



Digital Digging

The impact of technology on learning and digital
confidence in an undergraduate archaeology course

Katy Meyers Emery
2014-2015
FAST Fellowship
Mentor: Melissa McDaniels
IRB #: x15047e; i047846

Background: Digital Native Myth

- Digital literacy defined as:
 - Ability to create, collaborate, evaluate, critically apply, navigate and leverage digital tools for professional use
- Digital literacy is highly transferable skill that new employers expect 'digital natives' to have
 - 77% expect new graduates to have digital skills (JISC 2014)



Background: Digital Natives

- Digital Native
 - Digital Native: any individual born or brought up during the age of digital technology
 - Coined by Mark Prensky (2001)
- Assumptions
 - Prefer and like digital methods
 - Innately know how to use technology in professional manner
 - Eager and able to use technology in a critical, creative, collaborative and innovative manner



Background: Digital Native Myth

- Dangerous assumptions
 - Access \neq Ability to use critically
 - Consumption \neq Meaningful use
 - Governments and workplaces recognize importance and expect potential employees to have high digital literacy



Question

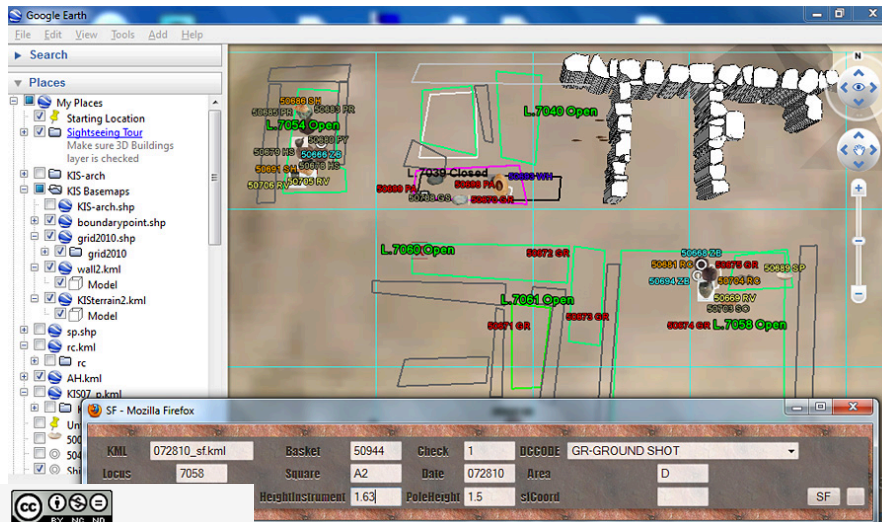
What impact can integrating technology into the classroom have on a student's digital literacy and class performance?

1. What is the current status of their perception of digital tools and their own digital literacy?
2. What effect do digital tools have on learning?
3. By integrating digital tools into the course, how are digital literacy and confidence effected?



Background: Why archaeology?

- Archaeology uses diverse technologies and amenable to new technology
- Integration of digital tools into an archaeology class is appropriate and fits with the discipline



Course Overview

- ANP 203:
Introduction to
Archaeology
 - 207 students
 - Introductory course for non-majors and majors
 - Basic review of theory, methods and case studies in archaeology
 - No digital requirements or expectations



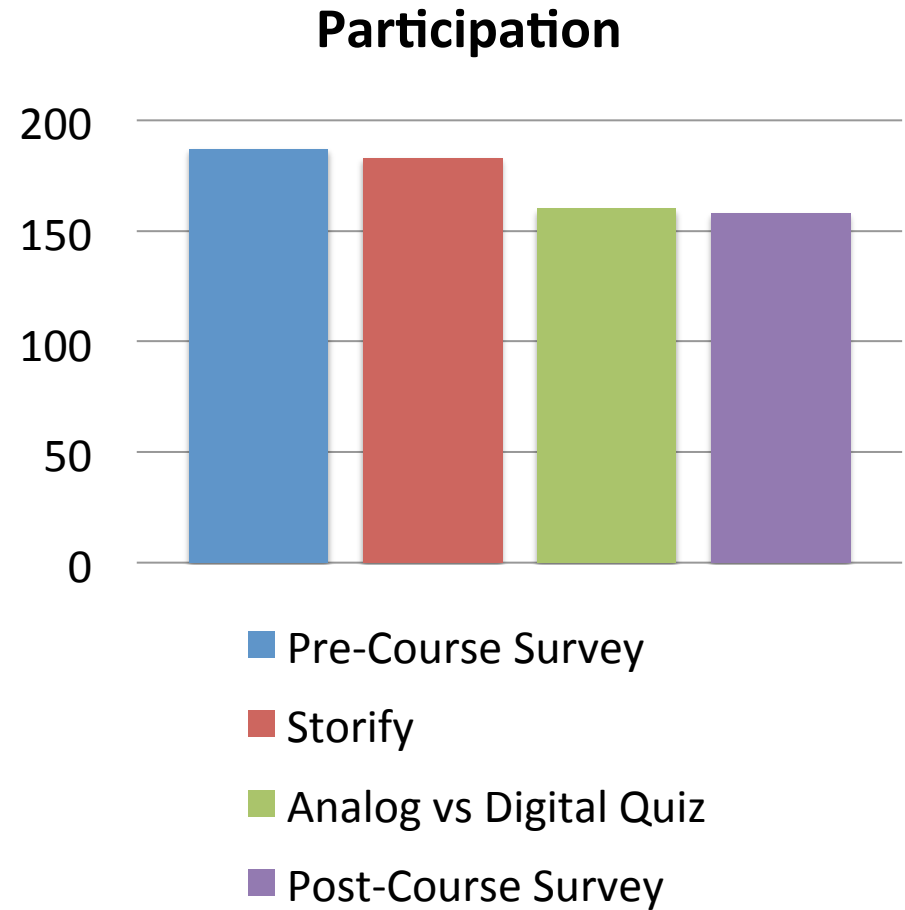
Objectives/Hypotheses

1. Assess the myth that students are “digital natives” by evaluating differences between perceived and actual digital literacy, and attitudes towards digital tools in their classrooms
 1. If students are innately digitally literate, they will be able to:
Describe and evaluate an archaeological controversy by locating, organizing and annotating evidence found online through the Storify platform
 2. Better understand archaeological concepts from video, rather than traditional reading, about archaeological methods
2. By integrating technology in various forms into the course, students will gain confidence in their ability to use and reuse new digital technologies for learning



