



**INFORMATION LITERACY
IMPLICATIONS
FOR STUDENTS USING 1:1 DEVICES**

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About Me

(and this topic!)

- Associate professor in the library science program at the University of Central Missouri, doctorate in information science from Mizzou
- Former librarian and instructional designer
- Parent to teenagers who use 1:1 devices
- Therefore, I see information policy and literacy issues everywhere, especially between the schools and libraries!
- Why should librarians care about 1:1?



AGENDA

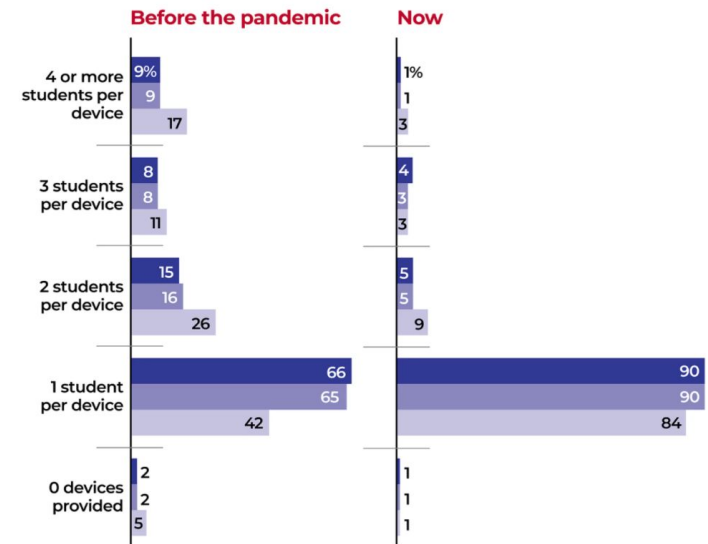
1. What is 1:1?
2. Results from my study
3. Implications
4. Discussion/Questions

WHAT IS 1:1?

- 1:1: Personal devices issued by schools to individual students which can be used in or outside of school (a ratio of 1 device per child in a school or district)
- Mass uptake (90%) in one-to-one computing programs in the U.S., particularly after pandemic (Klein, 2021). In [Mississippi](#) this was 96%!
- 73% of teacher says that great access to 1:1 makes teaching easier (Bushweller, 2020)
- 1:1 programs often use E-Rate funding
- Bourdieu's capital theory: 1:1 lessens digital divide by increasing technology assets (those with personal computing have access to extra assets)

How many students per digital learning device were there in your district at the following grade levels?

● High School (Grades 9-12) ● Middle School (Grades 6-8) ● Elementary School (Grades Prek-5)



*Results show responses from district leaders.
SOURCE: EdWeek Research Center survey, 2021

COLLEGE

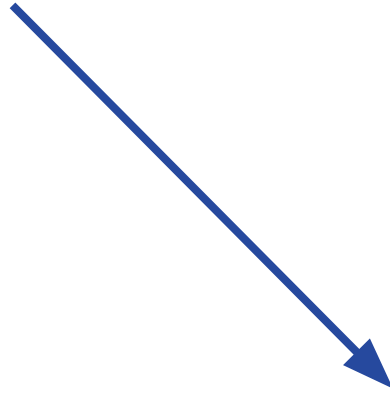
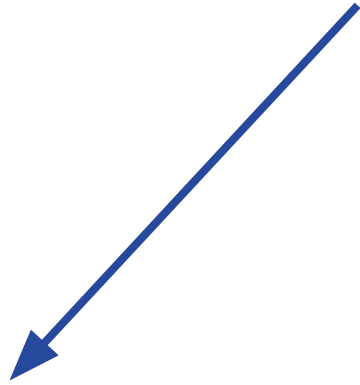


BUS

SCHOOL

HOME

Library



Is 1:1 effective?

- Student performance was positively impacted in English, writing, math and science (for more affluent students)(Zheng, et al., 2016).
- Without tech support, infrastructure, and professional development (on beliefs and integrating into instruction) 1:1 programs are ineffective (Bebel & O'Dwyer, 2010; Lemke, Coughlin, & Reifsneider, 2009; Sell et al., 2012; Warschauer, et al., 2011)
- 1:1 program are costly: repairs, maintenance, staff time, replacement devices (Hinton & Burstein, 2022)
- 30% students have inadequate connectivity/devices (Chandra et al. 2020)
- What we don't know: benefits for students (outside of academics); problems for students; what pre-service teachers need to know; implications outside of school; implications for universities

What is on a 1:1 device?

