Working with disabled clients

Helping students gain confidence exploring disability and disabled user's needs

Working and communicating with disabled clients or patients is fundamental to a biomedical engineer's competence. Therefore introducing students to key target audiences (employers, policy makers and, of course, patients) was at the heart of the UCL Biomedical Engineering course design since its first intake in 2014/15. The main focus though is on patients.

The course remit is to produce graduates who can improve the lives of ill or disabled people. And so students are taken through a journey of being introduced to people with different disabilities in the second and third years of the course.

Overview

The students are introduced to clinicians, hospitals and patients throughout the degree. This includes meeting disable people in one of the 2nd year scenarios that runs for one week, and the 3rd year design group project for MEng students which runs over terms and it is equivalent to two standard modules.

Second year Scenario

From the beginning, tutors have developed a relationship with Remap[1] a charity that helps people live more independent lives, by making bespoke living aids, for example, an aid to putting on their glasses for a client with limited arm movement. Remap volunteers have shared their experiences with the students, and sort to help tutors locate a client for students to talk to.

However due to time constraints, finding a client with a current unmet need and willing to come to UCL was impractical. Thus our first approach was to recruit a lady in her 80s who, as well as current age related disabilities, had personal experience of more specific disabilities and was able to role play with authenticity the part of a past REMAP client. The students encountered a friendly person with all her faculties who needed to be treated with respect and care – and discovered the need to tailor their output to the specific needs of the client.

She has done this for 2 years now, having a ten minute consultation with each group at the beginning of the week, and then testing the students' prototypes at the end of the week.

Third year design project

The third year design group project builds on the students' experience in year 2. The aim of the project is to design, manufacture, test and market a device or system that would help independence and/or improve lifestyle for those with disabilities. The project runs from October to March (two terms covering 2 standard modules) and provides plenty of time to connect with and see the world through the eyes of disabled people.

How does this work?

[1] Remap custom-makes equipment to help disabled people live more independent lives http://www.remap.org.uk/

- The disability focus changes each year to broaden the experience of students and academics. This also helps to ensure that each cohort is faced with making new connections and creates a more authentic environment for the design project.
- At the start of the project, one or two people with the selected disability or condition are invited in to talk to students about the challenges they face. This involves an opportunity for the students to interview real patients. Also a director or representative from a relevant charity related to the chosen disability / condition comes to give a guest lecture on their work, hence giving a new connection to the students. The past two years the charity was *Movement for Hope*.
- The students are also exposed to some of the research done at UCL that is relevant to their projects. For example, this year the students were given a seminar by Dr. Dafne Zuleima Morgado, a member of the Global Innovation Disability Hub in QE Olympic Park. She talked to the students about planning and running focus groups with disable people and presented 3 power assisted devices for wheelchairs. This connects students with researchers who work with disabled people all the time, and provides insights into products in us. This year the students had the chance see and test wheelchairs with the latest power assisted devices around the Olympic park, explore their benefits and limitations and bring these ideas back to their design project.
- Finally, during their project students are also encouraged to identify and contact other relevant charities, research groups and find their own clients. Again, extending the authentic design experience.

Structured introduction and support

Opportunities for students to interact in person with clients or patients with different disabilities are supported:

- Seminars on topics such as patient confidentiality and use of data; Medical ethics writing for disabled clients (2nd year)
- Seminars and information on applying for ethical approvals for research studies (3rd year)
- Supervisor advice

Impact on the students

Students have been profoundly affected by some of the people they have met. Whether a grandmother, a lady with Motor Neurone Disease (MND) who could only interact through her eye gaze communication system; a man diagnosed with Multiple Sclerosis in his early 20's that is working in IT, or a member of UCL staff with mobility problems, students have been able to have open conversations about the challenges they face as they try to live a full life.

The opportunity to interact in these personal ways has provided students with motivation for their projects, as well as the opportunity to gain experience and confidence to face finding their own clients to talk to in the 3rd year.

Some students claimed that their motivation changed dramatically and gave them drive when they meet patients. It is also very valuable to interact with people outside universities, and chatting with patients that are from outside their family and friends circle is very enriching. It needs to be incorporated within the programme and undertaken formally.

Evaluation

In the second year the need to consider the disabled client was brought into focus for the students by light touch assessments during the scenarios, this included:

- Client feedback on the appropriateness of student interactions with them
- "Moodle quiz where student have to record what they would do/say in various plausible client interaction situations, for example, when asked "what would you do if… a client bumped her leg against the table and the first aider wanted her to take her tights off?" students should think about how to provide physical privacy). There are a range of questions and students have 2-3 minutes to respond to each one;

In the 3rd year students are not formally assessed on their interactions with these clients but rather it significantly shapes the product that they design and its quality. Still, there are timetabled sessions where students prepare questions for when patients come in. The people who come in mention they want to be treated as everyone else. In many cases part of the interaction is the clients explaining to the students what people do to annoy them.

External examiners have commented favourably, Faculty, students and the department are pleased with the implementation of embedding user experience into the course. Sustainability is ensured by close collaboration among staff as well as clearly documented class plans.

Lessons learned

The initial aspirations for the strategy have been modified and also led by student requests. For instance, student had many questions about focus groups and so one of the guest lectures in the design group project talked about her experience running focus groups with disabled people, giving great insight.

As the design group project theme changes each year, the connections need renewing and staff has to find different charities and clients. Design group project module leader Pilar says, "It is a matter of finding the balance, so you give students the chance to talk with disable people and charities in class, but also encourage students find their own patient groups and charities with is a good learning experience. This helps to stop us from too much 'spoon-feeding' of students and rather allows students to take ownership of building relationships with external organisations."

Advice to others

Biomedical Engineering suggestions for other courses wishing to introduce this approach to students are:

- Start early when looking for people to come in
- Point students to charity websites and ask them to think about what they are going to do will affect people's lives and then I introduce them.
- Manage the expectations of the people who are being brought in. It is unlikely students will create a finished / working product at the end

Links to charity websites

Blog link – Rebecca. 3rd article on page: http://blogs.ucl.ac.uk/medical-physics-biomedical-engineering-teaching/category/scenarios/

Example policy from Derby hospitals

http://www.easyhealth.org.uk/ examples of how to tailor communications to users with low literacy skills

- GMC interactive casestudies (Medical Ethics)

Movement for Hope http://www.movementforhope.org/

Global Disability Innovation Hub https://www.disabilityinnovation.com/

UCL Interaction Centre https://uclic.ucl.ac.uk/

Images

Pilar has pictures of different wheelchairs and clients/patients. Provided.