iClicker and Achieve: Active Learning in the Math and Statistics Classroom

Together, Achieve and iClicker are an exceptionally effective and convenient pairing for making a math or statistics classroom more interactive.

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Introduction

Resources for the math and stats classrooms are not in short supply. You could choose several tools for your course but switching between multiple programs within a single class period can quickly become problematic. You waste time toggling back and forth. You have to worry about new sets of operational issues with each program, and not everything is user-friendly.

Finding an application that caters to all students, with options for both in-person and virtual learners can save you from having to do all the heavy lifting that teaching has traditionally entailed.

You'll find a perfect pairing with Macmillan's Achieve and iClicker.

Achieve is a comprehensive course management system that's accessible to students before, during, and after class. iClicker is a market-leading student engagement system. iClicker is available within Achieve. This offers you an assortment of dynamic learning opportunities for your students while encouraging active learning and participation.

Using Achieve and iClicker together can transform your classroom, removing the one-way conversation that often happens during lecture. Students no longer have to sit, listen, and take notes only. You can reinforce concepts in a more engaging way.

Interacting with your students using both Achieve and iClicker presents everyone with a better experience in the classroom. Students are given more options to learn, and you're able to create customized content in an efficient and time-saving way.

The Integration of iClicker Into Achieve

Achieve is a great way to simply and easily design your own course and deliver it to students in a hassle-free way. It's not a textbook replacement or a set of lecture slides. Rather it is an all-encompassing solution, complete with out-of-the-box formative and summative assessments and a dynamic e-book.

Achieve offers a flexible and customizable, pre-built template for each title and product within the program. Most Achieve courses integrate with iClicker, which then makes your classes more responsive and interactive. With iClicker, you're able to ask students questions in real time. This can easily boost the energy in the classroom and make a tough topic feel more playful and accessible.
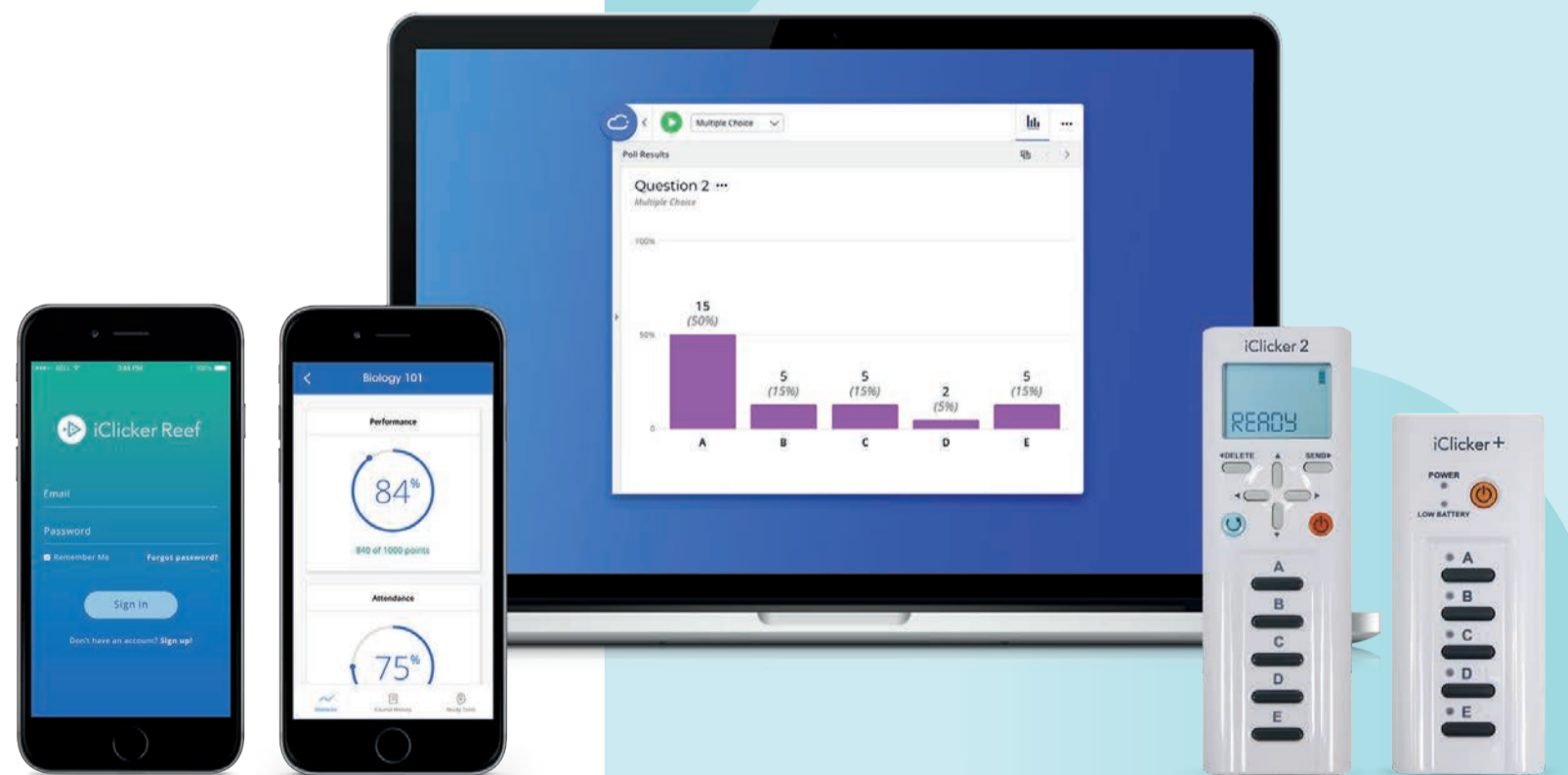
iClicker works with the presentation tool you're already using like PowerPoint and Google Slides. Within Achieve, you'll find iClicker activities and question decks. There's no need to create from scratch, iClicker and Achieve integrate seamlessly, and when using them together you gain access to additional capabilities including:

- Taking attendance with the Join Class button
- Setting up ice-breaker questions so students can get to know each other (and you can see who would work best with each other in group assignments)
- Boosting engagement with polling questions
- Providing opportunities for whole-class participation
- Offering tighter feedback loops where students are more concerned about getting the right answer to a question rather than what their overall grade is
- Creating automatic review resources based on the questions you ask, with iClicker, in class

How to activate iClicker with your Achieve course

- Write student questions within your preferred presentation tool.

- Create an iClicker course in Achieve via the gradebook.

- Review how to use the iClicker Cloud via the Demos and Training section of iClicker.com. You can even schedule a time to meet with someone for a live demo.
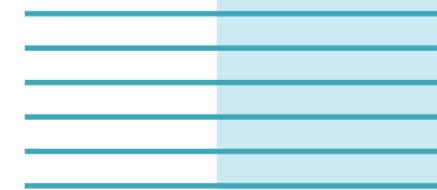
# What iClicker Does for Your Classroom

At the very heart of iClicker's functionality is active learning. It's designed to get students involved in the lesson they're learning by instigating a two-way conversation with immediate feedback. You can adjust your teaching style based on the results of the conversation, gaining unique insight into what students are learning.

Tip: Use iClicker to ask entrance questions such as:

- What do you remember most from our last class?
- What part of the homework gave you the most trouble?

Based on your students responses, you can then pivot your lesson plan for the day to address common issues.

