K-12 BLUEPRINT

Empowering Students to Find and Evaluate Digital Resources with Confidence

Comparing Microsoft Search Coach and Google Search to help students develop better information literacy skills

Executive Summary

In today's fast-paced and highly technological society, information literacy skills have become essential for personal, academic, and professional success. It is critical that students learn tools and skills for information literacy and have authentic opportunities to practice being critical consumers of information. The ability to identify, access, and effectively evaluate the credibility of a resource is a valuable lifelong skill that can be applied in many different contexts and is critical to becoming informed global citizens.

With information and resources so readily available, it is crucial for students to have the ability to distinguish between credible, relevant, and trustworthy information. Practicing and applying these important skills in practical situations is as essential as understanding them. Introducing these skills to students early and continuously throughout their education enables them to become well-informed global citizens. By mastering information literacy skills, students can become more informed consumers, confidently evaluate the credibility of sources, and avoid being misled by false or biased information.

> **With information and resources so readily available, it's crucial for students to have the ability to distinguish between credible, relevant, and trustworthy information. While understanding these skills is important, it's equally essential for students to practice and apply them in practical situations.**

When faced with teaching information literacy skills to their students, educators often find it challenging to prioritize information literacy in their lessons due to time constraints and not knowing where to start. Although librarians are experts in helping students become information literate, they have limited engagement opportunities for showing students best practices.

Search Coach*, a Learning Accelerator built into Microsoft 365 for Education*, empowers both educators and students to build information literacy skills with safe and inclusive tools. Search Coach shows students how to navigate search engines by providing real-time feedback during authentic searches. Search Coach runs in students' Teams for Education* and provides many benefits, including:

- Search Tips, which prompt students to form better search queries prompted by a specific student behavior like using biased language in their search or more general guidance before they begin.

- NewsGuard*, which employs journalists who objectively rate thousands of sites based on a list of criteria for trustworthy content, is built into results for reliability and trust rating system that also provides a rating and detailed analysis.

- Microsoft Bing SafeSearch*, which is enabled by default so students can practice important concepts in a secure, advertisement-free, educational environment.

- Reduced time needed to build information literacy skills with integrated tools that streamline the assignment creation, review, and analysis process.

- Education Insights*, which offers actionable student data from Search Coach that highlights class and individual search trends including, among others, common search terms and the number of searches each student conducted.

- Fact check filter that automatically yields results from reputable fact checking sites like Snopes.com and FactCheck.org.

In contrast, Google's* approach to information literacy involves a curriculum-based strategy rather than a real-time coaching tool. Its options for teaching information literacy skills at various grade levels include the Applied Digital Skills* "Evaluate Credibility of Online Resources" course designed for middle and high school and the Be Internet Awesome* curriculum geared towards upper elementary and middle school students. Although these resources offer valuable information, they require educators to spend extra time planning and finding intentional ways to incorporate lessons into instructional time. Moreover, they lack personalized coaching during authentic practice opportunities, leaving students to navigate research tasks on their own.

> **For students, Search Coach offers an authentic application of skills with real-time feedback that can continuously help them formulate less biased queries and navigate their way to better results.**

For students, Search Coach offers an authentic application of skills with real-time feedback that continuously helps them formulate less biased queries and navigate their way to better results. Conversely, Google's approach involves curriculum-based courses, lacking personalized coaching with authentic practice opportunities, leaving students to navigate research tasks independently. Search Coach aims to help students become confident, independent learners and develop the skills needed to succeed in the digital age, whether they are looking for resources to back up a claim in their research or verifying the authenticity of claims on social media.

Rationale

The Digital Native Myth

"Digital native" is a term used to describe someone who has grown up in the digital age and is therefore familiar and comfortable with technology and the Internet. They have had access to devices, such as smartphones and computers from an early age and can use the devices with general ease. This access tends to make them more willing and able to use technologies. However, this term tends to suggest that because of their exposure, digital natives have a natural or innate ability to use technologies effectively and with a critical eye.

