

3-2023

## Student Information Use During the COVID-19 Pandemic

Heather A. Howard  
*Purdue University*, howar198@purdue.edu

Annette Bochenek  
*Purdue University*

Zoeanna A. Mayhook  
*Purdue University*

Trena Trowbridge  
trena.trowbridge@gmail.com

Steven Lux  
stevelux@gmail.com

Follow this and additional works at: [https://docs.lib.purdue.edu/lib\\_fsdocs](https://docs.lib.purdue.edu/lib_fsdocs)



Part of the [Information Literacy Commons](#)

---

### Recommended Citation

Howard, Heather A.; Bochenek, Annette; Mayhook, Zoeanna A.; Trowbridge, Trena; and Lux, Steven, "Student Information Use During the COVID-19 Pandemic" (2023). *Libraries Faculty and Staff Scholarship and Research*. Paper 269.  
<http://dx.doi.org/https://doi.org/10.1016/j.acalib.2023.102696>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries.  
Please contact [epubs@purdue.edu](mailto:epubs@purdue.edu) for additional information.

**Abstract**

Since early 2020, life for students has changed tremendously. It has been a time of stress, turmoil, and trauma for students. Researchers from a large Midwestern university wanted to determine how student information use has changed during the COVID-19 pandemic. This paper examines the results of a mixed-methods study undertaken in 2021 using surveys and follow-up focus groups to determine if and how student information use has changed. To answer this, we explored student use of news sources, social media sources, political affiliations, and information responses, coupled with to what extent these factors demonstrate or impact potential changes in information use. We also addressed changes in the frequency of use, as well as the types of resources consulted, pertaining to information use of traditional and social media sources.

*Keywords:* information literacy, pandemic, social media, news

### **Student Pandemic Information Use**

In 2020, the world was affected by the challenges and consequences of the COVID-19 pandemic. The university setting was no exception, affecting students' ability to gather for class, collaborate in person, and access information within the classroom or library on a global scale. As more information about the COVID-19 pandemic was discovered and limitations continued to be enforced, students experienced stress and isolation while also adjusting to the online learning environment. Moreover, students experienced shifts and changes in their information-seeking behavior in response to the COVID-19 pandemic.

Due to the changes in the learning environment and variations in how individuals could access information, the researchers of this study aimed to explore changes in information use and information-seeking behavior among students. This study primarily examines how student information use changed during the COVID-19 pandemic, based on data gathered from a large Midwestern University. As a result, the primary research question is as follows: How has student information use changed during the COVID-19 pandemic?

To answer this research question, this study explored news information sources, social media sources, information evaluation strategies, and general information responses, as well as the extent to which these factors demonstrate or impact potential changes in information use. Data was also gathered to address changes in the frequency of information use and the types of resources consulted pertaining to information use of traditional and social media sources.

In this study, the researchers employed a mixed-methods study and executed it in 2021. The study used an online survey, supplemented by five iterations of virtual focus groups comprised of volunteer students who completed the survey. The virtual focus groups were held via Zoom and facilitated by the researchers, with one researcher taking notes and another reading instructions from a script and posing the scripted questions to the focus group participants. The focus groups were recorded and transcribed for reference and analysis by the researchers. Through the evidence provided by the resulting data, this study demonstrates how student information use has changed during the COVID-19 pandemic.

### **Literature Review**

Student information-seeking behavior has long been observed by scholars and has since been impacted by the COVID-19 pandemic. In particular, data about student information-seeking behavior in academic and research libraries have been captured through numerous methodologies, including questionnaires; ethnographic studies; mixed-methods studies; surveys; individual interviews; and focus group interviews ("Use and Assessment," n.d.; Bauer, 2018; Chen et al., 2022; Esmailzadeh et al., 2018; Head et al., 2019; Head & Eisenberg, 2009; Head & Eisenberg, 2010; Lachlan et al., 2021; Shi et al., 2021; Superio et al., 2021; Tella et al., 2020).

Prior to the COVID-19 pandemic, students from a broad range of academic fields, backgrounds, and geographic locations sought information in different ways, exhibiting varying degrees of difficulty and library support. While most students believe they are able to find and

## STUDENT PANDEMIC INFORMATION USE

evaluate information online, they still struggle with initiating research and identifying a proper scope (Head et al., 2019).

Moreover, students have also consulted a range of different information sources. Students use a mix of library sources and Google while conducting research and select particular sources based on credibility (Bauer, 2018). In other cases, students demonstrate interest in online sources as well as a preference to use the internet as an information-seeking tool (Tella et al., 2020; Thindwa et al., 2019). However, due to a lack of online information literacy skills and the barrage of information available, students can “get overwhelmed and confused” (Thindwa et al., 2019, p. 8).

### *Information-Seeking Behavior of Students*

There are a variety of reasons and contexts that drive students to meet their information needs, though, knowledge of library resources may vary. Students depend upon class lectures and library services for academic work (Howlander & Islam, 2019). As a result, it is worth examining their engagement with information sources within the academic setting and beyond, particularly in the case of exploring how their information-seeking habits may have changed during the pandemic and its impact on the class and library environment. College student engagement with the news has been explored in the past, particularly examining how college students engage with news when credibility and “fake news” cause them to question the validity of sources (Head et al., 2019, para. 1). In addition to receiving news from multiple pathways, the classroom also acts as an “influential incubator for news habits” (Head et al., 2019, para. 1). Information continues to be available and accessible to students from a variety of sources and pathways, with the pandemic also inspiring numerous searches from individuals looking to learn more about COVID-19.

Once the COVID-19 pandemic began to concern individuals on a global scale, information-seeking behaviors were influenced heavily. Individuals worked to learn more about COVID-19, as evidenced by the many COVID-19-related questions from the World Health Organization and Center for Disease Control as well as the first 100 days of U.S. news coverage about COVID-19 (Abir et al., 2020; “Coronavirus Search Trends,” n.d.; “COVID-19,” 2021). A wide variety of sources were consulted by individuals, including the use of information sources such as the radio, social media, and interactions with others, in addition to source preferences influencing risk perceptions (Lachlan et al., 2021). Likewise, students utilized various library electronic sources and services. “In general, the pandemic has ushered in a revolution in online library instruction and the virtual delivery of library services” (Nelson & Tugwell, 2022, p. 3). Per the results of a study by Nelson and Tugwell, undergraduates used lecture notes to complete assignments and developed an information-seeking pattern that did not change, while postgraduate students used various library information channels, primarily relying upon electronic journals.

### *Information Literacy Among Student Populations*

The need for health information literacy during the COVID-19 pandemic has become a fruitful ground for additional studies and the role libraries can play in the information-seeking

## STUDENT PANDEMIC INFORMATION USE

process, often in conjunction with studies regarding information avoidance (Chen et al., 2022). Throughout the pandemic, “data quality has gained traction globally,” with political leaders arguably “embracing the importance of data driven decision making for formulating strategies and reopening their countries” (Lloyd et al., 2020, p. 1). One such study focuses on the Digital Health Literacy Instrument, which “measures operational skills, navigation skills, information searching, evaluating reliability, determining relevance, adding self-generated content, and protecting privacy” (van der Vaart & Drossaert, 2017, p. 1).

However, some concerns developed in response to the “quality of the data underlying some metrics that are being used to compare and monitor our progress in fighting against the disease” (Lloyd et al., 2020, p. 2). Before the COVID-19 pandemic, a study in Isfahan, Iran, examined adolescent health information-seeking behavior related to high-risk behaviors and determined that adolescents possessed “a positive attitude towards health information” despite barriers to seeking health information (Esmailzadeh et al., 2018). In other instances, challenges were reported in assessing the reliability of information (Vrdelja et al., 2021). Students with a sufficient level of digital health literacy were more likely to pursue information through official institution websites and search engines, while those with limited digital health literacy used social media to find information (Vrdelja et al., 2021). As COVID-19 cases began to be reported in Italy, information sources were viewed as “fundamental, since they strongly influence public opinion” (Falcone & Sapienza, 2020, p. 1). Despite a history of distrust in the government, this study found that “people strongly modified their [information-seeking behavior] in order to assess the most reliable sources,” namely relying upon scientists (Falcone & Sapienza, 2020, p. 1).

As is the case with information-seeking behavior, health information literacy also presents difficulties. In a study that implemented the Digital Health Literacy Instrument, findings showed that “the level of digital health literacy in relation to dealing with web-based COVID-19-related information was high, however, a significant portion of University students still face difficulties with certain abilities to deal with information, such as finding the right information and evaluating its reliability” (Dadaczynski et al., 2021, p. 14). A further study expressed a discrepancy between how students evaluate information sources, with 81% of students paying attention to a source’s date of publication and 85% of students not considering the credibility of a source’s author, recommending further development of online health information-seeking skills for undergraduates as well as health literacy (Hsu, 2021; Schäfer et al., 2021). Another study regarding the library uses and needs of Chinese college students during the COVID-19 pandemic showed that students did not possess a thorough understanding of library online resources (Shi et al., 2021). As a result, academic libraries “should consider making more outreach efforts and offering programs and events to ameliorate isolation and improve students’ sense of community” (Shi et al., 2021, p. 150).

