# Effects of high school location on first-year students' research confidence and college readiness

Study conducted by Matt Benzing, Abigail Morgan, and Jerry Yarnetsky, Miami University

# Introduction and Methodology

In Ohio, K-12 public schools are heavily funded through property taxes, resulting in noticeable inequalities among districts from different economic and geographic areas. This funding model have been ruled unconstitutional four times (Napp, 2020). One of these inequalities is the availability of library services.

As the 2019-20 school year opened, we surveyed approximately 2,600 Ohio residents in the incoming first-year class at Miami University's main campus, a public university with 17,246 total undergraduates. We received 117 responses in total from this survey. We first looked at this population as a whole, then analyzed responses by students from Appalachian versus non-Appalachian counties in Ohio. We sought to determine if there is a difference in confidence in college readiness between students who received instruction from a school librarian and those who did not.

# Why did we conduct this study?

We knew that funding discrepancies existed in the state. We were specifically interested in researching rural or Appalachian school districts because 1) our university is located adjacent to rural Appalachia and draws a significant number of students from Appalachian counties, 2) the researchers had prior experiences attending and/or working in K-12 schools in both Appalachia and wealthier urban and suburban school districts, so we were curious to see if our anecdotal observations had merit and matched broader, objective data.

# Limitations

The primary limitation of our study is that we used a convenience sample and surveyed only students from our own university. The in-state residents of our student body are not necessarily representative of the K-12 population for the entire state of Ohio. While our survey invitation went to all incoming first-year Ohio residents, our respondents were self-selected. Furthermore, we received only 117 responses out of a total incoming in-state student population of approximately 2600, which represents a 4.5% response rate. As such, our results reflect only a small sample and are not generalizable.

Research Findings

# National and state statistics

**Nationwide, only 62% of rural school libraries are staffed by a full-time librarian.** This compares to 74% in suburban schools and 67% in urban schools (NCES, 2015-16).

In Ohio, 87.6% of public schools report having a library/media center (NCES, 2017-18).

The number of school librarians in Ohio decreased by 39.7% between 2006 and 2016 (Jackson, 2016).

**So we started by asking our students about their high schools...**

**"Did your school have its own library/media center?"**

**Our takeaway**:
Typically the students in our study did have access to a school library or media center. However, the quality and staffing of the school library is unknown.

We believe this chart could look much different if incoming students at other colleges and universities around the state were asked the same question.

