

Review, Amend, Apply: A Framework for Analytics in the Classroom

REVIEW, AMEND, APPLY: A FRAMEWORK FOR ANALYTICS IN THE CLASSROOM

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INTRODUCTION

Welcome to **Review, Amend, Apply!** The purpose of this site is to give you a framework for identifying your students' needs so that you can address them with evidence-based practices. This site's method isn't specific to a tool, practice, or classroom: rather, it provides a flexible strategy that you can integrate into your existing workflows.

The following course is split into three sections that correspond with the steps of the Review, Amend, Apply framework:

- **Review** the information available to you about your students' behavior.
- **Amend** the information you've gathered with student feedback to ensure accuracy.
- **Apply** evidence-based interventions in your classroom based on your insights.

Each set of modules begins with learning objectives and activities to help you apply the material to your courses. Once you've completed these modules you'll be directed to some resources that can help you take the next steps in your course.

1.0. REVIEW

1.1. REVIEWING INFORMATION

Learning Objectives

- Identify where you can find information about your students' behavior.
- Interpret dashboards displaying records of student behavior.
- Review best principles for using records of student behavior.

What are your students doing in there?

Most of your students are doing just fine in your class. You know this because they are getting A's and B's. But what about the students that are struggling? And what's going on when your A students unexpectedly do poorly on a test?

More and more research shows what works and what doesn't when it comes to learning. If only we could be a fly on the wall and watch how students are using the resources we provide! Are they watching those videos all the way through? Did they do the reading? How are they reviewing for tests? If we could get these answers, we could tailor our courses to address some of the issues students are having.

The good news is that we can be that fly on the wall. We can look at the information that Canvas, Engage, Kaltura, and others provide. It's called Learning Analytics, and it's friendlier than you think.

The argument for looking at data

How many of your students tell you that the video was too long and they were losing interest and focus by the time it got to the really important stuff? Does every student that encounters a sticking point come and talk to

you during your office hours? Students may feel shy about asking questions, may not want to offend you by telling you that an explanation didn't make sense to them, or simply may not have the time available to see you during office hours.

In these cases data can point to problem areas that you might not otherwise be aware of, and addressing them can help your students significantly. In an age where digital privacy is a touchy subject, it is important to be open with your students about which of their behaviors are being tracked. It is also a good idea to let them know that the data collected is being used to make your course better. And that they can help make it better by sharing with you what behaviors account for the data you see. (See Amend section.)



What to consider as you're reviewing analytics

As you're reviewing your course analytics, keep these tips in mind:

- **Analytics are only as good as you make them.**

Consider ways to improve your Canvas usage in a way that supports student learning. Do the data suggest ways to improve your course?

- **Don't make assumptions about what the data show.**

More on this in *Amend*.

- **Be a responsible steward of student data.**

Data privacy is a touchy subject, and we should use it wisely and ethically. Consider being transparent with your students about what data is collected and how you're using it. As with any other piece of student data, ensure you're following FERPA guidelines. For example, do not open analytics tools in front of entire classes, and if showing a student their personal analytics, be sure to open only the individual student's interaction report.

- **How NOT to use analytics:**

Don't rely on analytic reports and the dashboard to determine if your students are reading or watching required material. Instead, use best practices within your course, assignment, and grading design to encourage students to engage with the material.

1.2. FINDING THE DATA

Many tools are available to IU faculty for seeing student online behavior. A few are highlighted below. Consider viewing these dashboards in your courses and explore what information is available.

Canvas

Most reports and dashboards available for your course can be found from the **Reports and Dashboards** tool in Canvas. For more information, see [Reports and Dashboards](#).

Course Analytics

Canvas Course Analytics aggregates and presents activity, assignment submission, grade, and participation data for each student. The color-coded visualizations help instructors see, at a glance, which students are performing well and which are at risk.