For example, if you taught two different concepts last class, but every student only remembers one, maybe you need to do a quick review. If everyone struggled with the same problem on the homework, maybe you need to walk through how to solve it before diving into the new lesson.
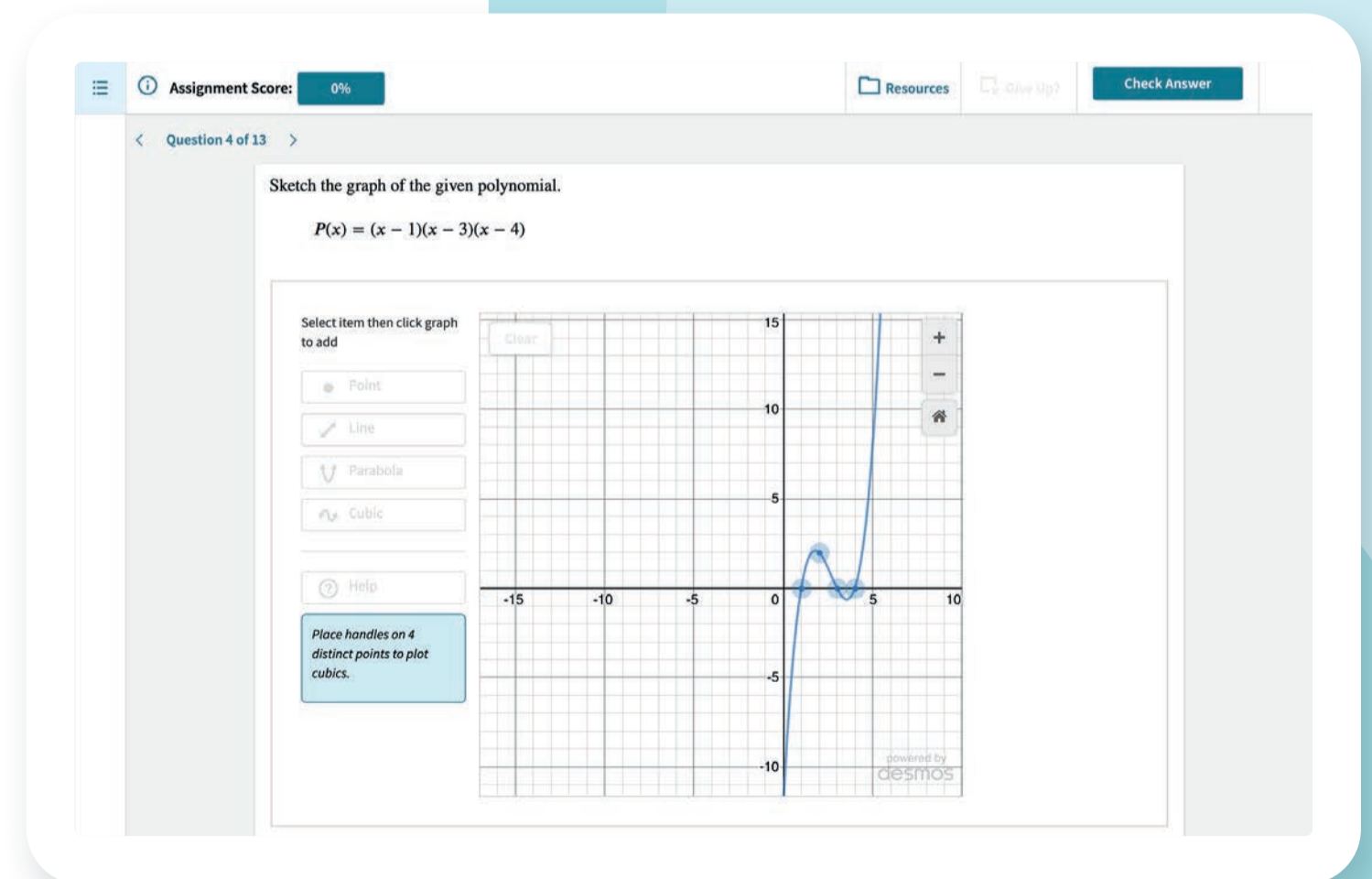
iClicker is also a great tool for:

- **Think-pair-share activities.** Put up a question all students answer. Before sharing the answer, ask students to talk to each other about why they picked their response. Asking the same question a second time will show whether students shifted their answer choice. This is a dynamic way to engage students and get them talking with each other.

- **Virtual hand-raising.** This is a great alternative to having a chat that gets out of control if you're teaching virtually or in a hybrid format. It brings a little order back into the course and is a more official way for students to communicate with you.