## Did your school have its own library/media center?
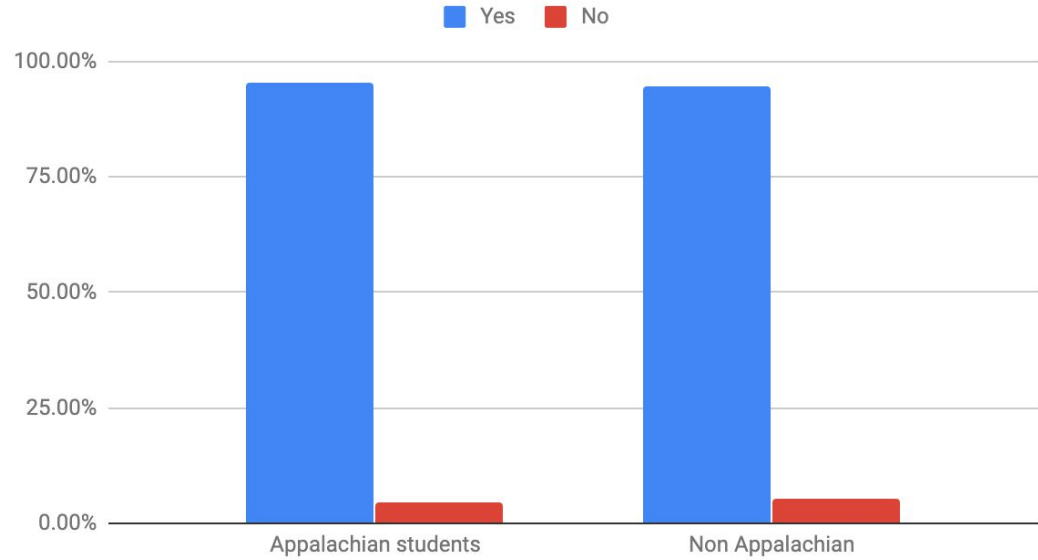


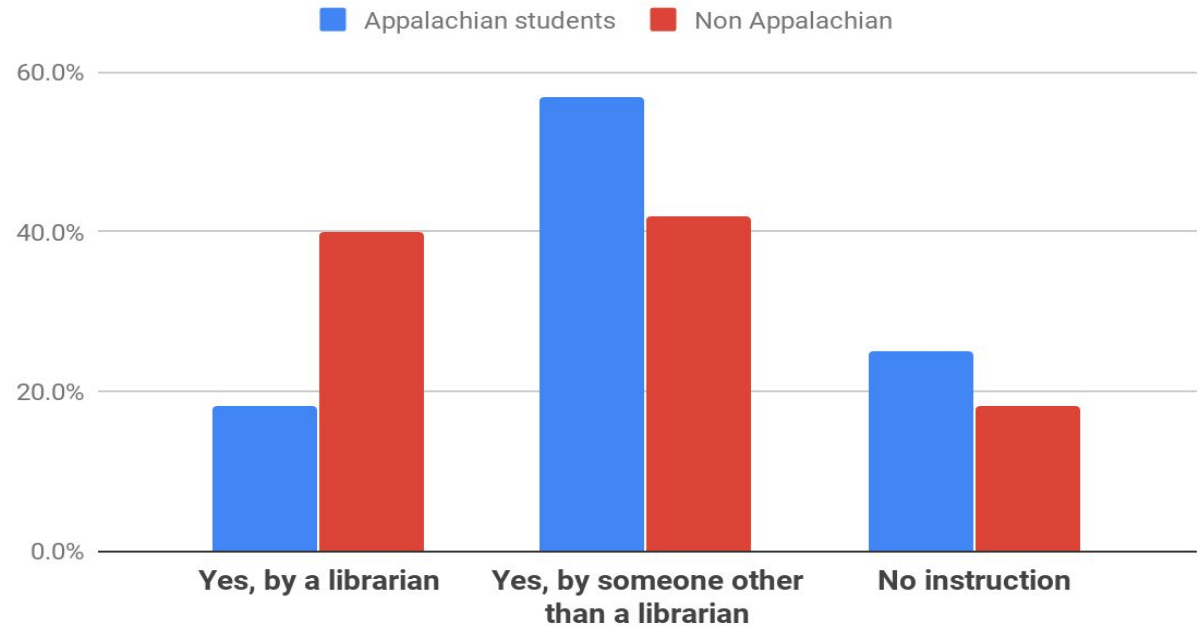| | Yes | No |
|---|---|---|
| Appalachian students | **42** | **2** |
| Non Appalachian | **53** | **3** |

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# Finding One

**Who taught students how to do research**?

Appalachian students were less likely to receive instruction from librarians.

**"Were you taught how to do research either in your class or in your library?"**

**Our takeaway**: Appalachian students being less likely to receive instruction from librarians did not surprise us.

However, the fact 25% reported receiving no information literacy instruction did.



Legend: ■ Appalachian students  ■ Non Appalachian

Chart axis labels: 60.0%, 40.0%, 20.0%, 0.0%

Categories: Yes, by a librarian | Yes, by someone other than a librarian | No instruction

| Raw data | Yes, by a librarian | Yes, by someone other than a librarian | No instruction | # responses |
|---|---|---|---|---|
| **Appalachian students** | 8 | 25 | 11 | 44 |
| **Non Appalachian** | 22 | 23 | 10 | 55 |

# Finding Two

When we asked students to rate their self-perceived readiness to conduct college-level research, Appalachian students on the whole reported feeling less certain.

These data points might explain the reason...

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## "I feel prepared to do college research"

**Our takeaway**: Only 24% of Appalachian students agreed or strongly agreed with this statement compared to 48% of their fellow students.

### "I feel prepared to do college-level research"
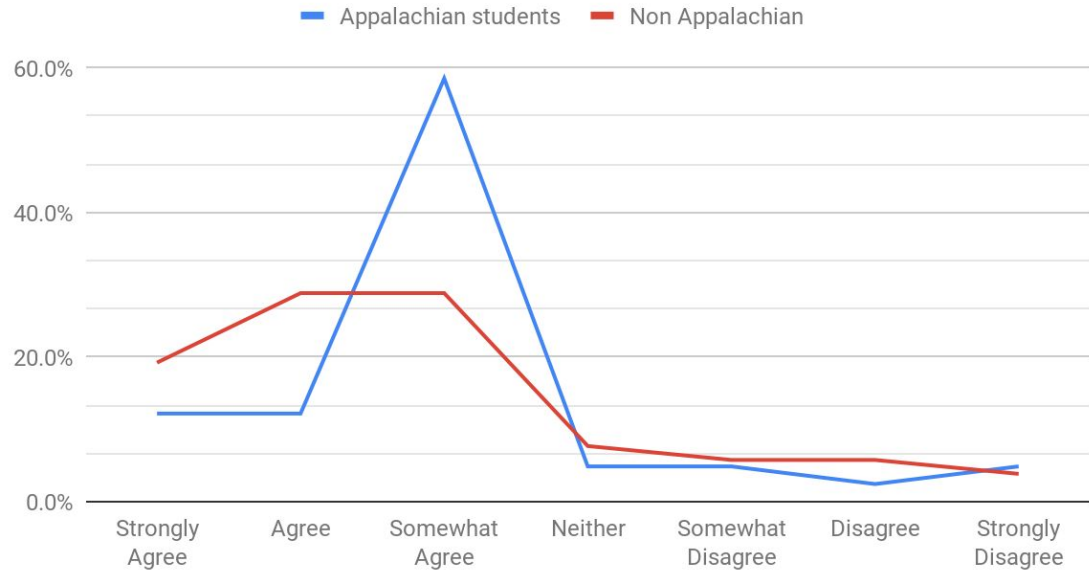


Legend: Appalachian students (blue), Non Appalachian (red)

| Raw data | Strongly Agree | Agree | Somewhat Agree | Neither | Somewhat Disagree | Disagree | Strongly Disagree | # responses |
|---|---|---|---|---|---|---|---|---|
| **Appalachian students** | 5 | 5 | 24 | 2 | 2 | 1 | 2 | 41 |
| **Non-Appalachian** | 10 | 15 | 15 | 4 | 3 | 3 | 2 | 52 |

# Student perceptions based on who did the instruction

**Our takeaway**: This may be the key cross tabulation.

**64% agreed or strongly agreed they felt prepared for college research when they received librarian instruction.**

Only 9.5% with no instruction and 38% learning from another instructor expressed the same confidence.