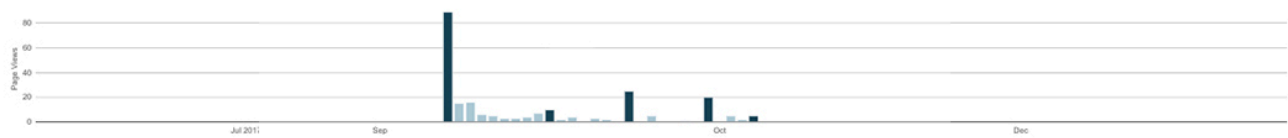


Current Total: 96.17%

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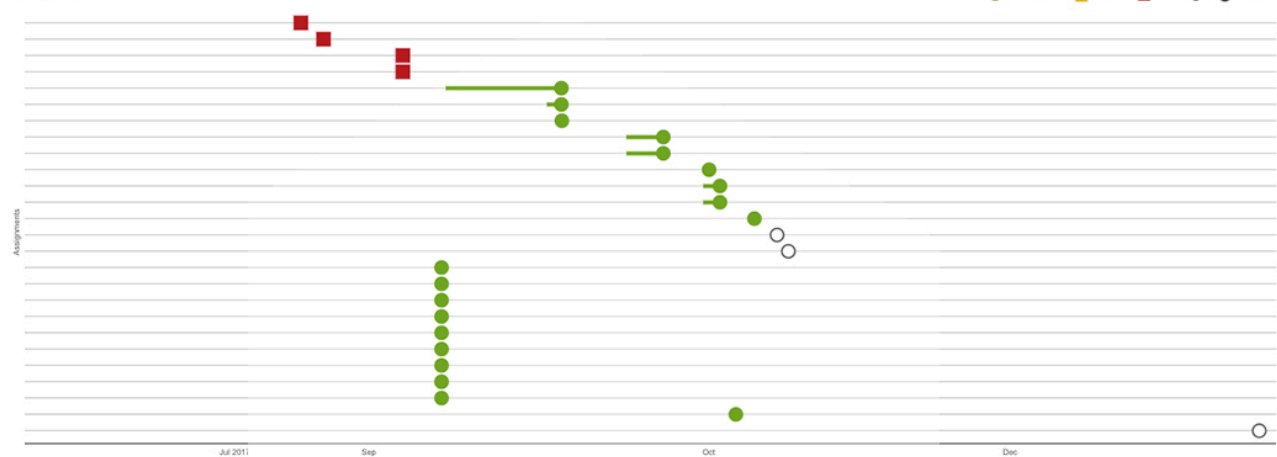
Activity by Date



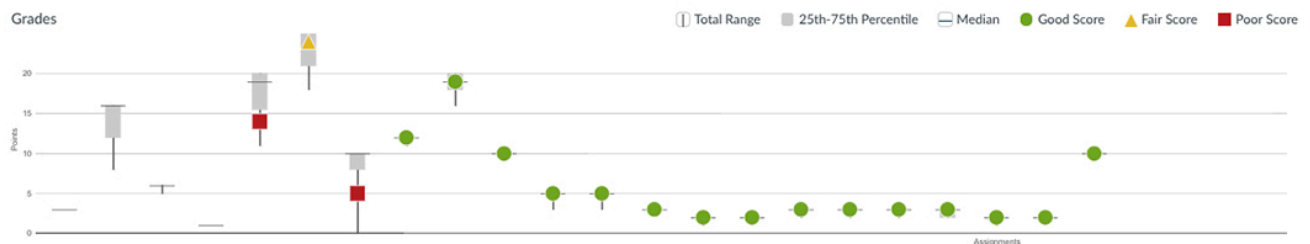
Communication



Submissions



Grades



Example of use

Imagine you noticed that many of your students missed a particular question on a quiz. You thought you'd covered the concept adequately on a page in Canvas, so you review your Course Analytics

dashboard to find out how many students opened the page. On review, you discover that only 3 students accessed the page! Later, you ask the class why this is, and discover that they hadn't seen the page — it was available only from a link that they missed. You adjust the page to ensure that it'll be more visible next time.



