

Using Instructional Design Principles In Developing Skill Acquisition Workshops In Hand Surgery- Our Experience

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Introduction

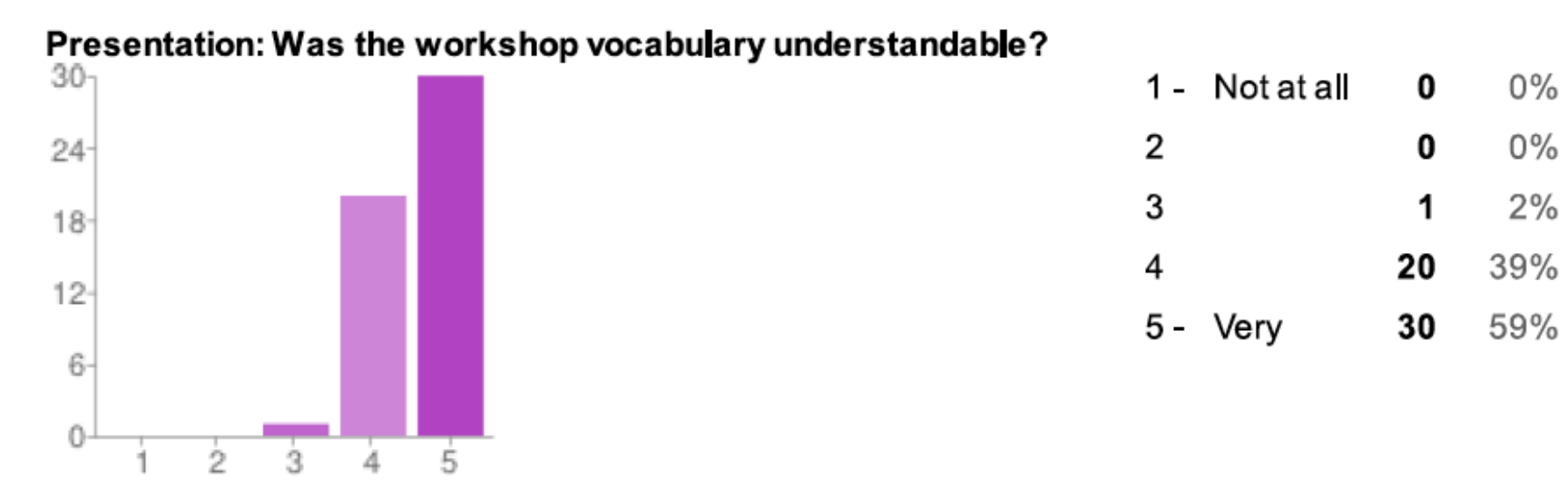
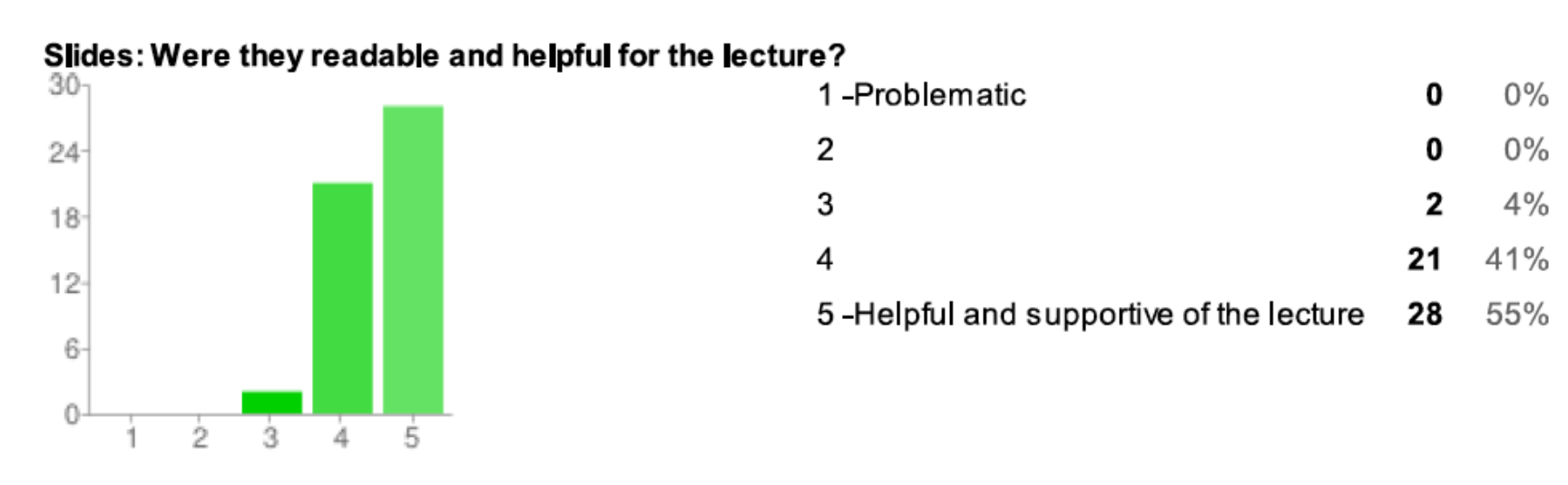
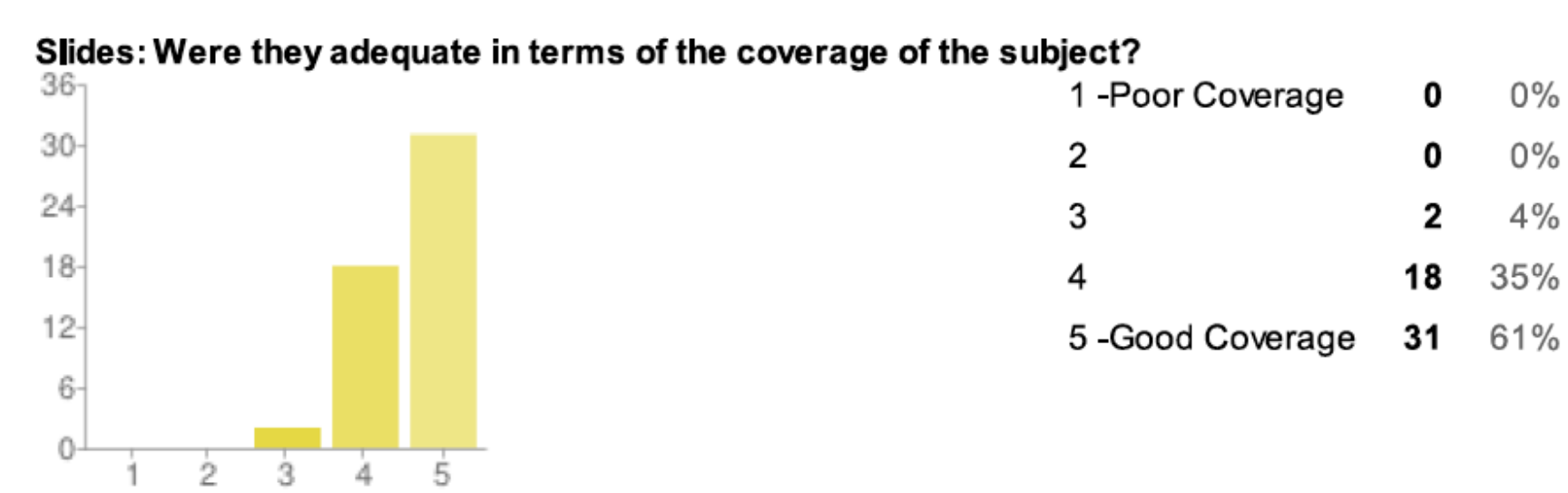
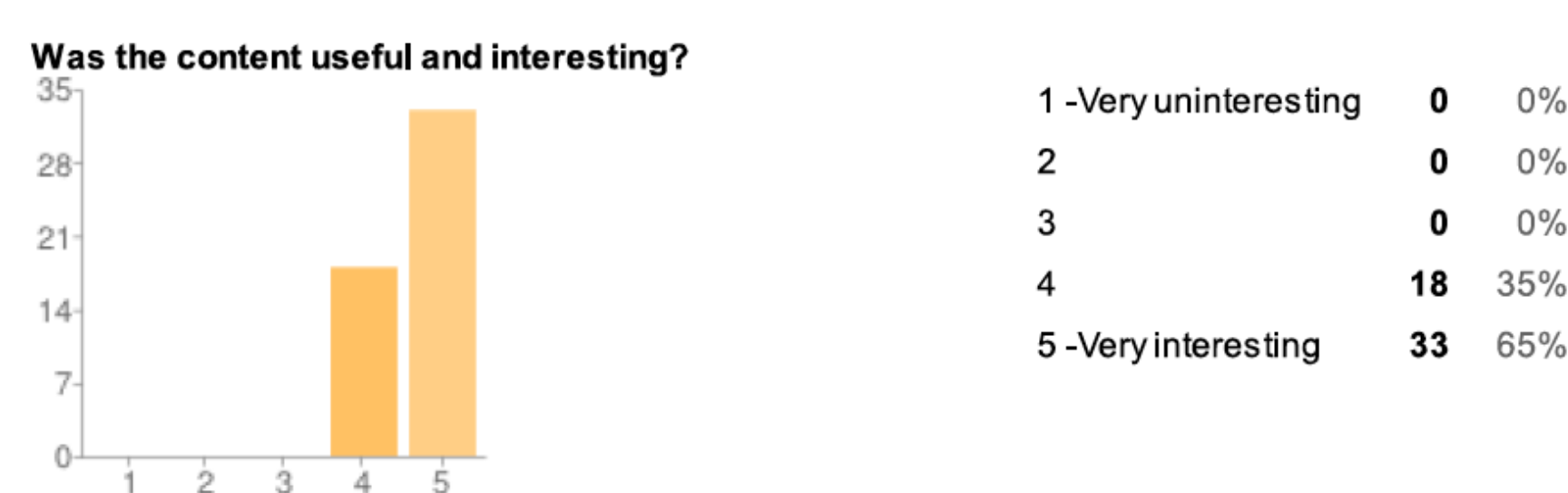
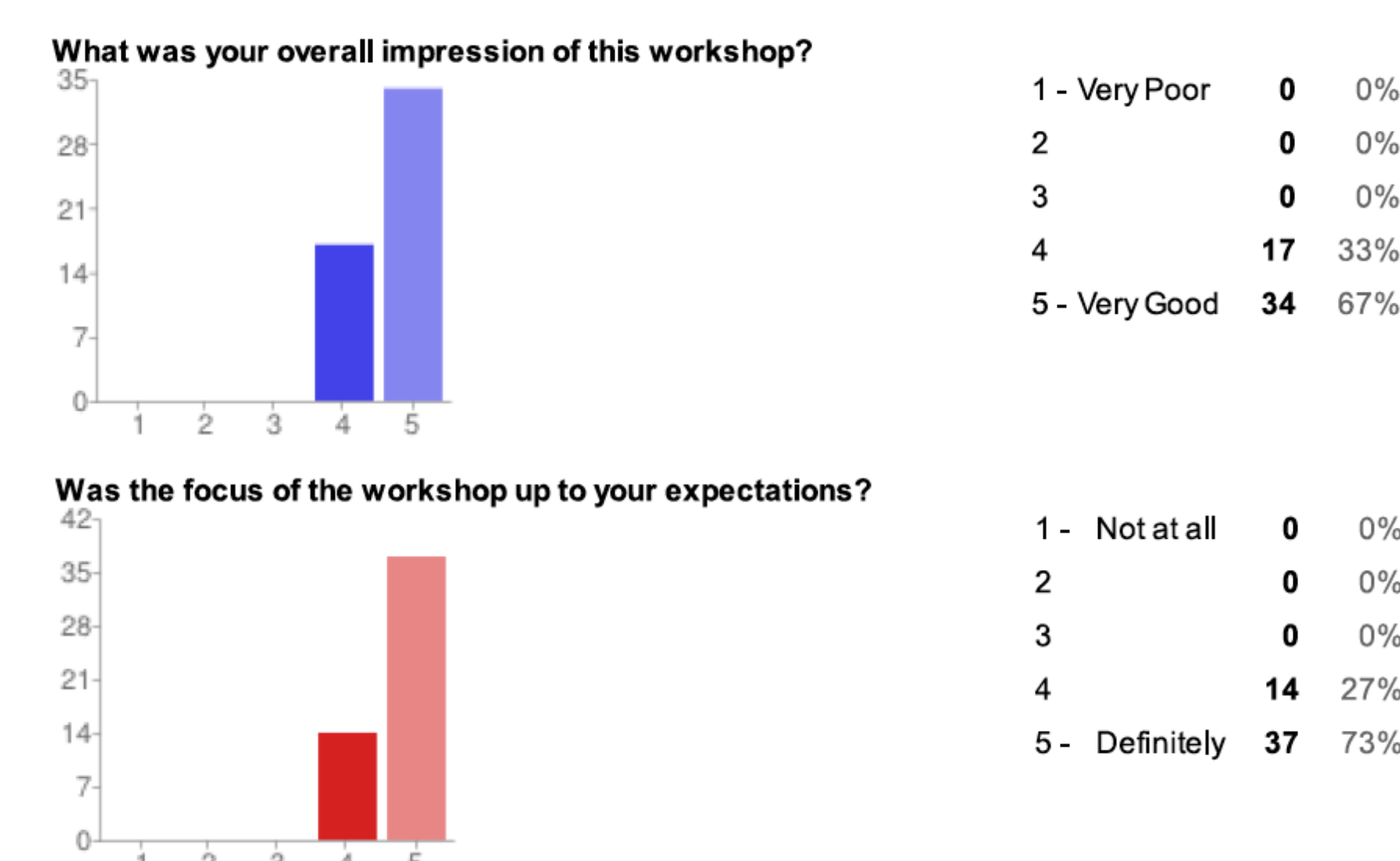
Hand surgery is very much a psychomotor dominant specialty requiring the need for predictable, reliable and cost effective means of transferring and developing surgical skills. The need for a high quality simulations model to acquire skills is important in skill training. In this paper we identified real world problems of skill gaps in hand surgery and used the theories of instructional design (ID) to analyse the instructional needs in the problems and then generated solutions using the principles of ID. Based on the individual needs of the learners and entry behaviour and characteristics, the framework developed instructional activities and materials allowing for effective and efficient transfer of information and skills allowing for adequate feedback and assessment to achieve the stated objectives of the instructions. It included generation of appropriate tools to evaluate the effectiveness of the whole ID framework.