**Librarians make a difference!**



Comparing those receiving instruction from a librarian vs other instructor and no instruction
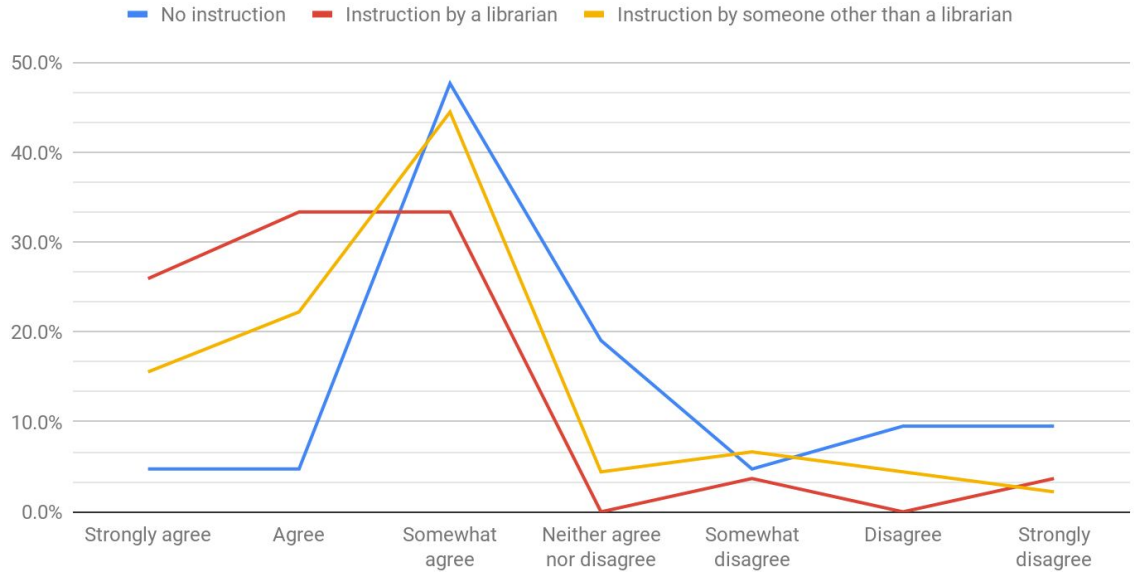
- No instruction
- Instruction by a librarian
- Instruction by someone other than a librarian

| Raw data | Strongly agree | Agree | Somewhat agree | Neither | Somewhat disagree | Disagree | Strongly disagree | #responses |
|---|---|---|---|---|---|---|---|---|
| No | 1 | 1 | 10 | 4 | 1 | 2 | 2 | 21 |
| Yes, by a librarian | 7 | 9 | 9 | 0 | 1 | 0 | 1 | 27 |
| Yes, by someone other than a librarian | 7 | 10 | 20 | 2 | 3 | 2 | 1 | 45 |

**"I feel confident that I know how to find academic research articles for my classes"**

**Our takeaway**:
We also asked about a specific research-oriented task and again, librarian instruction helps students feel more confident.

63% of librarian-instructed students agreed or strongly agreed. 9.5% of students not receiving instruction felt the same.

## I feel confident that I know how to find academic research articles for my classes
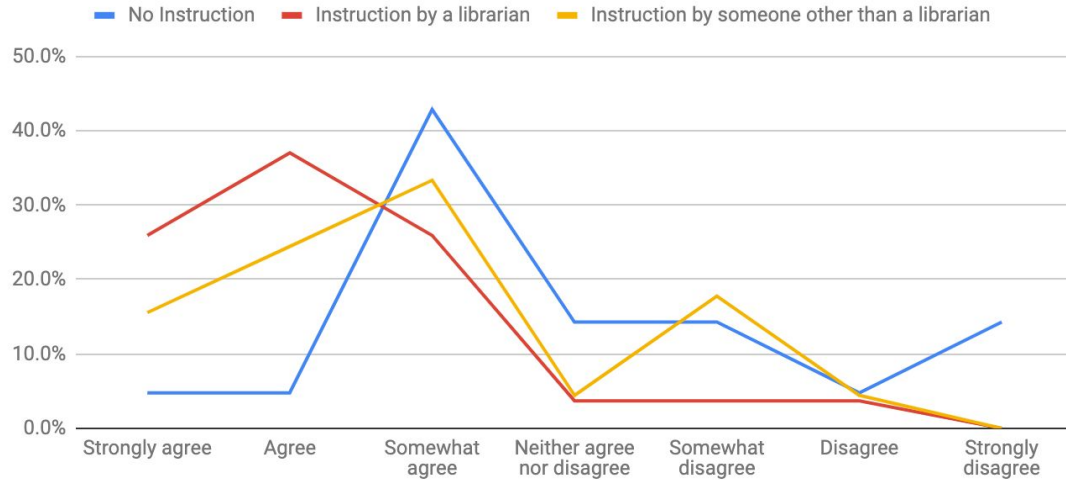
— No Instruction   — Instruction by a librarian   — Instruction by someone other than a librarian



| Raw data | Strongly agree | Agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Disagree | Strongly disagree | #responses |
|---|---|---|---|---|---|---|---|---|
| No instruction | 1 | 1 | 9 | 3 | 3 | 1 | 3 | 21 |
| Instruction by a librarian | 7 | 10 | 7 | 1 | 1 | 1 | 0 | 27 |
| Instruction by someone other than a librarian | 7 | 11 | 15 | 2 | 8 | 2 | 0 | 45 |

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**"I feel confident that I know how to find academic research articles for my classes"**

