

RATIONALE

Previous implementation of peer-led mock practicals in the medical gross anatomy course showed correlation of improved academic performance in participants (Hurley et al. 2017).

Based on these results, peer-led mock practicals were initiated in the medical neuroscience course to supplement the laboratory curriculum in Fall 2017.

Intended Goals:

- Improve first-year medical and graduate students' academic performance
- Reduce anxiety regarding laboratory examinations
- Encourage peer discussion of identification and derivative questions

To achieve these goals, a protocol was established for conducting neuroanatomy mock practicals.

This protocol has the potential to be revised annually through iterative development based on peer feedback.

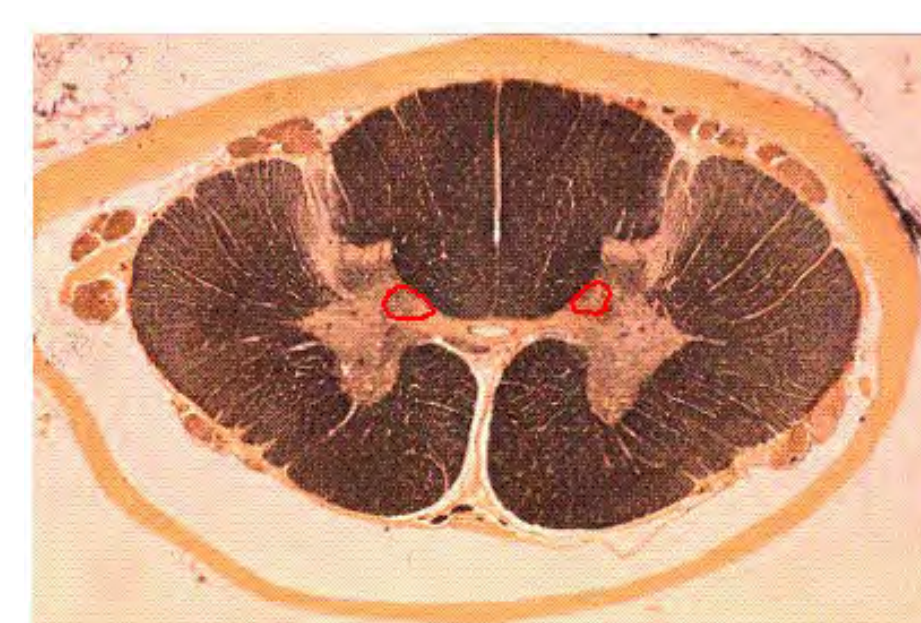
METHODS

Voluntary mock laboratory practicals are designed and administered in a testing environment intended to mirror conditions and content of faculty-administered laboratory examinations. Student facilitators create each practical to be of similar length, question types (Figure 1) and specimen tagging techniques.

During each mock practical, students are allotted 35 seconds at each station, 10 fewer than what is allowed on the course laboratory exams. A soundtrack is used to imitate the tone that signals the appropriate time to change stations during the exam.

This protocol was designed based on the previously implemented anatomy mock practicals with adaptations to fit the neuroscience curriculum.

- @ superior cistern on half brain
- Q. What vein is located in this cistern?
- Internal cerebral
 - Thalamostriate
 - Great vein of Galen
 - Basal veins of Rosenthal
- @ pterion
- Q. A fracture here will likely cause which of the following?
- Epidural hematoma
 - Subdural hematoma
 - Subarachnoid hemorrhage
 - Cingulate herniation



- 18 Q. What is this nucleus?
- Clarke's
 - Proprionic
 - Posteromarginal
 - Intermediomedial

Figure 1. Examples of derivative and identification questions

RESULTS

The protocol for conducting a neuroanatomy mock practical includes the following stages (Figure 2):

1. Planning – Prior to the date of the practical, facilitators divide the content, plan to identify high-yield neuroanatomy structures and concepts, and design questions representative of our expectations of the laboratory exam.
2. Set-Up – Approximately one hour before participants arrive, facilitators label structures and come to unanimous agreements on each identification by conducting a thorough walk-through review.
3. Implementation - This stage involves participants completing the mock practical and forming peer groups to foster discussion regarding each question. It also describes how facilitators should guide discussions by explaining answer rationale and how best to manage disagreements about questions.
4. Iterative Review - Verbal feedback from participants, observations of facilitators, and surveys completed by participants at the end of the course will allow for iterative development in the future.