- Cloud-based network management (authentication, security).
- Access to school portals
- Access to school approved software (learning management system, productivity tools, etc.)
- Some have bookmarks to the school library webpage (recommended!)
- Content filtering software
- Some schools will issue more robust computers (ie. MacBook Air) to students taking dual credit classes

Student Rules for Using 1:1

Acceptable Use Policies

- Provide “contract” with students/parents which explains policy (fines,rules, etc.)
- Teaches digital stewardship
- Usage is often tracked (expected to be educational)

Rules on Internet Filtering

5 CSR 20-100.220 Internet Filtering

(1) This rule is designed to restrict minors from gaining access to inappropriate material on the Internet. Public school districts should review and comply with the standards set forth in the Federal Children's Internet Protection Act (CIPA) and the Neighborhood Children's Internet Protection Act (NCIPA) which are incorporated by reference and made a part of this rule.

[-Rules of Department of Elementary and Secondary Education](#)

Technology protection measure: a specific technology that blocks or filters Internet access to visual depictions that are (A) obscene (B) child pornography or (C) harmful to minors; monitoring online content of minors; and online behavior education (Protecting Children in the 21st Century Act of 2008, 47 C.F.R. 54.520)

Blocked Content

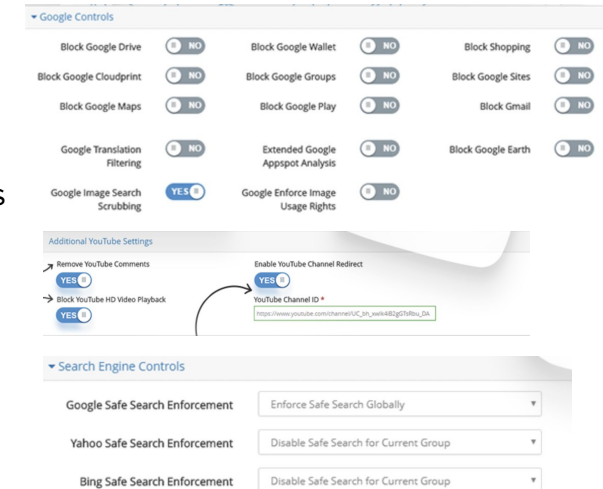
Categories Blocked on School Devices

- Most schools overfilter: social media, porn, games, known virus-infected websites, entertainment

Commonly Filtered Categories

(Deibert et al., 2008)

- Human rights
- Minority rights
- Women's rights
- Environmental issues
- Dating
- Gambling
- Gaming
- Hate speech
- Sex education
- Pornography
- Militants, extremists, separatists
- Alcohol and drugs
- LGBTQIA+ content
- Hacking
- Religious conversion



the Southerner

An upbeat paper for a downtown school • Midtown High School • Atlanta, GA

Requiring school-issued computers creates level academic playing field

Marcus Johnson

February 7, 2022

Atlanta Public Schools took a necessary stride to provide educational resources to all students and close the digital divide by issuing each student a personal Chromebook at the start of the school year.

However, many students are still being left

Related Story

[Personal computers allow students to bypass Chromebook frustrations](#)