Surveys and Interventions

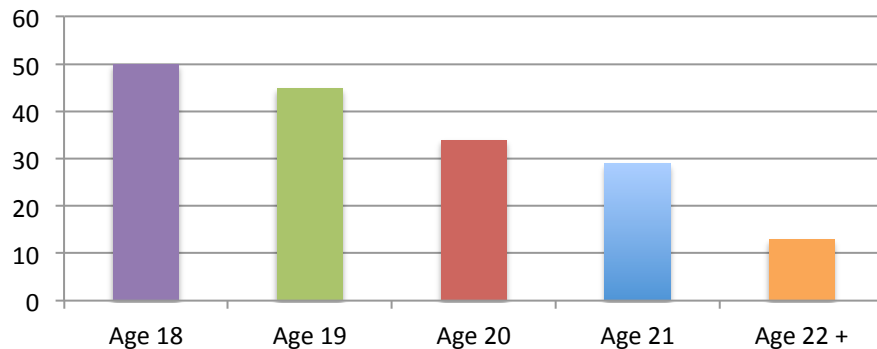
1. Pre-Course Survey
2. Interventions
 1. Storify Assignment
 2. Analog vs Digital Quiz
 3. Other Tools
3. Post-Course Survey



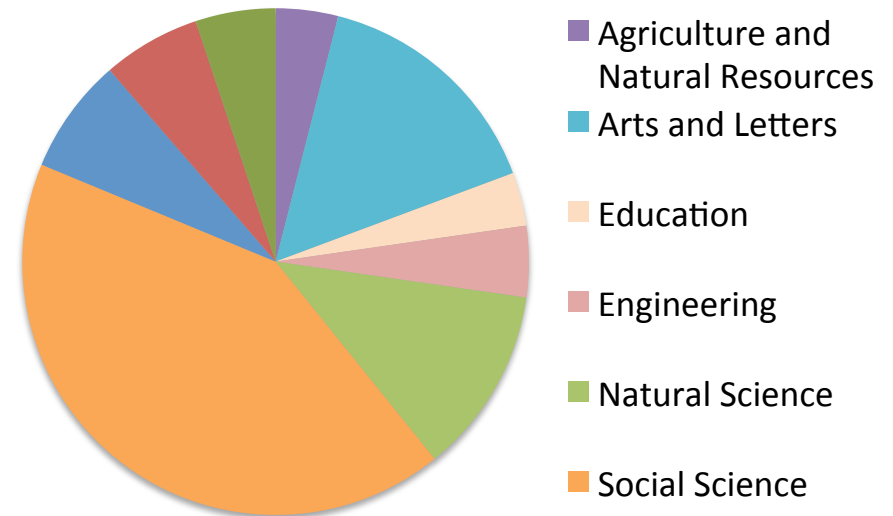
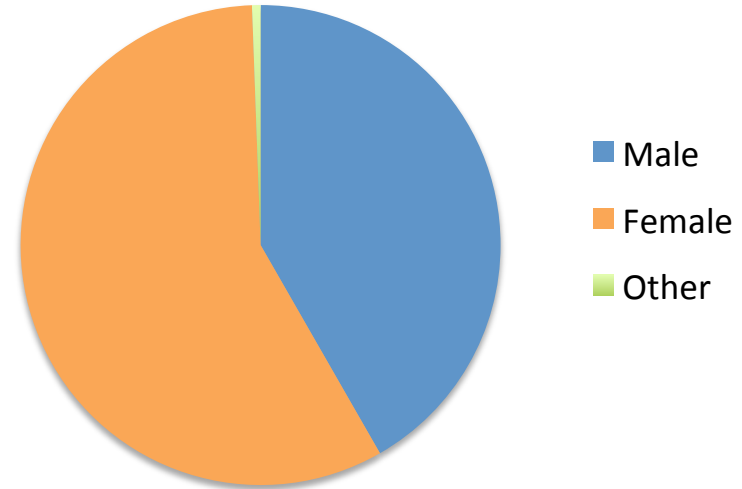
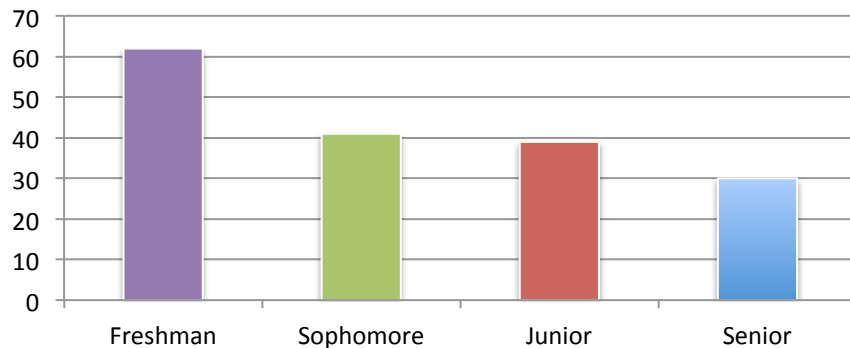
Results: Pre-Course Survey

Demography

Age



Class



Results: Pre-Course Survey

Attitudes towards digital tools

- Positive:
 - “I learn better with technology and digital tools”
 - “Help me collaborate better”
 - “I can articulate why an online source is reputable”
 - “I would like to improve my digital skills”
 - “I have the technical skills to create digital materials for learning”
 - “I am confident in my ability to learn new tools”
- Neutral
 - “I prefer digital assignments”
 - “Teachers should use more digital tools”
 - “I am more motivated to learn with digital tools”
- Negative
 - “I can create digital materials like websites”



