

A Multi-Instructor Creation and Implementation of a Free Question Bank for Introductory Statistics

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BACKGROUND

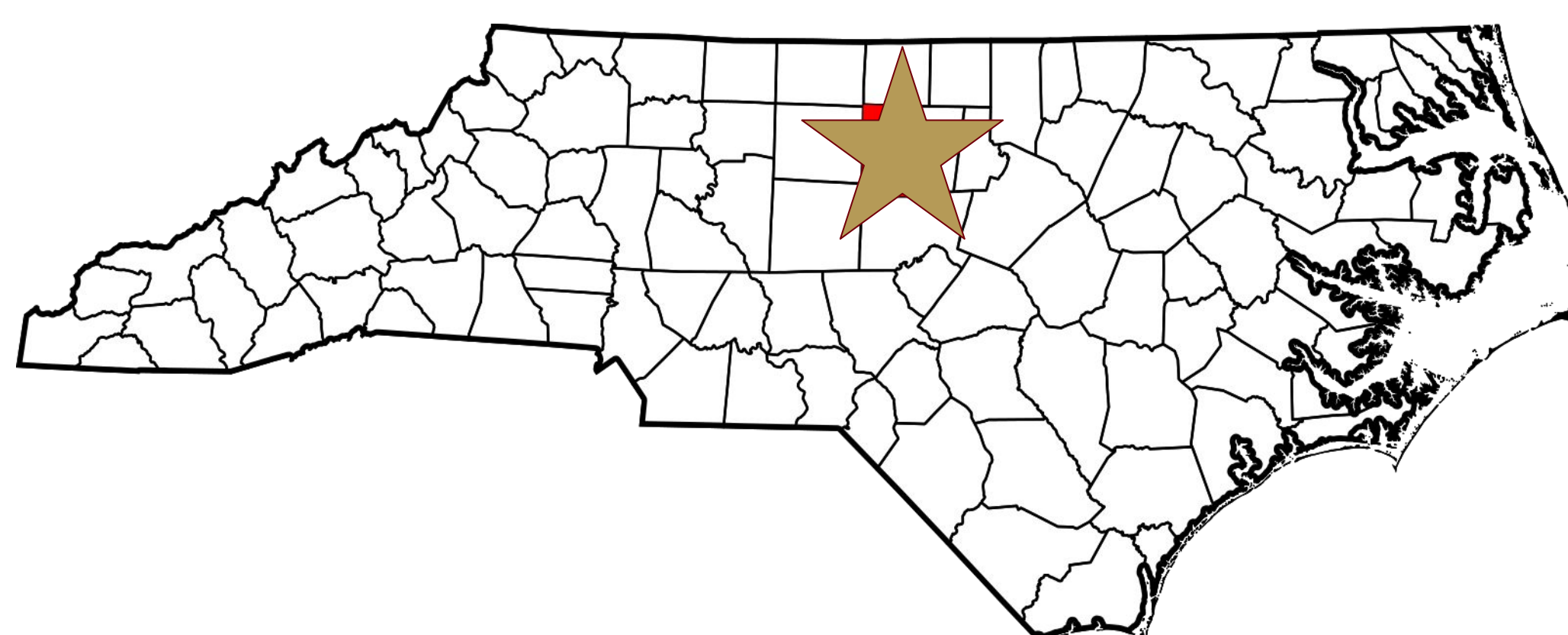
Open Education Resources (OER) refers to any resources that are available to users at no monetary cost.

Resources are often made public using a Creative Commons license.

We created a question bank that is currently housed in our LMS. This bank can be used to create assignments such as homework, quizzes, etc. We plan to work with staff in our library to make the question bank an OER that will be available to instructors outside of our university.