Tweets from @thesoutherner



the Southerner
@thesouther... · Mar 23



Just posted a photo

il college

Popula

instagram.com
the Southerner

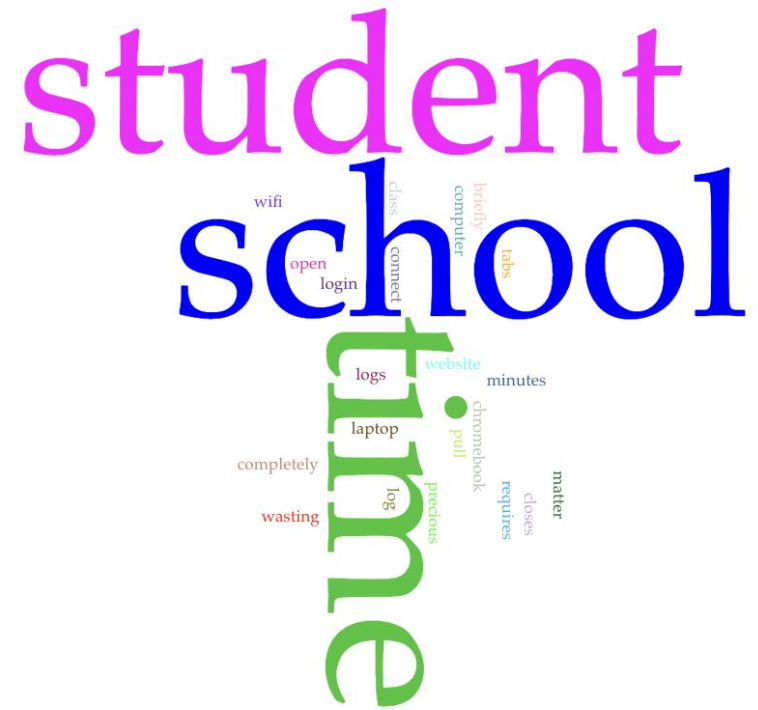
News



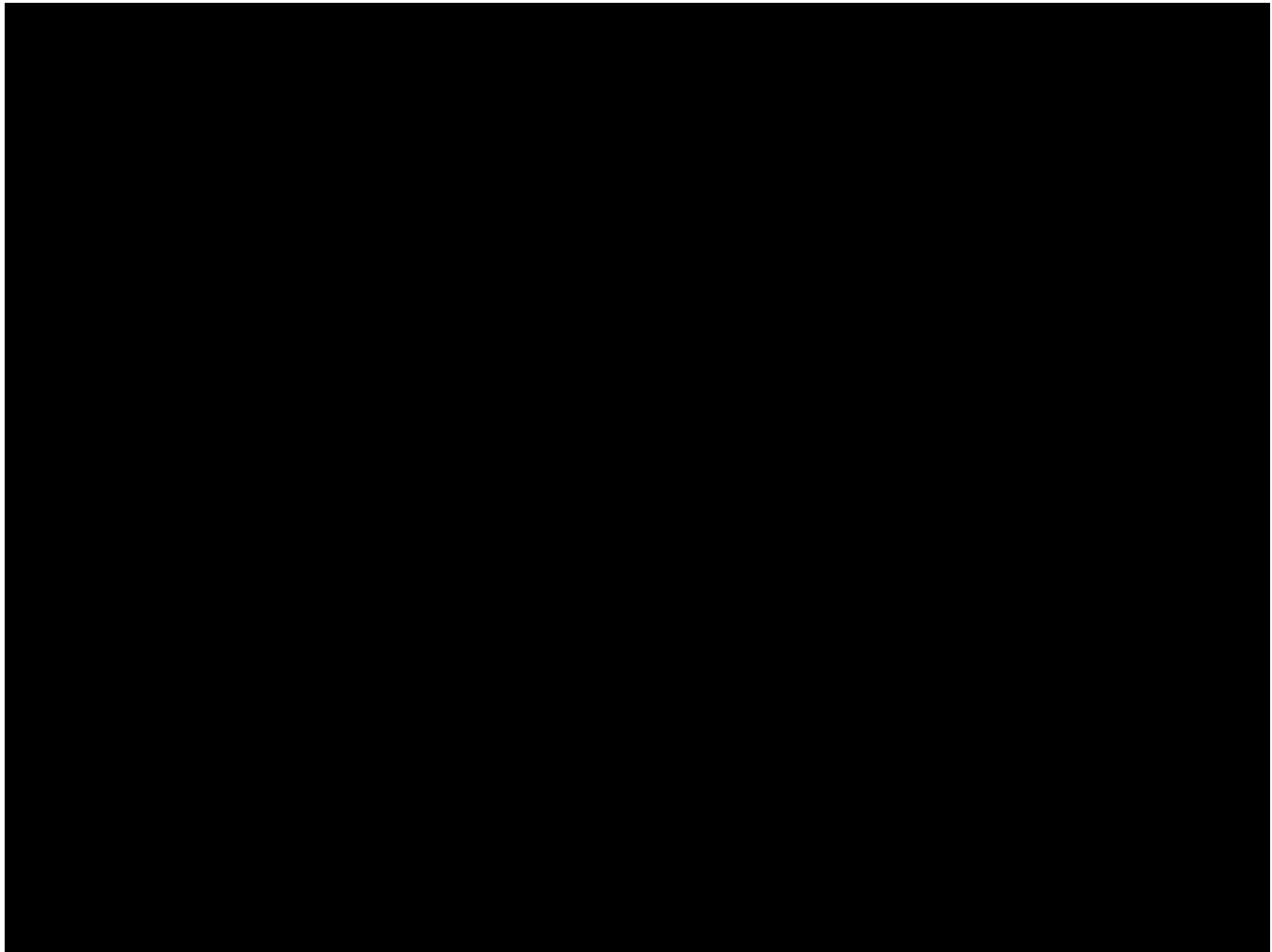
Figure 1. Midtown High School paper headline and related story:

<https://thesoutherneronline.com/87225/uncategorized/requiring-school-issued-computers-creates-level-academic-playing-field/>

“On a school Chromebook, it can take up to 15 minutes to log on, connect to WiFi and pull up a website. Every time a student closes a school laptop, no matter how briefly, it completely logs them out of their computer. This requires the student to re-login and open all of their tabs again, wasting precious class time.”

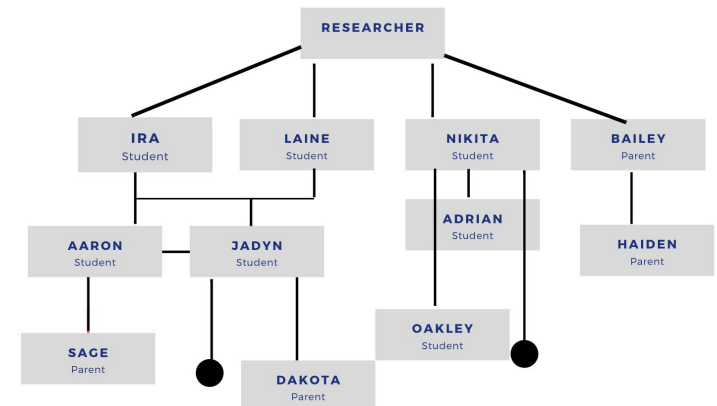


<https://voyant-tools.org/>



My Research on 1:1

- Participatory Mixed Methods (2 Stages):
 - Stage 1: Used phenomenology, a qualitative method, to understand lived experience (12 youth; 3 parents)
 - Stage 2: Photovoice (students sent pictures of their struggles)
- Used a snowball sampling method called chain referral (started with dual-enrollment, then expanded)
- Research questions:
 - Challenges?
 - Strategies?
 - Experiences?



Challenges

Blocked Content

games
Khan academy videos
nude sculpture
marketing websites
math games
math tutorials
medical content
food on youtube
Netflix
anything with Flash

travel websites
genetics articles
research articles for
English
blogs
a New York Times article
sex ed stuff
Perusall (discussion site)
videos for women's
literature
publisher's test site
computer science stuff
IXL math assignments
coding

General Annoyances

- time limits
- shutting down after 10
- no customization (background, etc.)
- no commenting
- no installing software (OS, coding apps, VPN etc)

Strategies

What do students do when they have frustrations with devices?

- Give up
- Find another device
- Buy another device
- Access the school's digital library
- Access the public library
- Ask for help from the school librarian
- Use mobile device

Experiences

What is the lived experience of 1:1?

- Problems on 1:1 interrupt a student's autonomy
 - dependence on other assets
 - lack of personal expression
 - unable to use learned problem-solving strategies
- Learning is disrupted
 - teaching and learning flow is disrupted
 - additional time required to work around restrictions
 - not always able to work around issues
- Accepting challenges as behavior control
 - thinking other students are doing bad things
 - accepting issues because they protect younger kids

Public Library Concerns

- Students need space to work on their devices
- Students need another device sometimes (one with less filtered content)
- Students may need hotspot to use the device at home
- They may need chargers for devices when school is out of session
- They are familiar with going to the library for technical support
- They may need technical support

Implications

Information Literacy

- Used to blocked content
- Library awareness (library resources are not blocked!)
- Need to know when to use a google search/when to use the library resources
- What they have learned about the search process is interrupted
- Asking a human librarian is helpful to them (but they may not be able to do that on virtual chat)

Implications



What experiences have you had
with 1-1 devices
in the library?

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<https://www.edsurge.com/news/2022-08-24-what-is-the-true-cost-of-a-1-1-device-program-one-state-s-careful-rollout-offers-a-look>

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THANK YOU!

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