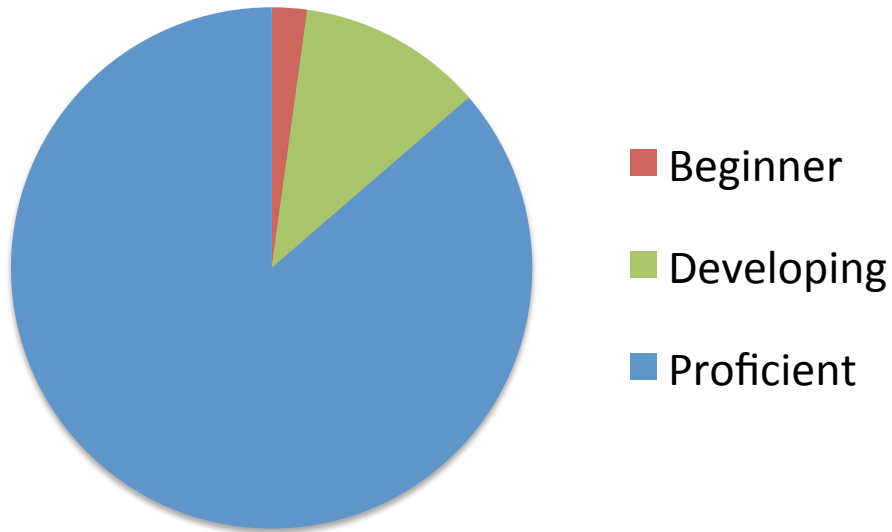
Results: Storify

Competency	Beginner	Developing	Proficient
Content appropriate to the question and diverse	Not able to find material related to question	Material relevant to the question and variation of courses	All material related to the question and sources are diverse
Evaluation/ Annotation of sources	Not able to distinguish reliability or annotation not descriptive	Finds mostly reliable sources and able to provide annotation	Sources highly reliable and provides annotation that increases comprehension
Organization of material	Material isn't organized in intuitive manner	Material organized in coherent manner	Organization flows with argument and is engaging
Coherence of evaluation of controversy	Does not fully explain the controversy, missing side or lacks conclusion	Able to argue both sides, but may lack some detail or coherent conclusion	Able to present both sides and provide summative conclusion
Ability to use Storify	Able to use with little to no issues	Able to use but with some issues	Not able to use, or had major issues

