Biology Quizzer

Instructor Name	Ana Otero
Course Subject	General Biology (BIOL 1111, BIOL 1112) and Foundations of Biology
Student Level	Undergraduate, introductory-level
Number of Students	200–400 (across sections, at full deployment)
Developed by	Ana Otero, Associate Teaching Professor in Biology, College of Science in collaboration with Rangoli Goyal, Assistant Teaching Professor, College of Science

What the Students Did

Biology Quizzer is a custom AI-built quiz tool, developed in Claude, that generates multiple-choice practice questions for students in large introductory biology courses. The tool used an OpenStax textbook to help produce practice questions across the relevant topics, varying in difficulty. Students work through the low-stakes practice questions and track their progress as they prepare for the multiple-choice assessments common in these courses.

With the Biology Quizzer, students can generate practice questions on the topics that they choose so they can rehearse content and check their understanding before exams. Because question difficulty varies, students can build from easier recall questions toward more challenging application questions. A secondary goal is to provide low-stakes, repeatable practice that fits around class and homework, with visible progress that students can track as they work

Purpose

The tool helps students prepare for the multiple-choice assessments common in large introductory biology courses..

Assessment

The effectiveness of the activity has been evaluated through a small number of student experience surveys, student interviews, and student performance on course assessments. Early feedback indicates that students find the tool useful and beneficial.. A fuller evaluation with quantitative measures of student performance in large sections is the next step. ,

Faculty Reflections

I have learned that this kind of tool raises real questions I still need to answer for students. The most common one is about accuracy: some faculty are reluctant to let students use AI to generate quiz questions because they worry the AI will make mistakes, and students themselves want to know whether the questions they practice with are comparable to what will appear on the exam. Being transparent about this with students is important. I would also like to give students clearer guidance on how to use the tool. For example, whether to start with easier questions and work toward harder ones, and roughly what share of questions they should aim to answer correctly.

One thing I would still like to add is a way for students to understand how to improve when they do not do well, rather than just seeing a score. I have also thought about adding a friendly competition element so students can compare scores, which might increase motivation.

My honest assessment is that it is early. I have only tested it with a few students, and while some colleagues are enthusiastic, others would rather not use it. In the fall, when I am teaching large sections again, I plan to look more carefully at quantitative measures and student performance to see whether it actually helps.

On the larger question of AI in teaching: AI tools can assist us, but they are not a substitute for critical thinking and creativity. We have a responsibility to help students develop thoughtful inquiry and ingenuity, and a practice tool like this should support that goal, not replace it.

Step-by-Step Directions

Step 1	Prepare the assigned material before class and come ready to engage with the topic.
Step 2	Attend class and participate in the day's activities.
Step 3	Complete the homework for the topic.

Step 4	Open Biology Quizzer and indicate the topic you'd like to be tested on.
Step 5	Work through the practice questions the tool generates for you.

Related Materials

- Biology Quizzer (Claude artifact): https://claude.ai/artifacts/b38e4237-53d7-4a4e-a4ab-66ffae5dfc8e