Maker movement manifesto: Navigating new pathways to enhance access to assistive technology.

Suzanne A. Milbourne with Acknowledgement to Phyllis Guinivan and Lil McCuen

Poster Symposium Supplement
Maker movement manifesto:
Navigating new pathways to enhance access to assistive technology.
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INTRODUCTION
The MAKER MOVEMENT can create positive change in a field that is often heavily burdened with administrative procedures by improving access, expanding the type of assistive tools available to individuals with disabilities. Acquiring assistive technology solutions is a process not an event. It starts with considering and trialing a variety of solutions until the "Fit" between the user and the solution seems to be successful. However, there are instances when; 1) the time between the identification of an assitive technology solution and the delivery of the solution to an individual is extraordinarily long; 2) even simple solutions can be costly and are often paid for by the consumer; and 3) the "just right fit" solution might not be commercially available. To address these issues one solution is the installation of a Maker Movement that provides opportunity for ordinary people to design, create and build extraordinary assistive tools for individuals with disabilities. Across the country Maker Moments abound, many focused on propelling technology production. The Maker Movement is a subculture of the DIY and it revels in the creation of new devices as well as tinkering with existing ones. The Maker culture in general supports open-source products. It stresses a cut-and-paste approach to standard hobbyist techniques and encourages cookbook re-use of designs. The potential for a Maker Manifesto and its necessary ingredients have outstanding potential for addressing time lags, cost, and finding the "just right fit" of low- or light- assitive technology solutions for individuals with disabilities.
PURPOSE
If we are to advance the role of simple, affordable, and timely assitive solutions for individuals with disabilities change is necessary. A change in the:
- Vision of how and the type of "services" available and how they are provided;
- Way billing structures are designed;
- Structure of collaborations and partnerships;
- In the value attributed to a collection of innovative minds contributing to the available pool of solutions;
- Way we train disability service providers to conceptualize assistive technology solutions;
- Approaches used by institutions of higher education to teach about assitive technology.

MAKER MOVEMENT APPROACH
This idea for and the practices that represent Maker Movement are akin to the first rehabilitation efforts performed during the moral treatment movement by occupational therapist. Today, a multitude of individuals can play a role in conceptualizing, designing, testing, and making assitive solutions– including AT consumers and family members.
- Dual-Sided – two distinct user groups that provide each other with network benefits
- Just-In-Time – a methodology aimed primarily at reducing flow times within production system as well as response times from suppliers and to customers
- Low- or Light- Technologies – Any THING That Has a PERSON with a Disability or Delay Do Something They Could Not Otherwise DO; THINGS that do not require batteries, electric programming, or a lot of instruction to use
- Participation-Based – an approach focused on promoting participation in daily routines and activities and attempts to modify the activity or the routine rather than "fix" the disability or impairment
- Open Source – in his case, THINGS that are readily available and may be redistributed and modified
- Zero-to-Maker Community – Every maker has a different starting point
- Maker-to-Maker Community - Makers collaborate and assess the expertise of others
- Maker Advocate Community: For every maker in the above segments there are individuals that foster and support them

Operational ingredients
Consumer Request – the process by which consumers from the community submit request for a solution
Volunteer Matching – the process of identifying Volunteer Makers with interest and expertise (or willingness to learn how) to design and assemble solutions
fabricATion Laboratory – the forum used to bring Makers and Consumers together and provide them with the necessary tools and materials to "Make"!

RESULTS
Between December 1, 2015 and November 30, 2016 fabricATe has signed up 52 Volunteers (88% Community members; 12% Students); received 14 Consumer Requests; held 5 fabricATion Laboratories; built 50 Assistive Solutions to support participation in activities including play, art, access to devices, functional positioning, self-care for less than $10 each.

CONCLUSIONS
There is immediate benefit for the disability community.
This is an opportunity for ordinary people to design, create and build extraordinary assistive tools for individuals with disabilities
This movement has outstanding potential for addressing time lags, cost, and finding the "just right fit" of low- or light- assitive solutions for individuals with disabilities

FUTURE DIRECTIONS
- Application of the maker-movement initiative for experiential, applied student learning
- Partner with other institutions of higher education in the region
- Create a regional network of hubs
- Secure partnership with student organizations outside typical maker communities
- Sustain the initiative by embedding it in the community

Introduction

The MAKER MOVEMENT can create positive change in a field that is often heavily burdened with administrative procedures by improving access, expanding the type of assistive tools available to individuals with disabilities

Purpose

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Maker Movement Approach

Dual-Sided

Just-In-Time

Low- or Light- Technologies

Participation-Based

Open Source

Zero-to-Maker Community

Maker-to-Maker Community

Maker Advocate Community

Ingredients:

Consumer Request

Volunteer Matching

fabricATion Laboratory

Results

Between December 1, 2015 and November 30, 2016

52 Volunteers enrolled
88% Community
12% Students

15 Consumer Requests received

5 fabricATion Laboratories

90 Assistive Solutions

$ <5.00 each

Conclusions

- Immediate benefit for the disability community
- Opportunity for ordinary people to design, create and build extraordinary assistive tools for individuals with disabilities
- Outstanding potential for addressing time lags, cost, and finding the "just right fit" of low- or light- assitive technology solutions for individuals with disabilities

Future Directions

- Application of the maker-movement initiative for experiential, applied student learning
- Partner with other institutions of higher education in the region
- Create a regional network of hubs
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