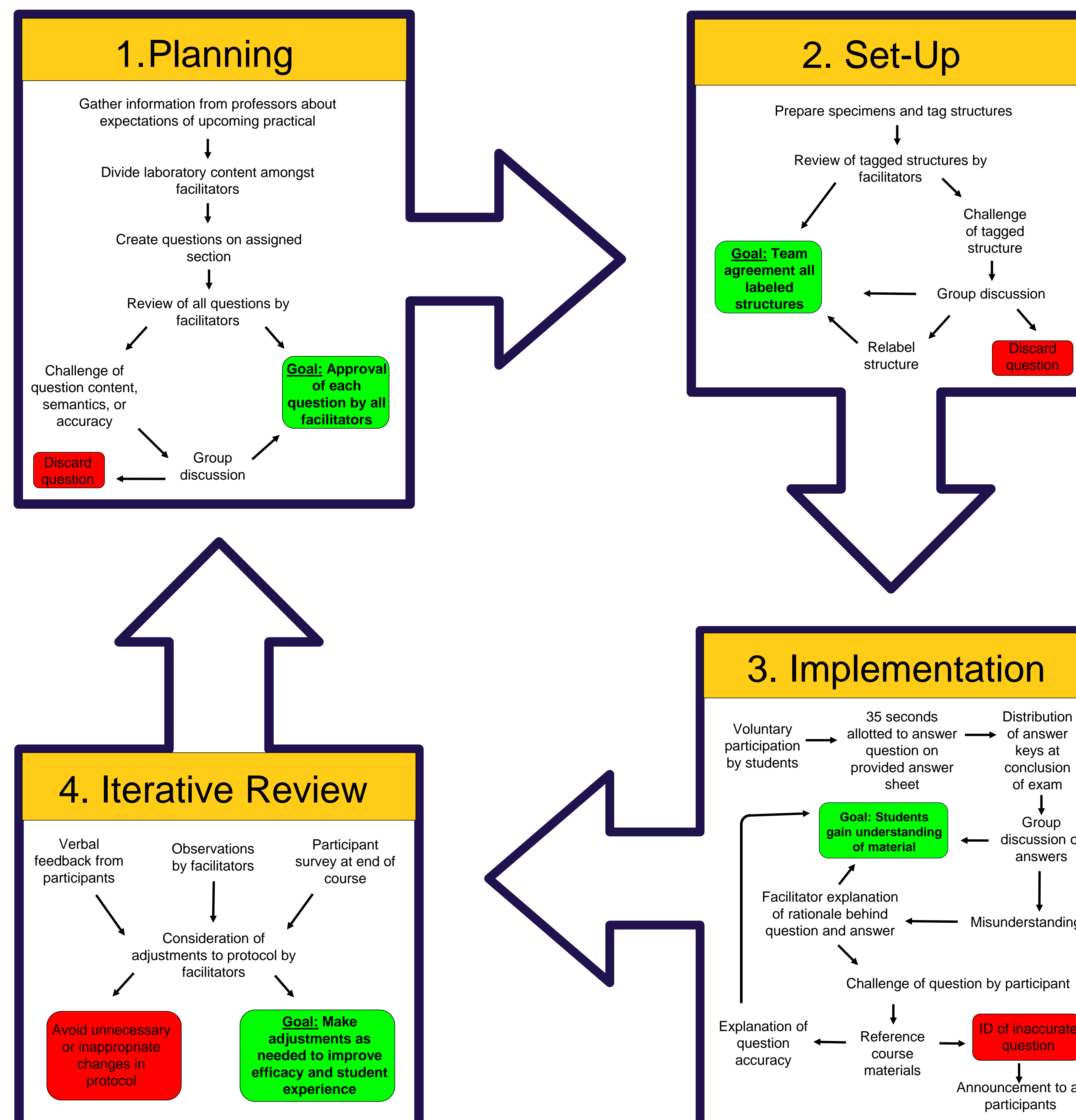


Figure 2. Protocol for conducting a neuroanatomy mock practical.

EVALUATION PLAN

To assess the efficacy of mock practicals, each participant fills out a survey after completing the simulation. The survey includes questions about the participant's confidence level in the laboratory material before and after the mock practical, study habits, and number of overall correct answers and derivative questions.

These survey results, in addition to anonymous data collected on the laboratory exam grades of participants, will allow for analysis of the effects of participation in mock practicals.

At the end of the course, an additional survey will be sent to participants to gain feedback on how the mock practical can be improved for future classes.

IMPACT

The potential impact of successfully implementing peer-led mock practicals in neuroanatomy includes the opportunity for participants to gain a better understanding of material and more experience taking an exam in this format. In addition, participants can assess their comprehension of the laboratory material several days before taking the laboratory exam.

If participation shows positive correlation on academic performance, it would indicate that it is worth investing resources into the integration of similar peer-led programs for other courses in the pre-clinical medical school and graduate school curriculum.

REFERENCES

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