According to the International Computer and Information Literacy Study (ICILS)[1] conducted every five years, US eighth graders:

90% could use a computer and complete basic tasks like opening a new tab or navigating a website

72% reported using the Internet to do research every school day or at least once a week

25% could independently use computers as a tool to gather information

65% reported teaching themselves how to find information on the Internet

The Stanford History Education Group (SHEG) study[2] found more than 80 percent of middle school students identified an advertisement on a news site marked with "sponsored content" as a real news story. The same study found over 40 percent of high schoolers identified an altered image post as compelling evidence of "nuclear effects" on nature despite the post having a suspicious account name and being posted on Imgur*, an American online image sharing service with a focus on social gossip.

In 2021, a study[3] conducted in the US assessed the ability of over 3,400 high school students to differentiate between high-quality information and misleading or biased content on websites. The results showed that almost 96% of the students surveyed were unable to identify a website's affiliation with a biased party. Additionally, two-thirds of the students were unable to distinguish news stories from ads on a popular website's homepage, while more than half of the students believed that an anonymously posted Facebook video, filmed in Russia, provided strong evidence of voter fraud in the US.

The prevalence of fake news, misinformation, and biased content online poses a significant risk to students who lack the necessary skills to evaluate the quality and reliability of the information they find. Despite being "digital natives," many students are not equipped to navigate the vast sea of information online. These studies reveal a concerning gap between basic computer skills and the ability to gather and evaluate information. It is crucial for educators to provide authentic opportunities for students to develop information literacy and critical thinking strategies to help them make informed decisions and understand the world around them.

[1] ICILS 2018 U.S. Results https://nces.ed.gov/surveys/icils/icils2018/theme2.asp?tabontop

[2] Evaluating Information: The Cornerstone of Civic Online Reasoning https://stacks.stanford.edu/file/druid:fv751yt5934/SHEG%20Evaluating%20Information%20Online.pdf

[3] Students' Civic Online Reasoning: A National Portrait https://journals.sagepub.com/doi/abs/10.3102/0013189X211017495

Emphasizing Information Literacy Skills in K-12 Education

The massive amounts of information available online, with little to no vetting for accuracy, leaves the onus on students to be critical and verify the information they are consuming. Integrating information literacy into authentic learning experiences can provide students with the essential skills to navigate the overwhelming amount of information available online and make informed decisions. Students can accomplish this by recognizing bias in search terms, defining what constitutes credible information, verifying sources by examining information laterally, and approaching information cautiously until is has been confirmed. By learning these skills, students can succeed academically and in life beyond the classroom.

Microsoft's Search Coach provides context and guidance for students to ask effective questions and discover reliable sources while providing real-time coaching and actionable feedback to help them become critical consumers of information.

Learning Scenario

The following scenario compares the step-by-step process that a representative seventh grade student would complete to develop information literacy skills using common search engines. Specifically, the scenario explores how students optimize search queries to find reliable, accurate results using Microsoft Search Coach and Google Search.

