

Are virtual surgical classrooms as good as face-to-face teaching for basic surgical skills training?

Submission date 15/04/2021	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
Registration date 23/04/2021	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 03/05/2024	Condition category Other	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Virtual classroom training (VCT) is a novel educational method that permits accessible, distanced interactive expert instruction and may improve proficiency of basic surgical skills. We tested the combined hypothesis that virtual classroom training (VCT) is superior to computer-based learning (CBL) and non-inferior to face-to-face training (FFT) for basic surgical skills acquisition.

Who can participate?

Current medical students at London Universities with access to a personal computer and smartphone.

What does the study involve?

Interventions consisted of 90-minute training sessions. VCT was delivered via the BARCO weConnect platform, FFT was provided in-person by expert instructors and CBL was carried out independently.

What are the possible benefits and risks of participating?

Benefits: Improve surgical skills

Risks: Needlestick injury

Where is the study run from?

University College London (UK)

When is the study starting and how long is it expected to run for?

October 2020 to May 2021

Who is funding the study?

University College London and Royal College of Surgeons (UK)

Who is the main contact?

Dr Arjun Nathan, arjun.nathan.11@ucl.ac.uk

Contact information

Type(s)

Scientific

Contact name

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Additional identifiers**Clinical Trials Information System (CTIS)**

Nil known

ClinicalTrials.gov (NCT)

Nil known

Protocol serial number

19071/001

Study information**Scientific Title**

Virtual interactive surgical skills classroom: a parallel-group, non-inferiority, adjudicator-blinded, randomised controlled trial

Acronym

VIRTUAL

Study objectives

The researchers tested the combined hypothesis that virtual classroom training (VCT) is superior to computer-based learning (CBL) and non-inferior to face-to-face training (FFT) for basic surgical skills acquisition.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 27/11/2020, University College London Research Ethics Committee (University College London, 2 Taviton Street, London, WC1H 0BT, UK; no telephone number provided; ethics@ucl.ac.uk), ref: 19071/001

Study design

Parallel-group non-inferiority prospective randomized controlled trial

Primary study design

Interventional

Study type(s)

Other

Health condition(s) or problem(s) studied

Surgical skills education

Interventions

Participants will be stratified by subjective and objective suturing experience level and allocated to three intervention groups with a 1:1:1 ratio. The interventions will consist of 90-minute training sessions. Virtual classroom training will be delivered via the BARCO weConnect platform, face-to-face training will be provided in-person by expert instructors and computer-based learning carried out independently. Optimal student-to-teacher ratios of 12:1 for VCT and 4:1 for FFT will be used. The assessed task will be interrupted suturing with hand-tied knots.

Intervention Type

Behavioural

Primary outcome(s)

Proficiency in placing interrupted sutures with hand tied knots. Measured using the Objective Structured Assessment of Technical Skills (OSAT) score post-intervention, adjudicated by two experts and adjusted for baseline proficiency. The OSAT is employed by the Royal College of Surgeons for accredited course assessment. The primary outcome was measured twice during the trial, once immediately pre-intervention and once immediately post-intervention.

Key secondary outcome(s)

Measured using questionnaires. All questionnaires were created specifically for this trial:

1. Subjective suturing and knot tying confidence measured pre- and post-intervention
2. Perceptions of intervention quality measured immediately post-intervention
3. Financial expenses associated with session attendance self-reported in British Pound sterling (GBP) immediately post-intervention
4. Confidence and perceptions assessed by five-point Likert scale questions immediately post-intervention

Completion date

10/05/2021

Eligibility**Key inclusion criteria**

Current medical students at London Universities with access to a personal computer and smartphone

Participant type(s)

Learner/student

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Total final enrolment

72

Key exclusion criteria

Does not meet inclusion criteria

Date of first enrolment

28/11/2020

Date of final enrolment

12/12/2020

Locations**Countries of recruitment**

United Kingdom

England

Study participating centre

University College London

London

United Kingdom

WC1E 6BT

Sponsor information**Organisation**

University College London

ROR

<https://ror.org/02jx3x895>

Funder(s)

Funder type

Charity

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 are/will be available upon request from Arjun Nathan (arjun.nathan.11@ucl.ac.uk) from dates 1/4/21 to 1/7/22, for review of analyses only not for further analyses. This was agreed with consent from participants. All data is anonymised.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		29/11/2021	12/08/2022	Yes	No
Protocol article		22/07/2021	23/07/2021	Yes	No
Participant information sheet		22/07/2021	03/05/2024	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes