

Usability of the ENTRUST Platform for High-Stakes Assessment in the College of Surgeons of East, Central, and Southern Africa (COSECSA)



Stanford
MEDICINE



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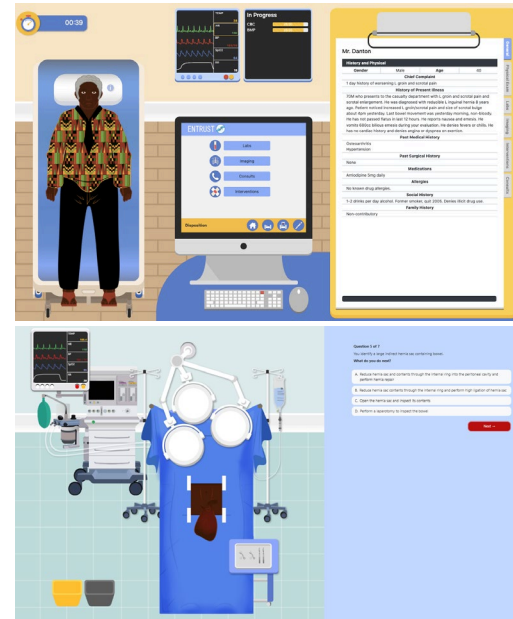
Background

- There is global need for accessible evidence-based tools to support competency-based surgical education in low- and middle-income countries (LMIC).
- The ENTRUST Assessment Platform is an innovative case-based online virtual patient simulation tool developed to objectively assess trainees' surgical decision-making in pre-op, intra-op, and post-op settings.
- This study assesses the usability of ENTRUST during the Membership of the College of Surgeons (MCS) Examination in COSECSA.

Methods

- In partnership with COSECSA, ENTRUST was piloted during the 2021 MCS exam with 110 examinees in 15 sub-Saharan countries.
- Following completion of three ENTRUST online virtual cases, n=79 examinees (72%) completed a survey including the System Usability Scale (SUS) (standardized 10-item questionnaire).
- Bivariate and multivariate analyses were performed to evaluate for potential usability bias related to demographic factors.

Results

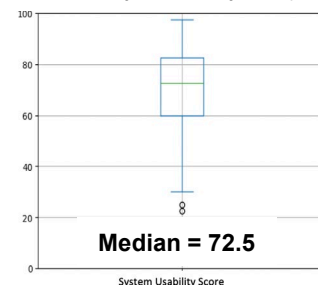


Bivariate Analysis of System Usability Scale (SUS) Score by Demographic Variables

	n (%)	Mean SUS (SD)	p-value
Age, mean (SD)	33.9 (5.1)	-	0.43
Gender			
Male (Reference)	60 (76)	71.2 (17.3)	
Female	19 (24)	70.0 (16.3)	0.80
Native Language			
English (Reference)	10 (13)	69.5 (19.6)	
Other	69 (87)	71.1 (16.7)	0.79
English Proficiency			
Native or bilingual proficiency (Reference)	3 (4)	75.0 (15.6)	
Full professional proficiency	71 (90)	71.0 (17.4)	0.69
Limited working proficiency	5 (6)	67.5 (14.1)	0.55
Specialty			
General Surgery (Reference)	32 (41)	71.0 (15.5)	
Other	47 (59)	70.8 (18.1)	0.96
Prior Video Game Experience (hrs/wk), mean (SD)			
No experience (Reference)	46 (58)	71.1 (16.8)	
Some experience	33 (42)	70.6 (16.7)	0.90

- There was no bias in usability based on demographic variables identified on bivariate or multivariate analysis (all p>0.40).
- Usability was independent of performance on ENTRUST (p=0.36).

Distribution of System Usability Scale (SUS) Score



System Usability Scale (SUS)



71% of participants indicated a preference for the ENTRUST Assessment Platform for all or a portion of the MCS Exam.

92% expressed interest in using ENTRUST as a learning platform.

Conclusions

- This study demonstrates good usability of ENTRUST in this population, akin to well-established software tools.
- No demographic biases were identified in the usability of the platform.
- The ENTRUST Platform holds potential as a scalable educational tool for learning and assessment in competency-based surgical education.

Future Directions

- In ongoing collaboration with COSECSA, the ENTRUST Assessment Platform has been utilized in the MCS Exam since 2022.
- The ENTRUST Learning Platform is in development and has been implemented during medical student clerkships at the University of Global Health Equity in Rwanda.