At a Glance

Topic
Information Literacy Skills

Grade Level
Seventh grade

Subject
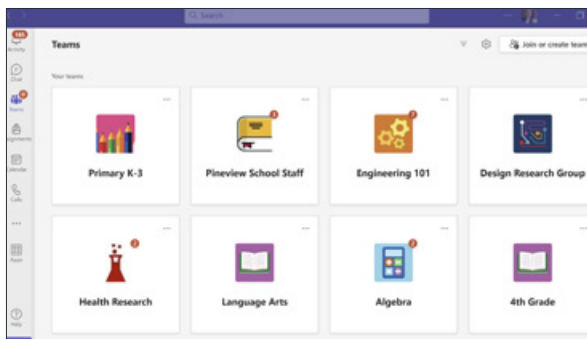English/Language Arts

Step-by-step Comparison

Test Devices

In conducting this comparison, the K-12 Blueprint team tested the following devices and configuration:
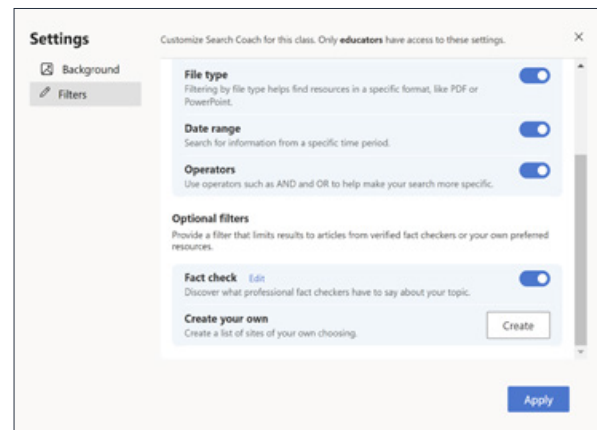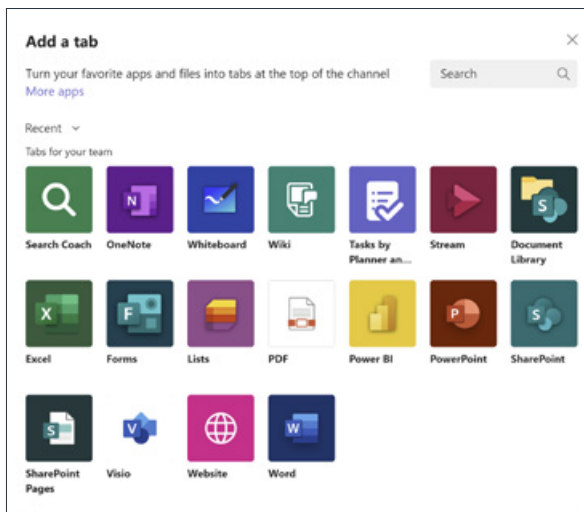
- **Dell XPS 00867 running Windows 11 Pro 22621.1105**

