

Inq-ITS Overview

Inq-ITS (Inquiry Intelligent Tutoring System) is an online educational environment for science. With Inq-ITS, students engage in virtual inquiry in Physical, Life, and Earth Sciences. Students form hypotheses, conduct investigations, analyze their data, warrant their claims, and communicate their findings in a claim-evidence-reasoning format. Inq-ITS puts students in control of their own learning, with each participating in their own authentic inquiry experience. As students work, Inq-ITS uses patented algorithms that automatically assess students and generate real-time formative reports on classroom-wide performance for educators on each inquiry skill, summarizing classroom-wide and individual student performance. With Inq-Blotter on their ipad, laptop, or smartphone, teachers receive alerts as to which students need assistance and on what skills. Alerts are automatically prioritized and color-coded so that teachers can move efficiently through the room assisting individual students. Rex, a cartoon dinosaur, can also tutor students' in real time as they conduct authentic inquiry. This immediate feedback provides the assistance students need to progress and improve their inquiry skills. The distinctive design behind Inq-ITS provides necessary resources for teachers' instruction and assessment, and for students' remediation and acceleration on critical NGSS skills.

About Us

The Inq-ITS project led by Dr. Janice D. Gobert, Professor of Learning Sciences and Educational Psychology in the Graduate School of Education at Rutgers University, is the first to provide automated, real-time assessment and scaffolding of inquiry skills by blending and extending techniques from the fields of Educational Data Mining, Cognitive Science, and Learning Science. The project began at WPI in 2007 and has received over \$20M in funding from the NSF and the U.S. Department of Education for on-going research with Inq-ITS. Apprendis is a spin off company co-founded by Janice Gobert, Michael Sao Pedro, and Cameron Betts.

Publications

Key recent research publications: Operationalizing and Detecting Disengagement During On-Line Science Inquiry (Educational Psychologist, 2015); From Log Files to Assessment Metrics for Science Inquiry Using Educational Data Mining (Journal of the Learning Sciences, 2013); and Leveraging Machine-Learned Detectors of Systematic Inquiry Behavior to Estimate and Predict Transfer of Inquiry Skill (User Modeling and User-Adapted Interaction, 2013).

Contact

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How Inq-ITS Works

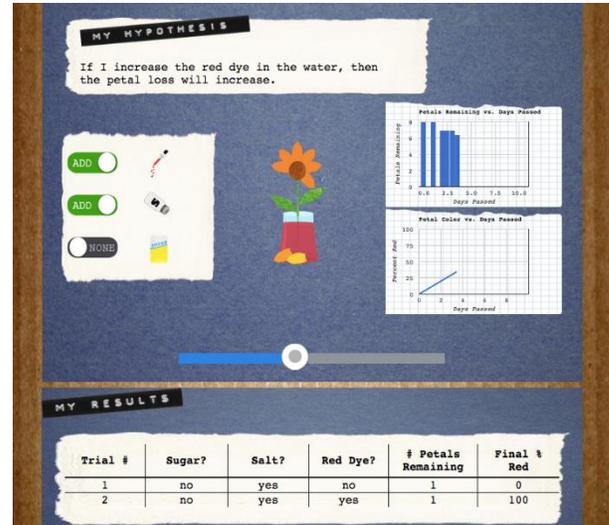
1. Inquiry starts by forming a testable hypothesis

All Inq-ITS activities have a similar look-and-feel to guide students through inquiry: hypothesizing, collecting data, analyzing their data, and communicating findings.



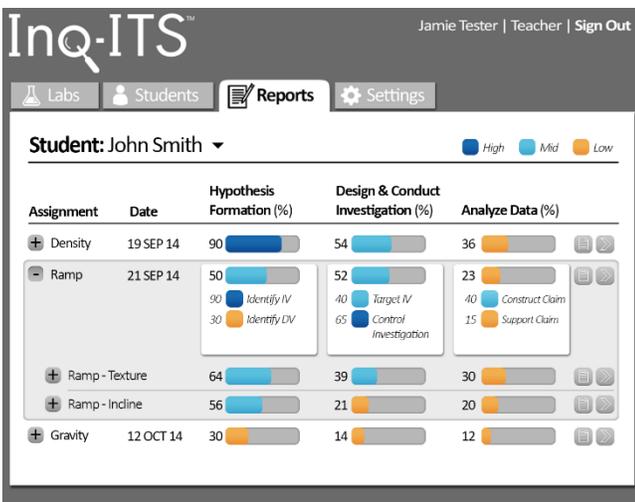
2. Students design and run their own investigations

Inq-ITS uses patented data-mined algorithms to determine when students do not test their hypotheses, or do not design controlled investigations, or properly analyze their data.



3. Automatic assessment reports allow educators to see trends in their classroom

Inq-ITS' real-time assessment enables teachers to quickly tell how the class is progressing, and to assess each individual student's understandings of key inquiry skills at a fine-grained level – both on each inquiry skill and its respective sub-skills.



4. Real-time alerts help educators focus their efforts when and where it matters most

Since timely feedback is critical to deep learning, Inq-Blotter, a mobile alert system, allows teachers to know who needs help the most, and on which specific inquiry skills. Teachers can get notifications about student activity on a desktop or smartphone.

