

Interactive Learning Assessment: Simulating Professional Practices

Elizabeth Yakes, PhD, RD

Andrea Cantarero

Tabitha McKay

Vanessa Svihla, PhD

Tim Castillo, MArch

Isaac Valdez

Justin Hertel



United States
Department of
Agriculture

National Institute
of Food and
Agriculture



The authors would like to acknowledge funding from a UNM Teaching Allocation Grant (#734059) and from the USDA/NIFA Hispanic-Serving Institutions (HSI) Education Grants Program (#2012-38422-19836).

The Project

- Build online case studies that allow students to try the role of a registered dietitian (Nutrition Care Process)
- Build a case authoring system that can be used by STEM-H instructors at high schools, community colleges and universities
- Overarching goal: recruit and retain a diverse group of students who have the skills required to be excellent in a professional STEM-H career

Why have students try professional practice?

Insights from previous research

Students who don't know what the professional practice is like tend to not persist (Stevens, O'Connor, Garrison, Jocuns, & Amos, 2008)

ILA allows students to learn content while making connections to their professional future selves (Svihla, Vye, Brown, Phillips, Gawel, & Bransford, 2009)

Students struggle to apply schoolish knowledge to real world practices (Detterman & Sternberg, 1996)

[The] approach prepares students to learn content and practices – *even those that may not yet exist* (Bransford & Schwartz, 1999)

Changing the way we do undergraduate instruction in nutrition

Recruitment and retention of a more diverse group of students into the profession

- Helping students to see the “human” side of the profession

Academy of Nutrition and Dietetics Visioning Report

- Creation of bachelor-level credential
- Need for authentic experiences at the undergraduate level

The rise of online learning

- How do we create meaningful experiences for students in online courses?

Instructional Advantages

- Allows students to work at their own pace
- Provides professional perspective (“supervisor”)
- More compelling than a “flat” case study because of interactive elements (passive → active learner)
- Introduces the idea of complexity in clinical practice in a structured (scaffolded) way
- Builds lifetime learning skills – how do I find the information I need?

