

Design for disability simulation

ME 476C-1

Team B2

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Team members:

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Introduction

- * One of the major constraints of humans to perform physical tasks is muscle strength, which can be greatly reduced as a result of neuromuscular damage in people with disabilities.
- * In order to make healthy people feel as the disabled and experience their issue we are building a device that lets the healthy experience their problems .

PROJECT DESCRIPTION

- Exoskeletons that locks the users leg in place to let them feel as the disabled.
- Patients who have been in wheelchairs face various problems related to movement and present some kind of psychological damage.
- This Design is meant to make normal people feel how disabled people would feel
- This design can help people feel the ones with leg, arm and back disabilities



BACKGROUND AND BENCHMARKING

- The design work well in providing the required experience to demonstrate to the user how the disabled feels.
- This project is aimed at improving currently existing exoskeleton designs to come up with a better human-exoskeleton mounting interface for leg arm and back disability by making normal people feel how disabled people would feel

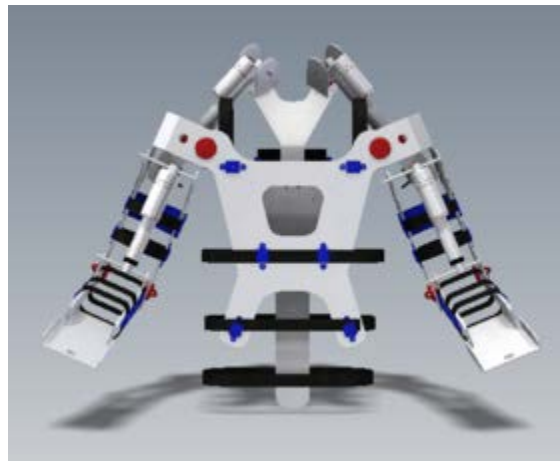
CUSTOMER REQUIREMENTS

- The client requires that the team comes up with a design that meets specific requirements.
- The client's needs a design that is:
 - *Safe*
 - *Durable And reliable*
 - *transportable*
 - *Look professional*
 - *Easy to use and understand by children and adult*
 - *Requires userd to perform certain tasks while simulating disability*
 - *At least three disabilities simulated*



ENGINEERING REQUIREMENT:

- * The team will work together to brainstorm on the ideas to incorporate in the design in order to make it better.
- * Different aspects of the design will be considered based on the customer needs and the engineering requirements.
- * The device should cause the right amount of sensation of disability.



DESIGNS CONSIDERED

- * A device that locks the elbow in place and wont let it bend.
- * A design that locks the knee in place and also the foot joint.
- * A device that locks the the back into a certain position.

DESIGNS CONSIDERED

- * The considered designs includes
 - * *Adjustable straps*
 - * *Adjustable structure*
 - * *Soft fabric*
 - * *Iron Structure*
 - * *Aluminum Structure*



SCHEDULE AND BUDGET

- * Our Budget in this project is 650\$
- * Estimated Cost :
- * Materials (30%)
- * Advertisement (30%)
- * Manufacturing (30%)
- * Prototyping (10%)