[Visit Canvas Course Analytics in the Tool Finder for more information.](#)

New Analytics

Like Canvas Course Analytics, New Analytics aggregates and presents activity, assignment submission, grade, and participation data for each student. The color-coded visualizations help instructors see, at a glance, which students are performing well and which are at risk.

As of Oct 13, 1:47 PM MDT

Course Grade

84.48% Average Grade

Average
Grade

- All Sections

● Emily Boone (History 1... x

● History 101 MWF x

You have reached the maximum number of questions for this session.



✓  Assignments

✓ Discussions

  Quizzes

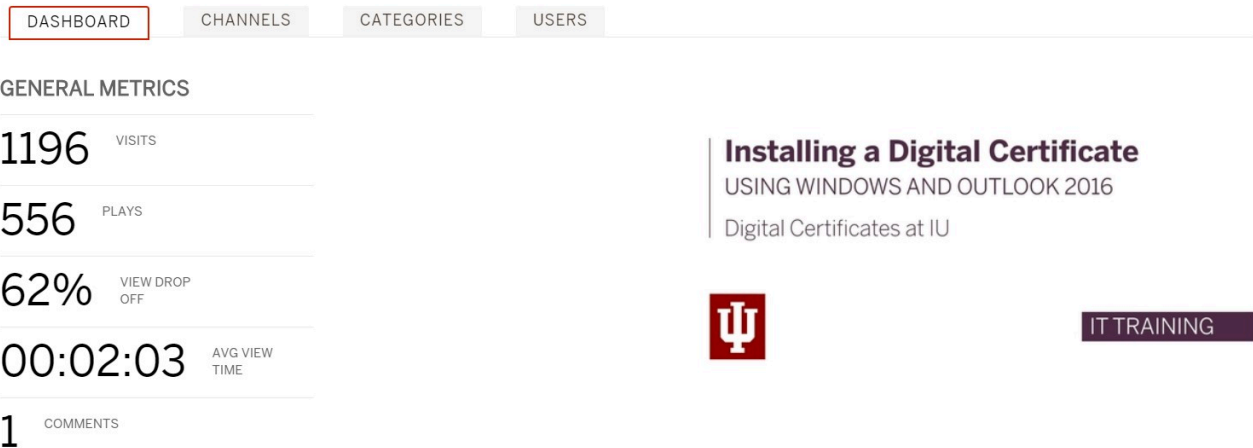


[Visit What is New Analytics? for more information.](#)

Kultura

Kaltura analytics give you a window into your students' video-watching behavior: you can see the number of times your students viewed a video, how often they stopped watching a video partway through – and at what point they stopped watching the video, and more.

Installing a Digital Certificate using Windows



Example of use

You record short videos every week for your students. Sometimes it's new content; oftentimes it's an overview of important concepts they should understand. As you review the analytics, you notice that over half of the class paused and rewound at a certain spot. You want to understand what's going on there.

Watching the video at that timestamp may help you diagnose student behavior. Perhaps you used a new term, and students paused to write it down. Or maybe your explanation of the concept was confusing, and they needed to rewatch it to understand. Or, perhaps you stuttered, your dog barked, or the sound went out. Regardless, use this information in conjunction with student feedback. In class or an ungraded survey, let them know your analytic findings and get their feedback as to why they paused the video and consider this information when planning your next video.