### *Information Sources*

During the COVID-19 pandemic, health information has been used to “inform the public, manage risk, understand capacity, prepare the health system and to plan public health strategy” (Lloyd et al., 2020, p. 1). Social media has exhibited an influence on how individuals engage

## STUDENT PANDEMIC INFORMATION USE

with news and online communications, as evidenced in past pandemics with a prominent information presence on social media platforms (Lloyd et al., 2020). In addition to social media, college students have also used television as an information source. In particular, “[t]elevision was the primary, most believable, and preferred source when seeking information. The Internet as a preferred source of information was significantly found to make college students very cautious” (Superio et al., 2021, p. 1).

Additionally, studies conducted before and during the COVID-19 pandemic demonstrated differences in information sources utilized among students. One health information-seeking behavior study determined the differences in health information-seeking behavior among participants between March 2019 and April 2020, before and during the COVID-19 pandemic, noting “a statistically significant difference in the increase number of sources and the ranked quality of the sources that people used during the pandemic” (Zimmerman, 2021, p. 1248). In addition to showing a strong reliance upon social media, the study revealed that “[p]articipants were much more likely to use credible news sources, especially if they were older, more educated and had higher literacy levels—both health and information” (Zimmerman, 2021, p. 1248). Moreover, “[t]he participant group in the pandemic had a much heavier reliance on sources that are often used in a passive encountering way but engaging with them in an active information-seeking manner” (Zimmerman, 2021, p. 1248). The study depicted an overall increase in the number and quality of sources consulted during the COVID-19 pandemic (Zimmerman, 2021).

## Methods

This paper aims to identify how student information use has changed during the COVID-19 pandemic in terms of frequency, types of resources consulted, forms of social media engagement (e.g., sharing, retweeting, etc.), and information evaluations. The research approach utilized a mixed methods study design, incorporating both an online student survey and focus groups.

### *Developing an Instrument*

While prior studies about information-seeking behavior and information sources have been conducted, the impact of the pandemic on university students across a wide range of academic majors in the United States has yet to be explored. Capturing the perspectives of these students and international students studying at a university in the Midwest, the investigators of this study aimed to develop an instrument that would capture the information needs and information-seeking behaviors of university students.

In an effort to successfully execute virtual focus group sessions, the investigators of this study examined best practice recommendations for utilizing videoconferencing programs to obtain qualitative data during the COVID-19 pandemic, particularly focusing on the features used in Zoom (Johnson & Odhner, n.d.; Liamputtong, 2011; Santosh et al., 2021). Additional literature was reviewed to determine the amount and duration of student focus groups (Guest et al., 2016). In order to develop questions for the survey and focus groups, the investigators also consulted literature about questionnaires and scales pertaining to the measurement and study of

## STUDENT PANDEMIC INFORMATION USE

information-seeking behavior (Dadaczynski et al., 2021; Head, 2019; Soroya et al., 2021; Tella, 2009; Timmers & Glas, 2010).

### *Online Student Survey*

The online survey was administered during the spring semester of 2021 (April-May 2021) to students on the main campus of a large Midwestern University. The survey was advertised using table tents and flyers stationed throughout the university libraries' study spaces, as well as promoted via email and via the Libraries' social media channels. Survey respondents were 18 years or older, voluntarily self-selected, and incentivized by being entered into a drawing for a \$25 Visa gift cards. At the time of the survey, there were 46,655 full-time students at the University's main campus, 35,706 of whom were undergraduate students.

The instrument consisted of 37 questions and took an average of approximately 15 minutes to complete. Survey respondents could also volunteer to participate in the focus groups that were completed during the Summer of 2021.

### *Online Survey Population*

A total of 330 students started the survey, with 166 respondents completing more than 98% of the survey questions. Respondents consisted of both undergraduate and graduate students across numerous fields of study. The majority of respondents were first-year college students (33%), followed by third-year students (22%), second-year students (17%), fourth-year students (12%), Masters students (10%), and Ph.D. students (4%).

More than half of the respondents identified as female (54 percent), with 45 percent identifying as male and one percent identifying as non-binary/third gender. The majority of respondents described their political affiliation as liberal or very liberal (38%), 28 percent identified as moderate, 22% identified as conservative or very conservative, and 12 percent preferred not to disclose or identified with another political affiliation (see Table 1).

**Table 1**

*Demographics of survey respondents*

<b>Current Student Status</b>	<b>N</b>	<b>% of Sample</b>
College first-year student	54	32.53%
College sophomore or second-year student	28	16.87%
College junior or third-year student	36	21.69%
College senior or fourth year student	20	12.05%

## STUDENT PANDEMIC INFORMATION USE

College fifth-year student or beyond	3	1.81%
Masters student	16	9.64%
PhD Student	6	3.61%
Other (e.g. Exchange Student)	3	1.81%
<b>Total</b>	<b>166</b>	<b>100.00%</b>
<b>Gender</b>		
Male	74	44.58%
Female	90	54.22%
Non-binary/third gender	2	1.20%
Prefer not to say	0	0.00%
<b>Total</b>	<b>166</b>	<b>100.00%</b>
<b>Age</b>		
18-20 years old	94	56.63%
21-22 years old	40	24.10%
23-25 years old	17	10.24%
26 years old or older	15	9.04%
Prefer not to state		0.00%
<b>Total</b>	<b>166</b>	
<b>Field of Study</b>		
Humanities	13	7.83%
Psychology	6	3.61%
Social sciences and History	14	8.43%
Natural sciences and mathematics	16	9.64%
Computer science	2	1.20%
Engineering	51	30.72%
Education	2	1.20%
Business	29	17.47%
Health professions and related programs	22	13.25%
Other:		
<i>Agriculture</i>	2	1.20%
<i>Animal Sciences/Wildlife</i>	4	2.41%



## STUDENT PANDEMIC INFORMATION USE

<i>Aviation</i>	1	0.60%
<i>Communication</i>	1	0.60%
<i>Exploratory</i>	1	0.60%
<i>Polytechnic</i>	2	1.20%
<b>Total</b>	<b>166</b>	<b>100.00%</b>
<b>Political affiliation</b>		
Very Conservative	5	3.01%
Conservative	31	18.67%
Moderate	47	28.31%
Liberal	39	23.49%
Very liberal	24	14.46%
Prefer not to state	15	9.04%
Other	5	3.01%
<b>Total</b>	<b>166</b>	<b>100.00%</b>

***Focus Groups***

Ten students participated in focus groups across five sessions. Most of the participants were freshman (40%), followed by juniors (30%), and the remaining students were either a senior (10%), sophomore (10%) or master's student (10%). Students were not asked their gender identity or their political affiliation. (See table 2). Several students who signed up did not attend, making some of the groups smaller than planned, with two students in the first group, one in the second, three in the third, three in the fourth, and one in the fifth. The small focus group method was chosen to help deepen our understanding of information obtained in the initial survey. Focus group participants received a \$10 Amazon gift card as compensation for their participation.

The focus groups were organized and conducted by the investigators. The format for the focus groups was semi-structured, with nine primary questions and suggested follow-up questions (see Appendix B for the focus group questions). The investigators then transcribed the interviews from audio recordings and a preliminary codebook was prepared using thematic analysis until saturation was reached and no new codes emerged (see Appendix C). The transcripts were then reviewed separately by two of the investigators and then compared to provide inter-rater reliability.

**Table 2***Demographics of focus group participants*

<b>Current Student Status</b>	<b>N</b>	<b>% of Sample</b>
College first-year student	4	40.00%

## STUDENT PANDEMIC INFORMATION USE

College sophomore or second-year student	1	10.0%
College junior or third-year student	3	30.00%
College senior or fourth year student	1	10.00%
College fifth-year student or beyond	0	0.00%
Masters' student	1	10.00%
<b>Total</b>	<b>10</b>	<b>100.00%</b>
<b>Field of Study</b>		
Humanities	0	0.00%
Psychology	0	0.00%
Social sciences and History	0	0.00%
Natural sciences and mathematics	1	10.00%
Computer science	1	10.00%
Engineering	2	20.00%
Education	0	0.00%
Business	3	30.00%
Health professions and related programs	3	30.00%
<b>Total</b>	<b>10</b>	<b>100.00%</b>