- **ASUS Chromebook Flip C436 running 104.0.5112.110 (Official Build) (64-bit)**

Educator's Steps for Adding Search Coach

1. Open Microsoft Teams for Education and select class.
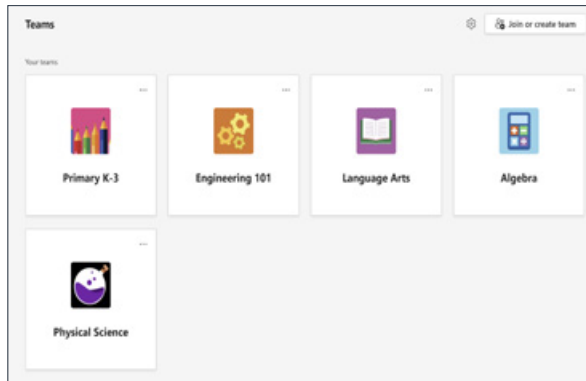

2. Select the + sign and then choose Search Coach.

3. Select Settings and then turn on Fact check filter.

Student's Steps for Developing Information Literacy Skills in Search Coach

1. Open Microsoft Teams for Education and select desired class.

2. Select General Channel and then + sign to access Search Coach.
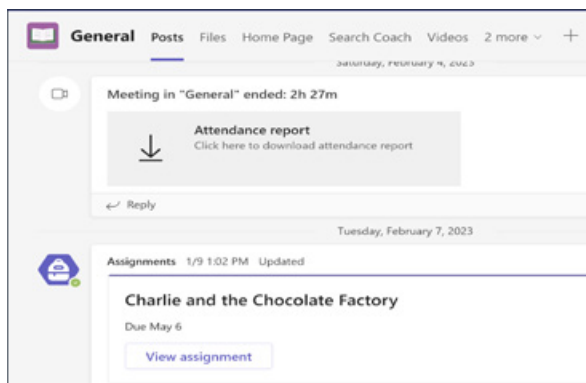
3. Conduct an initial search query.
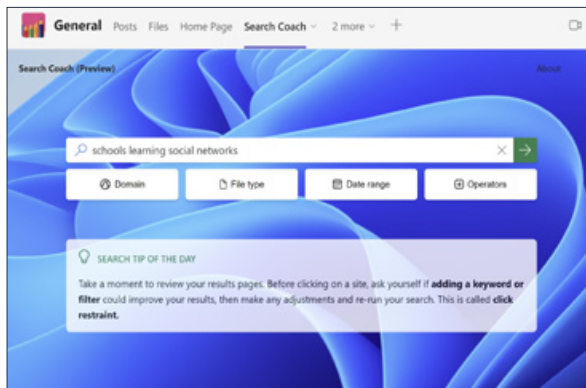
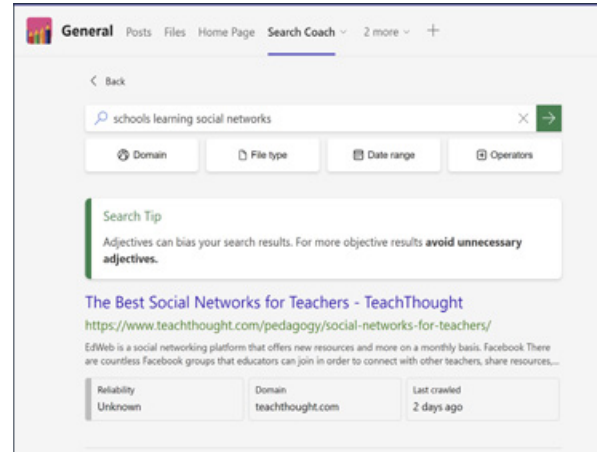4. Review Search Coach feedback alongside results.

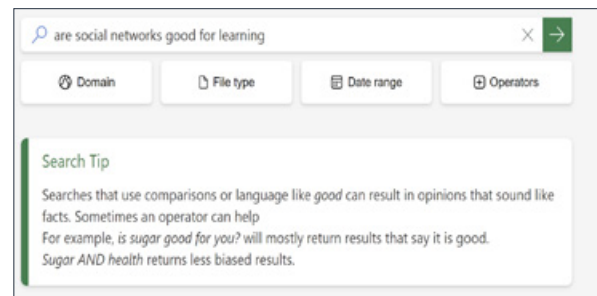**Figure 1:** Displays a sample search tip to simplify language.

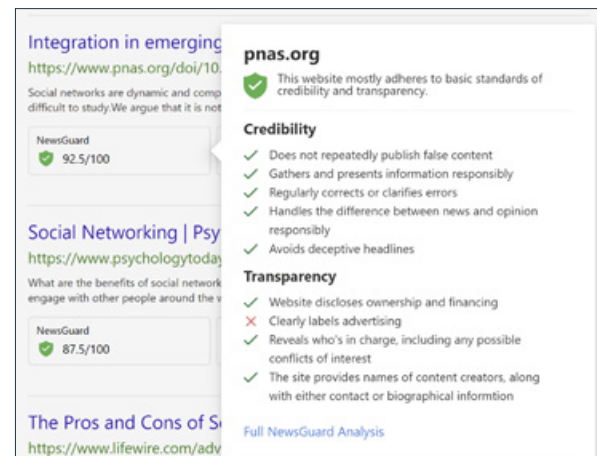**Figure 2:** Displays a sample search tip to use search operators.

Figure 3: Search Coach results include NewsGuard credibility scores.

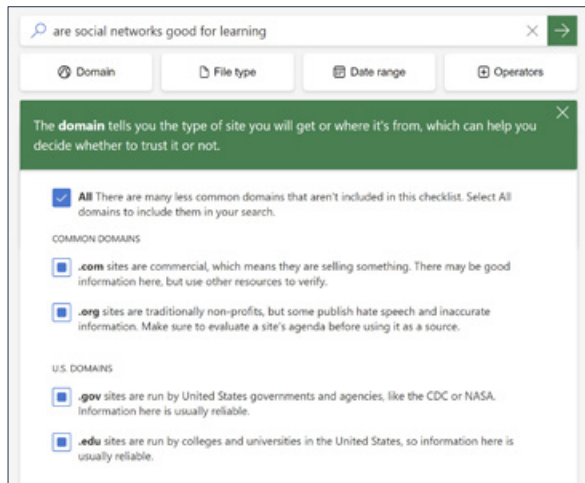5. Easily create search filters to improve results.

