**Evaluation Study of the online ADAPT Assistive Technology (AT) Training Programme**

**Study Protocol**

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# Project Details

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**Project Sponsor**

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**Project Funders**

ADAPT has been funded by the Interreg VA 2014-202 Programme. Interreg France (Channel) England (FCE) is an EU programme set up to foster economic development in the south of the UK and north of France by funding innovative projects which have a sustainable cross-border benefit.

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| Abbreviations |  |
| AT | Assistive Tecnology |
| BOS | Bristol Online Surveys |
| EPW | Electric Powered Wheelchair |
| CCCU | Canterbury Christ Church University |
| HCP | Healthcare professional |
| WP | Work package |

# Summary

The ADAPT project has been funded by the Interreg VA 2014-202 Programme and involves partners in the UK and France. The overall aim of the project is to address substantial difficulties or challenges to independent mobility faced by elderly and disabled people, by developing a novel smart electronic powered wheelchair and virtual reality wheelchair simulator.

The Canterbury Christ Church University (CCCU) ADAPT team is leading Work Package (WP) 3 of the project – the training of healthcare professionals (HCPs) in Assistive Technologies. This protocol refers to the UK arm of the project and the activities of the CCCU ADAPT team. Partners in France will seek ethical approval from their own local Research Ethics Committees.

In the UK, the CCCU ADAPT team previously received HRA Approval for the first phase of WP3 - an online survey of healthcare professionals to explore their experiences, attitudes and training needs in Assistive Technology (AT) (IRAS ID: 244485). In the UK, 966 survey responses were received, and the results helped to shape the next phase of WP3 - the development of AT training materials for HCPs. The evaluation of the training will contribute to further improvement of the design and development of AT solutions and further training materials and packages, as well as to assess the impact of training on professional practice.

Approval was obtained from the university Faculty Research Ethics Committee (FREC) on 13 February 2019 to launch the first unit of training to CCCU students, and to healthcare/other professionals who are contacts of the ADAPT partner networks. This protocol incorporates details relating to this first wave of circulation, but also relates to subsequent dissemination of the training and evaluation study, which healthcare professionals employed by UK NHS Trusts will be invited to participate in.

# Background

Long-term disabilities often result in a loss of autonomy and a breakdown of social interaction, and therefore there is a demand for devices that ensure people feel enabled to live independently for as long as possible. Assistive Technology (AT) is therefore an increasingly important aspect of many fields of health and care practice, and consequently the issue of universal terminology and potential for misunderstanding exists across professional health and social care disciplines. Amongst the many definitions offered for AT, Liddell et al (2008) broadly define it as “any product or service designed to enable independence for disabled and older people”.

Several studies highlight challenges and barriers regarding the adoption and usage of AT, and evidence suggests that adequate support, training and education are vital (Widehammar et al, 2017, Powell et al, 2015; Gillespie et al, 2012; Lannin et al, 2014; Powell et al, 2013; Svoboda et al, 2012; Sohlberg & Turkstra, 2011; Sohlberg et al, 2007; Scherer & Craddock, 2002). However, substantial barriers to education exist, including: the increasingly rapid development of the technologies; inconsistent provision and quality of training; brief exposure given to topics in current training; lack of time, resources and funding; lack of opportunity for hands-on experience; and shortage of qualified professionals to teach (Arthanat et al, 2015; Liddell et al, 2008; Jans and Scherer, 2006; Dissinger, 2003; Bloomberg et al, 2003). These challenges suggest a need for comprehensive education in the AT field, as well as ongoing assessment, updates and evaluation which is embedded in the training programmes.

As part of the ADAPT Project, the CCCU ADAPT team are leading the development and evaluation of AT training materials in collaboration with project partners in the UK and France and members of the Advisory Group (which include service users).

# Project Objectives

The main objectives for the CCCU ADAPT Team for WP3 are to:

1. Develop an ‘ADAPT AT Training’ package, incorporating different units of AT training programmes for healthcare professionals as well as a ‘Train the Trainer’ package
2. Deliver training sessions via an e-learning platform to healthcare and related professionals and those who are training to qualify as healthcare professionals
3. Evaluate the individual training units which make up the overall training programme

This protocol relates to objective 3 – evaluation of the training units within the programme.