## Results

### *Information-Seeking Behavior*

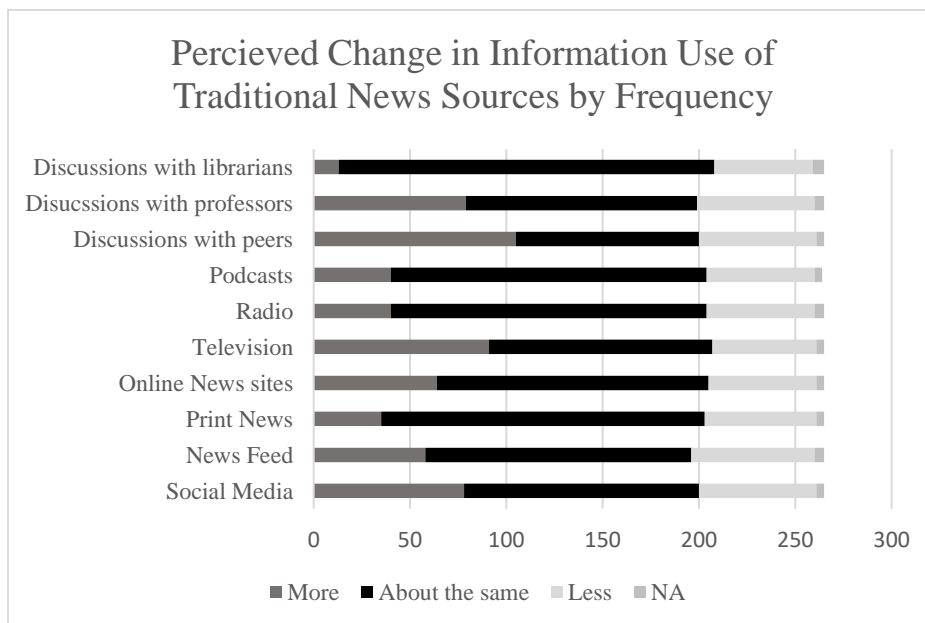
In the survey, students were asked to estimate how often they had accessed different types of information sources during the past week in the Spring of 2021, which included news sources such as social media, news feeds, print resources, television, peer discussions, and more. To establish whether information use of news sources had been altered due to the COVID-19 pandemic, participants were asked to reflect on whether their frequency of information use had changed since before March of 2020. While the “new normal” may affect recall of possible differences, some students did report both increases and decreases in their frequency of use. Notably, 40% of participants perceived that their information gathering through peer discussion had increased since before the COVID-19 pandemic, and 35% of participants noted an increase in television consumption. However, most participants did not feel that their information use had changed at all in terms of information sources consulted (see Figure 1). To simplify survey results, percentages from were often adjusted by combining “Much more” and “Somewhat

## STUDENT PANDEMIC INFORMATION USE

more,” into a “more” category, as well as combining “Much less” and “Somewhat less,” in a “less” category from the Likert scale responses.

*Perceived Change in Information Use of Traditional Sources by Frequency*

*Figure 1*



Respondents were also asked to provide qualitative feedback regarding their news frequency during the COVID-19 pandemic within the survey. While multiple respondents confirmed that they did not experience a real change in news consumption following the pandemic, others discussed shifts in information behavior due to changes in their environment, interpersonal factors, and increased free time: “Before COVID-19, I would hear my peers/teachers discussing news events. This would prompt me to research the information on my own. Without being in the classroom as much, more of the information/event I hear about comes straight from the internet/social media.” Another student said, “I think my increase in news consumptions from being quarantined, or at least unable to go to campus for in-person classes and do much outside of the house. I have much more screen time than I did before the pandemic.” Another student commented that their increased level of “free time” also resulted in increased frequency of news consumption: “Due to the COVID-19 pandemic, I’ve been consuming a lot more news media as a whole due to the increase in free time I’ve had and due to the more frequency development in breaking news.”

*Process*

Students were asked about the news sources they consulted within the focus groups. Several students talked about using Google to find information on different news topics. Some also mentioned the news function on their smartphones, which displays headlines on major news topics and links to articles from different sources, with Android devices displaying news directly from Google. For example, Student B said, “So I have an Android phone. And one of the, I

## STUDENT PANDEMIC INFORMATION USE

guess, features of that phone is like if I swipe left off with the home screen, it'll just start showing me a bunch of news articles curated by Google.” Students would use both of these methods to get to articles primarily in major news outlets. Student H describes their process here: “I definitely spend some time looking at that Google News just to understand what the topic that we were discussing, was it really happening. And then also visiting some of the websites of the news channels to understand what the reporting the same topic or not, the observations that they've had. So if you're looking at the websites of the news channels, Google, everything and trying to find out information.”

Conversely, Student A had previously used this process, but now primarily consumes their information passively through social media, “I used to check Google news before the pandemic, quite a bit like every day when I was at school, just open up Google News and just see whatever is on the homepage. Just kind of quickly over it, so I could be well-aware, but I started to not use that so much. I think it was because of the fact that I had social media right there so I was like, what's the point of me looking at Google News when I can just get the information directly from social media.”

### *Traditional News*

Many students in the focus groups had well-defined lists of traditional news sources they preferred to consult when seeking information. Sources mentioned included ABC, AP, BBC, BBC World News, Bloomberg, CNBC, CNN, Daily Wire, Fox, NBC, New York Times, Reuters, Wall Street Journal, and Yahoo News, with CNN being mentioned the most times by a total of four students. One student mentioned watching traditional news when it happened to be on the TV while they were in the room.

Five students also mentioned seeking out international news sources, some because they were international students and others in order to gain a more global perspective on news being reported in the US. Student J noted, “I always thought the BBC was more objective when it came to the United States stuff and they also kind of have a more interesting take on international news.”

### *Social Media*

All focus group participants indicated they use social media for information gathering. Platforms mentioned included Instagram, Facebook, Twitter, Snapchat, Discord, TikTok, YouTube, and Reddit. We found it interesting that the students identified the gaming platform Discord as a social media source, but Student A explains, “And I would also, you know, our friends. We set up a discord server, pre-pandemic which was just for like talking for fun. And then it kind of slowly turned into a like we would send links to different articles and such and look at that.” Many students reported an increase in the time they spent on these platforms due to the pandemic. Student D noted, “In regards to news consumption, before the pandemic, it used to be like I would usually just check the news on my phone at this often. But ever since the pandemic happened, I realized that I've been consuming much more news from all different

## STUDENT PANDEMIC INFORMATION USE

platforms like social media and also YouTube and also through different emails and newsletters and things like that.”

Some students also reported an increased usage early in the pandemic but a more recent decrease. Student C stated, “I think I was using my phone way more I think it was the most I had increased within a week in terms of using my phone was like 25 percent and I was using social media for like ten hours a day in the most extreme case, but I think now it's probably down to like two or 1.5.” Some students specifically described a recent decrease due to information exhaustion. For example, Student I said, “I think social media is one of the biggest sources for me. However, I, over the course of the pandemic, just got significantly less invested in news and what was going on in the world. I think a large part of it for me was because it just seems like more of the same. I mean, if you turned on the news, whether it was March, April, the next March, the next April. It was the pandemic. What's the death count? How are we doing with vaccines? No matter what, it was the same thing every day I felt like. So I would still occasionally see something online and get inspired to research and do it a little deeply. I definitely became less engaged with news as time went on.” Student F agreed, saying, “My news consumption was decently high before the pandemic because I'd just be on my social media a lot. But during the pandemic and like now, I try to stay off social media because it's like usually negative news.”

Many students seemed not to understand how social media feeds were curated on different platforms and projected bias onto specific platforms rather than critically evaluating the information they were seeing based on who and what they were following. For example, when asked about social media, Student G said, “I sort of found Facebook to share a lot more about my false information sources or what I perceived to be false information sources. And Twitter sort of felt more reliable to me. I'm not really sure why that is. Maybe just because of what has been like previously shared around [...] So I feel like Facebook gets shared a lot of opinions turn more into the political side. Whereas I was finding Twitter news sources to be more just like I don't know, current events, like what's happening more just like the straight information as opposed to like opinion sources.”

### ***Interpersonal***

Almost all focus group students reported using interpersonal sources for information gathering. For example, Student A notes, “I would talk to a lot of my friends about things that are going on in the news. Because the news is so vast that I only get like a little bit of it while, my friends get only a little bit of it. We might not be getting the same information. So us sharing it will allow us to understand about like parts of information. So they might be gaining an insight that I never got. So that's kind of, that was the cool part of like, you know, talking to other people's gaining the different insights into different information.” One student discussed using information from interpersonal connections to reach out to other people they knew, “I did, yeah, especially because I have friends that are more informed than me. I usually lean on them for information and then I like to share that with my platform because then I can reach out to people

## STUDENT PANDEMIC INFORMATION USE

from back home.” Student F also talked about using interpersonal information gathering to improve their decision making, “I would say that it helped with my decision making, because talking with them, we disagree I get to see both sides of the issue that make a more educated choice for myself.” Students also talked about giving different levels of credibility to different people based on the topic they were discussing, and others talked about receiving misinformation from people outside of their university circles, which made them more cautious.

One student discussed how they dug further into information received from interpersonal sources and gained a deeper understanding of the topic through this process, “I think there have been cases like having discussions with friends. They've been telling me something. When I went ahead and looked for that information online, there were things that I was surprised to look at and that really changed my perception about those topics that people are discussing. So there were times where I felt that whatever was being portrayed to me was correct but looking online, I had a perception about a topic but it had changed when I did more research about the topic.”

Three students also discussed passive information gathering from interpersonal connections, with student J noting, “I was never really seeking out that information and kind of just dripped down to me from what other people are saying.”

Several students mentioned consuming more news and spending more time on social media during periods of quarantine because of the extra time available, with one stating, “I think I consumed a lot more news than I would normally consume just because there isn't much to do.” One student conversely reported they became less engaged with the news because they were unable to have conversations with their peers and felt they did not have an outlet to discuss what was occurring.