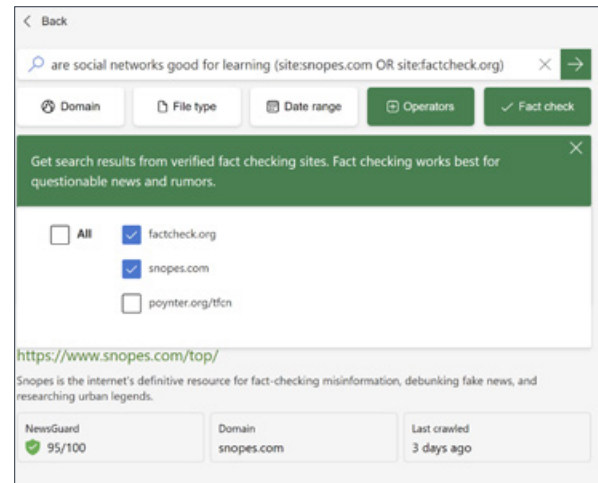**Figure 4:** Guidance and explanation for filtering domains.

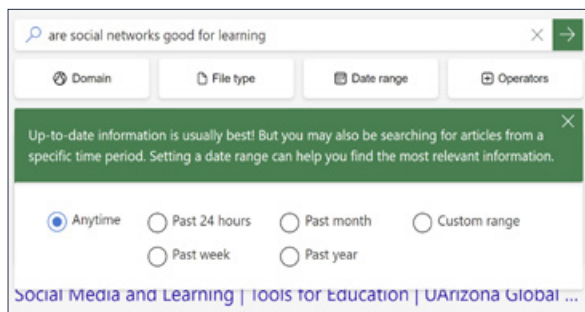**Figure 6:** Fact Check sources and topics.

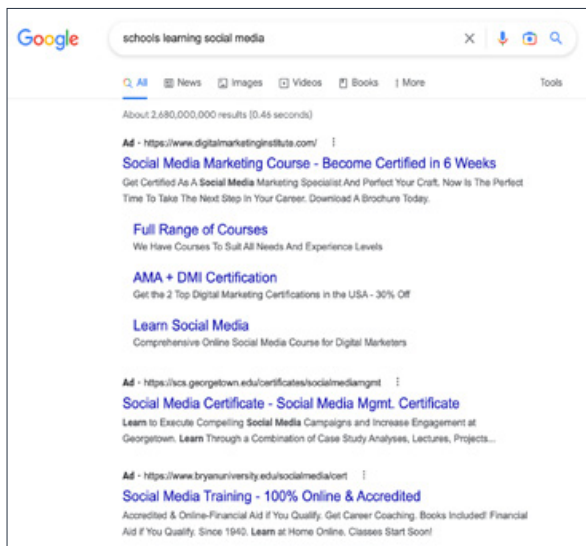**Figure 5:** Guidance on how to apply date ranges to filter results.

