

# DESIGNING A NOVEL SUTURING INSTRUCTIONAL VIDEO FOR MEDICAL STUDENTS

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## PLASTIC SURGERY

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**Purpose:** Videos teaching sleight-of-hand have long made use of multiple camera angles, including the “magician’s view.” Like sleight-of-hand, surgery requires dexterity. Industry-standard suturing tutorials use single-angle shots in succession. We propose students will learn better from a suturing tutorial with simultaneous multi-angle views over a single-angle view.

**Methods:** Dalhousie University medical students completed a questionnaire on suturing experience, sex, age, handedness, and past training in coordinated upper-limb activities, e.g. sports, visual art. Respondents were divided into two suturing-experience-matched groups.

Participants were video-recorded in a private room completing four increasingly difficult tasks on a pig-belly model using a tutorial video: 1. simple interrupted; 2. horizontal mattress; 3. deep dermal; 4. closure under tension. Participants were blinded to multi-/single-angle condition. Participants completed Likert confidence surveys pre-/post-trial.

Completion time was measured for each task. T-tests and ANOVAs were used for analysis. Recordings will be scored using the Global Rating Scale of surgical skill (Martin et al., 1997).

**Results:** 27 medical students participated. Groups were experience-matched (0, 1, or 2 past suturing workshops attended). Multi-angle (n=13) and single-angle (n=14) groups had lower pre- (2.23; 2.29) than post-trial confidences (2.92; 2.64)( $p=0.003$ ;  $p=0.019$ ). Low- and medium- but not high-experience groups had lower pre- (2; 2.72) than post-trial (3; 2.64) confidences ( $p=0.092$ ;  $p=0.019$ ). Multi-angle completion time (118s) was faster than single-angle (137s)( $p=0.013$ ). Multi-angle was faster than single-angle for task 2 (127s; 151s;  $p=0.0008$ ), task 3 (111s; 135s;  $p=0.0006$ ) and task 4 (138s; 154s;  $p=0.027$ ), but not task 1.

**Conclusions:** Results support that medical students can learn to suture more easily using multi-angle tutorial videos, leaving students with higher confidence.