OUR CONTEXT

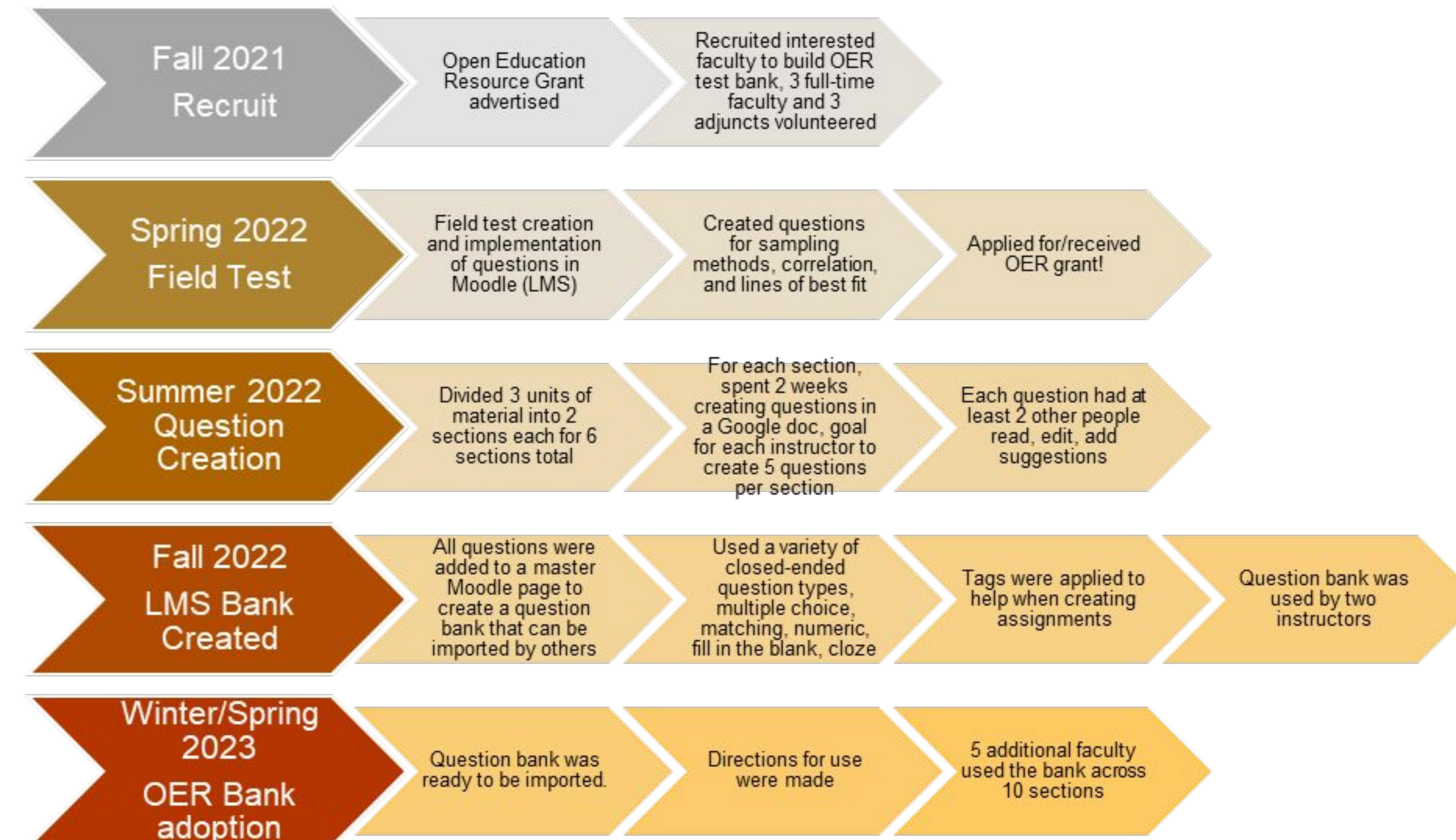
- Elon University is a 6,000+ student private university in Elon, NC.
- *STS 1100: Introduction to Statistical Reasoning* is taken by around 80% of all students to satisfy their first-year foundations math requirement. The course emphasizes consuming statistics rather than producing them.
- Class sizes are typically around 30 students.
- Six faculty collaborated to create the question bank - all six had taught the course for multiple years and were interested in creating resources tailored specifically for this course.



MOTIVATION

- **COST** – Our university typically offers up to 40 sections of STS 1100 per year with around 30 students per section. The standard course textbook costs about \$90, meaning students are collectively spending around \$100,000 per year. When an Open Educational Resource grant was announced, this made the course an ideal target.
- **LEARNING GOALS** – Questions from the textbook traditionally used in the course didn't always align with our course's learning goals.
- **RELEVANCE** – The traditional textbook didn't always use contexts our students found interesting and relevant.
- **EQUITY** – Lowered course costs, homework within the LMS rather than a separate platform, and relevant topics can all decrease barriers to student success in a primarily first-year course.