# Project Design

# Participants and recruitment strategy

The study will involve a minimum of 500 participants across the ADAPT project regions and the rest of the UK.

The training will be offered to HCPs and students in addition to their usual training/continuing professional development (CPD) and studies. To be eligible to take part in the evaluation, participants must have completed unit(s) of the ADAPT AT training. Learners will be invited to participate in an evaluation questionnaire at the end of each unit and a follow-up questionnaire approximately six months later. The questionnaires will incorporate a Participant Information Sheet in order that participants can provide their informed consent to take part in the evaluation.

Training Units will be delivered via an online training platform (e.g. CourseSites or Agora). The first unit introduces the learners to AT definitions and concepts while subsequent units are more specialist, including understanding disability, AT for mobility, AT for communication, AT for posture and seating, and evidence-based AT.

The following groups have already been invited to undertake the training and participate in the evaluation via email invitations from the CCCU ADAPT team: CCCU undergraduate and postgraduate students whose programmes are relevant to healthcare and AT; CCCU staff who have a related expertise and professional qualification; and contacts of ADAPT non-NHS partner organisations. This activity received ethical approval from the CCCU Faculty Research Ethics Panel on 13th February 2019. The next phase of recruitment will involve disseminating the training and evaluation of training for healthcare professionals via NHS Trusts, in the ADAPT regions (Kent, Surrey, Sussex, Hampshire, Devon, Dorset and Cornwall). Additionally, the CCCU ADAPT team has contact details of over 50 Trusts who participated in the previous study (online survey of healthcare professionals), many of whom expressed an interest in the training.

# Research Design

The evaluation adopts a post-intervention research design via the completion of two online questionnaires – one on completion of the training and a follow-up questionnaire approximately six months later. The questionnaires will be designed and hosted via Bristol Online Surveys (BOS).

# Methodology

**Research Questions**

The evaluation aims to assess learner knowledge, skills, attitudes, confidence and commitment, as well capturing as any behaviour changes or results as a consequence of undertaking the training (based Kirkpatrick’s (2016) four levels of training evaluation)) , in addition to suitability of materials and the e-learning platform via which training will be delivered.

**Research Methods**

Individuals undertaking the training will be invited to complete an evaluation questionnaire once they have completed each unit of training. The questionnaire will be self-completed and include basic background data (profession, years of practice, level of AT use) and a series of questions around learners’ experiences and views of the training materials, as well as feedback on content and use of the online training platform. A further questionnaire will be sent to the participant approximately six months after undertaking the training. The background data questions will be repeated, followed by a series of questions regarding the learners’ behaviour changes and results related to the knowledge and skills they obtained via the training. Both questionnaires will take approximately 10-15 minutes to complete.

# Data Analysis and Management

# Statistical Analysis

Statistical analysis of evaluation questionnaire data will be performed using SPSS version 24. Descriptive statistical analysis will be performed in order to describe the range of answers, in addition to summary statistics and sub-group analysis. As the evaluation questionnaire is exploratory in nature, analysis will be focussed on reporting frequencies of answers and conduct chi-square tests where appropriate.

# Data Protection and Confidentiality

Data will be processed in accordance with the General Data Protection Regulation (GDPR) and Data Protection Act (DPA, 2018). Electronic data will be stored on CCCU computers (protected by password) and any paper records will be stored securely within CCCU premises in a locked filing cabinet. No unrelated or unnecessary personal data will be collected or stored. In order to restrict access to personal information, data will be anonymised using unique participant codes. Data will only be accessible by the research team and no personal identifiable information will be shared or made available beyond the immediate project team.

After completion of the study and when writing up the results and communicating this information with audiences outside of the CCCU project team, all data will remain anonymous (i.e. all personal information associated with the data will be removed). In line with funder requirements, anonymised data will be held until 2026 (9 years from the start of the project). Documentation provided to participants (consent forms, participation information) will contain details about the confidentiality, storage procedures of personal data, and their rights under the GDPR and DPA (2018).

# Dissemination of findings

A final evaluation report will be available through the ADAPT project website. Project findings will also be presented to health and social care professionals and relevant stakeholders, and written up for publication in peer-reviewed academic journals. A brief summary of the report will be made available to all participants.