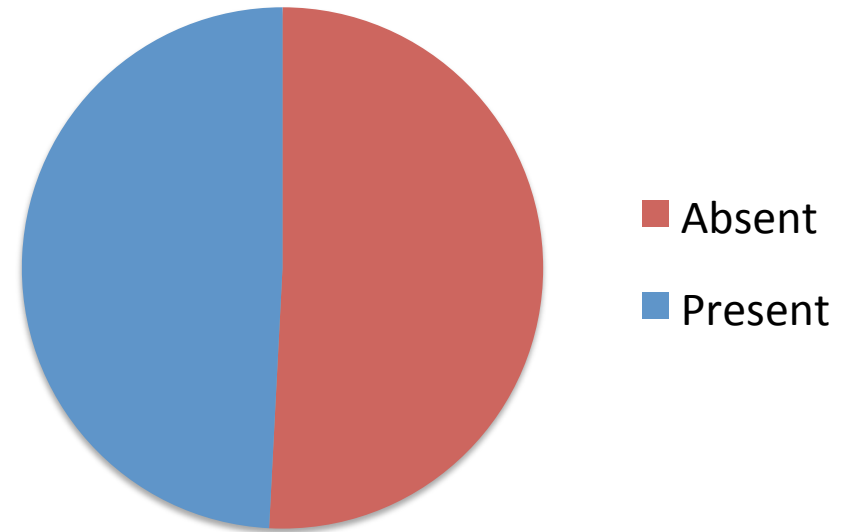


Results: Storify

Social Media Appropriate

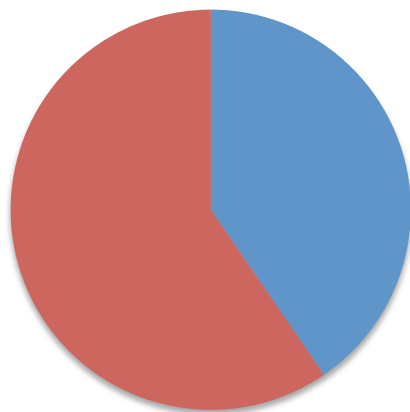


Scholarly Media Appropriate

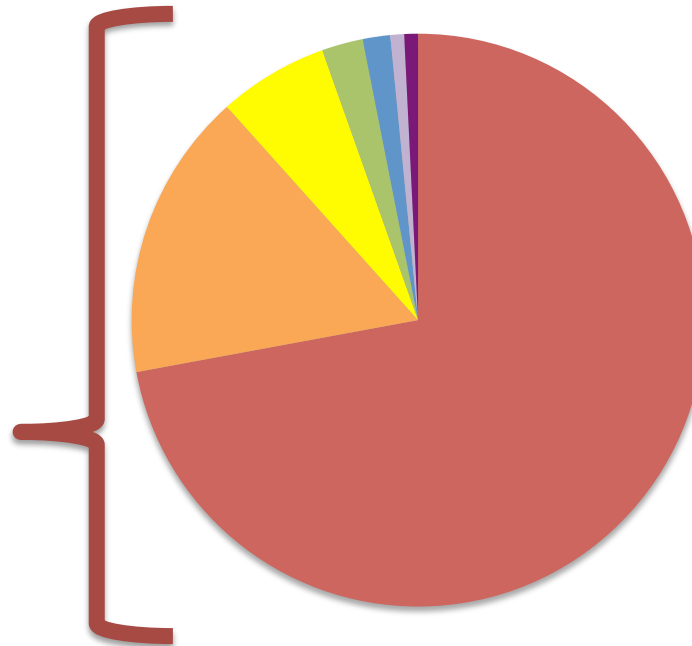


Results: Storify

Used Storify Correctly



■ Correct
■ Incorrect



■ Encyclopedia and news not scholarly

■ YouTube = social media

■ Cited other Storify

■ PDF

■ No Resources

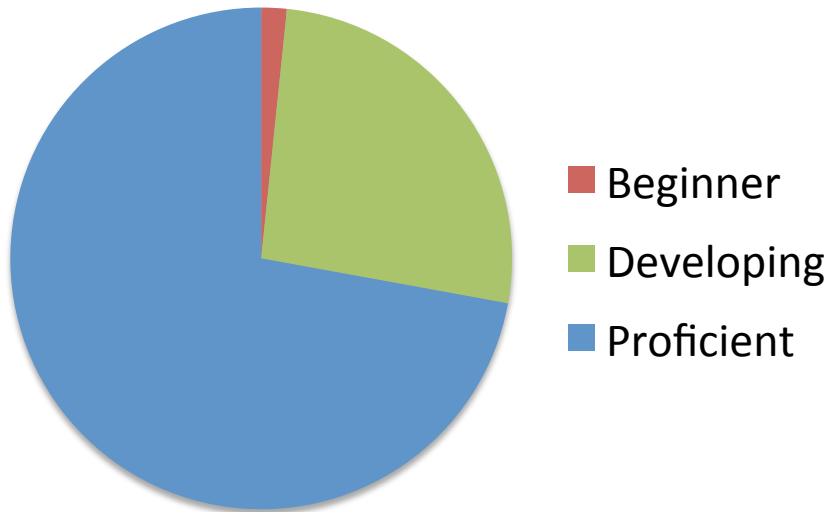
■ No annotations

■ Didn't remove help text

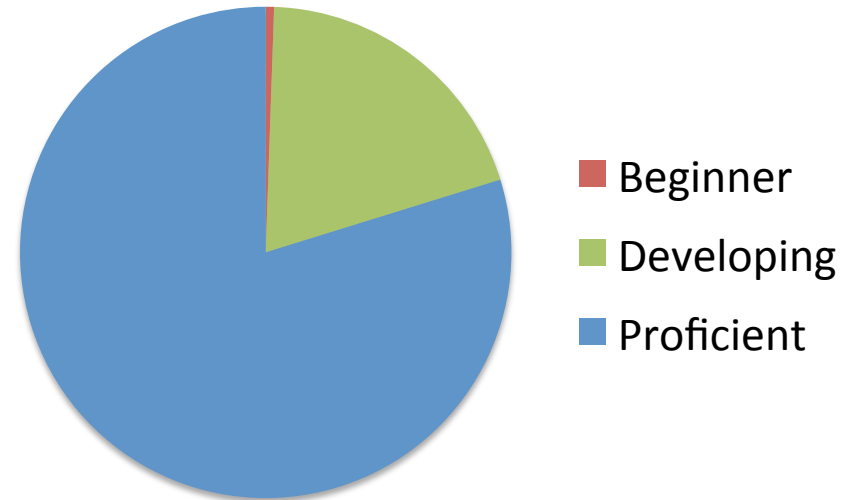


Results: Storify

Annotations

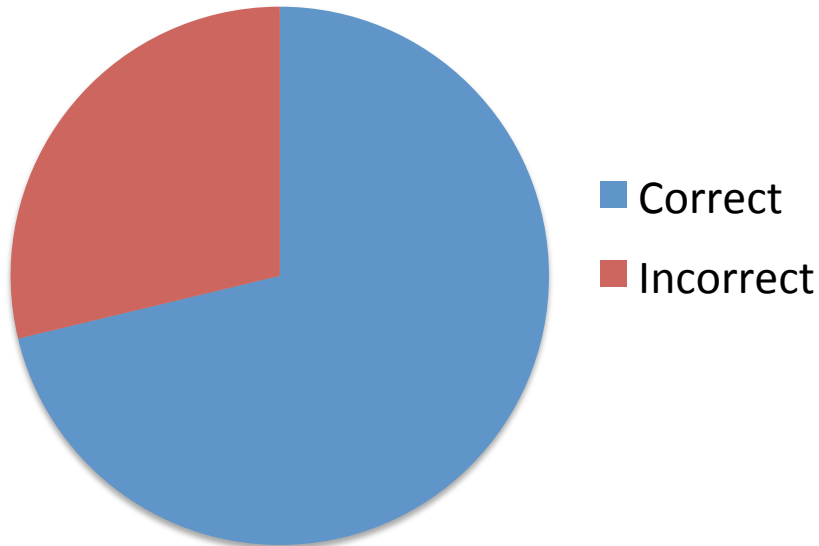


Organization

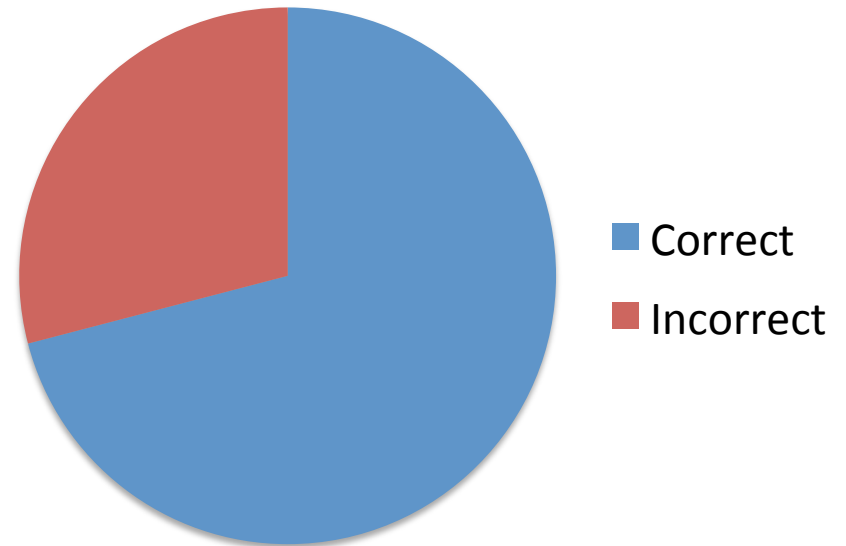


Results: Quiz

Answers from Digital Teaching