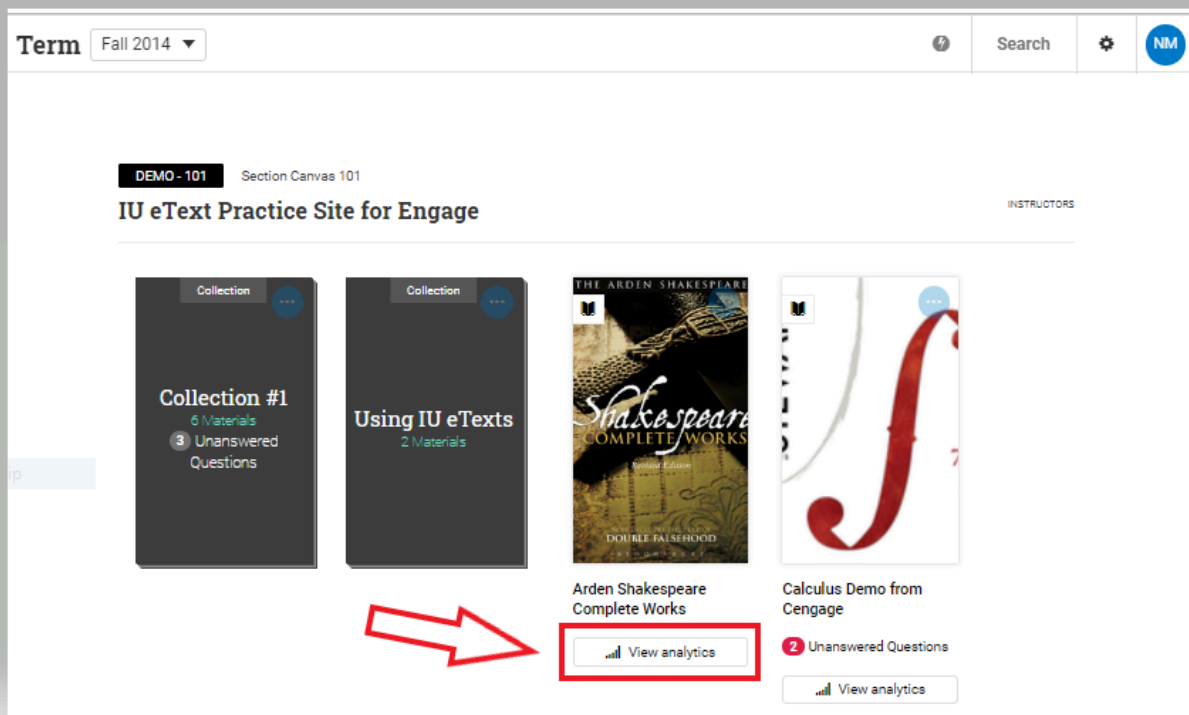


[Visit About Kaltura analytics for more information.](#)

Engage

Engage analytics offer you useful feedback about student studying behaviors. Such information can be useful in student conferences and/or may help you plan/review class time activities.

To find the analytics for a text, start on the Engage library home page. Click on the Analytics link underneath a material's tile to launch Engage Analytics.



By default Engage Analytics opens to the Reading View. With only a quick glance, you can get a great deal of information about your students' behaviors in the text.

A light blue bar indicates the student has visited the page. A dark blue bar indicates the student has re-visited