- **Confidence Checks.** Using the anonymity feature in iClicker, you're able to have students answer a question without having to feel like they're going to get singled out. This is perfect for the question, Do you understand everything we just covered? No student wants to say 'no' to this question. What if they're the only one? Having to raise your hand in front of everyone to respond is embarrassing, but iClicker makes it anonymous and easy.
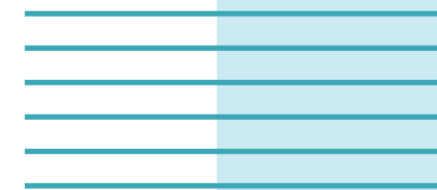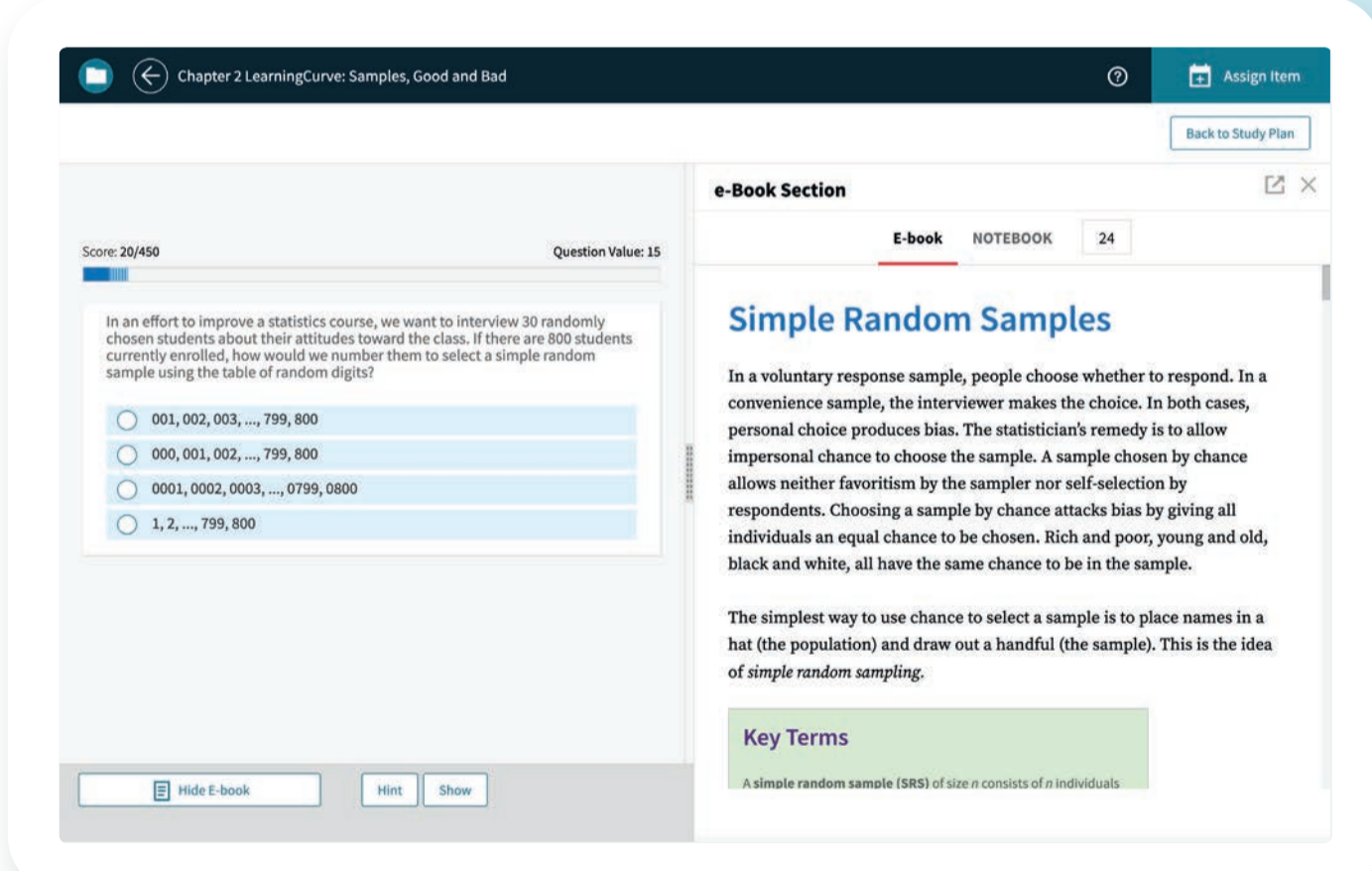
How Achieve Keeps Students Organized

