



Teach Global Impact

A Resource for CSP (or Any CS Class!)

Presenters: Julia Bernd and Jonathan Corley

Website: teachglobalimpact.org

Whose Idea Was This, Anyway?

A collaboration between **seven projects** to develop curricula and PD for **AP Computer Science Principles**:

BJC (Beauty and Joy of Computing)

CISS (Computing in Secondary Schools -- based on ComPASS)

Code.org CSP

CS Matters

CSP CS4HS (from CS4Alabama)

Mobile CSP

UTeach CSP



Teach Global Impact Resources: Overview



Database of lesson plans, classroom materials, and PD materials for teaching CSP Big Idea 7: Global Impact, from the seven participating projects

New classroom resources to ensure a **variety** of ways to cover all the main points (*or just follow through on some good ideas*)

Classroom strategy guides for teaching this unusual-for-CS topic

Regular **Computing in the News** feed highlighting impact of new innovations

Additional Project Goals:

Promote cross-pollination of good ideas between major AP CSP curricula

Make resources **accessible to any CS teacher** (not just AP CSP)

Website: <http://www.TeachGlobalImpact.org>



The screenshot shows the homepage of the Teach Global Impact website. The browser address bar displays 'teachglobalimpact.org'. The navigation menu includes 'CLASSROOM RESOURCES', 'TEACHING STRATEGIES', 'NEWS TO USE', 'FORUM', and 'ABOUT'. The main content area features a large image of Earth from space with a satellite arm, overlaid with a yellow geometric pattern. The central text reads 'CSP Global Impact of Computing' with the tagline 'Engage ~ Motivate ~ Connect' and 'Creative Teaching Resources, Lesson Plans, and Practical Strategies'. The footer contains three sections: 'Teaching Strategies for Global Impact', 'Classroom Resources Database', and 'Computing in the News'. A small logo for the International Computer Science Institute is visible in the bottom right corner.

Highlight 1: Resources Database

RESOURCES DATABASE - T... x +

teachglobalimpact.org/main/all-classroom-resources/database/

Classroom Resources Database: Lesson Plans and Materials

We've collected a comprehensive set of engaging, well-grounded resources from major CSP curriculum projects! You'll find lesson plans, stand-alone lesson components, and training modules with lesson suggestions.

Note: All the listed materials are free to use, but some providers may require you to create an account.

? Tips for Browsing the Database (Scrolling, etc.)
 ⚠ Content Advisory

Search:

Columns Print Excel CSV Copy PDF

Show entries

Resource Title	Favorites	Link to Teacher Materials	Link to Student Materials	Scope	Activity Type(s)	Delivery Format(s)	Description
A Problem Solving Process That Scales	Best of	LINK	LINK	Single-day lesson plan	in-class activity, videos, reading, discussion, reflection	lesson plan page, slide deck	In this lesson, students will learn how use abilities to solve larger and broader problem begins by examining reCAPTCHAs, which m but they may not realize how they solve t
Activity Guide - Privacy Policies	Best of		LINK	Lesson compone...	in-class activity	worksheet/activity guide	Students pick an app or website, read its worksheet
Association Rule Mining	Best of		LINK	Lesson compone...	group activity, exploratory activity	activity guide (PDF)	Students examine purchasing data, develop to optimize a store layout.

Refine by:

Clear filters

Scope:

- Lesson component
- Single-day lesson plan
- Multi-day lesson plan
- PD materials

Activity Type(s):

- Activity
- Assessment
- Assignment
- Discussion
- Debate
- Exercise
- Explore PT
- Lecture Video
- Practice PT
- PD Recording
- Project
- Reading
- Reflection
- Slides
- Tutorial
- Video

Total Minutes:

From

To

Difficulty:

- Easier
- Intermediate
- Advanced

Curriculum:

- BJC
- CISS
- Code.org CSP
- CS Matters
- CSP CS4HS
- Mobile CSP
- UTeach CSP

Global Impact Learning Objectives:

- 7.1.1 Communication Interaction and Cognition
- 7.1.2 Problem-Solving That Scales
- 7.2.1 Innovation in Other Fields
- 7.3.1 Beneficial and Harmful Effects
- 7.4.1 Economic Social and Cultural Context
- 7.5.1 Access Manage and Attribute Info
- 7.5.2 Evaluate Appropriateness and Cred

Highlight 2: Computing in the News

NEWS TO USE - Teach Glo... x +

teachglobalimpact.org/main/news/

Computing in the News

Why Use News?

Highlights from the news make a great attention-grabber at the beginning of class, and provide handy concrete examples for thinking about the global impacts of computing. (In fact, there's a move to use news in all undergrad CS classes at UC Berkeley!)

Tips and Options for Using Computing News in Class

- Present a current news story about a computing innovation (including a video if there is one), then ask the students what they think about it, what computer science concepts are involved, and what the positive and negative implications are.
- Once you've modeled the process several times, you can ask students to bring stories to the group.
- Can be used as a five-minute bellringer every day, or save news for Fridays and give it more time.
- If the discussion is going well, let it continue!
- It can be easy — maybe a little too easy — to highlight the positive elements of a new innovation (especially when news stories are based on press releases!), so it's important for students to see the negative (often unintended) implications as well.

Curated for CSP

This page curates current news stories that demonstrate the impact of computing innovations. Posted news stories include the CSP learning objectives and essential knowledge they demonstrate, along with discussion questions for a more extended activity.