**Our takeaway**:
The same pattern emerged on a related task-oriented research question.

## I feel confident that I know how to find academic research articles for my classes



Legend: Appalachian students (blue) — Non Appalachian (red)
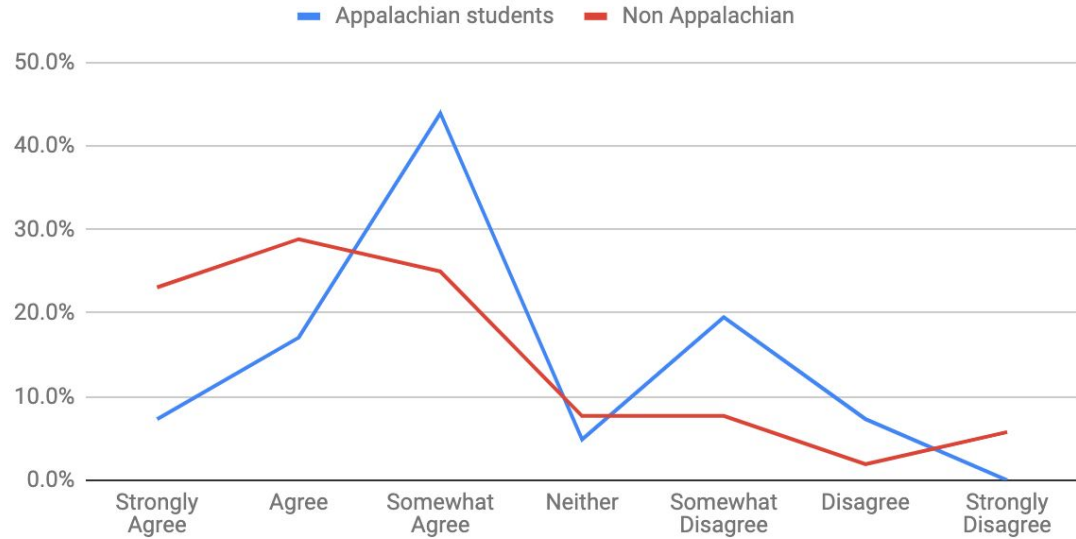
| Raw data | Strongly Agree | Somewhat Agree | Agree | Neither | Somewhat Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|---|
| Appalachian | 3 | 18 | 7 | 2 | 8 | 3 | 0 |
| Non Appalachian | 12 | 13 | 15 | 4 | 4 | 1 | 3 |

# Related Finding: **Library Anxiety**

Oddly, the same students who feel more prepared to do college-level research also found libraries and librarians more intimidating. How does library anxiety impact our students? Could this influence whether students come to us for assistance?
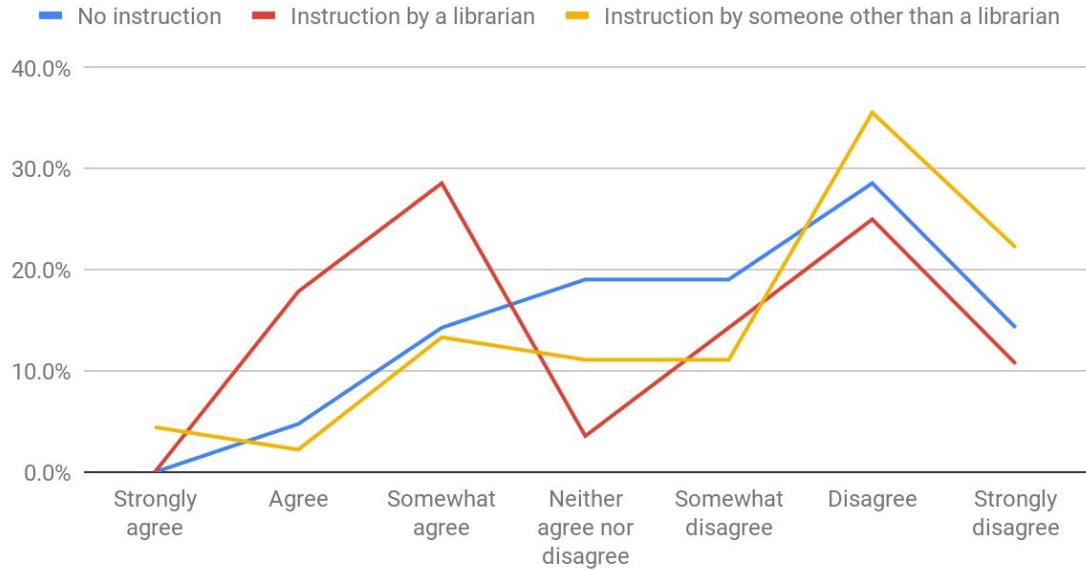
# "I find libraries intimidating"