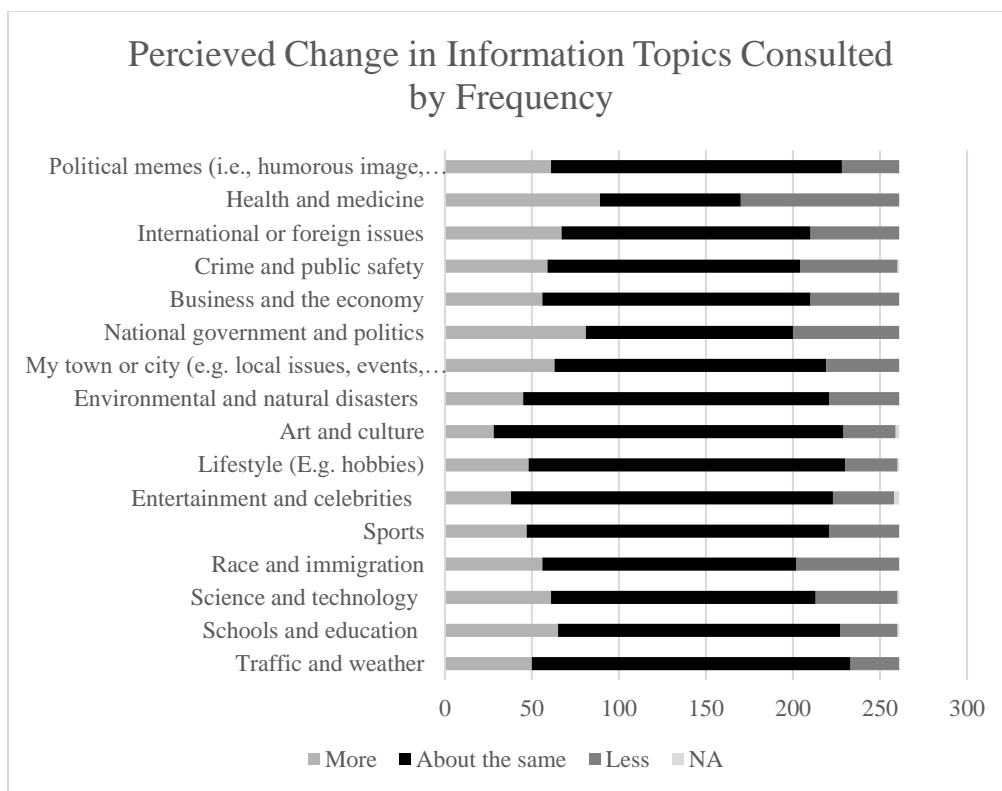
### **Information Use – Frequency by Topic**

In addition to the types of information sources consulted, survey participants were asked to reflect upon their frequency of information consumption by topic. Most notably, many students perceived changes in their consumption of “health and medicine” related news, with 34% of participants perceiving an increase in frequency, 35% of participants perceiving a decrease, and 31% of participants estimating their frequency was about the same. This was consistent when compared to Head, DeFrain, et al. (2019), where weekly consumption of “health and medicine” increased by 20.4% between 2019 and 2021.

### **Figure 2**

*Perceived Change in Information Topics Consulted by Frequency*

## STUDENT PANDEMIC INFORMATION USE



Due to the prevalence of news coverage on the COVID-19 pandemic, some respondents confirmed that their information frequency increased on topics related to health and medicine through qualitative responses. One respondent said, “COVID-19 has only affected my news consumption in that there is more health-related news in my feed due to the pandemic.” For some, health-related news became their most frequently sought category: “My consumption of health-related news used to be next to nothing, but now it’s one of the most consumed news categories.” Another noted that “COVID-19 has shifted what kind of news I listen to. I spend more time on health and things related to COVID and less time on everything else.”

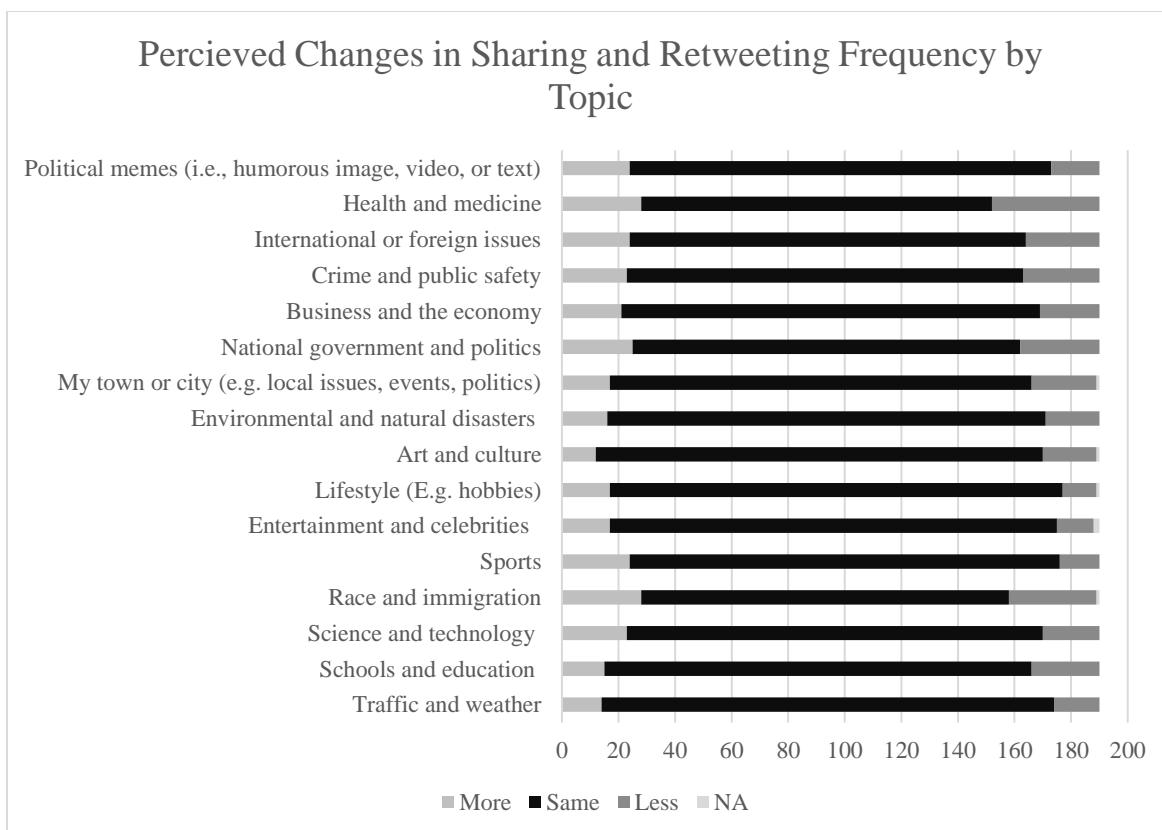
### Information Use – Sharing and Retweeting

When asked about perceived changes in sharing and retweeting by frequency, most respondents reported that they had shared information at a similar rate both before and after the pandemic. However, 15% of respondents did acknowledge that they increased sharing of both “health and medicine” and “race and immigration” In contrast, others found themselves sharing less on the topics of “health and medicine” and “race and immigration,” with a 20% and 16% of individuals reporting a decrease, respectively.

### Figure 3

*Perceived Changes in Sharing and Retweeting Frequency by Topic*

## STUDENT PANDEMIC INFORMATION USE



When asked about attitudes towards sharing or retweeting before and after the pandemic, most students did not waver in their opinions. However, prior to the pandemic, 35% of respondents believed sharing news was important for letting friends/followers know about something they should know. This value increased to 48% percent following the pandemic.