Answers from Analog Teaching



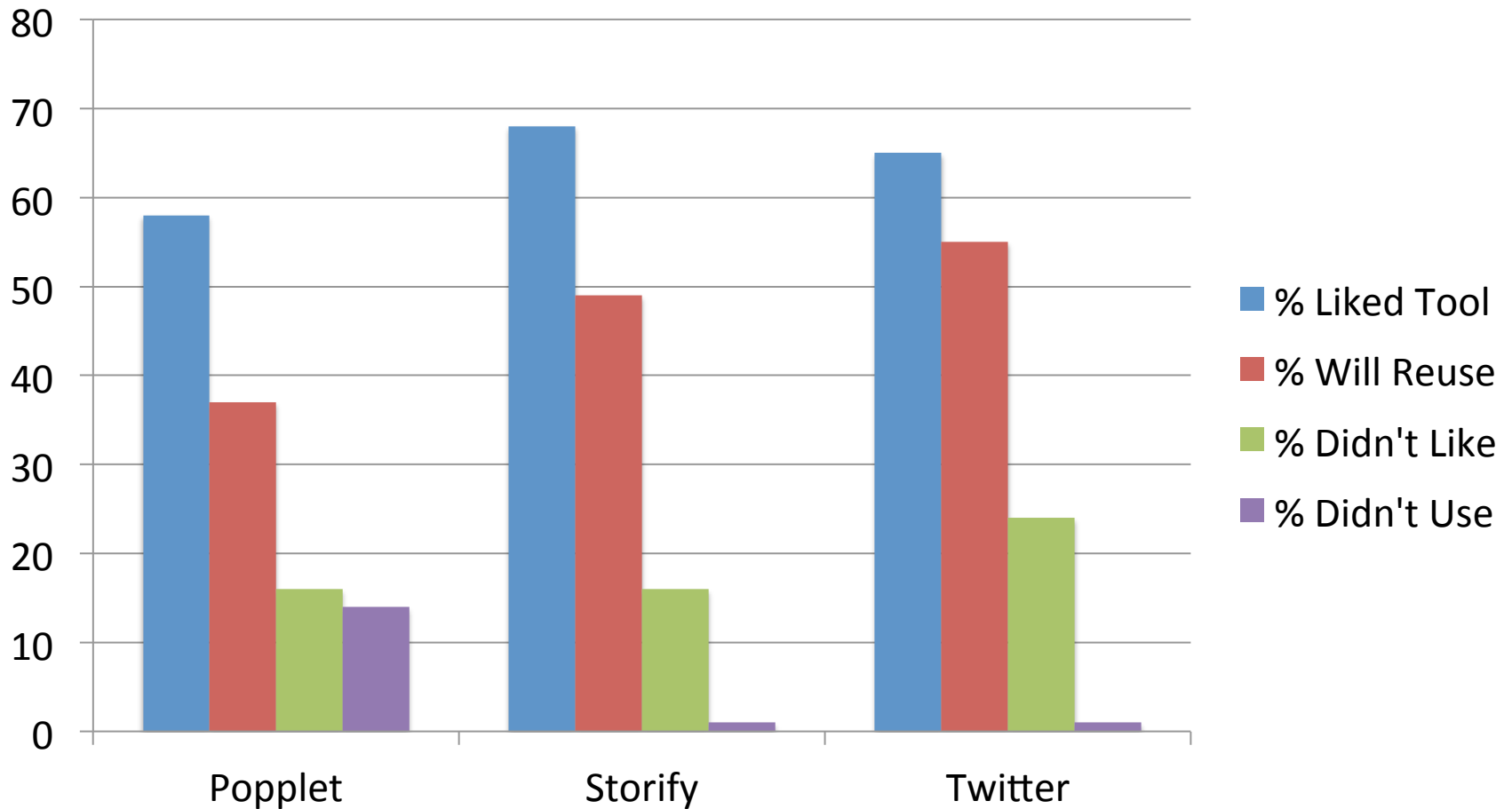
Results: Post-Course Survey

Changes in Attitudes

- Positive
 - “I can articulate why an online resource is reliable” 13% more positive
 - “I prefer to have open-ended assignments that allow me to select digital or analog options” 11% more positive
 - “I am more motivated to learn when using technology & digital tools instead of books or lectures” 10% more positive
 - “I am confident in my ability to learn a new digital tool” 6% more positive
- Negative
 - “I am confident in my ability to use technology for learning” 4% more negative
 - “I would prefer less technology in the classroom”
 - “I would prefer readings over videos”