## Our takeaway:

**Does more familiarity bring more intimidation?**

We can only speculate. However, it seems clear that instruction by a librarian impresses 46.5% of students with the sense that libraries are intimidating.
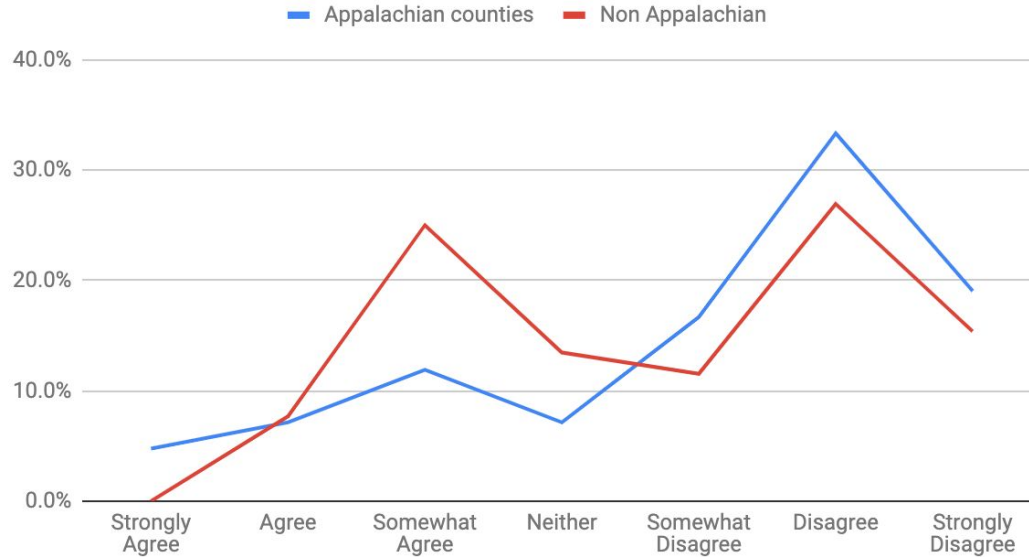


"I find libraries intimidating"

Legend: No instruction — Instruction by a librarian — Instruction by someone other than a librarian

| Raw data | Strongly agree | Agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|---|
| No | 0.0% | 4.8% | 14.3% | 19.0% | 19.0% | 28.6% | 14.3% |
| Yes, by a librarian | 0.0% | 17.9% | 28.6% | 3.6% | 14.3% | 25.0% | 10.7% |
| Yes, other than a librarian | 4.4% | 2.2% | 13.3% | 11.1% | 11.1% | 35.6% | 22.2% |

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## "I find libraries intimidating"

**Our takeaway**: Since non-Appalachian students are more likely to have received instruction from a librarian, perhaps they have experienced more frustrations and challenges in library research.
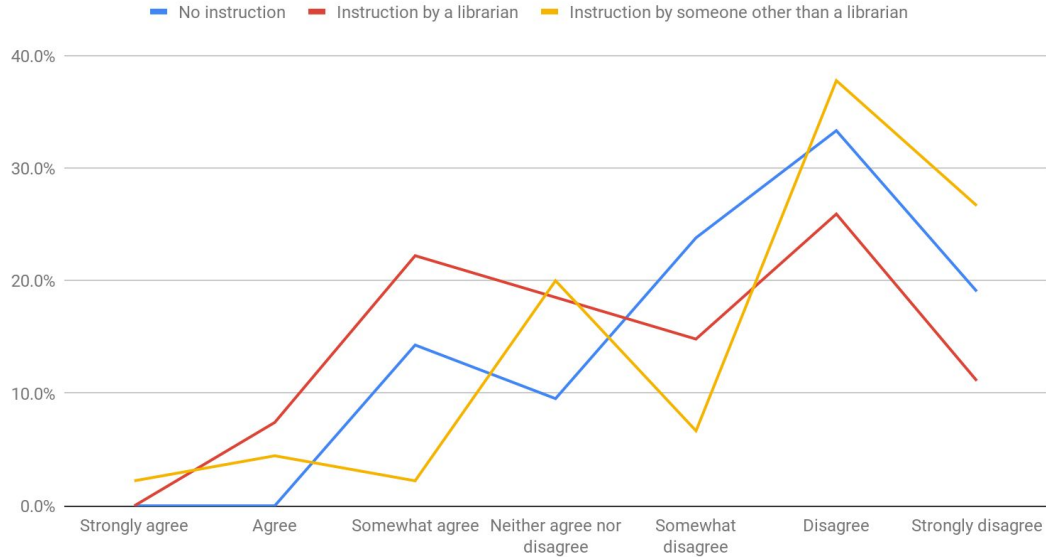


"I find libraries intimidating"

| Raw data | Strongly Agree | Agree | Somewhat Agree | Neither | Somewhat Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|---|
| Appalachian students | 2 | 3 | 5 | 3 | 7 | 14 | 8 |
| Non Appalachian | 0 | 4 | 13 | 7 | 6 | 14 | 8 |

# "I find librarians intimidating"

**Our takeaway**: While instruction from a librarian can make libraries themselves seem more intimidating, the same is not true for librarians. Only 29.6% of students who received instruction from a librarian found them intimidating.

## I find librarians intimidating

Legend: ■ No instruction  ■ Instruction by a librarian  ■ Instruction by someone other than a librarian



| Raw data | Strongly agree | Agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|---|
| No | 0.0% | 0.0% | 14.3% | 9.5% | 23.8% | 33.3% | 19.0% |
| Yes, by a librarian | 0.0% | 7.4% | 22.2% | 18.5% | 14.8% | 25.9% | 11.1% |
| Yes, by someone other than a librarian | 2.2% | 4.4% | 2.2% | 20.0% | 6.7% | 37.8% | 26.7% |

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# I find librarians intimidating