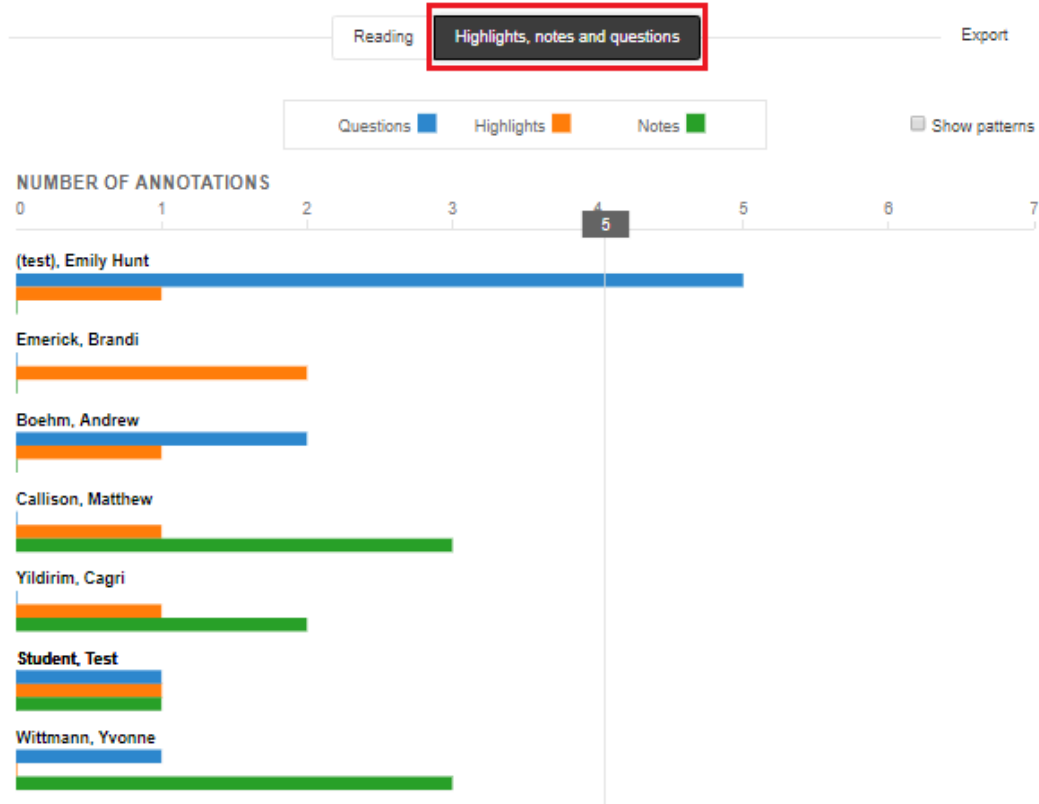
the page. You can click on any part of the graph to view more specifics about the student's activity in the text. This graph is never the complete picture. It does not calculate students who choose to use the reader app, or those who read on paper.

Introduction to Statistics



You can also view how students are engaging with the text by clicking on the Highlights, Notes, and Questions tab to open Engagement view. This view shows the quantity and type of markup that each student has made in the course material. Click on the chart to get more detailed information.

Microbiology: An Evolving Science, 2e



For more information about using Engage Analytics, see the [Unizin user guide – Using Analytics](#).

Other services

Additional dashboards are available.



[Visit Reports and Dashboards for more information.](#)

1.3. PROFESSOR JULES: REVIEW, AMEND, APPLY IN ACTION

The cases below describe one instructor's use of Engage analytics in her classroom.



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<https://iu.pressbooks.pub/reviewamendapply/?p=171>

2.0. AMEND

2.1. WHY "AMEND"?

Learning Objectives

- Describe why it's important to amend information about students with their feedback.
- Compose questions that respond responsibly to learning analytics trends in a course, and that would be most likely to garner student honest and useful student responses.
- Identify survey tools that would allow students to anonymously respond to appropriate questions about a course trend.

Introduction

Often different behaviors can look very similar online, or they may emerge for a variety of reasons. For example:

- A student refreshing a page every couple of minutes to overcome a technical issue may look like vigorous re-reading within Engage
- A student may stop watching a video because they perceive that the content doesn't relate to the upcoming exam, or because the video is long and they don't have the time to finish it
- A student may skip sections of a reading because they're struggling to understand the content, or because they're overwhelmed with other coursework

The information you reviewed in the first section of this site is only one piece of a puzzle, but that doesn't make it any less valuable. Asking students questions about their behavior — making sure that you've interpreted it correctly — ensures that you're providing them the right help when they need it.

Check your intuition



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2.2. GATHERING DATA & SURVEY QUESTIONS

When surveying students, consider doing the following:

- **Assure Students of Anonymity** – In addition to verbally assuring students of anonymity, instructors can place a statement near the top of most online surveys. They should also remind students not to share identifying information: “All survey responses are anonymous. Please do not share identifying information in your answers.”
- **Write Precise Questions** – Instructors should feel free to ask open-ended questions on surveys, but question parameters should be clear, with little ambiguous language – the more ambiguous, the more likely a student is to skip. “Is your instructor an effective teacher?” is a less clear, less helpful question than “How does your instructor engage your attention?”
- **Keep Questions Short** – Students are more likely to answer, and to complete the survey, when questions can be grasped quickly. Questions can open with direct, punchy words: “How,” “Does,” “What.”
- **Keep Survey Short** – Online surveys, especially when used in class, should not extend beyond 5-6 questions, unless the instructor has signaled a more extensive survey with a lengthier approximate time. Instructors might also post an “expected time to completion” near the top of the survey.
- **Mix Question Formats** – Instructors can mix question formats, moving among short-form answer, long-form answer, multiple choice, and Likert-scale. This provides different approaches and kinds of information for instructors, and makes the survey less repetitive for students.

