnerable, and inspiring. As educators, we were constantly blown away by the abilities of our students and given a sense of hope for the future of our schools and know that they will continue to have a positive impact on the industries they work in.

COVID-19 provided multiple challenges, with canceled field trips, multiple students out on quarantine and changes in presentation formats. We pushed through, embracing technology to collaborate digitally as students worked from home over collaborative docs and video calls. We had guest speakers and gave our final presentation with people around the country.

Reflecting, there are changes we could have made when teaching the Mini-Term course, particularly at the beginning and focusing more on teaching specific data science and social justice skills. Additionally, our hope for the Mini-Term was to both create the ideas and lay the foundation for a permanent Social Innovation Lab at all three partner schools. Within the scope of our time and resources, however, this wasn't feasible. We found that the Mini-Term provided enough space and time to create the ideas, but the scope and structure still needed to be attained.

As a result, the scale of the Lab had to change. We originally hoped to create a lab that focused on all three elements of education schools. However, our roster of students was overwhelmingly IDEA Students. So, though our initial plan shifted to focus only on IDEA, our future plans still include possible openings for involvement the other two partner schools. We hope overtime to grow our lab to have equal numbers of active members at all three schools with staff leaders at each school.

Maintaining the work has been difficult. However, with the 1 week-long end-of-year Micro-Term session, our goal is to create sustainable systems to implement and evaluate our student directed solutions as we continue into the 2022-2023 school year.

CONCLUSIONS

Though the January Mini-Term successfully planted the seed, the work of social innovation at IDEA High School has just begun. The week-long Micro-Term, held the last week of the academic year, will be our opportunity to establish the leadership and processes needed to launch the laboratory as a student-led and faculty-sponsored club in the 2022-2023 school year.

We feel confident that we established a strong foundation for social innovation at our school, but we also recognize the commitment and challenges that lie ahead of us to continue this important endeavor.

If you want to learn more or partner with us, please contact us at mthiers@tacoma.k12.wa.us or jflonac@tacoma.k12.wa.us.

REFERENCES

Phills Jr., J. A., Deglmeier, K., & Miller, D. T. (2008). Rediscovering Social Innovation. Stanford Social Innovation Review. https://ssir.org/articles/entry/rediscovering_social_innovation#

Larmer, J., Mergendoller, J. & Boss, S. (2015). *Setting the standard for project based learning*. Alexandria, VA: ASCD.

If you are interested in the teaching or reference materials we used in the course, please email us.



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