News Highlights Curated by Teach Global Impact

Our RSS feed...

<http://teachglobalimpact.org/category/news/feed/>

<h4>A Chip Flaw Strips Away Hacking Protections for Millions of Devices</h4> <p><i>Wired</i>, 3/14/2017</p> <p>Dutch researchers have discovered a method of hacking commonly used microprocessors. Operating systems randomly assign the locations in memory where programs run, but this hack detects where a program is running, making bugs</p>	<h4>Tech Companies Are Building Tiny, Personal AIs to Keep Your Messages Private</h4> <p><i>Quartz</i>, 2/10/2017</p> <p>Technology companies, such as Facebook and Google, are developing artificial intelligence systems (AI) for mobile devices to improve the privacy of messaging applications. New AI innovations allow algorithms that need less</p>	<h4>Voice Control Everywhere</h4> <p><i>MIT News</i>, 2/13/2017</p> <p>A chip, designed by MIT researchers, may reduce the level of energy required to use speech recognition. The software specific speech recognition chip will use up to an estimated 99% less energy compared to universal software compatible chips. The researchers hope to provide</p>
---	---	---

Tech Companies Are Build... x +

teachglobalimpact.org/main/tech-companies-are-building-tiny-personal-ais-to-keep-your-i

Tech Companies Are Building Tiny, Personal AIs to Keep Your Messages Private

February 21, 2017 by Nnamdi Onwumere
 Nnamdi Onwumere
 No comments yet
 16

Published By: *Quartz*, 2/10/2017

[View the Article](#)

Summary

Technology companies, such as Facebook and Google, are developing artificial intelligence systems (AI) for mobile devices to improve the privacy of messaging applications. New AI innovations allow algorithms that need less computing power, and can therefore be implemented locally on mobile devices. This means that information would not be sent to and from the cloud, reducing potential security issues.

Flesch-Kincaid Grade Level of Article: 12.5

Extended Discussion Questions

- Besides security, what are some other potential benefits of having access to sophisticated apps that do not require network communication?
- What could be some disadvantages of having an AI system that runs only on your mobile device, rather than a more flexible cloud solution?
- One reason Facebook says they want to do this type of processing on board your devices is that encrypted messages can't be processed in the cloud without decrypting them, which would create security vulnerabilities.
 - If you currently use Facebook Messenger, do you encrypt your messages?
 - If Facebook offered their suggestion service as a cloud-based program (that had to decrypt and then re-encrypt messages), would you use it?

Relating This Story to the CSP Curriculum Framework

Global Impact Learning Objectives:

- LO 7.1.1 Explain how computing innovations affect communication, interaction, and cognition.
- LO 7.3.1 Analyze the beneficial and harmful effects of computing.

Global Impact Essential Knowledge:

See all our:

- [News](#) (87)

Or search posts by one of the following tags:

- 1 Creativity 2 Abstraction
- 3 Data & Info 4 Algorithms 6 The Internet 7.1.1 Interaction and cognition
- 7.1.1A Email/texting 7.1.1C Social media 7.1.1E Access to info 7.1.1F Public data 7.1.1H Social sharing 7.1.1I GPS 7.1.1J Sensors 7.1.1K Smart infrastructure 7.1.1L Assistive tech 7.1.1N Breadth of change 7.1.2 Scaling problem-solving 7.1.2B Enhanced capabilities 7.1.2E Combined effort 7.1.2F Crowdsourcing 7.1.2G Mobile scaling
- 7.2.1 Impact in other fields
- 7.2.1A Data impact 7.2.1B Scientific computing 7.2.1C Sharing info 7.2.1E Scientific DBs 7.2.1G Enabling creativity
- 7.3.1 Benefits

So What's New?

Classroom materials supported by Teach Global Impact:

“Basics of Research and Technical Writing” lesson plan -- prep for Explore PT!

“Diversity Makes for Better Solutions” -- unintended bias in automated systems

“Net Neutrality” classroom simulation -- students act as the major players

“Association Rule Mining” activity -- how marketers use consumer data

In progress:

Video series: Impact of computing on scientific innovations

A classroom simulation focusing on the impact of encryption

“Computers Everywhere” journaling activity

The Pitch

Use the site to find new resources!

Begin your classes with Computing in the News!

Participate in the TGI discussion forum!

Give us feedback!

Teachers: Participate in our site review! (Stipends available.)

contact@teachglobalimpact.org

It's Not Just Us

Many thanks to our Teach Global Impact collaborators:

Dan Garcia (BJC); Nigamanth Sridhar (CISS); Baker Franke (Code.org CSP); Marie desJardins and John Winder (CS Matters); Jonathan Corley and Jeff Gray (CSP CS4HS); Ralph Morelli and Jennifer Rosato (Mobile CSP); Alicia Beth and Bradley Beth (UTeach CSP); Dan Streicher (ReAct Learning); Julia Bernd, Terry Burkes, Gerald Friedland, Anna Clark, Tyler Daniell, Michael Morguarge, and Nnamdi Onwumere (ICSI)

Many thanks to our funder:



Supported by the National Science Foundation under grant #1637601, *SINRGI: A Shared, Integrated Resource for "Global Impact"*.

(Opinions, findings, or conclusions are those of the presenters, and do not necessarily reflect the views of the NSF.)