### Information Evaluation

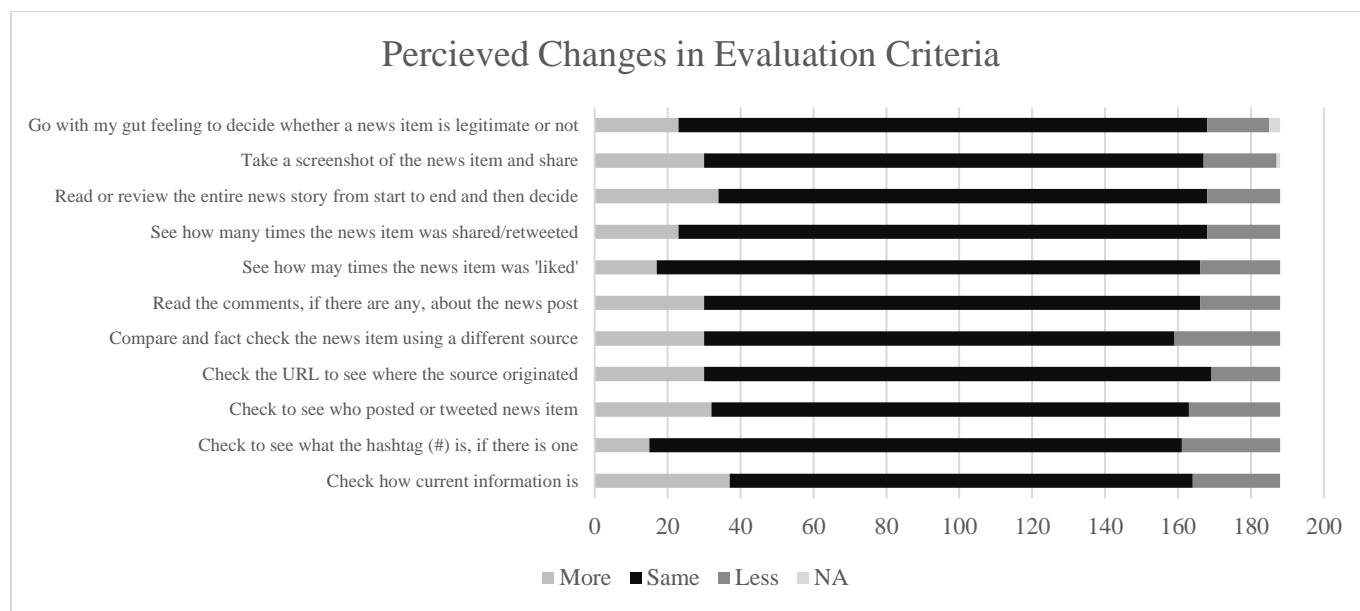
Students were also asked to reflect upon their information evaluation strategies following the pandemic. While there was a trend in students who believed their evaluation criteria had not changed, 20% of students became more concerned with the currency of information. 18% of students also reported an increased tendency towards reading or reviewing an entire story from start to end before making a decision about the information. Some students also reported that they utilized certain evaluation criteria less. Notably, 15% of respondents felt that they compared and fact-checked information less using different sources following the pandemic.

### Figure 4

*Perceived Changes in Evaluation Criteria*



## STUDENT PANDEMIC INFORMATION USE



From the qualitative survey responses, students cited issues of bias when digesting news sources: “The majority of everything is severely biased and “attack”-like,” and “News feels more conflicting.” Some respondents were drawn to seeking more authoritative or trustworthy sources: “I do read articles from Facebook, but rarely do I take those at face value. Especially information regarding politics and COVID-19, I often will do my own research and fact-checking to see if articles are providing accurate information or not,” and “The COVID-19 pandemic and quarantine of social isolation encouraged me in a way to receive my news more from online trustworthy sources and to take advantage of trustworthy websites.”

All focus group students recognized that there is some inherent bias in the media they consume, and many discussed seeking additional sources as a form of information evaluation. Student E talked about losing trust in specific outlets if they neglected to include important details, “like established brands have some more weight behind their names, but also like when I’m researching compare articles like if certain sites left out, like big details about an event that kind of makes me question how credible they are and question if they’re just trying to advance a narrative instead of report news.” Student E stated, “I think that they can all kind of have a slant to them one way or the other. So that’s why I like to do some research if I’m interested in a topic and kind of see if I can find different viewpoints.” Student B outlined their concerns and how they mitigated them, “I think when I would see some news, sometimes I’d see it from my conservative biased news sources first, and then I would go supplement that with liberal-leaning sources just because I wanted to see like a whole picture.” Student I noted additional problematic behavior from media sources and their subsequent frustration, “Well, I mean, at first, you know, if I saw an article headline on social media, I would just search for that exact headline, find wherever it came from, read that first. But then if I wanted to learn more beyond that, I’d usually default to either BBC World or the Wall Street Journal are two of my favorites. I have had issues with CNN and Fox in the past where I don’t think that they appropriately label their opinion pieces versus their fact ones. I mean, I know they differentiate them, but not clearly enough in

## STUDENT PANDEMIC INFORMATION USE

my opinion. So I've found myself halfway down an article only to realize that it's an opinion piece and I was wondering why that language was so inflammatory.”

Alternatively, other students have specific news sources that they trust and tend not to question, relying on the credibility of the source. Student D notes, “Again, going back to the trustworthiness of the news outlet himself. So like, say someone like a news platform like CNBC has been around for a long time covering a lot of news all around the world. So I'll definitely been more trustworthy to that compare to a random article on Facebook.”

Bias in mainstream news was repeatedly mentioned. To combat this, students discussed branching out and seeking additional news sources to confirm or deny what they were seeing or to learn about a different viewpoint on the topic in an attempt to gain a balanced understanding. For example, Student E stated, “but I think that they can all kind of have a slant to them one way or the other. So that's why I like to do some research if I'm interested in a topic and kind of see if I can find different viewpoints.” Student B said, “I think when I would see some news, sometimes I'd see it from my conservative biased news sources first and then I would go supplement that with liberal-leaning sources just because I wanted to see like a whole picture.” Student A “Like when it came to liberal news, if I see a liberal news first, I would still look, go look at conservative news to see what the other perspective is. Because sometimes like there's ways that the other side is sometimes right. Because you can't always by default, I think that one side is right automatically, I always want to be sure I'm double-checking to make sure that, you know, what I read if it was right or correct by looking the other side to see what the other perspective was, like what their sort of argument for why they view it another way or not. But yeah, I would look out for like conservative sources whenever I saw a lot of liberal sources because, naturally, on social media, there is a bigger liberal presence. So, I would go out and seek other conservative news.”

A few students discussed strategies other than looking for additional sources, including Student A:

I click on the source, does actually give, like, does it cite someone else. So kind of like what we're taught in school, like look at sources, make sure to cite to credible organization, and such, so yeah. But also look at what they're citing. Again, like sourcing the crucial part that we learned in high school. And I understand it fully more than ever. So if they like, if they said this is coming from a non-government, like I'm just gonna example at this point, I don't know like proper one to give but I'll just say if it was a CDC study. I'm more likely to believe it. But if it's not a CDC study, let's say it's like a third party, independent researcher. I'm very hesitant because the back of my head I'm like, okay, there could be anything, they could have paid the person to make their results purposely be like this because it's a third party, it's private. So, you know, I will try to make sure that first, keep that in mind that what the bias is. Second, see what sources or what the source is, and who was conducting it, what research they are citing, or whatever it may be. And then look at possible ways that source could possibly corrupted in quotation marks.

## STUDENT PANDEMIC INFORMATION USE

Interestingly, even though the focus groups were not explicitly asked about academic sources, Student C mentioned that they like to follow up on news articles surrounding the pandemic by looking in academic journals to see what the research is saying firsthand. When asked for more information regarding this practice, the student noted that they had a class their senior year of high school that taught them how to use peer-reviewed journal articles, and this is where they go when they want objective, fact-based information in order to make more informed decisions. Student D also discussed going beyond the news to the article being cited, “If it's a very big piece of the information, I'll try. If it's a very like life-changing information, I'll try to go to the research paper itself.

### Statistical Significance Testing

Since the survey used in this study was based, in part, on the Project Information Literacy study (Head et al., 2019), the following questions in both studies were virtually identical and comparable for significance testing (see appendix A for the list of survey questions):

Q1: How often, if at all, has your news come from one of these sources during the past week?

Q3: In the past week, how often have you read, listened to, or viewed news items about the following topics?

Q5: How often, if at all, did your news come from one of these social media sites during the past week?

While the data samples consisted of two different populations, there were similarities in the estimated weekly frequency of news consumption by source, social media usage, and topic type when comparing 2021 and 2019 data, which supports the inference that most students did not experience a significant change in their information usage due to the COVID-19 pandemic in most categories.

**Table 3**

### Comparison of 2019 and 2021 Percentages (weekly and daily)

<b>Question:</b>	<b>2019 Daily (%)</b>	<b>2021 Daily (%)</b>	<b>2019 Weekly (%)</b>	<b>2021 Weekly (%)</b>
<b>Sources Consulted</b>				
Social media	72%	70.99%	89%	91.60%
News feeds	32%	26.72%	55%	62.21%
Print newspapers or magazines	5%	4.58%	33%	27.10%
Television	32%	19.47%	76%	68.70%
Radio	15%	10.31%	45%	39.69%
Discussions with peers	14%	6.11%	37%	20.23%
Discussions with professors	9%	9.92%	28%	35.11%
Discussions with librarians	48%	37.02%	93%	89.31%
<b>Social Media Usage</b>				

## STUDENT PANDEMIC INFORMATION USE

Facebook	45%	21.24%	77%	46.11%
Instagram	27%	40.41%	51%	73.58%
LinkedIn	4%	13.47%	15%	40.41%
Pinterest	3%	4.15%	12%	18.13%
Reddit	10%	16.06%	18%	40.93%
Snapchat	27%	32.12%	55%	62.18%
TikTok	-	23.83%	-	42.49%
Tumblr	5%	4.15%	12%	9.33%
Twitter	28%	26.94%	42%	45.60%
Youtube	24%	30.57%	54%	63.21%
<b>Topics Consulted</b>				
Traffic and weather	66%	68.32%	90%	92.37%
Environmental & natural disasters	19%	17.56%	68%	69.85%
My town or city	23%	14.50%	72%	70.99%
National government & politics	51%	37.02%	89%	84.35%
Business and the economy	27%	26.72%	67%	67.94%
Crime and public safety	27%	22.90%	78%	70.61%
International or foreign issues	34%	24.05%	77%	71.37%
Health and medicine	20%	33.97%	67%	87.40%
Political memes	49%	40.08%	82%	77.10%
Schools and education	34%	23.66%	81%	69.85%
Science and technology	28%	29.01%	77%	75.57%
Race and immigration	30%	25.19%	75%	71.76%
Sports	25%	24.43%	56%	56.11%
Entertainment and celebrities	32%	25.19%	71%	67.94%
Lifestyle	33%	20.99%	71%	69.85%
Art and culture	26%	16.03%	68%	50.76%

