Dynamic Making Guides

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1 Status report

1.1 Proposal

1.1.1 Motivation

Makerspaces and the community surrounding them has grown in popularity in recent years. These spaces aim to be a place for people to create physical objects by sharing tools, experience, and support. A large component of this community is focused on education and inclusivity, especially for marginalised groups. However there is a gap between this idea and the reality. Many disabled people would greatly benefit from participating but there are currently barriers preventing them. One of which is project tutorials simply being inaccessible for their needs. There's a knowledge gap between the different groups: makerspaces generally have little knowledge of disability, and disability support groups have little knowledge of making projects.

1.1.2 Aims

This project aims to create a website that hosts making project tutorials that dynamically adapt to the skills and abilities of the user. It will allow a user to specify an end goal project and then create a path that teaches them the needed skills in a way accessible and engaging to them. Focused mainly at users with cognitive impairments such as intellectual disabilities and brain injuries. Projects will be able to be embedded into other sites.

1.2 Progress

- Reviewed relevant literature surrounding makerspaces, tangible learning for people with disabilities, accessible makerspaces, DIY assistive technology.

- Reviewed current DIY tutorial sites to see strengths and failings as well as types of projects.

- Identified local organisations to contact.

- Created website with static tutorials and the structures needed for the additional features.

- Hosted website online.

- Investigated ethics process.

1.3 Problems and risks

1.3.1 Problems

- Issue with ethics advice. Had trouble figuring out what ethical process I'd have to go through to include people with intellectual disabilities/brain injuries. Got conflicting advice, took a few emails to different people.

- Issue with ethics approval. Found out being able to evaluate/get input on the project from the intended users would require a lengthy ethical approval process that has a chance of being declined, with a timescale of several weeks.

- Creating the basic website took longer than planned.

- When hosting the website online, ran into several problems that took a while to fix regarding adapting the project to the new environment.

1.3.2 Risks

- Not getting ethical approval for people with intellectual disabilities/brain injuries. **Mitigation**: instead talk to people who work with/have knowledge of such groups, which would comply with the standard ethics checklist.

1.4 Plan

- Before semester 2: **Deliverables**: contact email scripts, finished lit review, website that allows profile creation and modification.

- Week 1: Contact organisations, add "syllabus" functionality to website. **Deliverables**: user can select a project, and gets a route of projects, using their current skills/abilities,culminating in the chosen project.

- Week 2: Collect initial feedback about project from organisations. Implement dynamic project view. Make decision on ethics approval process. **Deliverables**: projects are displayed based on user's given ability.

- Week 3: Integrate syllabus and dynamic projects. **Deliverables**: projects given in a syllabus depend on the users ability.

- Weeks 4-5: Collate project tutorials, carry out some to gain in-depth knowledge/"case studies". **Deliverables**: detailed notes on some projects.

- Weeks 5-6: Implement feedback system for projects.

- Week 7: Write test suite and final evaluation plan for project.

- Week 8: Finish implementation, taking into account any feedback from organisations.

- Week 9: Evaluation experiments run.

- Week 5-10: Write up. **Deliverables**: draft submitted to supervisor [?] weeks before final deadline.

1.5 Ethics and data

I have sought ethical guidance from the School's ethics convener and I will:

- Apply for College Ethics Board approval, for evaluation with participants who have intellectual disabilities/brain injuries.

Additionally, for evaluation not including these groups I have verified that the ethics checklist will apply. I have signed and completed the checklist, which has been signed by my supervisor.

I expect to collect data on opinions surrounding the design, usability and feasibility of the site by its intended users.