Student's Steps for Developing Information Literacy Skills in Google Search

1. Navigate to GoogleSearch and conduct an initial search query.

2. Review results. Notice that all the initial results are advertisements.

3. Further filtering is available; however, it is dependent upon a student knowing how to navigate without built-in support or guidance.
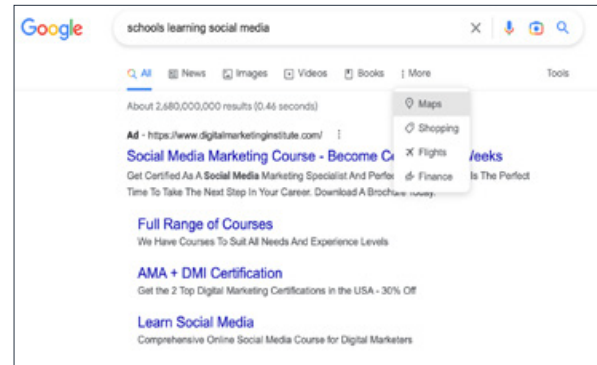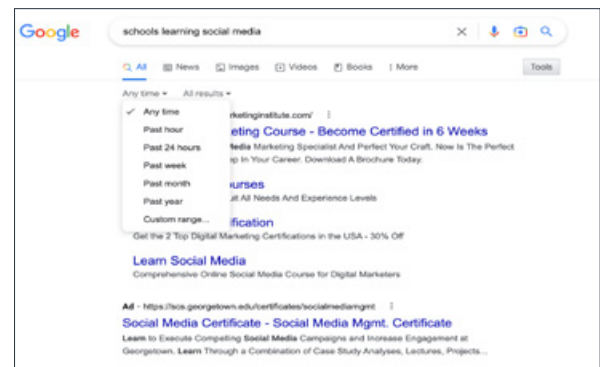

Figure 7: Filter options for types of results.
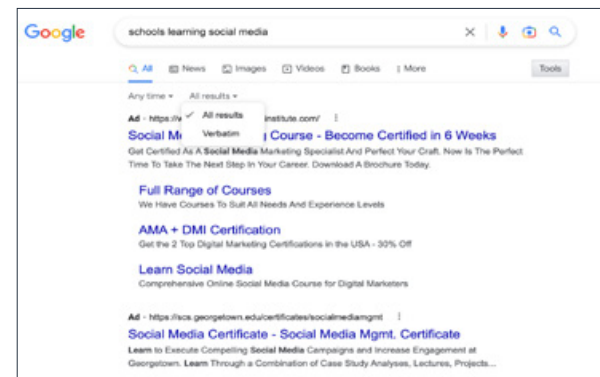

Figure 8: Filter options by time.

Figure 9: Filter options by limiting results.

Conclusion

Information literacy is an essential life skill in academic, personal, and professional settings. With the rise of misinformation, disinformation, and biased information, students must navigate resources with a critical eye to ensure that the results are credible, factual, and relevant. To foster information literacy skills, students benefit from having on-demand support built into commonly used tools where their learning is already taking place. Ideally, information literacy solutions should be simple to use and provide valuable feedback for students and actionable data for educators.

Being the most widely used search engine does not ensure that Google Search creates the best environment for learners to understand, develop, and practice information literacy skills. With a mix of advertisements, misleading or biased results, and difficult to navigate filters, Google Search alone does not contain enough support to ensure that learners find the search results that they need. While Google does offer instructional resources to help learners develop healthy search habits, the materials exist separate from Google Search itself and may not be enough to guarantee that students develop necessary information literacy skills.

> **Microsoft and Google both provide educators instructional resources to introduce search and information literacy skills to students. However, Search Coach provides learners an additional layer of coaching and real-time feedback support for developing vital skills that is unmatched by Google Search.**

In contrast, Microsoft Search Coach in Teams for Education provides learners with instructional resources as well as individualized coaching and guidance in real-time that helps each student practice safe and effective searches that yield more reliable results. Search Coach is built directly into Teams for Education allowing students to quickly shift from assignments to researching in just a few clicks. Students who use Search Coach receive guidance on improving their search query to reduce opinions, suggestions about additional filters to find credible results, and a NewsGuard score for each result that assesses a site's bias. Educators can explore actionable data from Search Coach in the Education Insights dashboard to identify individual or class needs and then adjust instruction.

	Microsoft Solution	Google Solution
Provides instructional lesson plans for information literacy	☑	☑
Provides individualized suggestions to help learners refine searches	☑	
Real-time feedback and coaching	☑	

Number of data reports to inform educators and instruction	6 data reports available in Education Insights:
	
	  Searches by student
	  Search filters
	  Domain filters
	  Filetype filters
	  Most common domains
	  Common search terms
		0 data reports available