



PTAS Project Report (for SMALL PROJECT GRANTS)

Project Title: Evaluation of surgical confidence and competence with key surgical EPAs after repeated use of low-fidelity training models in veterinary students.

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What did you do?

As planned, we used the funding provided through the Principles Teaching Award Scheme to design and develop 3 surgical training models for final year undergraduate veterinary students: each model representing a core surgical entrustable professional activity (EPA). Models represented a canine castration, an eyelid laceration repair, and a subcutaneous lump removal. We initially surveyed the cohort to gather information on surgical experience and to ensure there was agreement that the models, thus tasks, selected represented those core surgical skills required in practice as a new graduate. Models were created using low cost and easily accessible materials to ensure models could be affordable and reproducible. Three groups of undergraduate students (containing 23-27 students) were then given the opportunity to use the surgical models 4 times. Participants were asked about their surgical stress and confidence throughout the session and graded on their competence after repeated use of the model.

What did you find out?

One hundred and ten students were surveyed. The survey results showed that the cohort did agree that the key surgical EPAs selected were clinically important and relevant but over 50% of the respondents felt that they had no substantial experience performing them and were not confident or comfortable performing them. After introduction of the surgical training models student self-assessed confidence increased, and stress decreased significantly. Graded competence significantly improved on all training models between the first attempt and the fourth attempt with the model. Most students deemed the model's to be realistic and helpful for student practices.



How did you disseminate your findings?

The results of the first part of the study (survey) were published in the Vet Record (<https://doi.org/10.1002/vetr.1978>).

The results of the second part of the study (models) have been written up and submitted to the Vet Record and are currently under review. Methods on how to reproduce the simulator have been provided within the submitted publication, to allow others to recreate the model for teaching in their own institutions.

What have been the benefits to student learning?

The study has shown that repeated exposure to 3 different low-fidelity surgical training models, each representing a core surgical EPA, increased final-year students' surgical confidence, competence and reduced procedural stress levels. Additionally, assessment of competence when performing the assigned surgical EPA, using a grading rubric, was successful.

How could these benefits be extended to other parts of the university?

There has been a massive growth in surgical model development over the past 5 years and 2 models are widely recognised (low- and high-fidelity), with research suggesting no difference in the learning outcomes between them. Low fidelity models are often easily accessible and cheap. This study has shown how easily surgical models can be created and incorporated into a training programme. There is scope to introduce these training models into a competence-based education assessment framework to allow screening of competence prior to graduation in the veterinary field, but I also believe this concept has some translation to other medical professions and schools within the university (eg, dental and medical).

Further collaborations in this area would be welcomed. Please contact Dr Jamie-Leigh Thompson for further details regarding this project or any future collaborations.



Financial statement (please delete as appropriate):

This project has remaining funds unused and we require details of how to return the balance. The Principal Investigator or School Administrator appropriate can provide financial statements showing the funding usage as and when required by the UoE Development Trusts who may require it for auditing purposes.

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