For more about these tips, see [Yale’s Poorvu Center for Teaching and Learning’s document on Creating an Anonymous Online Survey](#).

2.3. TOOLS TO USE

A number of tools are available at IU that may be used to gather anonymous feedback from students, each with different strengths. Review some of the options available to you below.

Canvas Quizzes

Benefits	Limitations
Familiar interface	Anonymity has conditions you'll need to share with your students
Can be graded, encouraging engagement	
Can be anonymous*	

Example: Kaltura video survey

Due No due date Questions 4 Time Limit None

Instructions

All survey responses are anonymous. Please do not share identifying information in your answers.

In the interest of transparency, you should know that Canvas allows me to adjust this quiz at any time to make it no longer anonymous. I will not adjust the quiz's anonymity settings unless I have your consent or a legal obligation to do so.

This week many of you **started but didn't finish the chapter video**. Please describe why in this anonymous survey.

Your responses will be used to help improve this course going forward.

Resume Survey

Canvas Quizzes (or “surveys”) are a good option for gathering student feedback using a tool that you and your students may already be familiar with. For help creating a survey in Canvas, see: [How do I create a survey in my course?](#)

This quiz is available to be viewed from [this Canvas site’s Quizzes list](#).

Top Hat

Benefits

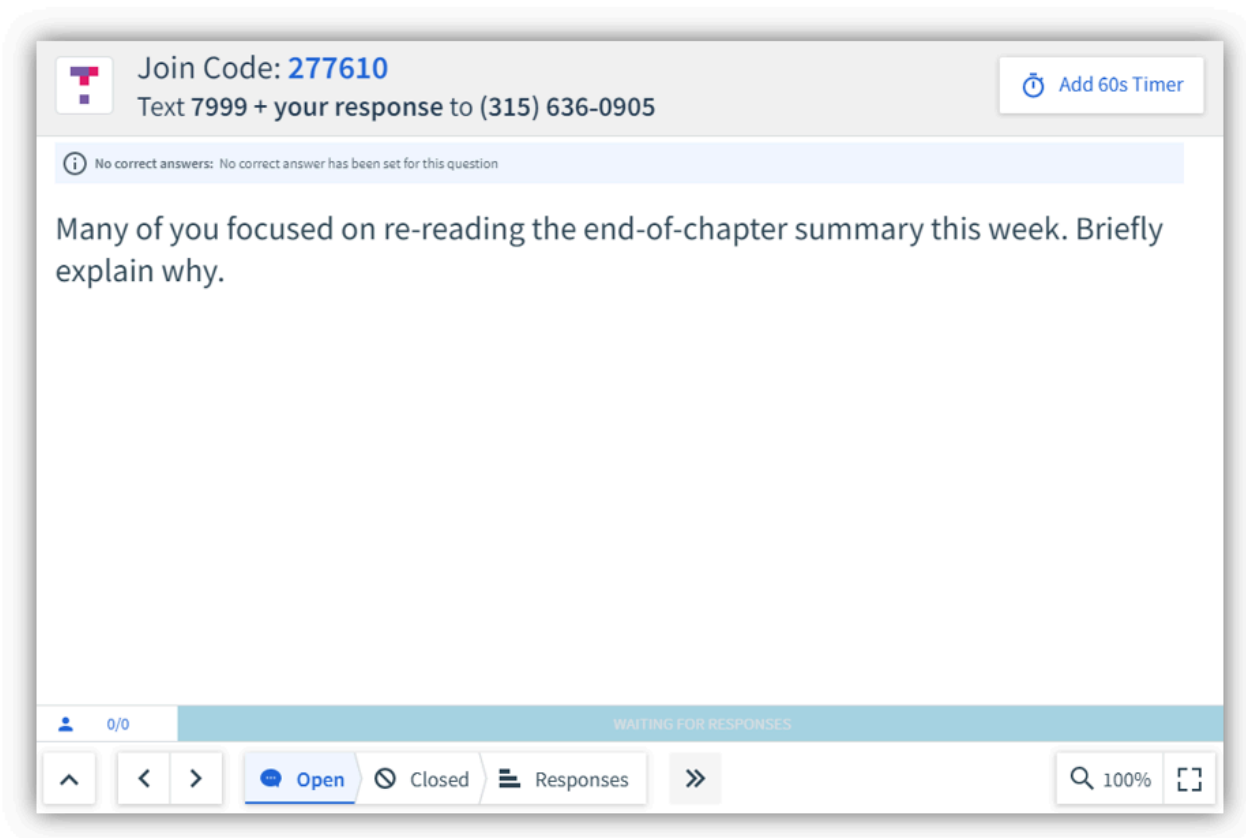
Works well in the classroom

Can address responses with students in the moment

Can be anonymous

Limitations

Can’t be graded



Top Hat can be used to gather anonymous feedback from students in the classroom, enabling you to ask follow-up questions in the moment that students are considering the question. For help creating anonymous questions in [Top Hat](#), see: [Professor: Anonymous Questions](#) and [Top Hat at IU Instructor resources](#).

Google at IU Forms

Benefits	Limitations
Quick creation	Can't be graded
Can be anonymous	Can be challenging to share

Example: quiz question survey

This week many of you missed question 5 on our quiz:

Soccer fields vary in size. A large soccer field is 115 m long and 85 m wide. What are its dimensions in feet and inches? (Assume that 1 meter equals 3.281 feet.)