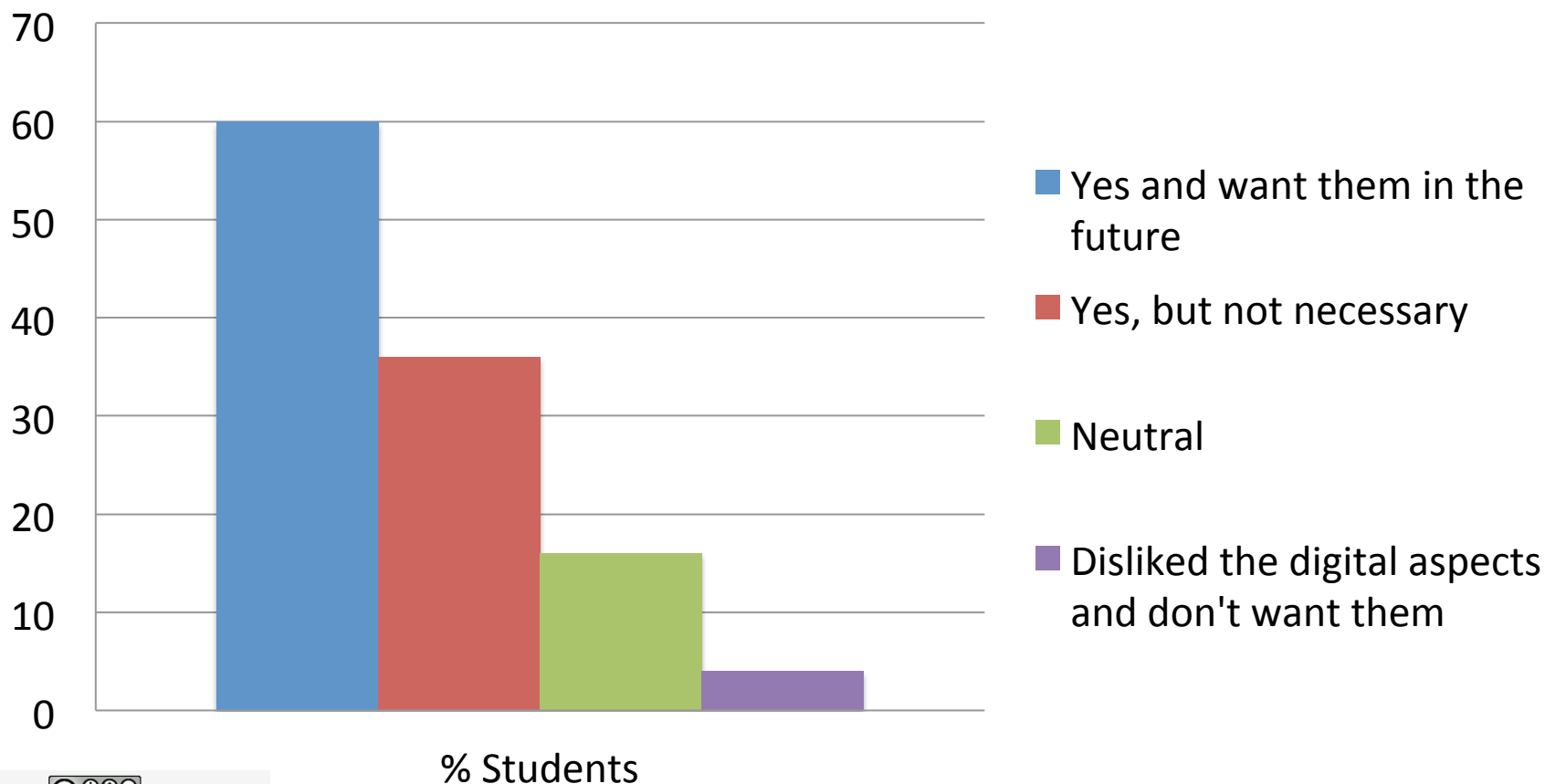


Results: Post-Course Survey



Results: Post-Course Survey

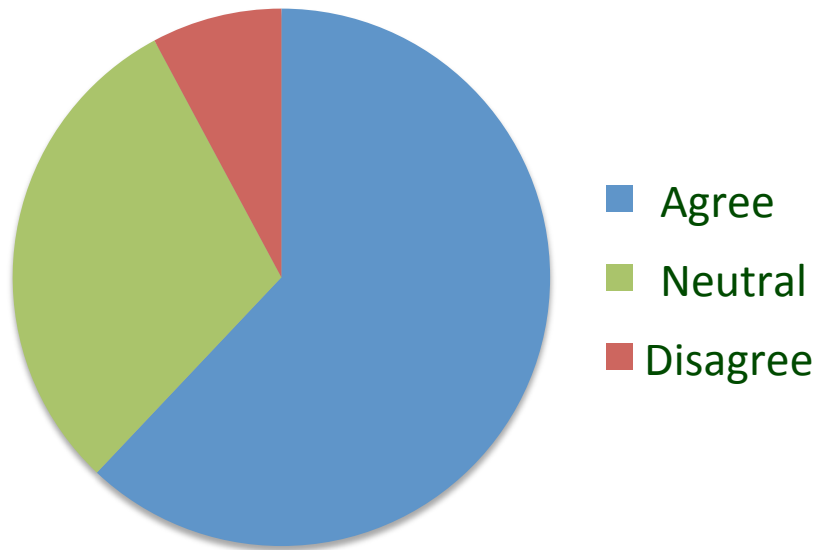
Generally, did you like having increased digital components in the classroom?



