

SPEED Eases Dentistry Students in Anesthesia Practice

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In dental treatment, oral anesthesia is essential. It is needed in several procedures including dental extraction, root canal treatment, and many else.

Anesthesia is a compulsory material for every dentistry student. In practice, anesthesia training for dentistry students is performed using a mannequin called phantom.

“So, treatments such as tooth conservation and extraction should be done using phantoms before being performed on humans,” Rizky Septiano Andian, UGM Dentistry student, at the campus on Friday (7/20).

However, anesthesia practice using phantom is still rare because there is a lack of domestic phantom manufacturer. Meanwhile, imported anesthesia phantom is expensive.

“Addressing the problem, we tried to make a tool named SPEED, Smart Phantom Electronic to Ease Dentist,” said Rizky Septiano.



Along with two Electronics and Instrumentation students, Alfian Andi Nugroho and Karna Siwantara Suara, Rizky designed the tool. SPEED connects anesthesia phantom to a smartphone app to help student and lecturer practice during data analysis.

“The app stores the record and notifies each student’s success rate in performing anesthesia to supervising lecturers using Wi-Fi.”

Interestingly, SPEED presents a real trigeminal nerve that is connected through pressure and touch sensors. This can certainly offer a much more real experience for dentistry students and represent phantom like a patient.

“This phantom tool is a skull model whose jaw and gums are equipped with special sensor that represents the real neural pathways in human teeth. Additionally, the syringe has been fully modified so when it touches the neural pathway, the phantom will detect and send the injected nerve data to the user’s smartphone,” said Rizky, leader of SPEED development team.

With the guidance of drg. Pingky Krisna Arindra, Sp.BMM, the SPEED innovation has received grants from Higher Education Directorate General through Student Creativity Program for Karsa Cipta 2018. SPEED is expected to help dentistry students in studying dental anesthesia.

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