THE PROCESS / PRODUCT

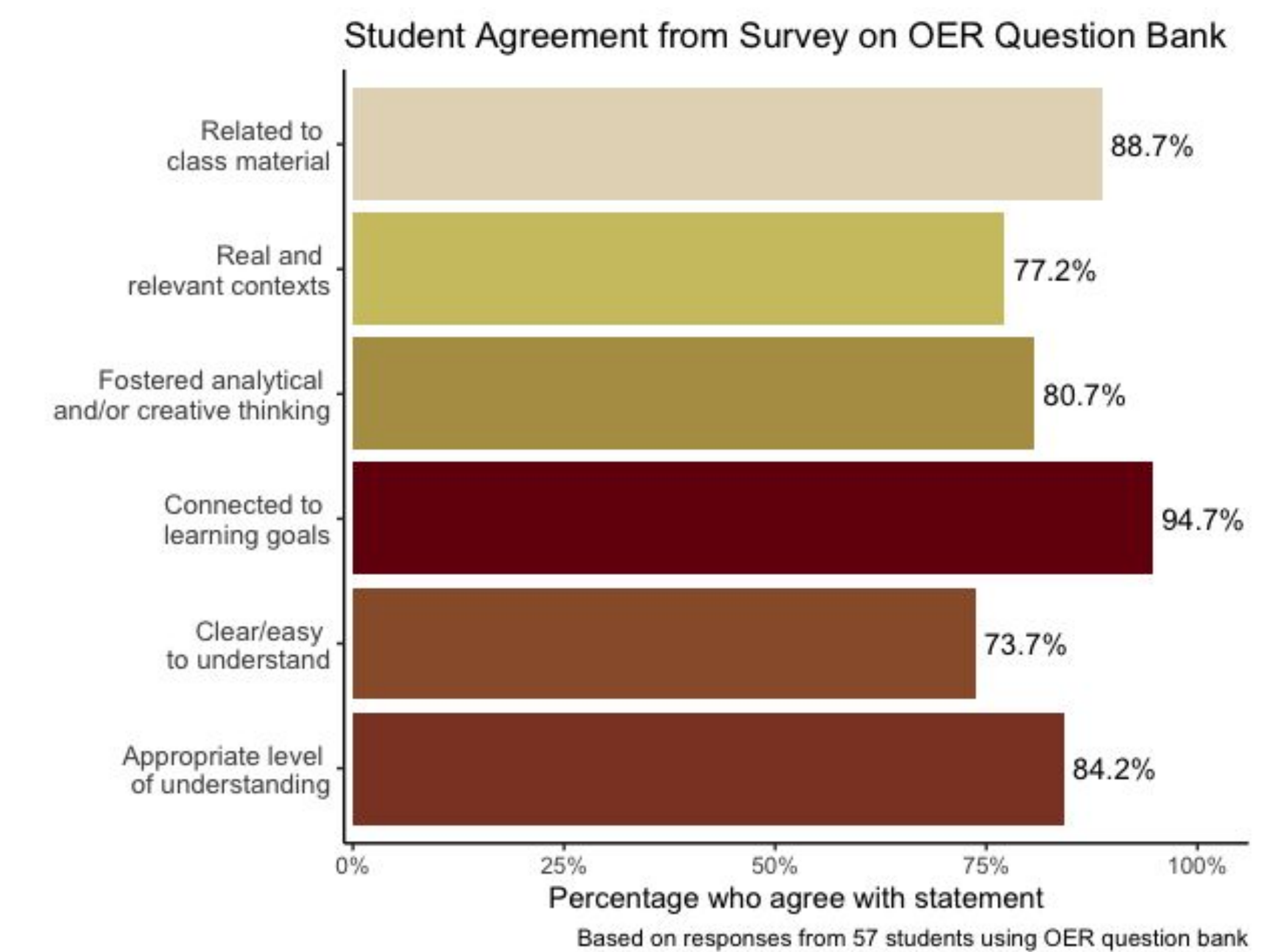


- Our original goal was to create 180 questions, but in total the team created **267 questions** for use by any STS 1100 instructor.
- Instructors have used these questions for in class assignments, homework, tests, and other assessments.
- Since many topics have several different questions, instructors can create random questions from a pool of questions with a similar topic.

RESULTS

The OER test bank was made fully available beginning in 2023. This year, 22 of 40 sections have utilized (or will utilize) a free textbook compared to 7 of 38 sections in 2022. With 30 students per section, those additional 15 sections equal an approximate total savings of \$36,000 to our students.

A student satisfaction survey was administered across these sections. A total of 57 students responded who had used the OER. The graph below shows their agreement to the given statements about the OER test bank questions.



NEXT STEPS

- Encourage new STS 1100 instructors to adopt a free text and utilize the question bank.
- Periodically revise questions and add new ones as recommended by STS 1100 instructors.
- Share the question bank beyond our university.

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