**Our takeaway:**
The sentiment is also true when looked at by geographic location.

## I find librarians intimidating
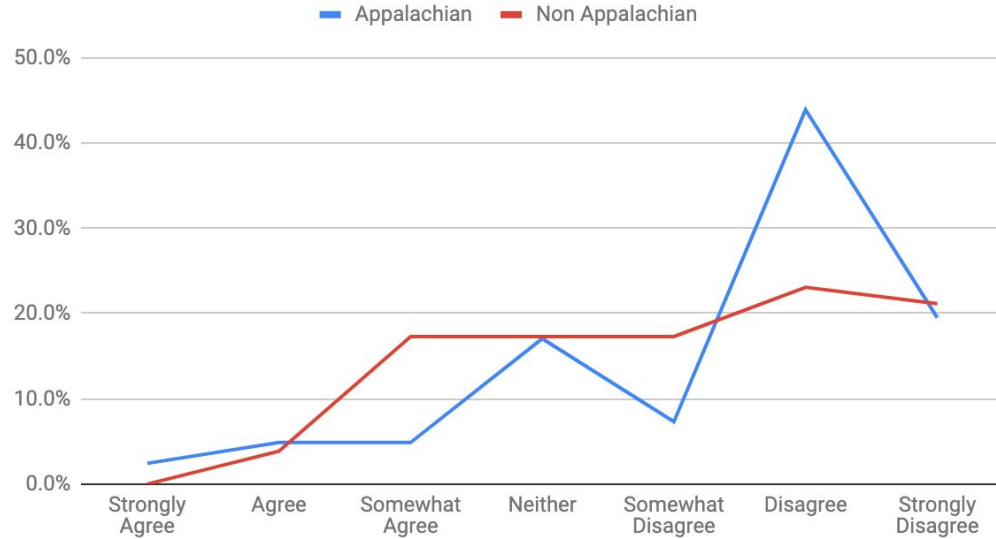
Appalachian — Non Appalachian



| Raw data | Strongly Agree | Agree | Somewhat Agree | Neither | Somewhat Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|---|
| Appalachian | 1 | 2 | 2 | 7 | 3 | 18 | 8 |
| Non Appalachian | 0 | 2 | 9 | 9 | 9 | 12 | 11 |

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**"If I had a research question the first person that would go to would be?"**

**Our takeaway**: Despite differences in percentages between the two groups, it is clear that for both of them librarians are **not** who students reach out to first for research help.

## If I had a research question the first person that would go to would be?
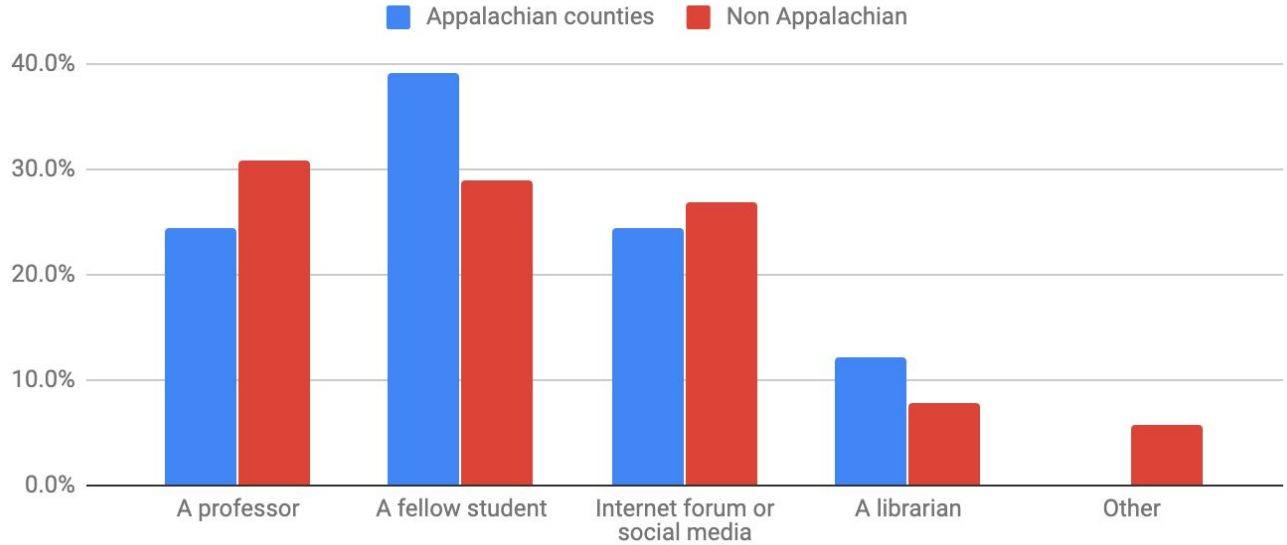


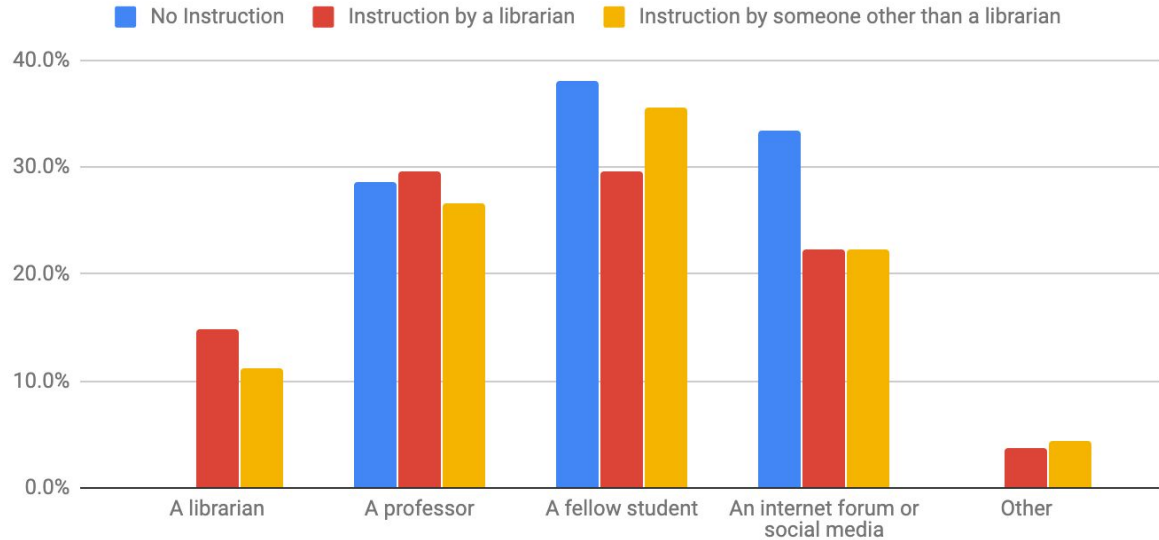| Raw data | A professor | A fellow student | Internet forum or social media | A librarian | Other |
|---|---|---|---|---|---|
| Appalachian students | 10 | 16 | 10 | 5 | 0 |
| Non Appalachian | 16 | 15 | 14 | 4 | 3 |