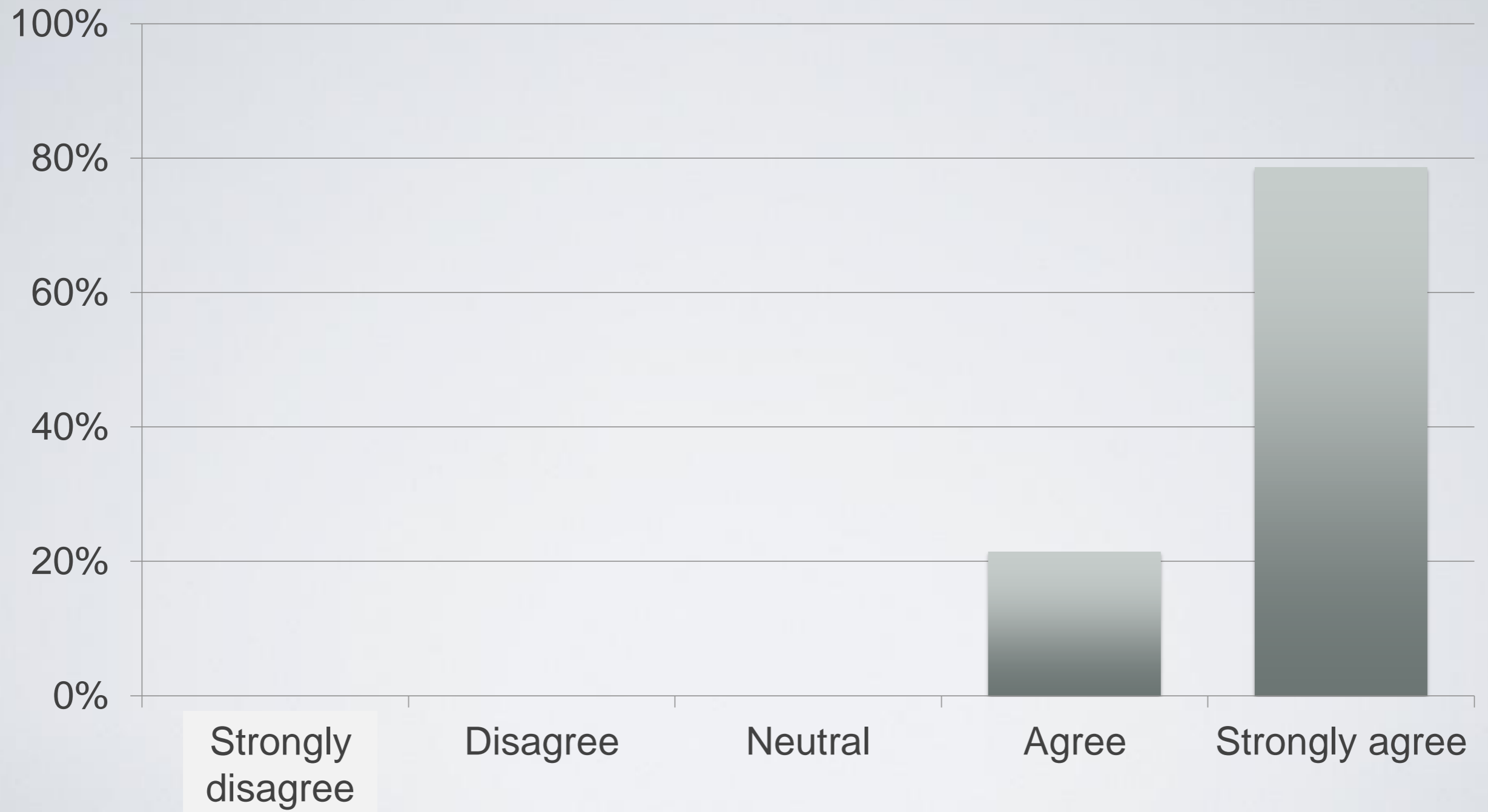
Pilot ILA

“It was **more interesting than a power point lecture...**”

“I liked that the case study reassured us of our answers and made us feel like there were **no right or wrong answers**. This helped me to **really think about the questions** instead of focusing on whether or not I would get full credit for being right.”

“I liked that I had to think about my responses but then after I submitted my responses I got to see how the instructor interpreted the data (as she has more experience than I do in dietetics). There was a lot of information provided but it was a nice way to learn because **I was actually interacting with the information instead of just hearing it.**”

What I learned in this case will be important for my future occupational success



Future Directions



Building an intuitive authoring system

The screenshot displays the 'Case Study Designer' application window. At the top, there are window control buttons (minimize, maximize, close) and a title bar. Below the title bar is a toolbar with buttons for 'Save and Publish', 'Preview', 'Save', 'Load', and 'Manage Pages'. The main workspace is titled 'Assessment' and contains a text area with the following content:

Supervisor: Next, we let's take a closer look at Rosario's lab values.

Was there anything in the lab section of her medical chart that you think we should to evaluate more closely?

Please check all that apply:

To the right of the text area is an 'Available Answers' list with the following items:

- Hemoglobin
- Serum ferritin
- 24 hr urinary protein excretion
- Hemoglobin A1c
- 2hr 75g OGTT

Each item in the list has a corresponding control icon: a green plus sign for adding, a red minus sign for removing, and blue up/down arrows for reordering. A 'Lab values' button is located at the top right of the component configuration area.

On the right side of the interface, there is a 'Components' panel with the following options:

- HTML Notice
- Multiple Answer
- Multiple Choice
- Short Answer

Below the components panel is a 'Help' section with the following text:

Help

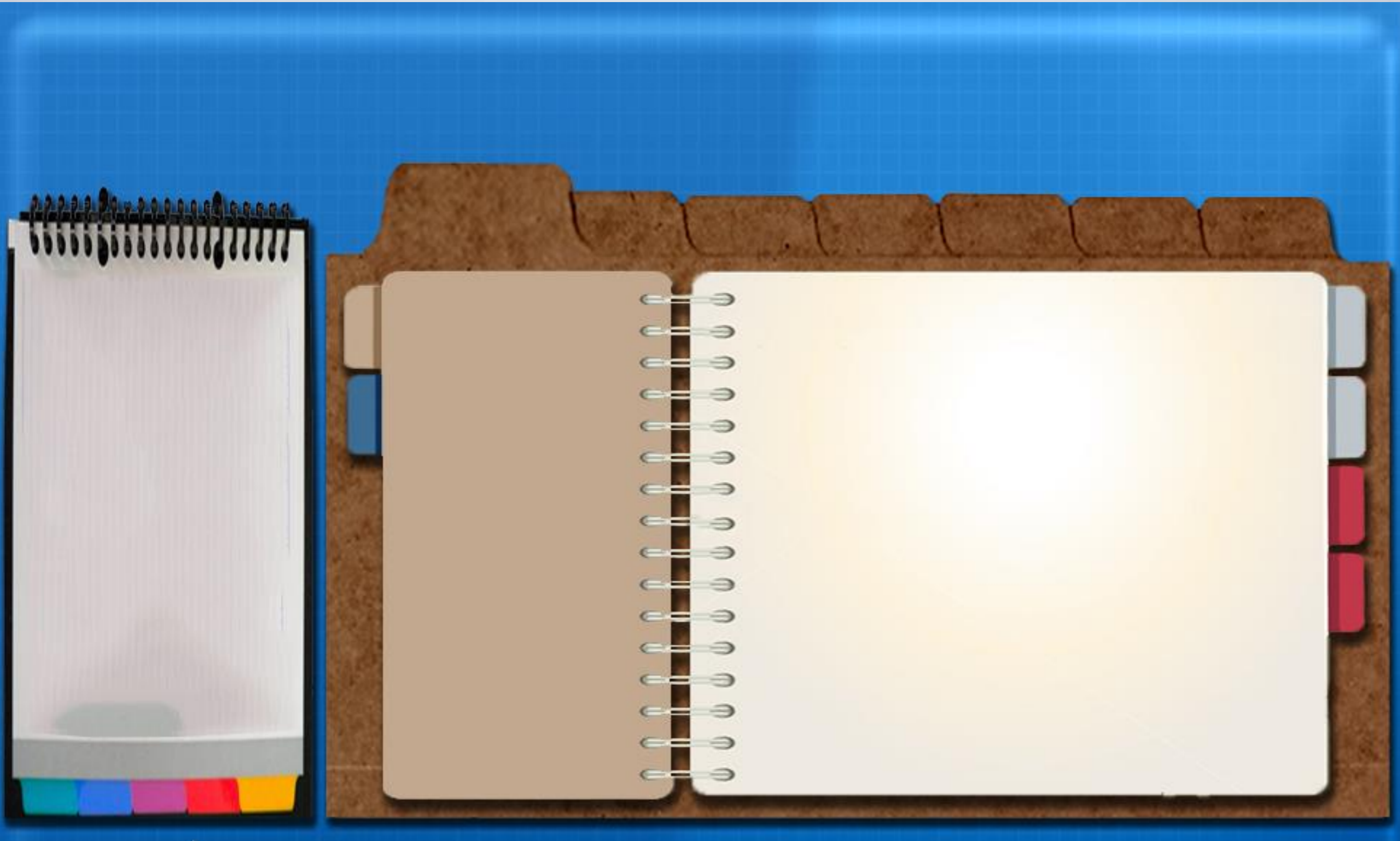
You can begin to build a case study by selecting the type of component that you would like to add. Drag and drop the component you want from the right menu onto a page in the workspace area.

You can rearrange the order of components within a case study by grabbing its title bar and dragging it to the desired position. Components on the page will move out of the way to let you know where it will be placed. You can even drag components from one page to another.

You can also remove a component from the case study by dragging it from the workspace and dropping it into the trash can at the bottom right corner of the program.

At the bottom right of the interface, there is a trash can icon and the text 'Delete Component'.

User-friendly interface design



Bells & whistles: video, audio, etc.



Richer output for instructor

- *How* did students go through the case study?
- Responses quickly compiled across students → use data to drive teaching

New audiences

- New STEM-H subject areas
- New venues
 - Charter high schools
 - High school health professions clubs
 - Community colleges
 - Freshman/sophomore undergraduates
 - Continuing professional education

Parting thought: How could you use ILA?

- What role would the student take on?
- Who are the clients?
- What CONTENT would the student need to know/learn to complete the case?
- What RESOURCES would students have trouble finding?
- What PRACTICES could the student learn while completing the case?

Questions?

Interested in designing your own cases?

eyakes@unm.edu