Note: N=262 (2021) | N≈4385 (2019)

To determine whether these results were statistically significant, data from the 2019 sample (Head et al., 2019) were compared to the 2021 sample in this study using the chi-square test for homogeneity, which shows whether the distributions of the two sample populations are the same or different. To run the chi-square analysis, actual values from the Head et al. 2019 sample were estimated based on the proportions within each category outlined in their study and multiplied by the average sample size because specific sample sizes per question were not provided. Additionally, daily counts from the 2021 sample were added to the weekly counts to be consistent with the Head et al. (2019) study. Results were compared using a 5% level of significance.

$$H_0: P_A = P_B$$

$$H_A: P_A \neq P_B$$

$$\text{Chi-square equation: } \sum i \cdot j (O - E)^2 E \quad \alpha = 0.05$$

## STUDENT PANDEMIC INFORMATION USE

**Table 4 Chi-Square Test: Source Frequency (weekly and daily)**

Type of sources consulted	X <sup>2</sup>	df	P-value	Accept or Reject H <sub>0</sub>
Social media	0.181	1	0.671	Accept
News feeds	4.307	1	0.038	<b>Reject</b>
Print newspapers or magazines	0.116	1	0.733	Accept
Television	1.29	1	0.255	Accept
Radio	0.612	1	0.434	Accept
Discussions with peers	3.154	1	0.076	Accept
Discussions with professors	9.91	1	0.002	<b>Reject</b>
Discussions with librarians	0	1	1.000	Accept

**Note:** N=262 (2021) | N=4385 (2019)

**Table 5**

Chi-Square Test: Social Media Usage Frequency (weekly and daily)

Social Media Sites	X <sup>2</sup>	df	P value	Accept or Reject H <sub>0</sub>
Facebook	1.560	1	0.212	Accept
Instagram	0.064	1	0.800	Accept
LinkedIn	1.340	1	0.247	Accept
Pinterest	0.049	1	0.824	Accept
Reddit	2.515	1	0.113	Accept
Snapchat	0.102	1	0.750	Accept
Tumblr	0.022	1	0.881	Accept
Twitter	0.457	1	0.500	Accept
Youtube	0.269	1	0.604	Accept

**Note:** N=262 (2021) | N=4385 (2019). TikTok was omitted from this analysis because it was not included in the 2019 study by Head et al.

**Table 6**

Chi-Square Test: Topic Frequency (weekly and daily)

Type of topics consulted	X <sup>2</sup>	df	P-value	Accept or Reject H <sub>0</sub>
Traffic and weather	0.007	1	0.933	Accept
Environmental & natural disasters	0.389	1	0.532	Accept
My town or city	6.147	1	0.013	<b>Reject</b>
National government & politics	6.779	1	0.009	<b>Reject</b>
Business and the economy	0.028	1	0.866	Accept
Crime and public safety	0.182	1	0.669	Accept
International or foreign issues	3.316	1	0.069	Accept
Health and medicine	4.096	1	0.042	<b>Reject</b>
Political memes	2.998	1	0.083	Accept
Schools and education	2.043	1	0.153	Accept
Science and technology	0.151	1	0.697	Accept
Race and immigration	0.795	1	0.372	Accept

## STUDENT PANDEMIC INFORMATION USE

Sports	0.026	1	0.871	Accept
Entertainment and celebrities	1.752	1	0.186	Accept
Lifestyle	7.819	1	0.005	<b>Reject</b>
Art and culture	1.125	1	0.289	Accept

Note: N=262 (2021) | N=4385 (2019)

From the chi-square analysis, most categories had a p-value greater than a 0.05 significance level, indicating that there was sufficient evidence that these two samples were homogenous. However, there were a few exceptions. In terms of the frequency of sources consulted, the results for “news feeds” and “discussions with teachers/professors” had a p-value less than .05 and thus had distributions that were different. When analyzing the types of topics consulted, categories related to “My town or city” (local news), “National government and politics,” “Health and medicine,” and “Lifestyle” also had p-values less than .05. Because the data represents two independent samples that were taken at different locations and times, these results cannot be attributed to the pandemic entirely. However, it does show a statistically significant difference in the two samples that are consistent with the self-reported reflections from the survey responses that explored how personal information use had changed. In particular, students reported changes regarding frequency of discussions with professors and increases in frequency of consulting topics related to health and medicine and national government and politics. While many respondents in this study did indicate changes in consulting race and immigration information and conferring with their peers as a means of information gathering, these results were not statistically significant when comparing these datasets using chi-square analysis.

## Conclusions

We found the student information-seeking process to mirror that of Thindwa et al. (2019, p. 1), with students often starting their information searches in Google. We were, however, surprised to find that the frequency of information sources used didn’t change much after the onset of the pandemic. This finding was validated by the comparison to the Project Information Literacy study (Head, DeFrain, et al., 2019), which showed similar information and news source-use pre-pandemic in a larger population, with most of these categories showing homogeneity within both populations following a chi-square analysis. However, a few categories, such as information gathering through news feeds and discussions with professors, along with consulted topics such as health and medicine and national government politics, did present differences in the distribution between the two populations. While not considered statistically significant compared to the 2019 sample, there were many students who participated in this study that observed notable changes in their information gathering through peer discussions. Forty percent of survey participants reported increases in their information gathering through conversing with their peers since prior to the COVID-19 pandemic, despite that many students were often not seeing one another, or their instructors, in person.

This has important implications for library instruction. Students are using interpersonal connections as information sources, which can be easy to miss when creating an information literacy lesson plan. Based on the increase in information gathering through peer discussion, it would be valuable to talk to students about how to gather, evaluate, and use information from

## STUDENT PANDEMIC INFORMATION USE

human sources, as well as traditional sources. It is also worth noting that students in both the survey and the focus groups discussed an increase in social media and phone use at the beginning of the pandemic that then went back to pre-pandemic levels. This clearly relates to the increased responsibility the students felt to share information on social media with their friends and followers in the areas of “health and medicine” and “race and immigration.”

Our responses from focus group students also aligned with Falcone and Sapienza’s earlier study (2020, p. 1), with students looking for health related information from the most reliable sources, e.g., official government health organizations. These students may have felt an increased level of confidence in the information they were sharing as many had solid strategies for evaluating information and mitigating bias. While most students discussed consulting multiple sources, a surprising number detailed higher-level strategies to ensure they were getting a clear picture of their information landscape, including determining the original source(s) of specific information, the types of sources that were cited, and who was conducting and funding particular research. Students were also very clear about what news sources they considered to be most reliable. This helps support the evidence that the students are, indeed, using solid information evaluation strategies and looking beyond politically biased information sources.

Overall, the students impressed us with their reported information literacy skills. This could be because this University has competitive admissions; the average new student in Fall 2022 has a GPA of 3.74, an average SAT total of 1317, and an average ACT of 29.8 (Purdue News Service, 2022), which may impact the base level information literacy skills with which they arrive. Alternatively, this could be a national trend, with students understanding the importance of information evaluation and other information literacy skills. This has implications for practice, as librarians sometimes have to choose how to spend valuable time in an instruction session. If students truly understand this as deeply as this study implies, this can help make the choice of topic easier. We recommend instructors explore this with local student populations to help mitigate assumptions of student information literacy competencies and adjust instruction methods and content accordingly.

A primary limitation of this study is that the students recruited were selected via non-probability sampling for the survey, and self-selection for the focus groups, and all from one university. The sample size for both was also small, which limits the conclusions that can be drawn both independently, and through comparisons with previous studies. Despite edits and trial runs to shorten the wording, consolidate questions, and overall shorten the amount of time required to complete the survey, it was still long, which resulted in a 50% completion rate. It also relies on recollections of prior information use, which could be unreliable, especially as the “new normal” has set in.

For future research, we are interested in exploring how information use has changed further as we transition from a pandemic to an endemic environment. There should be more conversations with students that help deepen our understanding of how and why they make their information decisions. We are also interested in further exploring the information evaluation skills of university student, including which methods they use and how they learned those

## STUDENT PANDEMIC INFORMATION USE

methods. This information can help us make informed decisions in our classrooms regarding which aspects of information literacy require more attention.

While this study focused on how student information use has changed during the COVID-19 pandemic, it is important to remember that both students and information use are always changing, regardless of any individual event. As educators, it is essential that we understand the choices our students are making so that we can help prepare them to navigate the world of information outside of academia.