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**If I had a research question the first person that would go to would be?**

Our takeaway:

**Information literacy instruction from anyone in K-12 makes a difference!**

Students receiving no instruction in information literacy would not seek out a librarian at all and were more likely to go to a peer or a non-specialized internet source

## If I had a research question the first person that would go to would be?

■ No Instruction  ■ Instruction by a librarian  ■ Instruction by someone other than a librarian



| Raw data | A librarian | A professor | A fellow student | An internet forum or social media | Other |
|---|---|---|---|---|---|
| No | 0 | 6 | 8 | 7 | 0 |
| Yes, by a librarian | 4 | 8 | 8 | 6 | 1 |
| Yes, by someone other than a librarian | 5 | 12 | 16 | 10 | 2 |

# Finding Three

In general, students at Appalachian schools had less access to tablets or laptops and poorer internet speeds. This distinction in access to technology has has become increasingly important as students are expected to learn remotely because of COVID-19.

## Did your school lend laptops or tablets for you to take home?



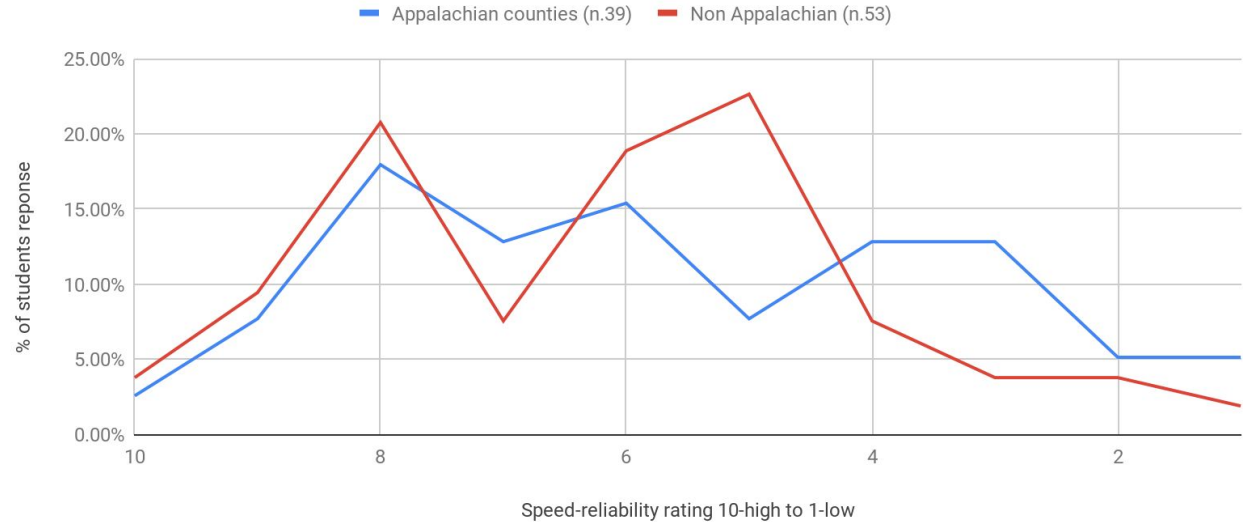"Did your school lend laptops or tablets for you to take home?"
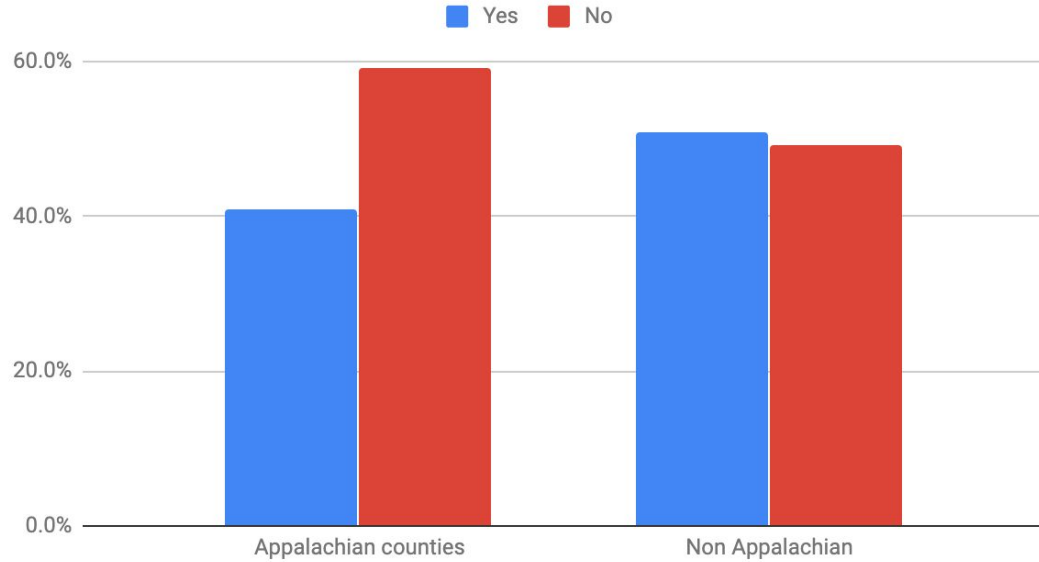
| Raw data | Yes | No |
|---|---|---|
| Appalachian students | 18 | 26 |
| Non Appalachian | 28 | 27 |