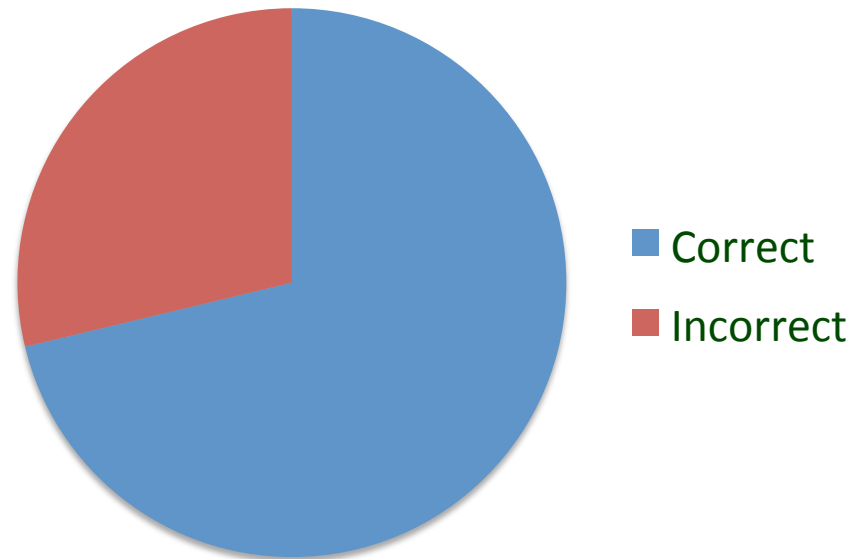
Discussion

Actual Use vs Perception

Learn Better with Digital Tools



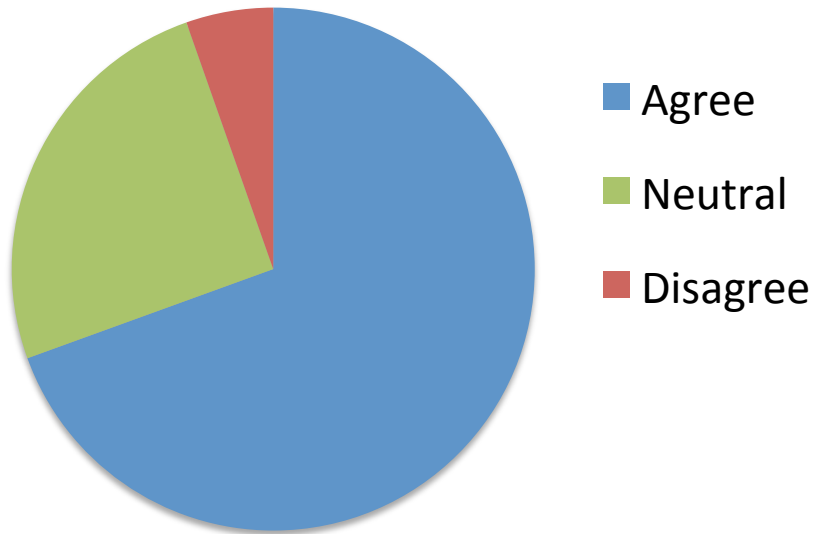
Correct Answers from Digital Teaching



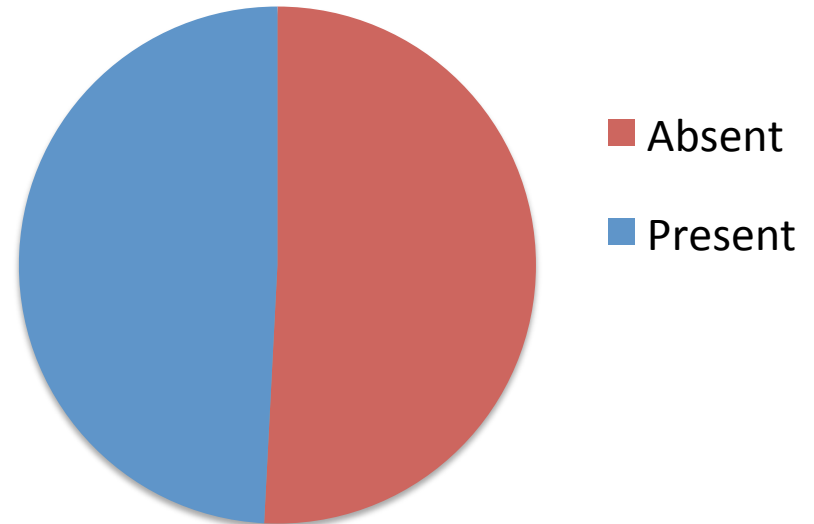
Discussion

Perception vs Actual Use (Pre-Survey)

Can Determine When Online Source is Reliable/Expert



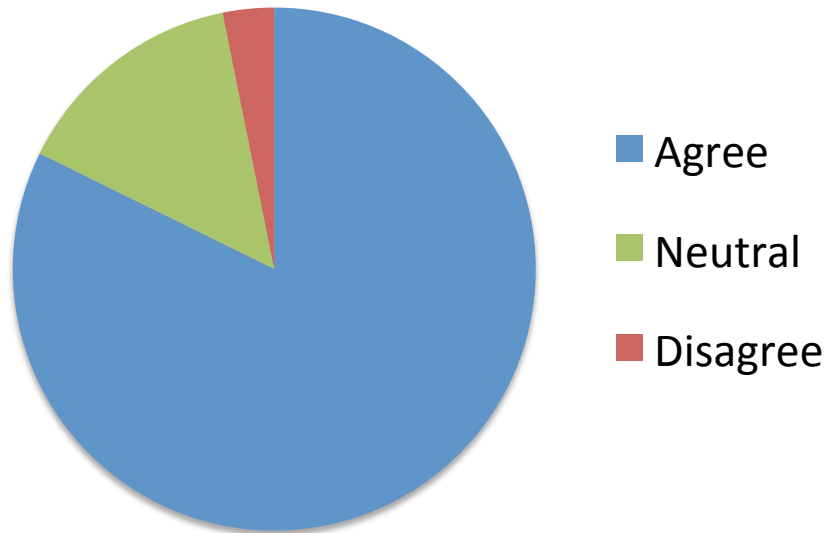
Scholarly Media Appropriate



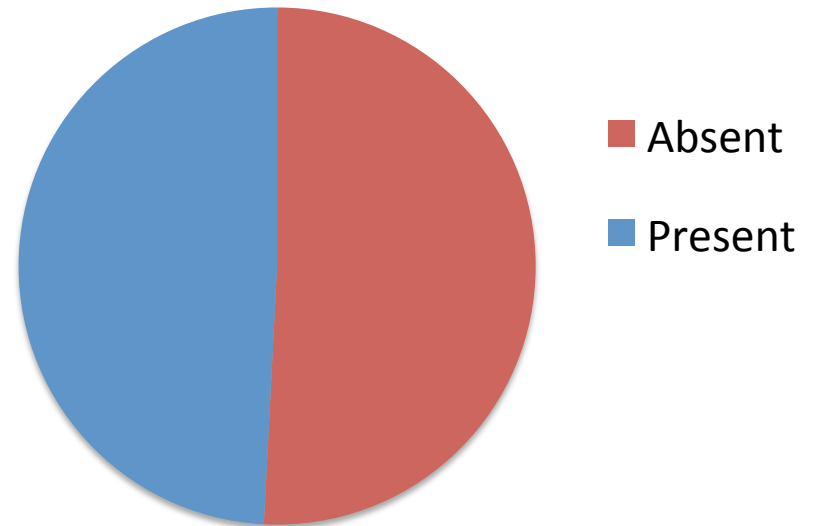
Discussion

Actual Use vs Perception (Post-Survey)

