

## What this is

*The Innovative Instructor* is an article series (<http://cer.jhu.edu/ii>) and a blog (<http://ii.library.jhu.edu>) related to teaching excellence at Johns Hopkins

## Article categories

### Best Practice

How to use technologies and apply innovative instructional methods

### Pedagogy

Hopkins professors share successful strategies for teaching excellence

### Technology

Information about emerging technologies, who is using them, and why you should know

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<http://cer.jhu.edu/ii>

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## About the CER

The Center for Educational Resources partners with faculty, postdocs, and graduate students to extend instructional impact by connecting innovative teaching strategies and instructional technologies

Center for  
**Educational  
Resources**



## Tcrunch

John Hickey, PhD Candidate, Biomedical Engineering, JHU

## What it is

Tcrunch is a mobile application that enables more efficient and frequent instructor-student communication. You can think of it as an electronic version of the teaching strategy called an exit ticket. A traditional exit ticket is a 3x5 index card given to students at the end of class; the instructor asks a question to solicit formative feedback from the students. With Tcrunch you can do the same thing, but the app eliminates the paper, performs all collecting and analyzing activities in real-time, and emails the results to you.

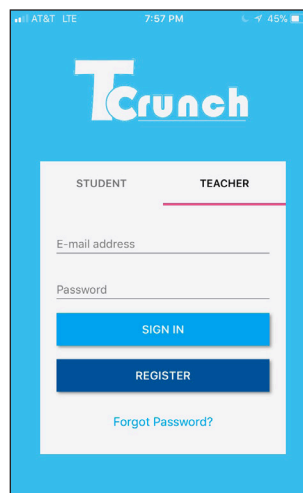
As an instructor you can create a question to get feedback on your class structure, teaching techniques, or student comprehension. The app format decreases administration and analysis time enabling more frequent implementation. Designed specifically to improve recurrent feedback, a question bank is available to assist you in prepopulating the question field.

## Who produced it

The app was developed by John Hickey, PhD candidate, department of Biomedical Engineering at Johns Hopkins University. Coding was done largely by two JHU undergraduates, Tony Jiang and Gabriel Fernandes. Significant guidance and support was given by JHU's Center for Educational Resources (CER).

## Why it was made

John developed Tcrunch due to his own struggles with improving learning in the classroom while facing time constraints. He understood the value of regular feedback on his teaching style, classroom activities, and student comprehension, but knew he didn't have the time to hand out, collect,



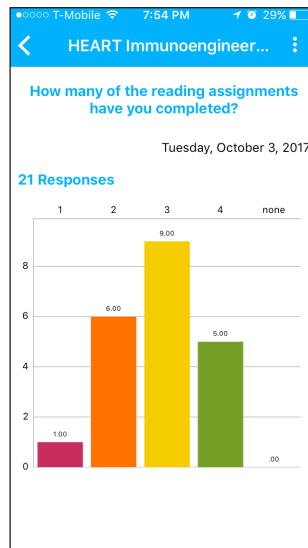
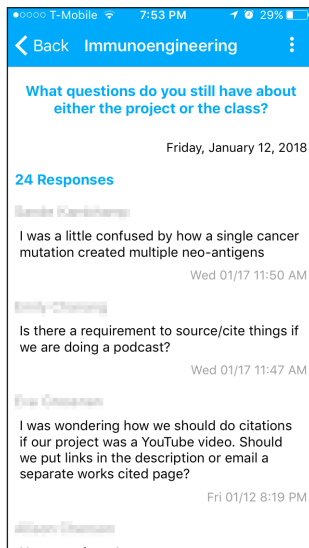
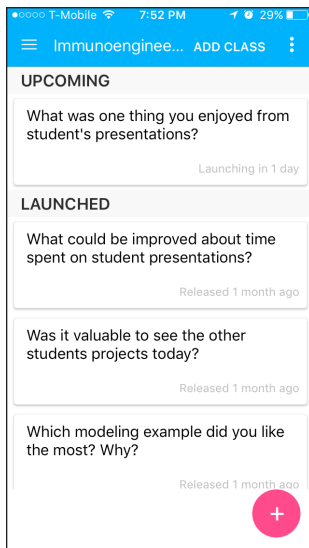
read, and analyze dozens of exit tickets or other formative assessments for each class. While there are existing classroom polling apps, they proved not as useful for gathering and analyzing the more complex formative assessments he wanted to implement. John introduced the Tcrunch concept at the CER's first Educational Shark Tank event at Johns Hopkins in 2016, and was awarded seed funding to start the project.