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**How would you rate your high school's internet access (speed, durability, etc)?**

Students rated this question on a scale from 1 (low) to 10 (high)

How would you rate your high school's internet access? (scale 1-10)

Appalachian counties (n.39) — Non Appalachian (n.53)

% of students reponse

Speed-reliability rating 10-high to 1-low

| Raw data | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Average |
|----------|----|----|----|----|----|----|----|----|----|----|---------|
| Appalachian students | 1 | 3 | 7 | 5 | 6 | 3 | 5 | 5 | 2 | 2 | 4 |
| Non Appalachian | 2 | 5 | 11 | 4 | 10 | 12 | 4 | 2 | 2 | 1 | 5.96 |

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# Discussion: Our thoughts

**Implications for library instruction:** For me, as an instruction librarian, I was surprised that students who received instruction from a librarian actually found libraries more intimidating. Knowing this, I will consider adding time into my instruction, especially with first-year students, to acknowledge the complexity of library research, but also incorporating clear steps about how to get started. However, I also take solace from our findings that librarians themselves are not intimidating and that our instruction does make a difference in students' confidence. — **observations from Abigail Morgan, social sciences librarian**

**Implications for web services:** Academia often designs web services and workflows for experienced researchers. However, the levels of non-instruction and library anxiety reported by the Appalachian students in our survey were both higher than I expected. First-year Instruction is certainly key, but not every section will receive librarian-driven instruction, especially in our era of COVID-19. This amplifies the demands on our web services to act as an on-ramp for first-year students conducting college-level research. As such, we should carefully examine the language and design of our web services that can helps students to learn through doing. — **observations from Jerry Yarnetsky, web services librarian**

# Discussion: **Your thoughts?**

1.  What does the library and library instruction look like in your local high school(s) and how that might prepare students for college?

2.  What are the information literacy challenges of rural students in high school and how can we use that knowledge to adapt college level information literacy instruction?

3.  How do you think our findings might compare to students at your institution?

# References

Jackson, V. (2016). *Number of Ohio's vital school professionals dwindling: Student health, career preparation, art exposure suffer* (ED573586). Policy Matters Ohio; ERIC. https://files.eric.ed.gov/fulltext/ED573586.pdf

National Center for Education Statistics. (2015-2016). *National Teacher and Principal Survey (NTPS): Number of schools with a library media center and number of full–time and part–time school technology specialists and librarians/library media specialists, by selected school characteristics: 2015–16* [Data set]. U.S. Department of Education. https://nces.ed.gov/surveys/ntps/tables/ntps1516_20180119002_s1n.asp

National Center for Education Statistics. (2017-2018). *National Teacher and Principal Survey (NTPS): Percentage of public schools with a library media center, percentage with students attending across 12 months, percentage that offered any courses entirely online, and percentage that offered a foreign language immersion program, by state: 2017–18* [Data set]. U.S. Department of Education. https://nces.ed.gov/surveys/ntps/tables/ntps1718_table_03_s1s.asp

Napp, C. (2020). *DeRolph v. State school funding case* (Members Briefs Volume 133, Issue 10). Ohio Legislative Service Commission. https://www.lsc.ohio.gov/documents/reference/current/membersonlybriefs/133%20DeRolph%20v%20State%20School%20Funding.pdf

# Further Readings

## Ohio's Public School Funding:

1. **Important Ohio education-related court cases** (via Education Law Center)
2. **DeRolph v. State, 97 Ohio St.3d 434, 2002-Ohio-6750** (Ohio Supreme Court decision text)
3. Phillis, W. (2005). Ohio's School Funding Litigation Saga: More Money and Some New Buildings but the Same Unconstitutional School Funding Structure. *Journal of Education Finance, 30*(3), 313-320. **http://www.jstor.org/stable/40704238**

## Rural Students

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## School Libraries and College Readiness

1. Lance, K.C. & Kachel, D.E. (2018). Why school librarians matter: What years of research tell us. *Phi Delta Kappan, 99* (7), 15-20. **http://kappanonline.org/lance-kachel-school-librarians-matter-years-research/**
2. D'Orio, W. (2019, September 6). *School librarians poised to support student success, information literacy survey shows*. School Library Journal. **https://www.slj.com/?detailStory=School-librarians-poised-to-support-student-success,-information-literacy-survey-shows**
3. D'Orio, W. (2019, September 4). *Lacking research skills, students struggle. School librarians can help solve the college readiness gap*. School Library Journal. **https://www.slj.com/?detailStory=lacking-research-skills-students-struggle-school-librarians-solve-college-readiness-gap-information-literacy**

# Thank you! Contact us:

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