Another way to utilize features in both Achieve and iClicker is to help get students organized. Within Achieve, students can see their to-do list of assignments as well as the big picture with an entire course content view. Because Achieve and iClicker are integrated, even iClicker work is listed for students to see. This helps prevents students from claiming they didn't know what the homework was.

You can also assign adaptive quizzing to keep students on the right learning path. It's a great pre-class assignment to get students organized with the right terms and concepts.

As the instructor, you have the ability to decide what content you want students to see in Achieve, and what you don't, so you're able to highlight those features that will really help students keep it together.

How Achieve Reinforces Math and Stats Concepts

Additionally, being able to assign iClicker questions within an Achieve assignment means more coverage that relates to the topic you're teaching. You're able to ask a question in class so students can immediately share an answer. You're also able to put the same question into Achieve for students to answer on their own time through that program's interface.

Regardless, questions are scored immediately, making it efficient for you to monitor student progress, and for students to get feedback.

The table shows data on the average annual global temperatures for the years between 1994 and 2014 in degrees Celsius.

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Temperature	14.23	14.35	14.22	14.42	14.54	14.36	14.33	14.45	14.51	14.52	14.48

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Temperature	14.55	14.50	14.49	14.41	14.50	14.56	14.43	14.48	14.52	14.59

Click to download the data in your preferred format.

CSV   Excel   JMP   Mac-Text   Minitab   PC-Text   R   SPSS   TI   CrunchIt!

Make a scatterplot using year as the explanatory variable and temperature as the response variable.

The least-squares regression line is

$$\text{temperature} = -7.8 + (0.0111 \times \text{year})$$

What would you predict for the annual average temperature for 2014 based on this line? Report your answer in degrees to two decimal places.

How Achieve Supports Instructors

Two features in particular allow Achieve to give instructors a break in their own workload: pre-built activity guides and assessments.

Activity guides span varied topics throughout the course. Topics are timely, relevant, and interesting to students.

Instead of having to come up with what to do from scratch, Achieve presents a step-by-step guide for preparing and implementing the activity. You get everything you need to do, including tools like worksheets, presentation slides, and even iClicker questions when available.

The assessment engine within Achieve is mobile-friendly and meets accessibility standards. Students can see it and use it on any device. It links the interactive e-book, hints, course-specific resources, and a variety of tools that can help with homework assignments.

This support is very efficient since none of it requires students to access a separate piece of software.

The assessment engine also gives students detailed feedback as they work, making it easier to address any errors or misconceptions.

Natalie Dougall is a Faculty Advocate and iClicker Trainer at Macmillan Learning. Before coming to Macmillan, she was a community college instructor for over ten years, and she loves mixing practicality and pedagogy in her presentations.

Carie Crosby After completing her Bachelor of Interdisciplinary Studies at Arizona State University, Carie Crosby entered the exciting world of educational publishing and hasn't looked back. During her 20 years with Macmillan Learning, Carie has been supporting instructors in a variety of roles and has enjoyed contributing to the evolution of instruction in a digital world. For the past six years, Carie has worked almost exclusively with Mathematics and Statistics instructors with all levels of experience to implement digital content and engage students in the classroom.

The right tools can change the game

When you're striving to create an active, engaging learning environment in your math or stats course, the tools you select could make or break you. Finding something that accomplishes your teaching and learning goals that's user-friendly, efficient, and exciting for students to use isn't easy.

The seamless integration of iClicker into Achieve allows Macmillan to bring together two effective tools that promote active learning and engagement.

To schedule a demo or receive assistance setting up your first course, **Register Here.**

Watch full webinar recording.

macmillanlearning.com

Edited by: Lesly Gregory