## Why it matters

Finding time to implement effective teaching strategies can be challenging, especially for professors whose teaching is only one of their many responsibilities. The app can save instructors time in the following ways:

- Question creation** - There are many preset questions that can be selected.
- Elimination of paper** - All processes are consolidated in the mobile app.
- Easy Access** - Instructors can create questions or analyze results anywhere and results can be accessed anytime.
- Consolidation of class accounts** - Instructors can go to one place for all their classes, avoiding the need to create unique codes or accounts.
- Simple analysis** - The graphical/chronological interface makes it easy to see results quickly.
- Complex analysis** - Results can be downloaded to Excel to further analyze.





Various screenshots showing question listings, submissions, and analytics.

The real value of Tcrunch is not having to wait until the end of the semester to find out that your students think you spend too much time lecturing and not enough time promoting group work, or that students are not doing the course reading. It allows for a dynamic evolution of teaching and learning throughout the term.

## How it can be used

There is both a teacher and student portal for Tcrunch. Instructors can create and manage multiple courses, labs, and sections. Within a course, teachers can create a question or prompt and release it to their students through Tcrunch. Students see this question, click on the question, and answer it. Student answers come into the instructor's app in real-time. Instructors can evaluate the results within the app or email themselves the results in the form of an Excel spreadsheet. Other functionalities include multiple choice questions, a bank of pre-existing questions to help improve teaching, and an anonymous setting for the students.

Tcrunch can be used to get feedback both in and outside of class. For example, a question that pertains to the lecture could be asked to solicit responses in class, to evaluate if further explanation of a concept is needed. Or a question can be created outside of class time to help instructors plan their teaching, such as, "What is one question you have about the assigned reading for our class discussion tomorrow?" With just-in-time student responses, instructors can analyze the answers before the next class to make adjustments. Assessments can be made as often as the instructor deems useful.

## Who is using it

Both instructors and students report that they have found Tcrunch valuable. They like being able to create and answer questions on the go and having a platform for all their classes in one place. Ease of use has been noted as a big plus. John has personally found that Tcrunch helped him restructure classroom time and assignment load, and to determine why students were missing class. Professors at Towson University have used Tcrunch and faculty at Johns Hopkins have expressed interest in trying out the app.

## Where is it going

In the short term, the push is to extend the reach of Tcrunch to more faculty. Additionally, development efforts will be focused on adding a web-based platform that would connect users without a mobile phone. In the long term, the aim is to partner with larger edtech organizations to establish this as a supported solution for instructors who want direct student feedback.

## How to get started

To find and use this free app, search for Tcrunch in the Apple or Google App stores and download. If you have questions about the app, or would like to contribute ideas, John Hickey can be contacted at [jhickey8@jhmi.edu](mailto:jhickey8@jhmi.edu)

## Additional Resources

- Apple store link: <https://itunes.apple.com/us/app/tcrunch/id1287291189?mt=8>
- Google Play Store link: <https://play.google.com/store/apps/details?id=com.toniebalonie.tjiang11.tcrunch&hl=en>

## Author's Background

John Hickey, PhD Candidate, Biomedical Engineering, JHU



John Hickey is a PhD candidate in the Biomedical Engineering Department at Johns Hopkins. He completed the *Preparing Future Faculty Program* and developed the curriculum for two *Immunoengineering* courses while at Hopkins. He currently participates in *Teaching as Research* and is developing an online Masters level class. He was one of the winners of the first *Teaching Shark Tank* event at Hopkins to be able to develop *Tcrunch*.