

## Peer Review File

Article information: <https://dx.doi.org/10.21037/amj-21-59>

### Reviewer #A

This is a very interesting topic and the use of the WKS-2 simulator seems really interesting as well. However, the study and how the simulator was used is confusing to understand. Because the simulator is not commonly available, we have no experience with it, and I actually couldn't find anything written about it online, a description of the simulator, with a photograph, would be very useful in the introduction. The results and discussion are confusing without knowing how the simulator works.

1. We have added a new photograph of WKS-2 simulator on Figure 1.

The language is excellent in the introduction, but it seems that the language becomes harder to understand, with more grammatical errors, later in the manuscript. I think that after adding this information, and reviewing the language in detail again, it would be an interesting manuscript for others to read.

2. We have corrected the text to reflect multiple grammatical errors.

### Reviewer #B

I read with interest the manuscript titled “Acquisition of surgical technique by surgical training using a Swine model - Evaluation of the suture technique using a WKS-2 simulator”.

The author describes the objective evaluation of suturing skills (with a WKS-2 simulator) in medical residents before and after surgical training using a pig model. They found that after training, suture time had significantly shortened and the strength of the suture ligature reduced significantly compared to before training.

The author concludes that surgical training using pig models can shorten the suturing time and enables surgeons to master tissue-friendly suturing.

I have some comments and questions:

- Introduction: the author explains OBE and EPA with a wide variety of qualities a surgeons must have. Little references are used (Mini CEX, 360 degree evaluation) and the traditionally used CanMEDS and SCORE® systems are not mentioned. Moreover, line 72-75 states that evaluation has only been done by third parties... In my opinion it is perfectly possible to perform evaluation by the tutor and not a third party.

However, I do not agree with the phrase “However, it is undeniable that the evaluation of medical training by a third party not only reduces objectivity but also makes uniform and

accurate evaluation difficult.” All depends on how the objective criteria are defined, such as in Objective and Structured Assessment of Technical Skills (OSATS).

Also, it is dangerous to state “We assessed, for the first time...” .

Regarding the “evaluation kit that evaluated EPAs”: when the WKS-2 simulator was meant, it is only evaluating one single EPA, being suturing skills...

- Methods: the WKS-2 simulator should be well explained and referenced to (suggestion to add DOI: 10.1109/IROS.2007.4399351). Figure one is contributive, but the formula is completely not. The author mentions that “the confidence level was evaluated under the supervision of teaching physicians”. Was there any objective evaluation? Can it be added to the results section?

- Results: line 130: “The higher the stitching time value, the shorter the stitching time” is a sentence that goes with figure one and should be under “methods”.

I would also suggest to mention the p-values in this section.

- Discussion: is based on comparing the results of this study with historical results in another setting, only using one single reference, which is too weak. Moreover (line 166), the author mentions “these data prove that wet lab training improves suturing skills in trainees, which contradicts with the results obtained with WKS-2.”. As a reader I cannot see any objective proof of suturing skills, besides a faster suturing time.

I agree with the limitations of the study, without any control groups or control tests...This is however a major flaw in the initial design of the study.

I am also not sure if the WKS-2 simulator alone justifies that “ the wet lab training can provide a

learning experience similar to real-world clinical practice...”

- Practice points: only “Wet lab training improves suture time” is supported by evidence. The second points should be further evaluated and the third point was not the subject of the current manuscript.

1. We have removed the sentence “a third parties” and added “oneself”.

2. We have removed the sentence “for the first time”.

3. We have removed the sentence “Mini CEX, 360-degree evaluation, and case presentation”.

And

described the sentence “CanMEDS and SCORE® systems.” We have added reference[7].

4. We have removed the sentence “that evaluated EPAs”.

5. We have removed the sentence “the confidence level was evaluated under the supervision of teaching physicians”.

6. Figure 1 By normalizing the time, the doctor's average suturing time is 107 seconds and

that of the inexperienced person is 398 seconds, so if the suturing time is 107 seconds or less, IT becomes 1, and if it takes 398 seconds or more, it becomes 0. This sentence was newly written in the “Methods”.

7. We have added p value after these result.

8. Practice points have removed the sentence “ Unlike dry lab training, wet lab training enables

surgeons to practice tissue-friendly suturing technique that reduces ligating power.” and “WKS-

2 simulator allows efficient and uniform evaluation of the suturing technique of surgeons.”

9. We have removed the sentence “These data prove that wet lab training improves suturing skills in

trainees, which contradicts with the results obtained with WKS-2.”.

10. We have removed the sentence “The wet lab training can provide a perfect alternative that mimics the actual clinical practice.”

11. Unfortunately, we have not measured the control group or control test. We understand that this is an important point and will try to obtain the data in future study.