### References

- Abir, Y., Marvin, C., Van Geen, C., Leshkowitz, M., Hassin, R., & Shohamy, D. (2020). Rational curiosity and information-seeking in the COVID-19 pandemic. doi:10.31234/osf.io/hcta4
- Bauer, M. (2018). Ethnographic study of business students' information-seeking behavior: Implications for improved library practices. *Journal of Business & Finance Librarianship*, 23(1), 1-10. doi:10.1080/08963568.2018.1449557
- Chen, X., Li, M., & Kreps, G. L. (2022). Double burden of COVID-19 knowledge deficit: Low health literacy and high information avoidance. *BMC Research Notes*, 15(1). doi:10.1186/s13104-022-05913-8
- Coronavirus search trends - Google trends. (n.d.). Retrieved April 12, 2022, from [https://trends.google.com/trends/story/US\\_cu\\_4Rjdh3ABAABMHM\\_en](https://trends.google.com/trends/story/US_cu_4Rjdh3ABAABMHM_en)
- COVID-19: The first 100 days of U.S. News Coverage. (n.d.). Retrieved April 11, 2022, from <https://projectinfolit.org/publications/covid-19-the-first-100-days/>
- Dadaczynski, K., Okan, O., Messer, M., Leung, A. Y., Rosário, R., Darlington, E., & Rathmann, K. (2021). Digital Health Literacy and web-based information-seeking behaviors of university students in Germany during the COVID-19 pandemic: Cross-sectional survey study. *Journal of Medical Internet Research*, 23(1). doi:10.2196/24097
- Esmailzadeh, S., Ashrafi-rizi, H., Shahrzadi, L., & Mostafavi, F. (2018). A survey on adolescent health information seeking behavior related to high-risk behaviors in a selected educational district in Isfahan. *PLOS ONE*, 13(11). doi:10.1371/journal.pone.0206647
- Falcone, R., & Sapienza, A. (2020). How COVID-19 changed the information needs of Italian citizens. *International Journal of Environmental Research and Public Health*, 17(19), 6988. doi:10.3390/ijerph17196988



## STUDENT PANDEMIC INFORMATION USE

- Guest, G., Namey, E., & McKenna, K. (2016). How many focus groups are enough? Building an evidence base for nonprobability sample sizes. *Field Methods*, 29(1), 3-22. doi:10.1177/1525822x16639015
- Head, A. J., & Eisenberg, M. B. (2009). Lessons learned: How college students seek information in the Digital Age. *SSRN Electronic Journal*. doi:10.2139/ssrn.2281478
- Head, A. J., & Eisenberg, M. B. (2010). (rep.). *Truth be told: How college students evaluate and use information in the Digital Age*. Project Information Literacy. Retrieved November 17, 2022, from [https://projectinfolit.org/pubs/evaluating-information-study/pil\\_evaluating-information\\_2010-11-01.pdf](https://projectinfolit.org/pubs/evaluating-information-study/pil_evaluating-information_2010-11-01.pdf).
- Head, A. J., DeFrain, E., Fister, B., & MacMillan, M. (2019). Across the great divide: How today's college students engage with news. *First Monday*. doi:10.5210/fm.v24i8.10166
- Howlader, A. I., & Islam, M. A. (2019). Information-seeking behaviour of undergraduate students: A developing country perspective. *IFLA Journal*, 45(2), 140-156. doi:10.1177/0340035219842312
- Hsu, W. (2021). Undergraduate students' online health information-seeking behavior during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(24), 13250. doi:10.3390/ijerph182413250
- Johnson, B., & Odhner, K. (2021). Focus groups from home: Conducting virtual focus groups during the COVID-19 pandemic and beyond. *College & Research Libraries News*, 82(6), 258. doi:10.5860/crln.82.6.258
- Lachlan, K. A., Hutter, E., Gilbert, C., & Spence, P. R. (2021). From what I've heard, this is bad: An examination of Americans' source preferences and information seeking during the COVID-19 pandemic. *Progress in Disaster Science*, 9, 100145. doi:10.1016/j.pdisas.2021.100145
- Liamputtong, P. (2011). Focus group methodology: Principles and practice. doi:10.4135/9781473957657
- Lloyd, S., Walker, S. M., & Goswami, A. (2020). Health information: Applications and challenges in the COVID-19 pandemic. *Asia Pacific Journal of Health Management*, 15(3), 23-28. doi:10.24083/apjhm.v15i3.473
- Nelson, K. S., & Tugwell, Y. V. (2022). Information-seeking behaviour of students at a Caribbean University during the COVID-19 pandemic. *Library Management*. doi:10.1108/lm-10-2021-0089
- Purdue News Service. (2022). *Purdue sets all-time student enrollment record in West Lafayette*. Retrieved October 27, 2022, from <https://www.purdue.edu/newsroom/releases/2022/Q3/purdue-sets-all-time-student-enrollment-record-in-west-lafayette.html>

## STUDENT PANDEMIC INFORMATION USE

- Santhosh, L., Rojas, J. C., & Lyons, P. G. (2021). Zooming into focus groups: Strategies for qualitative research in the era of social distancing. *ATS Scholar*. doi:10.34197/ats-scholar.2020-0127ps
- Schäfer, M., Stark, B., Werner, A. M., Tibubos, A. N., Reichel, J. L., Pfirrmann, D., . . . Dietz, P. (2021). Health information seeking among university students before and during the corona crisis—findings from Germany. *Frontiers in Public Health*, 8. doi:10.3389/fpubh.2020.616603
- Shi, Y., Li, C., & Luo, L. (2021). Impact of the COVID-19 pandemic on Chinese college students' information behavior and library needs: A qualitative study. *The Library Quarterly*, 91(2), 150-171. doi:10.1086/713051
- Superio, D. L., Anderson, K. L., Oducado, R. M., Luceño, M. T., Palcullo, V. E., & Bendalian, M. V. (2021). The information-seeking behavior and levels of knowledge, precaution, and fear of college students in Iloilo, Philippines amidst the COVID-19 pandemic. *International Journal of Disaster Risk Reduction*, 62, 102414. doi:10.1016/j.ijdrr.2021.102414
- Tella, A. (2009). Correlates of undergraduates' information-seeking behavior. *College & Undergraduate Libraries*, 16(1), 1-19. doi:10.1080/10691310902754221
- Tella, A., Bode-Obanla, O., & Sulyman Age, A. (2020). The perspective of undergraduate students on information needs and seeking behavior through YouTube. *Journal of Electronic Resources Librarianship*, 32(2), 94-109. doi:10.1080/1941126x.2020.1739826
- Thindwa, T., Chawinga, W. D., & Dube, G. (2019). Information-seeking behaviour of security studies students: A case study. *SA Journal of Information Management*, 21(1). doi:10.4102/sajim.v21i1.1048
- Timmers, C. F., & Glas, C. A. (2010). Developing scales for information-seeking behaviour. *Journal of Documentation*, 66(1), 46-69. doi:10.1108/00220411011016362
- Use and assessment of electronic resources. (n.d.). Retrieved April 11, 2022, from <http://informationr.net/ir/12-3/paper320app.html>
- Van der Vaart, R., & Drossaert, C. (2017). Development of the Digital Health Literacy Instrument: Measuring a broad spectrum of Health 1.0 and Health 2.0 Skills. *Journal of Medical Internet Research*, 19(1). doi:10.2196/jmir.6709
- Vrdelja, M., Vrbovšek, S., Klopčič, V., Dadaczynski, K., & Okan, O. (2021). Facing the growing covid-19 infodemic: Digital Health Literacy and information-seeking behaviour of university students in Slovenia. *International Journal of Environmental Research and Public Health*, 18(16), 8507. doi:10.3390/ijerph18168507
- Zimmerman, M. S. (2021). Health information-seeking behavior in the time of COVID-19: Information horizons methodology to decipher source path during a global pandemic. *Journal of Documentation*, 77(6), 1248-1264. doi:10.1108/jd-01-2021-0022

### Appendix A

#### Survey questions

1. How often, if at all, has your news come from one of these sources during the past week?

Information Sources	Several times a day	Once a day	2-3 times this week	Once this week	Didn't use this source at all this week
Social media (e.g., Facebook, Twitter)	( )	( )	( )	( )	( )
News feeds (e.g., Apple News, Feedly, or alerts)	( )	( )	( )	( )	( )
Print newspapers or magazines	( )	( )	( )	( )	( )
Online newspaper sites (e.g., NYTimes.com)	( )	( )	( )	( )	( )
Television	( )	( )	( )	( )	( )
Radio	( )	( )	( )	( )	( )
Podcasts	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

Discussions with peers (i.e., online or face-to-face)	( )	( )	( )	( )	( )
Discussions with teachers/professors (i.e., online or face-to-face)	( )	( )	( )	( )	( )
Discussions with librarians (i.e., online or face-to-face)	( )	( )	( )	( )	( )

2. Thinking back to before the COVID-19 Pandemic, did you use these sources more or less frequently than you do now?

Information Sources	Much more	Somewhat more	About the same	Somewhat less	Much less
Social media (e.g., Facebook, Twitter)	( )	( )	( )	( )	( )
News feeds (e.g., Apple News, Feedly, or alerts)	( )	( )	( )	( )	( )
Print newspapers or magazines	( )	( )	( )	( )	( )
Online newspaper sites (e.g., NYTimes.com)	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

