Teaming and Designing for Art for All - Work in Progress

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Abstract

The Art for All (AfA) endeavor brings together teams of freshman engineering students and sophomore art students to address the physical barriers many with disabilities encounter when using art tools and resources of the able artist community. Freshman engineering students in an introduction to engineering design course team with art students in a sophomore figure drawing course to understand the users' boundaries with art creation and to brainstorm and select the best solution. The engineering students design, build, and test the solution, including the client and art students as needed. Upon completion, the finished device is delivered to the user or the customer's facility. This paper reports on the experience of the collaboration of the art and engineering students and its effect on the brainstorming component of the design process.

Keywords

Multidisciplinary Design, First Year Design, Art and Design, Service Learning

Introduction

The Art for All (AfA) endeavor focuses on breaking down the barriers experienced by those with disabilities so they can benefit from the artistic process. This endeavor brings together teams of freshman engineering and sophomore art students to address the physical barriers many with disabilities encounter when using art tools and resources of the able artist community. The goal of the endeavor is to develop a community library of assistive tools that can help individuals with disabilities express themselves in a variety of art forms.

The AFA endeavor developed from a previous effort focused on improving the lives of young people with disabilities. This effort emphasized aiding young people to be independent when accomplishing every day activities such as walking and communicating. During this effort, the principle investigators became aware of the difficulty those with disabilities have with participating in and benefiting from visual art experiences. A group of interested individuals including the professor for the freshman design course, a volunteer working with individuals with disabilities, leadership from two local area businesses that serve adults with disabilities, and the owner of an art gallery that displays and sells the art of veterans, the homeless, and persons with disabilities formed to brainstorm how to improve the art experience for adults and young people with disabilities. The community assistive art tool library was the solution.

Art for All Importance

The Art for All endeavor is important because it (1) fills a need of the disabled community and (2) provides students an opportunity to address design solutions from a view point outside of their academic setting. In addition, the endeavor may help persons with disabilities become more

confident and independent. Research findings state that participation in art programs can help persons with disabilities identify and address perceptions of disability and thus engage in self-realization. [3] [4]. This is possible because they experience that art is an extension of the physical body. This creation of art helps move persons with disabilities from a feeling of isolation to an identification with normalization. [2].

Collaboration Process

One engineering class and one art class participated in the AfA sponsored projects. The class size of each was approximately 15 students with the engineering students being predominately male and the art students being predominately female. The classes did not meet at the same time. Four project problem statements were addressed.

Prior to project initiation, the engineering students received instruction in the engineering design process and the art students received instruction in body and visual trace. The engineering and art students were then introduced to the four assistive art projects within their own class environment. Once the projects were introduced, the art instructor gave a one class session introduction to the engineering students on art and the body (Figure 1) with many visuals and the engineering instructor provided a one class session introduction to the engineering design process and how engineers define functions, objectives and constraints. Both of these lessons were welcomed by the classes and involved student participation. The engineering students commented that the illustrations were "cool," and shared that that they now understand that art involves interpretation and the art process is as important as the art product itself.

Figure 1: Art and Body

After the class sessions the art and engineering students spent the next week independently researching the project problem statements and brainstorming possible solutions. One project involved helping an individual create art using a mouth pen. Another project involved helping people with minimal use of their hands use a paint brush or other similar art tool. The engineering teams met with the clients of the art tool to directly understand the user's needs.

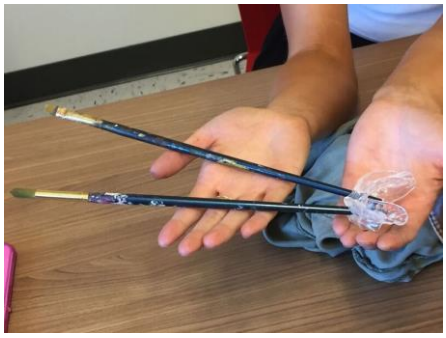

Figure 2: Mouth Guard Paint

The engineering and art students then came together in an art classroom to share their problem understandings and solution ideas. The art students were tasked to develop prototypes of possible solutions. The engineering students were tasked to bring sketches of possible solutions. Figures 2 and 3 show two of the solutions developed by the art students to address the mouth pen project. Figure 2 provides a simple solution on how to

hold one or two paint brushes in the mouth. Figure 3 illustrates how one can have multiple color pens easily available to the user.

Figure 3: Mouth Pen Holder

The collaborative session alos provided both the engineering and art students an opportunity to share project applicable knowledge. In some cases the art students introduced the engineering students to their art tools, such as brushes, pens, and chalk. The engineering students learned how holding the tool differently or with more or less force provides different weighted lines. In other cases the engineering students took the lead and held a group brainstorming session to record the team's understanding of the problem and possible solutions.

Figure 4 : Student Experience

Following the collaboration session the engineering students continued brainstorming and then solution selection. The art students were not required to participate in this part of the design process though they were invited to do so. As an assignment the art students were required to create an artistic reaction of their experience in the collaboration (Figure 6).

Collaboration Outcomes

The art and engineering instructors' reacted positively to the collaboration. The students openly shared their ideas and appeared to benefit from the sharing. The engineering students benefited from the diversity of ideas and the different perspectives on the problem and possible solutions. They thought the art students helped them be more creative when developing possible solutions. The art students admitted relief that the engineering students listened to and encouraged their contribution. Some felt proud they had taught the engineers about different kinds of art materials. However, the art students shared they had moments of frustration, miscommunication, but also excitement upon working with the engineering students. In a written reflection, an art student remarked "Even from the beginning, there were times where there seemed to be a language barrier between our classes. Both have their own understood terms and ways of thinking, so it was nice to work through those moments and see a fresh insight on the problem."

Refinement of the experience though is needed. The engineering students felt that the art students lacked perspective on the problem since they did not witness the client's issues. They suggested that the art students can benefit from meeting with the clients and personally witnessing the client working with the traditional art tools. There was a general sense of frustration among the art students who felt they were not invited to be more involved beyond the initial meeting. It seems clear that to strengthen the experience for students the classes need to meet at the same time and multiple meetings between the two groups need scheduled.

References

1. Hahn, H., "The political implications of disability definitions and data", *Journal of Disability Policy Studies*, 4(2), 1993, pp 42-55.
2. Darling, R. B., "Toward a model of changing disability identities: A proposed typology and research agenda", *Disability and Society*, 18(7), 2003, pp. 881-895.
3. Mason, C. Y., M. S. Thormann, and K. M. Steedly, "How students with disabilities learn in and through the arts: An investigation of educator perceptions", Washington, DC: VSA Arts, 2004.
4. Taylor, M., "Self-identity and the arts—Education of disabled young people", *Disability & Society*, 20(7), 2005, pp. 763-778.
5. Wigal, Cecelia, Louie Elliott, and Christina Vogel, "Work in Progress – Art, Design, and Community," *Proceedings of the First Year Engineering Experience (FYEE) Conference, August 2016*.
6. Findley, Andrew and John A. Mirth, "Enduring Design: Developing Connections Between Art and Engineering," *Proceedings of the 2016 ASEE Annual Conference & Exposition*, New Orleans, Louisiana, June, 2016.

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