Please describe why in this anonymous survey.

Your responses will be used to help improve this course going forward.

All survey responses are anonymous. Please do not share identifying information in your answers.

Was the concept covered adequately in class?

☐ Yes

☐ No

Were you confused by the way the question was phrased?

☐ Yes

☐ No

Was there another reason you missed this question on the quiz?

Your answer _____

SUBMIT

Never submit passwords through Google Forms.

Google Forms offer a quick solution for gathering anonymous feedback from students. While Google Forms can't be graded, they can be made available in Canvas or elsewhere on the web. For help creating a Google Form, see: [Google Forms](#).

This form is also available to be [viewed in Google Forms online](#).

Qualtrics

Benefits	Limitations
Wide variety of question-types	Can't be graded
Can be anonymous	

All survey responses are anonymous. Please do not share identifying information in your answers.

This week many of you revisited the **chapter 2 assigned reading**. Please describe why in this anonymous survey.

How helpful have you found the chapter 2 assigned reading overall?

	Extremely helpful	Somewhat helpful	Neither helpful nor unhelpful	Somewhat unhelpful	Extremely unhelpful
Perceived helpfulness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Does the chapter 2 assigned reading help you understand concepts we're covering in chapter 6?

Yes

No

If the chapter 2 assigned reading has not helped you understand concepts we're covering in chapter 6, why are you revisiting the reading? (If you have not been revisiting the reading you may skip this question).



Qualtrics offers numerous question-types for gathering detailed, anonymous feedback from students. While

Qualtrics surveys can't be graded, they can be made available in Canvas or elsewhere on the web. For help with Qualtrics, see: [About Qualtrics at IU](#).

This form is also available to be [viewed in Qualtrics online](#).

2.4. PROFESSOR JULES: REVIEW, AMEND, APPLY IN ACTION



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3.0. APPLY

3.1. REVIEWING SURVEY RESPONSES

Learning Objectives

- Identify specific student needs reported in survey feedback.
- Navigate to resources that connect evidence-based strategies with the identified student needs.

