

4th European Otolaryngology-ENT Surgery Conference

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3rd International Conference on Craniofacial Surgery

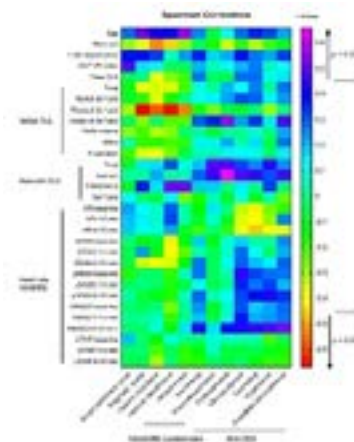
August 15-17, 2019 Rome, Italy

Measurement of cognitive load and heart rate variability during a Video-Based Learning for the Acquisition of History Taking and Physical Examination Skills

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Video-based learning represents an effective way to reduce cognitive load (CL) when teaching a complex task. However, how best to assess the effects of different CL measures is unknown. In this preliminary study, we assessed the impact of subjective or objective CL measures on learning experiences and outcomes with a video-based learning for history taking and physical examinations. Twenty undergraduate medical students were prospectively enrolled and randomly assigned to a 360° virtual reality (VR) video group and 2-dimensional (2D) video group with different visual angles and self-determinations. Standard deviation of normal to normal R wave intervals in the 360° VR video group were significantly higher than those in the 2D video group. Difference in learning experiences and Mini-CEX scores between both groups were not statistically significant whereas global satisfaction of the 360° VR video group was significantly better than that of the 2D group. Temporal demand could independently predict overall clinical competence whereas the 360° VR video independently predicted global satisfaction in multivariate analyses. Our preliminary results suggested that subjective and objective CL measures have considerable potentials when assessing the role of CL/autonomic nervous system fluctuations in video-based learning for the acquisition of history taking and physical examination skills.



Recent Publications

1. Lee LA, Fang TJ, Li HY, Huang CG, Chen TC, Liao CT, Kang CJ, Chang KP, Yen TC. Low expression of pRB predicts disease relapse in early glottic cancer treated with transoral laser microsurgery. *Laryngoscope*. 2019 Jun;129(6):E220-E226.
2. Lu CT, Li HY, Lee GS, Huang YS, Huang CG, Chen NH, Lee LA. Snoring sound energy as a potential biomarker for disease severity and surgical response in childhood obstructive sleep apnoea: A pilot study. *Clin Otolaryngol*. 2019 Jan;44(1):47-52.

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3. Lee LA, Wang CJ, Lo YL, Huang CG, Kuo IC, Lin WN, Hsin LJ, Fang TJ, Li HY. Drug-Induced Sleep Computed Tomography-Directed Upper Airway Surgery for Obstructive Sleep Apnea: A Pilot Study. *Otolaryngol Head Neck Surg.* 2019 Jan;160(1):172-181.
4. Lee LA, Wang SL, Chao YP, Tsai MS, Hsin LJ, Kang CJ, Fu CH, Chao WC, Huang CG, Li HY, Chuang CK. Mobile Technology in E-Learning for Undergraduate Medical Education on Emergent Otorhinolaryngology-Head and Neck Surgery Disorders: Pilot Randomized Controlled Trial. *JMIR Med Educ.* 2018 Mar 8;4(1):e8.
5. Lee LA, Chao YP, Huang CG, Fang JT, Wang SL, Chuang CK, Kang CJ, Hsin LJ, Lin WN, Fang TJ, Li HY. Cognitive Style and Mobile E-Learning in Emergent Otorhinolaryngology-Head and Neck Surgery Disorders for Millennial Undergraduate Medical Students: Randomized Controlled Trial. *J Med Internet Res.* 2018 Feb 13;20(2):e56.

Biography

Dr. Lee has completed his MD from Kaohsiung Medical University (Kaohsiung, Taiwan), residence from Linkou-Chang Gung Memorial Hospital (Taoyuan, Taiwan), and MSc (Medical Education) from Graduate Institute of Clinical Medical Science, Chang Gung University (Taoyuan, Taiwan). He is the director of Division of Laryngology, Department of ORL-HNS, Linkou-Chang Gung Memorial Hospital and professor of Faculty of Medicine, Chang Gung University (Taoyuan, Taiwan). He has published more than 97 papers in reputed journals and has been serving as member of council, International College of Surgeons, Taiwan.

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