Methods

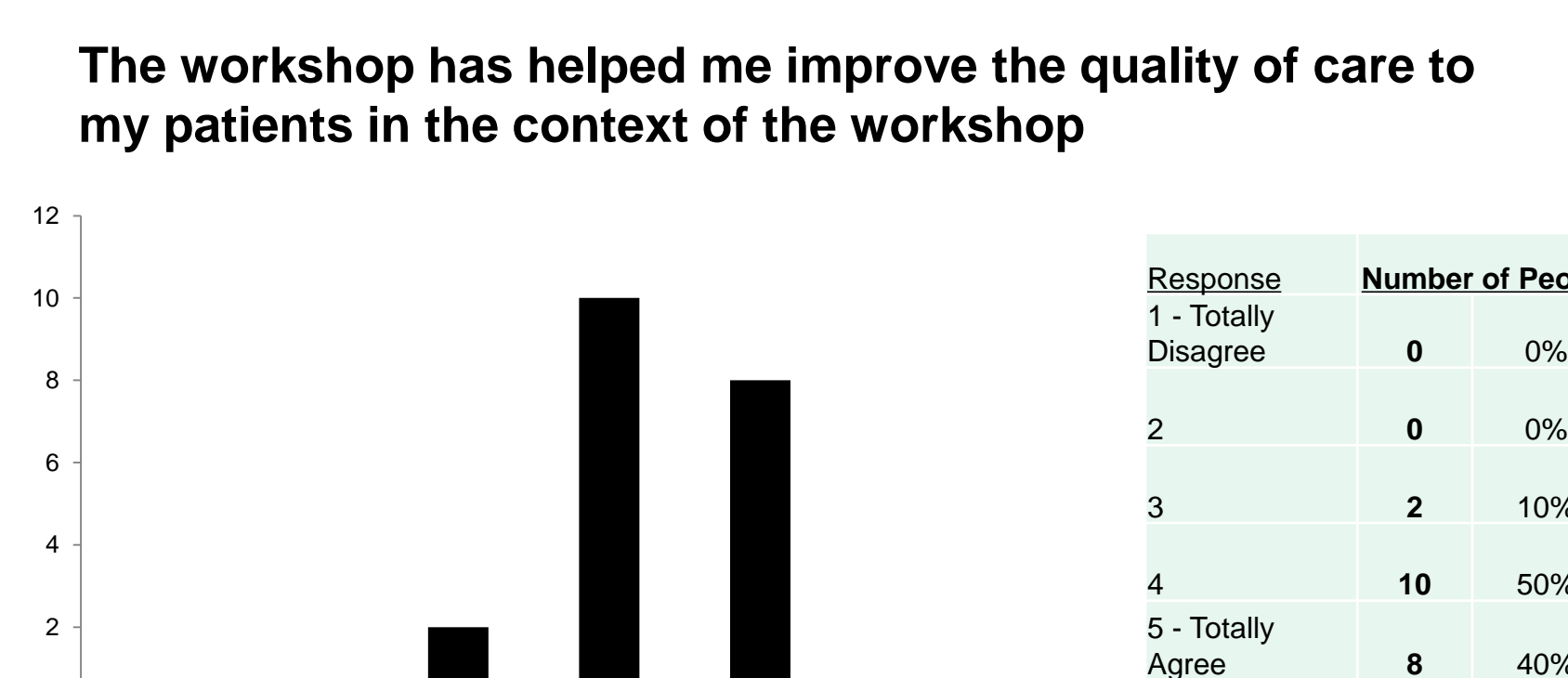
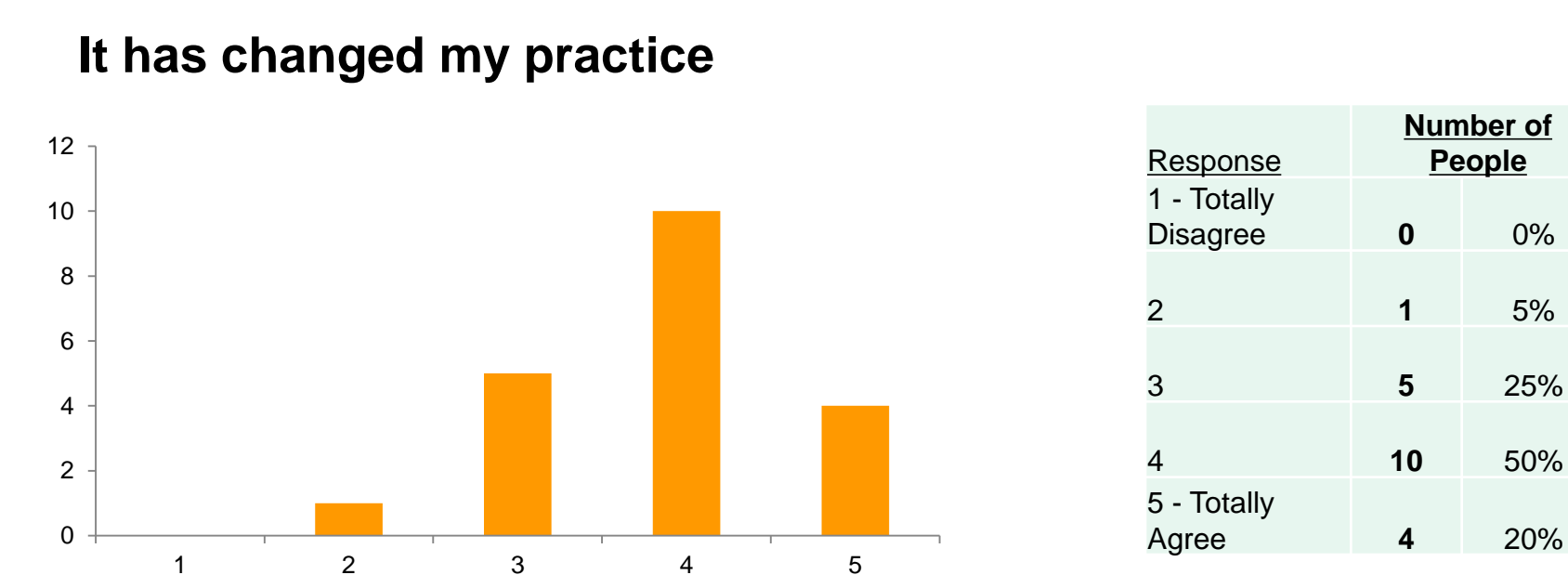
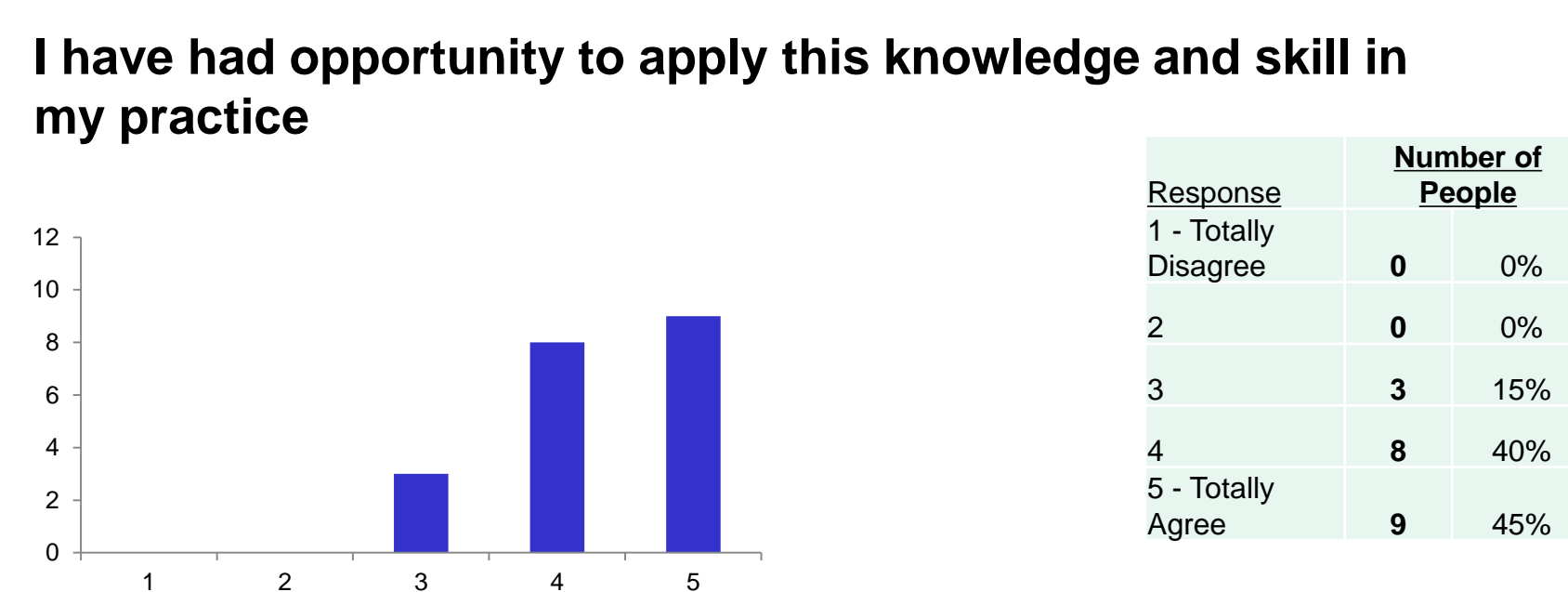
- ✧ Trainees may be trusted to perform a professional task with sufficient independence.
- ✧ This professional activity that is required in the community is called a Entrustable Professional Activities (EPAs).
- ✧ EPAs are entrusted when a supervisor is confident the trainee can demonstrate the knowledge, skills and attitude required of the task, knows when to ask for additional help and can be trusted to seek assistance in a timely manner.
- ✧ The senior authors developed the EPA for trainees in hand surgery care.
- ✧ 4 skill acquisition workshop were conceptualized and developed based on the ADDIE (Analyse, Design, Develop, Implement, Evaluate) framework of Instructional Design.
- ✧ The 4 workshops were: Injured Hand Assessment; Flexor Tendon Workshop; Hand Fracture Fixation; Micro-neural repair workshop
- ✧ Using Gagnes 9 events of instruction, we developed the curriculum, pedagogy, and assessment.

Results

- ✧ These 4 workshops were held twice yearly (except for micro-neural repair workshop which was held annually).
- ✧ They were assessed for usefulness with immediate feedback following the course.



✧ Effects of the workshop were further analysed using Kirkpatrick evaluation and it showed there was positive change of behaviour.



Conclusion

- This paper shows that the use of the Instructional Design models like ADDIE is a useful tool in designing surgical skill workshops and is a reliable and predictable tool in producing learning programs for surgeons.
- The authors have drawn on the theories on ID to analyse the learning gap in a group of junior surgeons in the performance of hand surgery procedures.
- Using the revised ADDIE, the authors have used the framework to analyse the instructional goals and needs and formulated strategies to bridge the gap by developing the instructional events for delivery of the learning in the form of an intensive course to transfer knowledge and skills using a high fidelity simulated models and Gagnes 9 event in instruction.
- The authors have shown that the framework used to develop instructional resources to meet the overall learning objectives have been effective in producing relevant authentic learning.

Bibliography

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