You might consider approaching reviewing your students' survey responses as you would analyzing data of any sort: look for trends and patterns, identify outliers, and triangulate their responses with what you observed in the analytics.

Before you begin

Start by defining some thresholds before you begin digging into your survey responses. For example, you may decide that you will re-address content in class if over 60% of your students reported finding it confusing. You may wish to address survey feedback that doesn't meet your threshold, but doing so on an individual basis might be a better use of your and your students' time. The threshold is ultimately arbitrary, but making a decision before you look at your students' feedback can simplify your decision-making process.



What to consider as you're reviewing responses

As you're reviewing your survey responses, keep these tips in mind:

- **Look for words or phrases that you see emerging frequently.**

For example, in response to “Why were you unable to complete the video?” if you noticed that a number of students were using words like, “irrelevant” or “different than the book,” then it could be worth making an explicit connection between the video and other course content during your next less, or even structuring an assignment where students are guided through making that connection.

- **Remember that people (not just students!) don't always know what they need.**

Your students may recommend courses of action that don't make sense for your course. You don't always need to fulfill their requests, but make sure that you're being transparent with them when you don't. Providing context will help them come with you when you propose moving in another direction.

- **Think about the whole picture, not just the survey responses.**

On occasion you may find that your survey feedback doesn't match the information you gathered in the “review” step. For example, you may receive feedback from your students reporting that they enjoyed a video and found it valuable, but the information you gathered in the “review” step suggests that most of them didn't watch the video all the way through. Consider possibilities: did your students enjoy the video but not finish it because it's too long? Are your students reporting that they enjoyed the video because they believe they're expected to?

- **“Amend” doesn't need to be a one-time process.**

If the survey responses you received didn't give you actionable feedback, you can always reach out to your students again. Addressing their needs may require a longer conversation.

3.2. APPLYING STRATEGIES

Two strategies for addressing common student needs are detailed below. While these strategies can help you get started, it's recommended that you visit the resources available on the next page for more varied and detailed approaches.

Guiding assignment or quiz

Tools to use

Here are some tools you can use to implement this strategy:

- [Canvas Quizzes](#)
- [Quick Check](#)
- [Top Hat](#)
- [Canvas Assignments](#)

For example, imagine again the situation where you received a significant number of students who indicated that they didn't watch a video all the way through because they thought it was confusing. You could assign a follow-up quiz that asks a series of relevant questions about information or concepts that build through the course the video – each question is one step along that path. Applying concepts covered in course content, especially in a practice quiz, has been shown to improve learning and retention (Dunlosky et al, 2013). Moreover, by scaffolding questions, you have opportunities to guide students through readings or videos.

Alternately, you could assign a low-stakes assignment that provides a structure for the content, but that students have to fill out (e.g. a partial outline, reading guide, or worksheet). Whatever the method, the key component is for the

assignment or quiz to be worth few points, so students will have an opportunity to practice their learning before addressing heavier-stakes assessments.

Class discussion or mini-lecture

If your analysis indicated that there was only a few concepts that students were struggling with, you may want to forgo new content for a small portion of the class, and instead go back to the information or concept that students indicated was challenging. By addressing this directly in class (e.g. “It sounds like a lot you were feeling confused about the Krebs Cycle in the reading, so let’s break this down before we go on,”), you can potentially save a great deal of time and confusion as your course gets more complex.

If you don’t want to use class time for this, perhaps record a very short video explaining the concepts in a different way, and send it out to your students in an announcement.

Tools to use

Here are some tools you can use to implement this strategy:

- [Canvas Announcements](#)
- [Kaltura Personal Capture](#)
- [YouTube](#)

Finding more strategies

There are many other strategies available to help you address your classes’ needs. In particular, [Teaching for Student Success: An Evidence-Based Approach](#) includes numerous evidence-based strategies to address classroom needs, many of which were created by faculty like you.



[Visit Teaching for Student Success: An Evidence-Based Approach.](#)

3.3. PROFESSOR JULES: REVIEW, AMEND, APPLY IN ACTION



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PRESSBOOK EVALUATION



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