Television	( )	( )	( )	( )	( )
Radio	( )	( )	( )	( )	( )
Podcasts	( )	( )	( )	( )	( )
Discussions with peers (i.e., online or face-to-face)	( )	( )	( )	( )	( )
Discussions with teachers/professors (i.e., online or face-to-face)	( )	( )	( )	( )	( )
Discussions with librarians (i.e., online or face-to-face)	( )	( )	( )	( )	( )

3. In the past week, how often have you read, listened to, or viewed news items about the following topics?

Information topics	Several times a day	Once a day	2-3 times this week	Once this week	Didn't follow this news at all this week
Traffic and weather	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

Environmental and natural disasters	( )	( )	( )	( )	( )
My town or city (e.g., local issues, events, politics)	( )	( )	( )	( )	( )
National government and politics	( )	( )	( )	( )	( )
Business and the economy	( )	( )	( )	( )	( )
Crime and public safety	( )	( )	( )	( )	( )
International or foreign issues	( )	( )	( )	( )	( )
Health and medicine	( )	( )	( )	( )	( )
Political memes (i.e., a humorous image, video, or piece of text)	( )	( )	( )	( )	( )
Schools and education	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

Science and technology	( )	( )	( )	( )	( )
Race and immigration	( )	( )	( )	( )	( )
Sports	( )	( )	( )	( )	( )
Entertainment and celebrities	( )	( )	( )	( )	( )
Lifestyle (e.g., hobbies)	( )	( )	( )	( )	( )
Art and culture	( )	( )	( )	( )	( )

4. Thinking back to before the COVID-19 pandemic, did you read, listen to, or view news items about the following topics more or less frequently than you do now?

Information topics	Much more	Somewhat more	About the same	Somewhat less	Much less
Traffic and weather	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

Environmental and natural disasters	( )	( )	( )	( )	( )
My town or city (e.g., local issues, events, politics)	( )	( )	( )	( )	( )
National government and politics	( )	( )	( )	( )	( )
Business and the economy	( )	( )	( )	( )	( )
Crime and public safety	( )	( )	( )	( )	( )
International or foreign issues	( )	( )	( )	( )	( )
Health and medicine	( )	( )	( )	( )	( )
Political memes (i.e., a humorous image, video, or piece of text)	( )	( )	( )	( )	( )
Schools and education	( )	( )	( )	( )	( )



## STUDENT PANDEMIC INFORMATION USE

Science and technology	( )	( )	( )	( )	( )
Race and immigration	( )	( )	( )	( )	( )
Sports	( )	( )	( )	( )	( )
Entertainment and celebrities	( )	( )	( )	( )	( )
Lifestyle (e.g., hobbies)	( )	( )	( )	( )	( )
Art and culture	( )	( )	( )	( )	( )

5. How often, if at all, did your news come from one of these social media sites during the past week?

Social Media Platforms	Several times a day	Once a day	2-3 times this week	Once this week	Didn't use this source at all this week	I don't use this social media source at all
Facebook	( )	( )	( )	( )	( )	( )



## STUDENT PANDEMIC INFORMATION USE

Pinterest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reddit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snapchat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tiktok	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tumblr	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How often, if at all, have you shared or retweeted a news item on the social media sites that you use about one of these topics during the past week?

Information topics	Several times a day	Once a day	2-3 times this week	Once this week	Didn't share this news at all this week
Traffic and weather	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental and natural disasters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My town or city (e.g., local issues, events, politics)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National government and politics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business and the economy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## STUDENT PANDEMIC INFORMATION USE

Crime and public safety	( )	( )	( )	( )	( )
International or foreign issues	( )	( )	( )	( )	( )
Health and medicine	( )	( )	( )	( )	( )
Political memes (i.e., a humorous image, video, or piece of text)	( )	( )	( )	( )	( )
Schools and education	( )	( )	( )	( )	( )
Science and technology	( )	( )	( )	( )	( )
Race and immigration	( )	( )	( )	( )	( )
Sports	( )	( )	( )	( )	( )
Entertainment and celebrities	( )	( )	( )	( )	( )
Lifestyle (e.g., hobbies)	( )	( )	( )	( )	( )
Art and culture	( )	( )	( )	( )	( )

8. Thinking back to before the COVID-19 pandemic, did you share or retweet a news item on social media sites that you use about one of these topics more or less frequently than you do now?

Information topics	Much more	Somewhat more	About the same	Somewhat less	Much less
--------------------	-----------	---------------	----------------	---------------	-----------

## STUDENT PANDEMIC INFORMATION USE

Traffic and weather	( )	( )	( )	( )	( )
Environmental and natural disasters	( )	( )	( )	( )	( )
My town or city (e.g., local issues, events, politics)	( )	( )	( )	( )	( )
National government and politics	( )	( )	( )	( )	( )
Business and the economy	( )	( )	( )	( )	( )
Crime and public safety	( )	( )	( )	( )	( )
International or foreign issues	( )	( )	( )	( )	( )
Health and medicine	( )	( )	( )	( )	( )
Political memes (i.e., a humorous image, video, or piece of text)	( )	( )	( )	( )	( )
Schools and education	( )	( )	( )	( )	( )
Science and technology	( )	( )	( )	( )	( )
Race and immigration	( )	( )	( )	( )	( )
Sports	( )	( )	( )	( )	( )
Entertainment and celebrities	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

Lifestyle (e.g., hobbies)	( )	( )	( )	( )	( )
Art and culture	( )	( )	( )	( )	( )

9. When you're deciding to share 'breaking news'— a special news event that is currently developing — on social media, how do you evaluate the quality of the information that you share, if you do at all?

Evaluation Strategy	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	I don't share or retweet news items at all
Sharing helps me define my online presence	( )	( )	( )	( )	( )	( )
Sharing news lets me provoke responses from others	( )	( )	( )	( )	( )	( )
Sharing news is a way to entertain my friends/followers	( )	( )	( )	( )	( )	( )
Sharing news is a way to entertain myself	( )	( )	( )	( )	( )	( )
Sharing news gives me a way to have a	( )	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

voice about a larger cause in the world						
Sharing news gives me an opportunity to help change the views of my friends/followers	( )	( )	( )	( )	( )	( )
Sharing news gives me a break from what I am currently doing	( )	( )	( )	( )	( )	( )

10. Thinking back to before the COVID-19 pandemic, when you would decide to share 'breaking news'— a special news event that is currently developing — on social media, did you use these evaluation criteria more or less frequently than you do now?

Evaluation Strategy	Almost always	Often	Sometimes	Rarely	Never	I don't share breaking news at all
Sharing helps me define my online presence	( )	( )	( )	( )	( )	( )
Sharing news lets me provoke responses from others	( )	( )	( )	( )	( )	( )
Sharing news is a way to entertain	( )	( )	( )	( )	( )	( )

## STUDENT PANDEMIC INFORMATION USE

my friends/followers						
Sharing news is a way to entertain myself	( )	( )	( )	( )	( )	( )
Sharing news gives me a way to have a voice about a larger cause in the world	( )	( )	( )	( )	( )	( )
Sharing news gives me an opportunity to help change the views of my friends/followers	( )	( )	( )	( )	( )	( )
Sharing news gives me a break from what I am currently doing	( )	( )	( )	( )	( )	( )

## Appendix B

### Focus Group Questions

1. Can you describe your news consumption during the pandemic?
  - a. How has it changed from prior to the pandemic?
  - b. Did your living situation or social life impact this?
2. Did your social media use change during the pandemic?
3. What are your perceptions of the accuracy and reliability of the news you consumed?  
How did you evaluate this?



## STUDENT PANDEMIC INFORMATION USE

- a. Were there times you believed something, then changed your opinion based on new information?
4. Did the national and global social unrest impact your news consumption?
5. How did the news impact your emotional state?
6. Did your emotional state impact the news you sought out?
7. Did you actively or passively avoid any news consumption? In what ways?
8. Did information you found regarding the COVID-19 pandemic impact your behavior or decision-making?
9. If at all, how did your political beliefs influence your information gathering behavior and/or decision-making regarding COVID-19?

### Appendix C

#### Codebook

##### Initial codes

1. Quarantine / isolation [Quarantine]
2. Information-seeking behavior: Traditional news [News]
3. Information-seeking behavior: Social media [Social Media]
4. Information-seeking behavior: Interpersonal [Interpersonal]
5. Information-seeking behavior: Health authorities [Health]
6. Information-seeking behavior: International news [International]
7. Information-seeking behavior: Academic sources [Academic]
8. News impacting emotional state [Emotion]
9. News bias [Bias]
10. Information avoidance [Avoidance]
11. News influence on beliefs [News Influence Beliefs]
12. Influence of political beliefs on information behavior [Political]
13. Disinformation / Fake News [Disinfo]
14. Information evaluation [InfoEval]

##### Emergent codes

15. Change [Change]
16. Comedy [Comedy]
17. Google [Google]
18. Social unrest [Unrest]