Can Determine When Online Source is Reliable/Expert



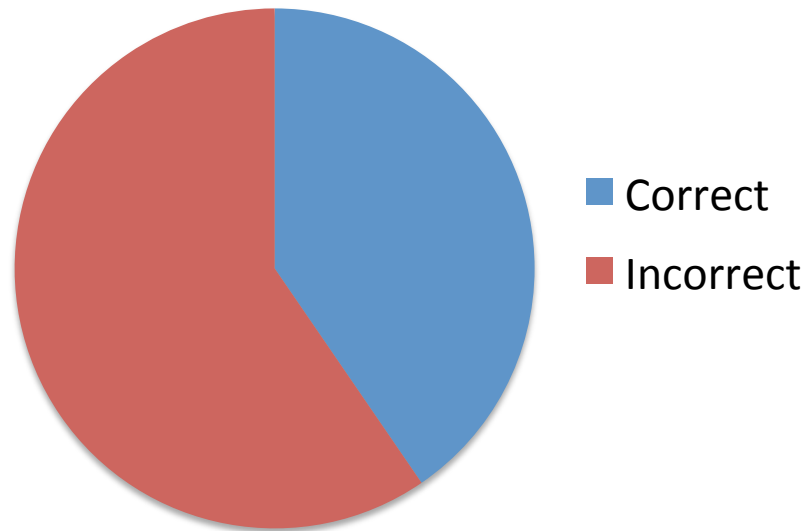
Scholarly Media Appropriate



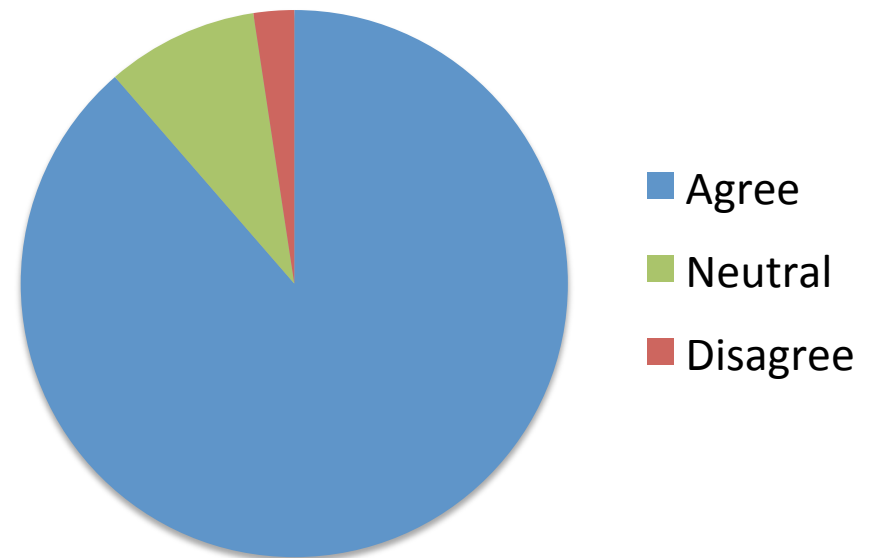
Discussion

Actual Use vs Perception (Pre-Survey)

Used Storify Correctly



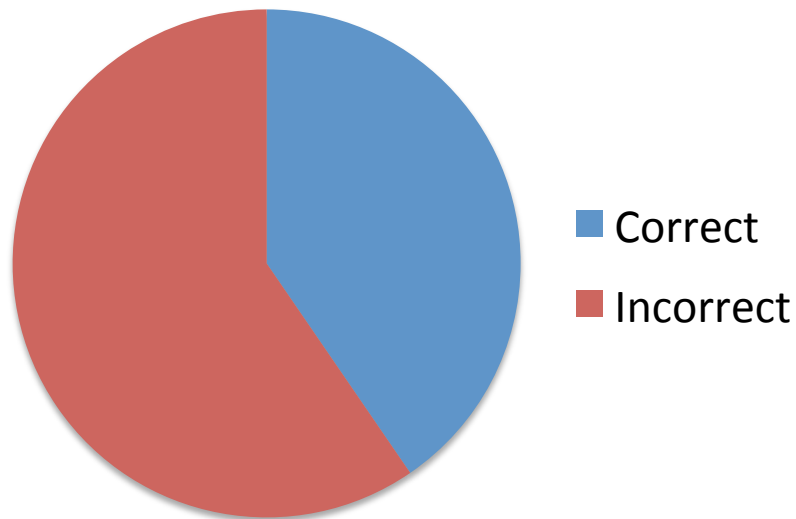
Confidant In Ability to Use Tech for Academics



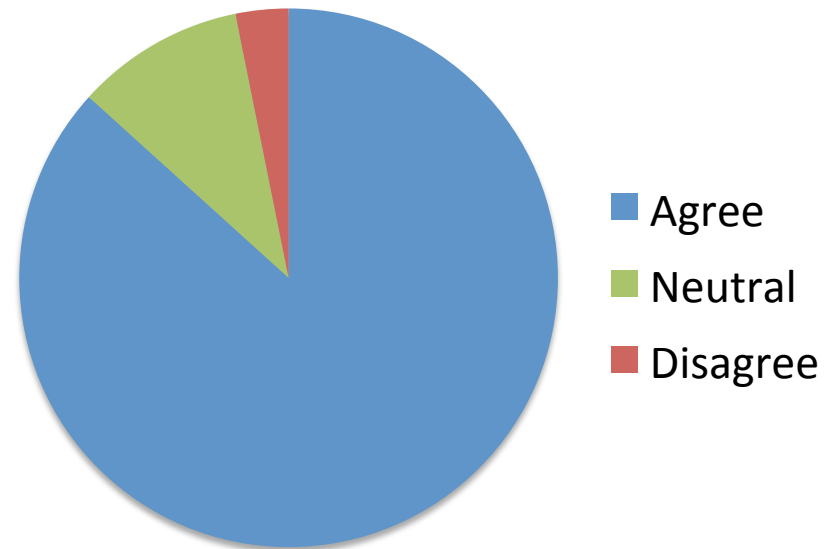
Discussion

Actual Use vs Perception (Post-Survey)

Used Storify Correctly



Confidant In Ability to Use Tech for Academics



Discussion & Broader Implications

1. Both students and instructors make assumptions about digital literacy
2. If we are going to prepare students for the modern work environment, we need to treat digital literacy like basic writing skills- integrate it into the broader curriculum
3. Need to look more closely at what skills they are lacking and how to build better scaffolding



Thank you!

- All the FAST Fellows and LeighAnn Tomaswick for their support and help
- Kateri Salk for helping with the IRB consent process
- Melissa McDaniels for mentorship throughout
- Rique Campa and the Guidance Committee for their advice and support
- Lynne Goldstein and Ethan Watrall for supporting digital tool use in Anthropology!
- Will also be presenting results at HASTAC 2015, May 29 5:30 pm at MSU's Kellogg Center