# Risk Management

# Safety considerations

In accordance with ethical regulations, a risk assessment has been undertaken to identify potential hazards to participants as a result of their involvement in the study and the related control measures. These include: participants finding it difficult to refuse to take part in the evaluation (measure – participants will be provided with an information sheet with full details of the study, which advises that participation is voluntary and they can withdraw with no adverse impact); the potential identification of participants (measure – the participant information provides clarity that procedures will be implemented to maintain confidentiality of data).

# Ethical Considerations

It is unlikely that participation in this project will cause participants distress. Benefits of undertaking the training include enhanced knowledge and understanding in the area of AT and related issues for studies/careers and evidence of completion of training for CPD portfolios/performance appraisals. Benefits of participating in the evaluation of the training include enhanced knowledge of academic research, contribution to a research study that will benefit the healthcare professional population as a whole, as well as enhanced future AT training where there is currently a gap identified in terms of provision.

# References

Arthanat, S., Lesner, K. and Sunday, V. (2015) An evaluation framework to measure usability of Assistive Technology at workplace: A demonstration study. Journal of Vocational Rehabilitation, 44, 213-226.

Bloomberg, K., West, D. and Iacono, T.A. (2003) PICTURE IT: An evaluation of a training program for carers of adults with severe and multiple disabilities. Journal of Intellectual Developmental Disability, 28 (3), 260-282.

Dissinger, F. K. (2003) Core curriculum in assistive technology: In-service for special educators and therapists. Journal of Special Education Technology, 18(2), 35-45.

Gillespie, A., Best, C., and O’Neill, B. (2012) Cognitive function and assistive technology for cognition: A systematic review. Journal of the International Neuropsychological Society, 18(1), 1-19.

Jans, L.H. and Scherer, M.J. (2006) Assistive technology training: Diverse audiences and multidisciplinary content. Disability and Rehabilitation: Assistive Technology, 1(1-2), 69-77.

Kirkpatrick, J.D. and Kirkpatrick, W.K. (2016) Kirkpatrick’s Four Levels of Training Evaluation. Virginia: ATD Press.

Lannin, N., Carr, B., Allaous, J., Mackenzie, B., Falcon, A., and Tate, R. (2014) A randomized controlled trial of the effectiveness of handheld computers for improving everyday memory functioning in patients with memory impairments after acquired brain injury. Clinical Rehabilitation, 28(5), 470-481.

Liddell, A., Adshead, S. and Burgess, E. (2008) Technology in the NHS: Transforming the patient’s experience of care. London: The King’s Fund.

Powell, L.E., Glang, A., Pinkelman, S., Albin, R., Harwick, R., Ettel, D. and Wild, M.R. (2015) Systematic instruction of assistive technology for cognition (ATC) in an employment setting following acquired brain injury: A single case, experimental study. NeuroRehabilitation, 37, 437-447.

Powell, L. E., Harwick, R., Glang, A., Todis, B., Ettel, D., and Saraceno, C. (2013) TATE: Training Assistive Technology in the Environment Toolkit. <http://cbirt.org/products/trainingassistive-technology-environment-tate/>

Scherer, M. J. and Craddock, G. (2002) Matching Person and Technology (MPT) assessment process. Technology & Disability, Special Issue: The Assessment of Assistive Technology Outcomes, Effects and Costs, 14(3), 125-131.

Sohlberg, M. M. and Turkstra, L. S. (2011) Optimizing cognitive rehabilitation: Effective instructional methods. New York, NY: Guilford Publications.

Sohlberg, M. M., Kennedy, M., Avery, J., Coelho, C., Turkstra, L., and Ylvisaker, M. (2007) Evidence-based practice for the use of external aids as a memory compensation technique. Journal of Medical Speech-Language Pathology, 15(1), x-li.

Svoboda, E., Richards, B., Leach, L., and Mertens, V. (2012) PDA and smartphone use by individuals with moderate-to-severe memory impairment: Application of a theory-driven training programme. Neuropsychological Rehabilitation, 22(3), 408-427.

Widehammar, C., Lidström, H. and Hermansson, L. (2017) Environmental barriers to participation and facilitators for use of three types of assistive technology devices. Assistive Technology, DOI: 10.1080/10400435.2017.1363828.