Project Specifications

Head-Mounted and Arm-Mounted Adaptive Art Squigglers

NSF Sponsored Project

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INTRODUCTION AND OVERVIEW:

“To create and live out a best practice model for collaborative art making between artists with and without developmental disabilities. This new mindset demonstrates that creativity is innately a part of all people and recognized that art enhances the quality of life and strengthens communities.” - Passion Works Studio

The Passion Works Studio, with the aid of the National Science Foundation, is looking for more available resources to allow for individuals with limited motor abilities to express their creative side through the visual arts. The goal of this project is to design and implement a specialized art squiggler system that would permit people with cerebral palsy and hydrocephaly to create works of art. The system will help its respective user to depict various squiggle designs. The completed head and arm mounted art squiggler system will not only decrease the work and stress on the client but it will also allow the user to better fit in an art enriched environment.

Stacey is the primary motivation for this project. Her restricted range of motor functions prevents her from drawing effectively. Previous crude aids failed to address her needs. The new design will be comfortable, functional, durable and user friendly in hopes that she can fulfill the Passion Works Studio vision. This unique system will hopefully make drawing easier for other artists at the studio who experience similar disabilities as Stacey.

REALISTIC CONSTRAINTS

In brainstorming the creation concepts for the Squiggler system, a few pragmatic limitations were realized. Economically speaking, a $750 budget has been allotted. From an ideal consumer standpoint, a low cost and high quality product will be the sought out goal. After performing a thorough background check, the possibility of possible patent infringement has been excluded. No known competitors have created similar devices permitting a completely unique product. There are no apparent political effects as a result of the Head and Arm Mounted Art Squiggers.

The materials used in the creation of this device will not only be durable and long lasting, but also it will follow all EPA regulations and cause no harm to the environment or its user. This system is not meant to offend or demean the client’s disabilities, but rather an aid to help them achieve their creative goals and perhaps improve their livelihood. Contact with the advisor has already eliminated possible material allergies so that immediate commencement on the system’s mechanical design may happen. Basic electrical and mechanical components are expected to be used in the Squiggler System, thus preventing any difficulty if the time arises to mass-produce this prototype. All the materials of each of the components are readily available, and the parts are interchangeable allowing easy fixing of the system. For safety’s sake, no sharp, potentially harmful components will be made part of the system. Also, an appropriate center of gravity for the device will prevent further strain on the client’s neck and head region. This system is also intended to improve the social comfort of the client by allowing them to better fit in the art studio and participate in the same activities as others.
TECHNICAL SPECIFICATIONS:

Electrical Parameters
- Power Supply: Cordless, Rechargeable Battery
- Easy On/Off Switch
- User-Friendly adjustments between Squiggle Types

Mechanical Parameters
- Small size for easy storage
- Lightweight since temporarily fixated to head and arms
- Easily maneuverable and adjustable for those who will have to attach to the clienteles’ heads and arms
- Adaptive to crayons, colored pencils, markers, and paintbrushes

Environmental
- Location: Art Studio
  - Able to withstand:
    - Liquid spills such as paint or water
    - Dust
    - UV rays
    - Standard cleaning mixtures
    - Scratches and everyday wear and tear
- Operating Temperature: 60 to 80º F
- Storage Temperature: 50 to 90º F