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Augmented reality in undergraduate surgical education in final year medical students in the UK

Submission date 20/04/2023	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol
Registration date 21/04/2023	**Overall study status** Completed	[_] Statistical analysis plan [_] Results
Last Edited 21/04/2023	**Condition category** Surgery	[_] Individual participant data [_] Record updated in last year

Plain English summary of protocol

Background and study aims
The study is about testing whether using augmented reality (AR) technology can improve the way medical students learn about surgery. They will compare how well students learn with augmented reality technology versus traditional teaching methods.

Who can participate?
Final-year medical students aged 22 years and over from all medical schools in the UK

What does the study involve?
Participants will be randomly split into two groups. One group will receive augmented reality teaching on top of their normal undergraduate teaching. The other group will only receive their normal undergraduate teaching.

What are the possible benefits and risks of participating?
The study is expected to benefit participants by improving their learning experiences, and there are no expected risks to participating.

Where is the study run from?
University College London (UCL) (UK)

When is the study starting and how long is it expected to run for?
March 2022 to August 2023

Who is funding the study?
1. Royal College of Surgeons of England (UK)
2. B. Braun Medical (USA)

Who is the main contact?
Kien Hang, zchamkh@ucl.ac.uk

Contact information

Type(s)
Principal investigator

Contact name
Mr Arjun Nathan

ORCID ID
https://orcid.org/0000-0002-8572-2832

Contact details
Gower St
London
United Kingdom
WC1E 6BT
+44 (0)7595 189982
arjun.nathan@ucl.ac.uk

Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
19683/002

Study information

Scientific Title
Augmented reality in undergraduate surgical education in final year medical students in the UK

Acronym
AUGMENT

Study objectives
Augmented reality in undergraduate surgical education improves student SBA performance

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 16/08/2022, UCL Research Ethics Service (2 Taviton Street, London, WC1H 0BT, UK; +44 (0)20 7679 8717, Extension: 28717; ethics@ucl.ac.uk), ref: 19683/002

Study design

Interventional randomized controlled trial

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Augmented reality in undergraduate surgical teaching

Interventions
Method of randomization: block randomization

Control arm: current national undergraduate university curriculum
Intervention arm: additional teaching comprising three virtual surgeries through the Proximie platform

Intervention Type
Other

Primary outcome(s)
Student performance in Short Based Answer (SBA) questions using MRCS-based Part A questions, measured at baseline (pre-intervention) and post-intervention.

Key secondary outcome(s))
1. Student perception and confidence measured using a five-point Likert score at baseline (pre-intervention) and post-intervention
2. Cost-benefit analysis. The cost-benefit of the intervention will be assessed compared to traditional surgical teaching. The cost-benefit analysis will be conducted after the intervention is completed.

Completion date
01/08/2023

Eligibility

Key inclusion criteria
Final-year medical students in the UK

Participant type(s)
Other

Healthy volunteers allowed
No

Age group
Adult

Sex

All

Key exclusion criteria
Students who are not final-year medical students in the UK

Date of first enrolment
01/01/2023

Date of final enrolment
01/06/2023

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
University College London
Gower St
London
United Kingdom
WC1E 6BT

Sponsor information

Organisation
Royal College of Surgeons of England

ROR
https://ror.org/02qrg5a24

Funder(s)

Funder type
Industry

Funder Name
B. Braun Medical

Alternative Name(s)

B. Braun Medical Inc., B. Braun

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
United States of America

Funder Name
Royal College of Surgeons of England

Alternative Name(s)
RCS England, RCS ENG, The Royal College of Surgeons of England, RCS

Funding Body Type
Private sector organisation

Funding Body Subtype
Universities (academic only)

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be stored in a non-publicly available repository, the UCL Safe Haven (https://www.ucl.ac.uk/isd/services/file-storage-sharing/data-safe-haven-dsh). A persistent weblink to the dataset will be provided once the data is ready for sharing. The type of data stored includes demographic information, questionnaire responses, and test scores. The process for requesting access to the data is through the UCL Safe Haven. Requests for access will be reviewed by the data custodian and granted on a case-by-case basis. The dates of availability are not currently known but will be added to the study record at a later date. Consent from participants was obtained for the storage and use of their data in this study. The participant data will be anonymized before it is stored in the repository to protect the confidentiality of participants. There are no ethical or legal restrictions on the use of the data in this study.

IPD sharing plan summary
Stored in non-publicly available repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet			21/04/2023	No	Yes

Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes