



Optimism and Uncertainty — How Teens View and Use Artificial Intelligence

Date of Release: November 2024





Optimism and Uncertainty — How Teens View and Use Artificial Intelligence

Date of Release: November 2024

AUTHORS

[David Bickham, PhD](#)

Research Director, The Digital Wellness Lab

[Nicole Powell, MSW](#)

Clinical Research Specialist, The Digital Wellness Lab

[Hannah Chidekel, MPH](#)

Clinical Research Specialist, The Digital Wellness Lab

[Zhiying \(Zoey\) Yue, PhD](#)

Scientist, The Digital Wellness Lab

[Sam Schwamm, MA](#)

Research Manager, The Digital Wellness Lab

[Kaitlin Tiches, MLIS](#)

Medical Librarian & Knowledge Manager, The Digital Wellness Lab

[Emily Izenman, BA](#)

Former Clinical Research Specialist, The Digital Wellness Lab

[Katrina Ho, MA](#)

Clinical Research Assistant, The Digital Wellness Lab

[Michael Carter, PhD](#)

Scientist, The Digital Wellness Lab

[Michael Rich, MD, MPH](#)

Founder/Director, The Digital Wellness Lab

SUGGESTED CITATION

Bickham, D.S., Powell, N., Chidekel, H., Yue, Z., Schwamm, S., Tiches, K., Izenman, E., Ho, K., Carter, M., Rich, M. (2024). *Optimism and Uncertainty: How Teens View and Use Artificial Intelligence*. Boston, MA: Boston Children's Hospital's Digital Wellness Lab. <https://digitalwellnesslab.org/pulse-surveys/optimism-and-uncertainty-how-teens-view-and-use-artificial-intelligence/>

SPECIAL THANKS

[Brinleigh Murphy-Reuter, BA](#)

Program Administrator, The Digital Wellness Lab

Zoë Kronberg, Alicia Owens

Summer 2024 Research Interns

Summer 2024 Teen Advisors: Geo Elasmarr, Pritika Kharkwal, Josh Rodriguez-Ortiz, Brian Zhou



Optimism and Uncertainty — How Teens View and Use Artificial Intelligence

Date of Release: November 2024

Table of Contents

Executive Summary.....	4
Introduction	5
Key Findings	9
Teens' Use of Artificial Intelligence	10
Teens' Attitudes About Artificial Intelligence.....	18
Education, Information, and Guidelines Around Artificial Intelligence	27
Teens and Artificial Intelligence: Where Do We Go From Here?.....	31
Conclusion.....	34
Appendix	37
Methodology	
References	
Survey Questions	
How We Create Impact	



Executive Summary

From Voice Assistants (VAs) like Siri and Alexa to Generative AI (GenAI) tools like ChatGPT, Artificial Intelligence (AI) is becoming a key part of young people's lives, shaping how they learn, create, and interact. This report explores how teenagers are navigating the opportunities and challenges that come with this rapidly evolving technology, including how they are using AI, their perceptions and concerns around these tools and their applications, and the types of guidance that will enable them to use AI responsibly.

The vast majority of teenagers we surveyed have used Voice Assistants, and more than half have used Generative AI, but how and why they use these tools varies. Many turn to AI for help with schoolwork, such as researching information or creating study guides, while others use it for more personal matters like relationship advice; some may even view AI tools as companions that can provide social and emotional support. However, not all teens are regular users, and this gap may reflect demographic or socioeconomic differences between groups of young people and their access to these new technologies.

Despite the growing adoption of AI among teenagers, most expressed concerns about privacy and security, particularly with newer Generative AI tools, including how their data is being used and the risk of AI-generated deepfakes and scams. Teens were also less likely to trust the accuracy of AI-generated content compared to more traditional search engines and other sources. Although teenagers see tech companies as primarily responsible for ensuring young people have positive experiences when using AI, they also feel personally responsible for creating this environment.

Our findings suggest that many teenagers, although familiar with AI, are not fully confident in their understanding of how to best use these tools. For example, there is a clear gap in digital literacy education, as many teens rarely verify information from AI and yet have not received formal instruction on recognizing bias or misinformation. In fact, less than half of teens reported having any school rules around using Generative AI for schoolwork, despite this being the most commonly reported use of the technology. Teens' relationships with AI are also shaped by their home environment, but many say that their parents do not regularly monitor or restrict their use. Notably, those who did report parental rules around the use of Generative AI overwhelmingly agreed with these rules or expectations. Overall, most teens feel that more discussions at home and school about responsible AI use – particularly around ethics and privacy – are essential, and they are eager to engage in these conversations.

Ultimately, teens are optimistic about AI's potential to improve their learning, creativity, and productivity, but they are still learning how to balance its benefits and its risks. This report emphasizes the importance of providing young people with the tools, education, and support they need to harness AI responsibly in their personal and academic lives.



Introduction

Within just a few years, Artificial Intelligence (AI) has radically transformed the way young people interact with digital media and technology. AI-powered voice assistants like Siri, Alexa, and Google Assistant are readily available and widely used across different devices, while Generative AI tools like ChatGPT have become more powerful and accessible than ever before.

Research Gaps in Teen Use of AI

Existing research on the implications of AI for adolescent health and development has largely focused on healthcare applications and outcomes, such as developing chatbots to provide nutritional information, physical activity guidelines, and other personalized treatment or preventative knowledge (e.g., Han et al., 2023; Hoodbhoy et al., 2021; Rowe & Lester, 2020). More recently, researchers have begun evaluating the integration of AI into education, such as using AI to develop lesson plans or educating students about digital literacy topics like algorithmic bias (e.g., Moundridrou et al., 2024; Vartiainen et al., 2024).

While a few large surveys have explored teenagers' overall use of AI (FOSI, 2023; Hopelab et al., 2024; Madden et al., 2024), far less is known about how teens specifically use these tools for entertainment, information-seeking, or educational support. Much of the research on voice assistants has been conducted with younger children, seeking to understand their information-seeking behaviors and relational understanding of these technologies (Hoffman et al., 2021; Lovato et al., 2019). The little research on adolescent perceptions of these tools has focused on specific contexts like supporting independence of adolescents with Autism Spectrum Disorder (Cha et al., 2021) or use during the COVID-19 pandemic (Menon & Shilpa, 2023).



Concerns Surrounding Generative AI in Education

Since the public release of Generative AI tools like ChatGPT, concerns about academic integrity and performance have gained national attention. Both parents and teenagers are worried that students may become too dependent on these tools or use them to cheat (Common Sense Media, 2023), but despite these fears, the reality appears to be more nuanced. There is little evidence that cheating behaviors have increased after the introduction of ChatGPT; when AI detection tools are used on written assignments, only about 3% are flagged as being mostly AI-generated (Lee et al., 2024; Prothero, 2024). Instead, many students use these tools to create an outline or research new topics, but they generally do not believe that it is acceptable to use them to complete a large assignment like writing an essay (Hopelab et al., 2024; Rubin et al., 2024; Sidoti et al., 2024). Additionally, a majority of surveyed students agreed that Generative AI tools could help with brainstorming and personalizing their learning (Madden et al., 2024).

Addressing Concerns Around Generative AI

Despite the promise of AI to enhance the lives of young people, there are still additional concerns about accuracy of information and privacy (Madden et al., 2024; Rubin et al., 2024). Little is known about how teens address these concerns if they decide to use Generative AI, and over half of teens have not received in-school training on using Generative AI (Madden et al., 2024). Additionally, much of our current understanding regarding adolescents and AI is often limited to ChatGPT or other large language models (LLMs) rather than the AI features that are increasingly integrated into social media or other platforms. Finally, considering the rapid rate of change and development in Generative AI tools, additional work is always necessary to capture the most current perceptions of the technology and use patterns.

Research Questions

To better understand the impact of Artificial Intelligence (AI) on the lives of young people, this survey asked teenagers about their general patterns of use but also specific use cases, attitudes and concerns surrounding the technology, their existing knowledge on how to use these tools responsibly and effectively, and the type of guidance that they would like to receive from parents*, teachers, and tech companies.

1. How are teenagers using AI-powered tools like Voice Assistants and Generative AI?

- a. What are teens' overall levels of experience and skill with AI tools?
- b. What proportion of teens use AI, and how frequently do they use it?
 - i. What demographic factors and differences in access to digital devices distinguish teens who use Generative AI from those who do not?

2. What are teenagers' attitudes and perceptions surrounding these AI technologies?

- a. What are teens' primary concerns when it comes to using AI?
- b. How do teens think the use of AI impacts their learning, productivity, creativity, and social skills?
- c. In what ways do teens perceive Voice Assistants and Generative AI as similar or different?

3. What knowledge, guidance, and instruction are teens currently receiving related to the use of AI?

- a. What (if any) formal instruction around AI are teens receiving at school?
- b. What types of rules and conversations around AI do teens have at home?
- c. What type of knowledge and/or guidance do teens want going forward?

How We Conducted This Survey

A nationwide sample of 1,440 adolescents (ages 13-17) were surveyed between August 2-6, 2024, using the Alchemer online research platform. Participants were initially asked to specify whether they had used, heard of but never used, or never heard of both Voice Assistants and Generative AI; from there, only participants who had used and/or heard of each technology were asked relevant follow-up questions related to their use and attitudes. All participants were asked for demographic information and about their access to different digital devices.

A full description of the methods can be found at the end of this document.

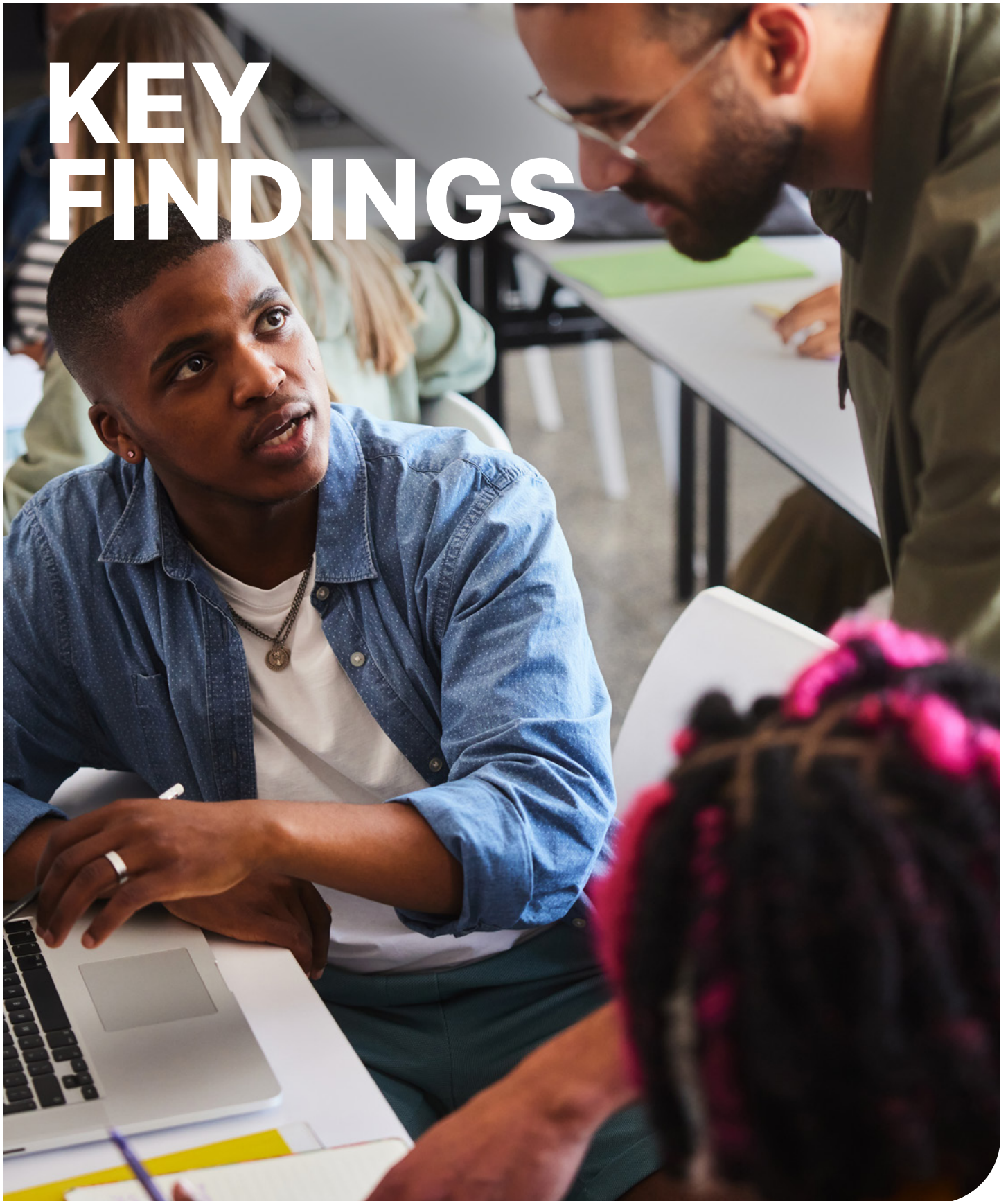
**In this report, we use the term "parents" to refer to all parental figure caregivers.*

Notes About the Findings

- For the purposes of this survey, we defined Voice Assistants and Generative AI as follows:
 - **Voice Assistants (VAs):** “Voice Assistants are applications like Siri, Amazon Alexa, and Google Assistant that often run on smartphones, smart speakers, computers, and other similar devices. They can understand voice commands and respond by answering questions, carrying out tasks, or providing different services.”
 - **Generative AI (GenAI):** “Generative AI includes technologies like ChatGPT, Google’s Gemini, and MetaAI. These systems can modify and/or create new content (e.g., text, images, audio) by learning from large amounts of information and generating responses to user prompts.”
- In this report, we sometimes refer to “users” and “non-users”. Users are respondents who have directly interacted with either Voice Assistants and/or Generative AI, while non-users have not interacted with these tools (but may have heard of them).
- For ease of reporting and visualization, we have sometimes combined responses from more detailed scales to simplified three-point scales. For example, “strongly disagree” and “disagree” are combined into “disagree”, while “improves a little” and “improves a lot” are combined into “improves”.
- Due to the survey structure, participants only answered questions about AI technologies (Voice Assistants or Generative AI) that they were familiar with and/or had used previously. Therefore, the sample size differs for some sections of the report, as detailed below:
 - The section “How Do Generative AI Users Differ from Non-Users?” focuses on differences between those who have used GenAI (N = 773) and those who have not (N = 667).
 - In the section titled “Do Teens View Voice Assistants and Generative AI Differently?”, we analyzed responses from a subset of participants who reported having used both technologies (N = 741).
- For data analysis, we relied on the following methods (for full details, see “Methodology”):
 - To explore different research questions, we used chi-square tests (e.g., examining how Generative AI users differ from non-users in terms of gender, age, school type, and parental education), ANOVA (e.g., analyzing whether users and non-users of Generative AI differ in their level of trust in the information generated by AI), and repeated measures analysis (e.g., within-subject comparisons of how the same teens perceive Voice Assistants compared to Generative AI).



KEY FINDINGS



KEY FINDINGS

Teens’ Use of Artificial Intelligence

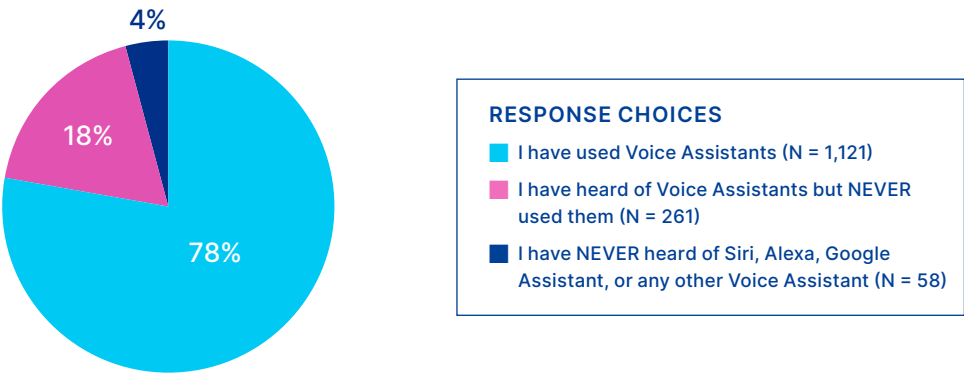
This section provides information on how teens have used Voice Assistants (VAs) and Generative AI (GenAI), including their familiarity with these technologies and how they are used. Given the relative novelty of GenAI, we also explore demographic differences between teens who have used this emerging technology and those who have not.

Voice Assistants

Most teens are using Voice Assistants.

Voice Assistants are widely used by teens, with more than three-quarters (77.8%) indicating that they have used a VA such as Siri (42.8%), Alexa (28.9%), and Google Assistant (25.7%).

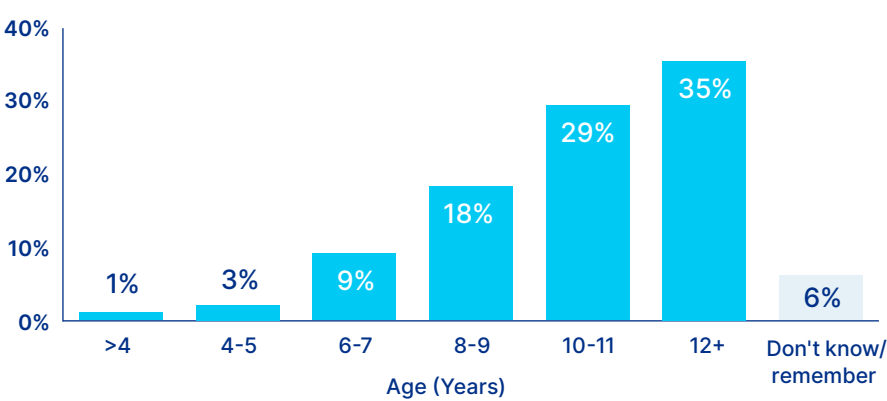
Have you ever heard of or used any Voice Assistants?



Among teen Voice Assistant users, about half started using them between the age of 8 and 11, primarily for educational and entertainment purposes.

46.9% of teens reported that they first used a Voice Assistant between ages 8 and 11, and a third of respondents (35.3%) started using these tools at age 12 or older. Over half of teens reported using VAs frequently when they first started using them: 31.9% indicated that they used them several times a week, and 23% used them daily. Teens reported that they first started using VAs for a variety of activities, including listening to music (53.3%), asking questions to learn (48.7%), or for fun (42.4%).

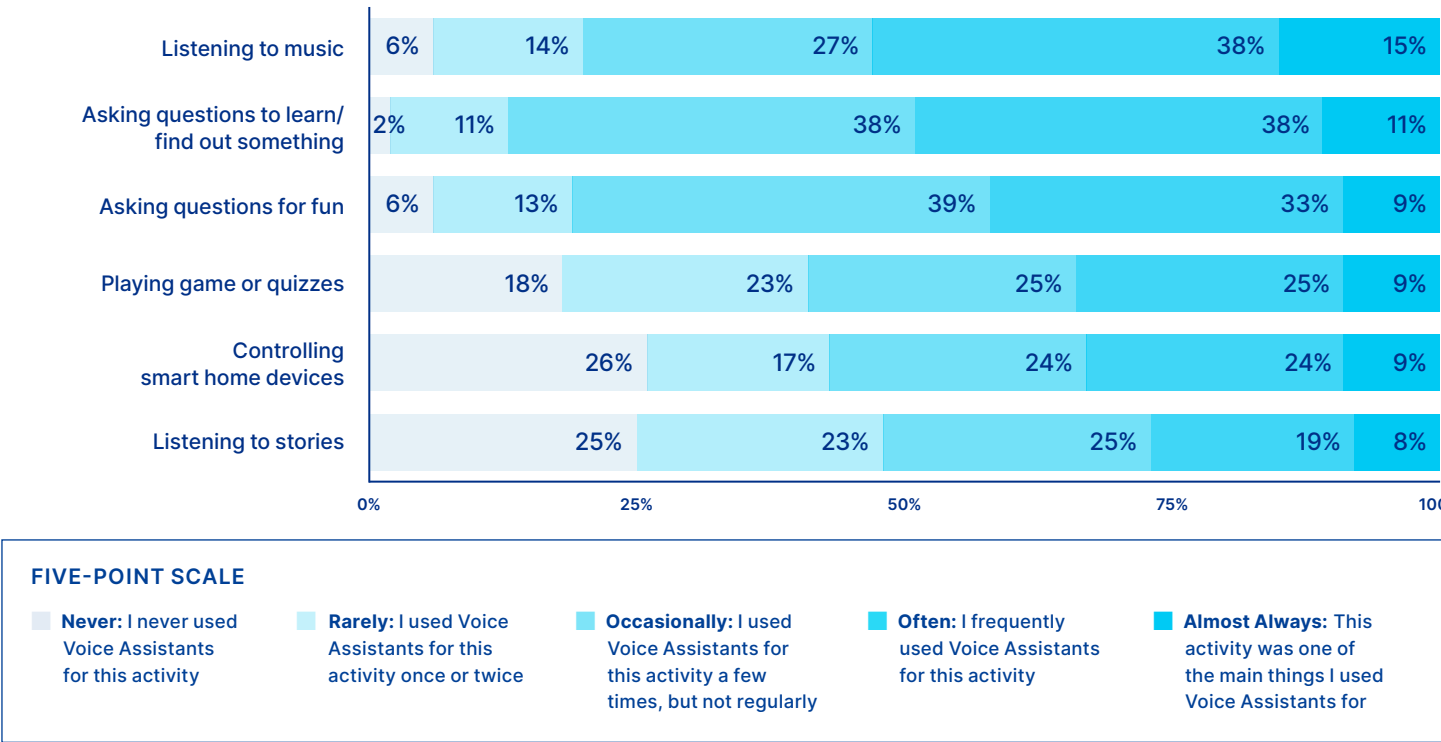
Around what age did you start using a Voice Assistant?



KEY FINDINGS

Teens reported that they first started using Voice Assistants for a variety of activities.

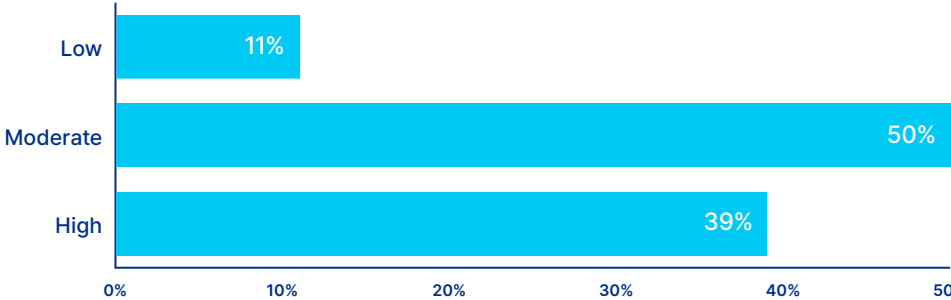
When you first started using Voice Assistants, how often did you use them for the following activities?



The large majority of teens who have used Voice Assistants reported having moderate to extensive experience with this technology.

Specifically, 49.7% of teens described their experience with Voice Assistants (VAs) as “moderate”, meaning they have a solid understanding of VAs and have used them fairly often; 39.1% reported having a “high” level of experience, indicating they are very knowledgeable about VAs and have used them extensively across different contexts.

How would you describe your level of experience with Voice Assistants?



RESPONSE CHOICES

Low: I have a basic understanding of Voice Assistants and have used them a little

Moderate: I have a good understanding of Voice Assistants and have used them a fair amount

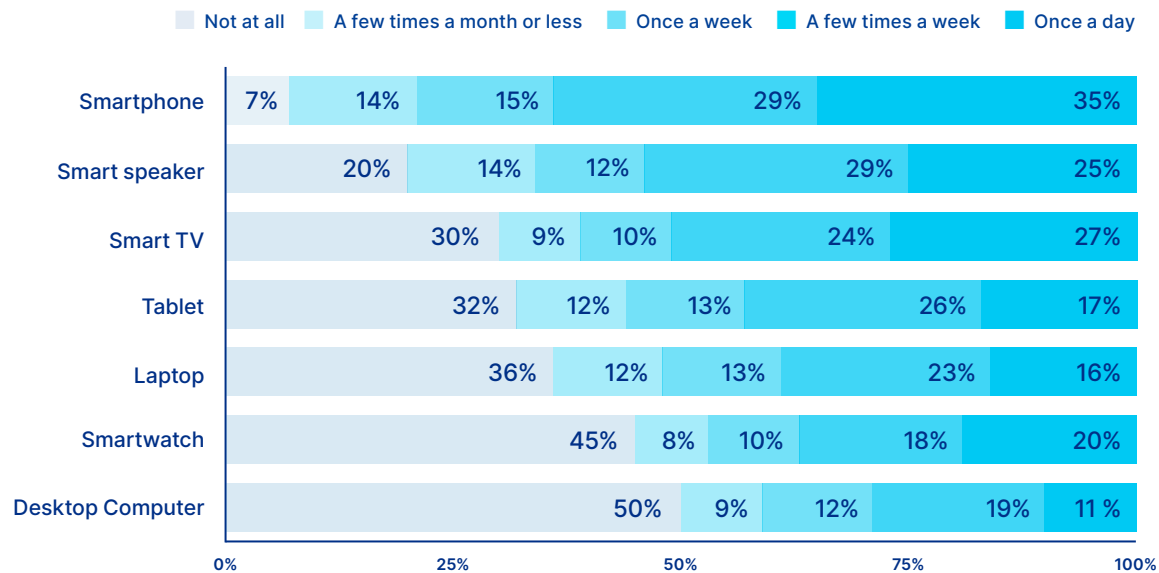
High: I am very knowledgeable about Voice Assistants and have used them extensively

KEY FINDINGS

Teens seemed to largely interact with Voice Assistants on smartphones, smart speakers and smart TVs.

More than three-quarters (78.7%) of teens indicated that they use Voice Assistants (VAs) on their smartphones at least once a week, and 65.9% are using VAs at least once a week on a smart speaker. Roughly two-thirds (61.1%) of teens interact with a VA on a smart TV at least once a week.

How often have you interacted with a Voice Assistant on the following devices?

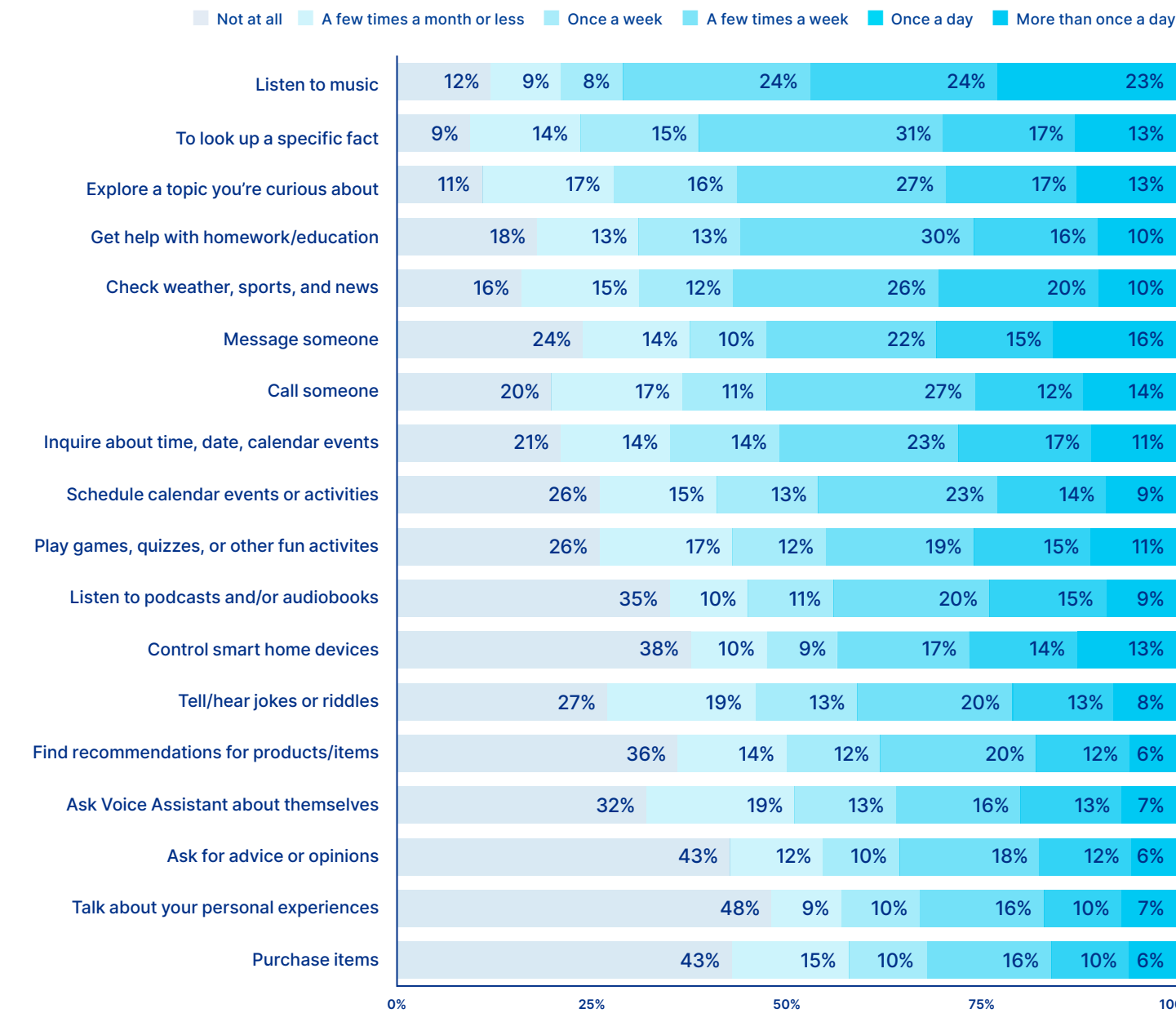


KEY FINDINGS

Teens reported using Voice Assistants for a range of purposes.

When asked about how frequently they use Voice Assistants (VAs) for specific tasks, teens indicated that they are using these tools for a range of practical, entertainment, and socialization purposes. They most frequently use VAs to listen to music, with approximately three-quarters (71%) reporting that they do so at least a few times a week. After listening to music, the tasks for which teens use VAs most frequently are largely functional in nature, such as looking up specific facts (61.5%) or checking for updates such as the weather, news, or sports (56.7%). Teens reported using VAs less frequently for activities related to personal or social matters: 48% of teens indicated having never talked to a VA about their personal experiences, and 43% have never asked one for advice or opinions.

How frequently have you used Voice Assistants for the following tasks?



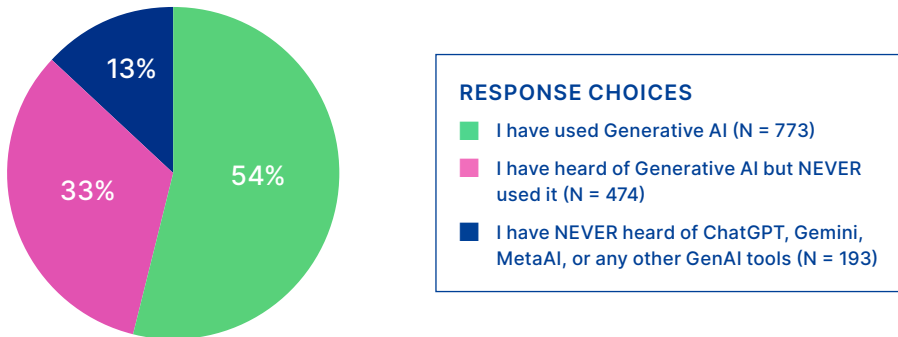
KEY FINDINGS

Generative AI

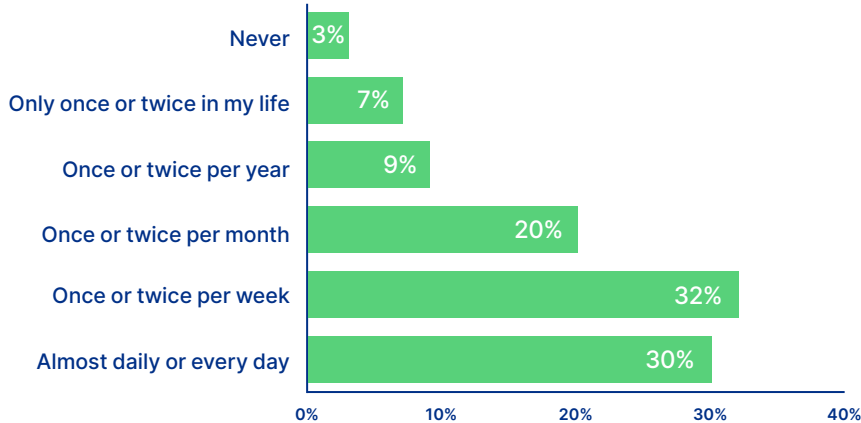
Most teens have heard of Generative AI, and many use it every day or almost every day.

Generative AI (GenAI) is an emerging technology, but more than half of teens (53.7%) said they have used GenAI tools like ChatGPT, Gemini, or MetaAI. Another third (32.9%) have heard of GenAI but never used it themselves, while many fewer (13.4%) have never heard of these tools. Many teens who are users of GenAI use the technology regularly, with 30% using it every day and another 32% using it once or twice a week.

Have you ever heard of or used any Generative AI tools?



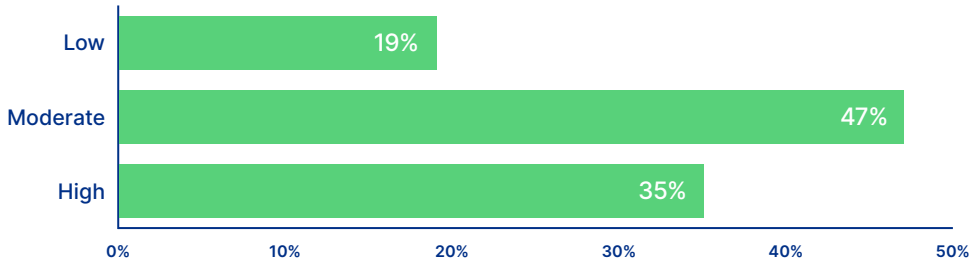
How often do you use Generative AI overall?



Over 80% of teens who use Generative AI said they have moderate to extensive experience with this technology.

Even though all users of GenAI are fairly new to the technology, more than a third of teens (34.5%) reported that they are very knowledgeable about GenAI and have used it extensively. Almost half (46.8%) of teens reported a more moderate understanding of the tech, saying they have a good understanding of GenAI and have used it a fair amount.

How would you describe your level of experience with Generative AI?

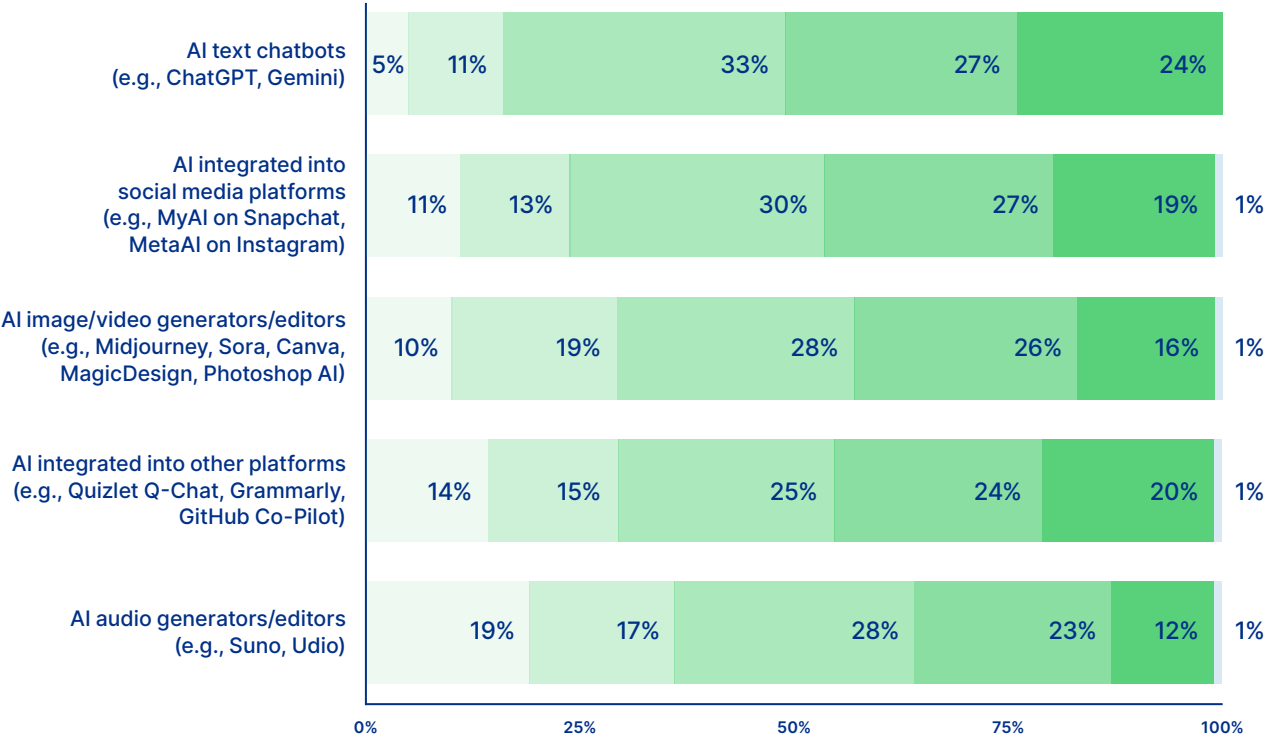


KEY FINDINGS

Teens who use Generative AI said they have a good understanding of how to use the different Generative AI tools effectively.

Considering the accessibility and ease of use of ChatGPT, it may not be surprising that teens saw themselves as particularly skilled in using AI chatbots: the majority (51.1%) described themselves as skilled or very skilled at using these tools. Nearly half of teens (44.8%) said they were similarly skilled in using AI integrated into social media platforms, such as MyAI on Snapchat or MetaAI on Instagram.

Please indicate your level of skill for each of the following Generative AI tools.



SIX-POINT SCALE

- Not at all skilled: I have no experience or ability with this Generative AI tool
- Not very skilled: I have minimal experience and struggle to use this Generative AI tool effectively
- Somewhat skilled: I have a basic understanding and can perform simple tasks using this Generative AI tool
- Skilled: I have a good grasp of this Generative AI tool and can use it effectively for a variety of tasks
- Very skilled: I have advanced knowledge and can use this Generative AI tool proficiently for complex tasks and problem-solving
- I don't know/I don't remember

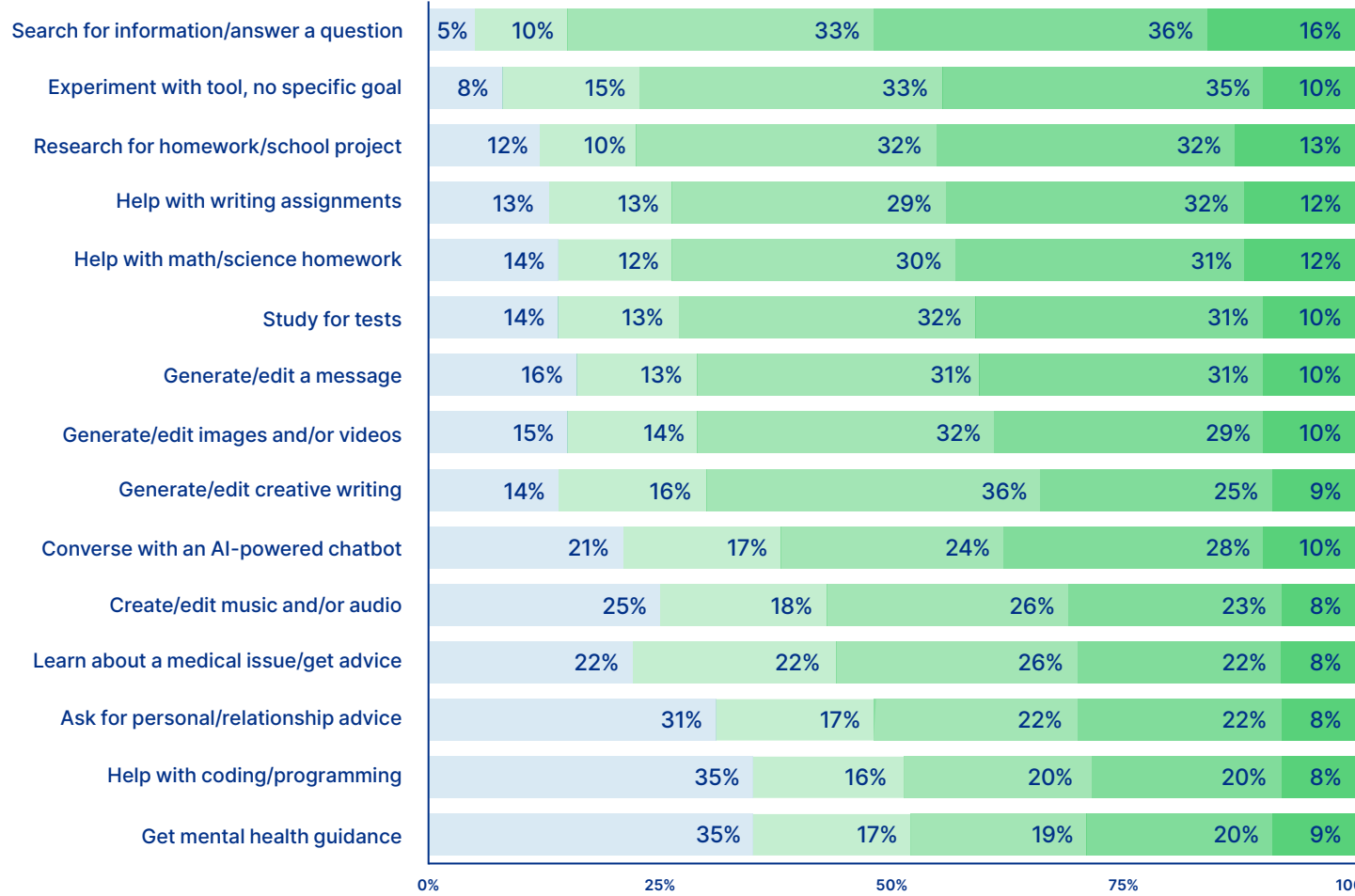
KEY FINDINGS

Teens use Generative AI for a wide range of activities, particularly for research and studying.

For teens in our study who use Generative AI (GenAI), the most common uses were for tasks related to schoolwork, gathering information, and communication. When they use GenAI, over half (51.8%) of these teens search for information to answer a specific question often or almost always. A sizable percentage of teens also reported researching for homework or school projects (45%) and drafting communications, such as emails or texts (40.8%) often or almost always when they use GenAI.

Generally, teens reported turning to GenAI for personal matters less frequently. For example, 28.6% sought mental health guidance and 30.4% turned to it for relationship or personal advice often or almost always. While these figures are lower, nearly a third of teens still engage with AI for these sensitive topics.

When using Generative AI, how often have you done each of the following activities?



FIVE-POINT SCALE

Never: I never used Generative AI for this activity

Rarely: I have done this Generative AI activity once or twice ever

Occasionally: I have done this Generative AI activity a few times, but it is not regular

Often: I do this Generative AI activity frequently

Almost Always: I do this activity in most of my Generative AI sessions

KEY FINDINGS

How do Generative AI Users Differ from Non-Users?

In this section, we examine some key differences between teens who have used Generative AI (GenAI) (N = 773) and those who have not (N = 667).

Gender & Age

While boys were significantly more likely to be GenAI users compared to girls, there was no age difference between users and non-users. More than half of the boys (57.9%) but fewer girls (49.5%) said they had ever used GenAI.

School Type

Teens in private schools were significantly more likely to use GenAI compared to their peers in public or homeschool settings. 67.5% of private school students reported using GenAI, compared to 52.2% of public school students and 54.8% of homeschooled teens.

Parental Education

Teens reporting higher levels of parental education were significantly more likely to use GenAI. Among teens whose parents have bachelor degrees and lower, 52.3% have used GenAI. In contrast, 65.3% of teens whose parents hold an advanced degree report using GenAI.

Race/Ethnicity

Overall, a higher proportion of White teens reported using GenAI compared to their Hispanic/Latinx and Black/African American peers. 58.6% of White (non-Hispanic) teens said they have used GenAI, compared to 48.3% of Hispanic/Latinx teens and 45.2% of Black (non-Hispanic) teens.

Device Access

Teens who are the primary users of smartphones and smart speakers were more likely to use GenAI tools. For example, 61.2% teens who are the primary users of a smartphone and 64.3% teens who are the primary users of a smartwatch have used GenAI.

We found that teens who were boys, White, reported higher parental education levels, and/or attended private schools are more likely to use GenAI. While we did not ask directly about household income in this survey, many of these factors (e.g., race/ethnicity, parental education, school type) are often related to socioeconomic status. **These results suggest that access, exposure and support related to the use of digital devices, potentially influenced by socioeconomic factors such as parental education and school type, plays a role in shaping engagement with GenAI among teens.**

Teens’ Attitudes About Artificial Intelligence

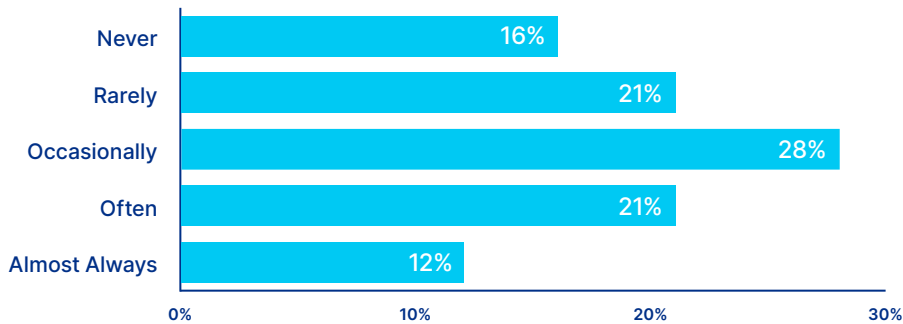
This section addresses teens’ trust in and concerns with Voice Assistants (VAs) and Generative AI (GenAI), their perceptions of the tools’ impact, and their thoughts on AI’s interpersonal potential. We then take a closer look at how teens who have used both VAs and GenAI view these tools differently from one another.

Attitudes About Voice Assistants

About 40% of teens never or rarely check additional sources to verify the information they gather from Voice Assistants.

In general, most teens are not checking additional sources to verify the accuracy and information provided by VAs. Almost half (49%) do this rarely or occasionally and 16.2% never check. There are, however, about one-third (32.8%) of teens who regularly (often or almost always) use additional sources to verify information from these devices.

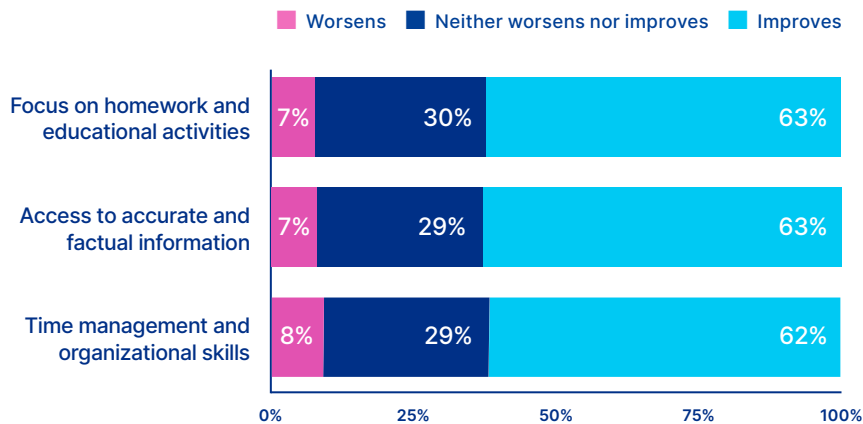
How often do you check additional sources to verify the truth/accuracy of the information you get from Voice Assistants?



The majority of teens who use Voice Assistants believed these tools improve their time management, research, and schoolwork.

Most teens reported that VAs improved rather than worsened some areas key to their successful completion of their schoolwork. 63% believe that VAs improve their access to accurate information, 62.6% believe that this technology improves their time management and organization skills, and 62.4% believe that it improves their ability to focus on educational tasks.

How do you think using Voice Assistants influences your ability in each of the following areas?

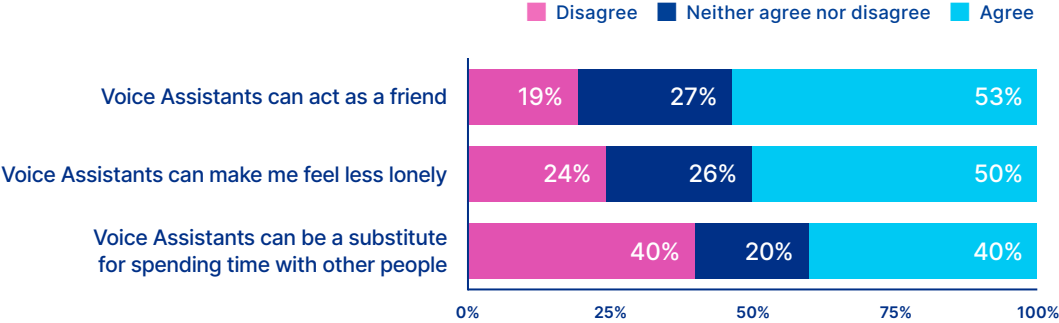


KEY FINDINGS

More than half of teens agreed that Voice Assistants can act as a friend.

In addition to seeing Voice Assistants (VAs) as a valuable source of information and time management, many teens consider them as having the ability to fulfill positive social needs, including 53.2% who say they can act as a friend, and 49.6% who agree that interacting with VAs can make them feel less lonely. This belief only goes so far, with fewer teens (40.2%) seeing VAs as a substitute for spending time with other people.

How much do you agree or disagree with the following statements about Voice Assistants?

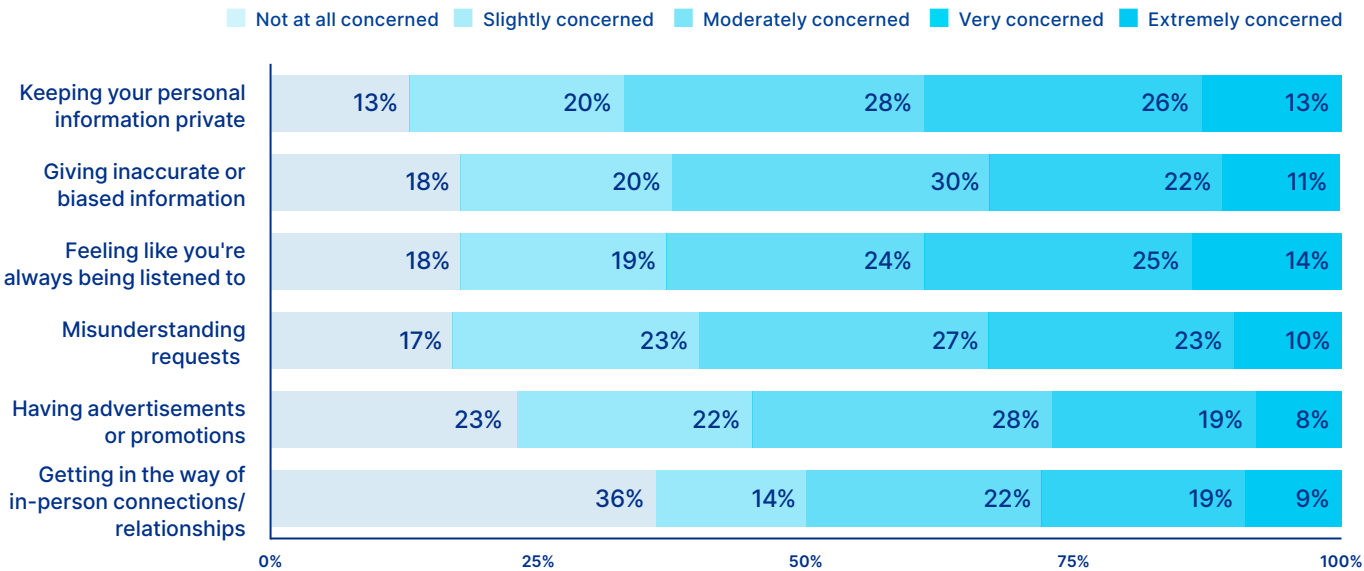


When using Voice Assistants, teens were most concerned about their privacy and the functionality or reliability of this technology.

Many teens do hold concerns about their privacy when using VAs, with 67% of teens being moderately to extremely concerned about keeping their personal information private, and 63.3% equally concerned about being listened to constantly.

In terms of VAs’ functionality, 62.5% of teens indicated they are concerned about these tools giving them inaccurate or biased information; 60% worry about VA’s ability to understand their requests.

How concerned are you about the following issues related to using Voice Assistants?

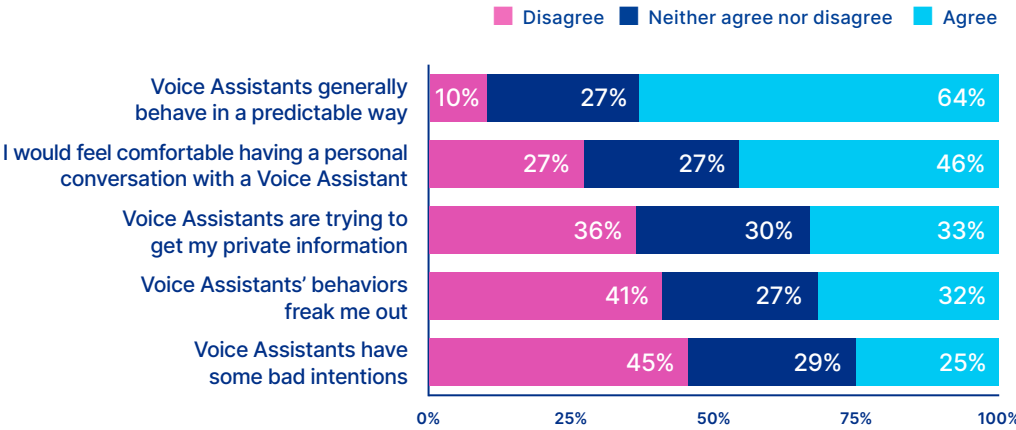


KEY FINDINGS

The majority of teens were comfortable with their understanding of how Voice Assistants work.

63.4% of teens agree that Voice Assistants (VAs) generally behave in a predictable manner. One-third (31.7%) indicated that VAs’ behavior “freaks them out.”

How much do you agree or disagree with each of the following statements about Voice Assistants?



Additionally, teens were generally confident in their ability to identify when Voice Assistants provided them with inaccurate information.

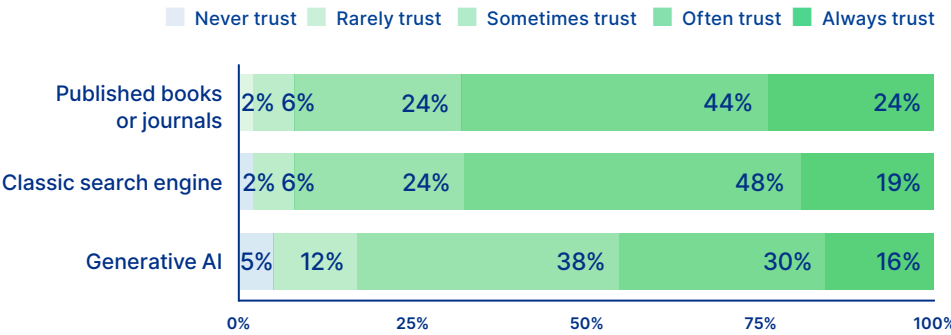
Specifically, 62.4% of teens shared that they feel confident in their ability to determine if a response from a VA is accurate or unbiased. With this in mind, 63.1% of teens indicated that they trust the responses provided by VAs.

Attitudes About Generative AI

While teens indicated that they do use Generative AI for schoolwork, they still trusted it significantly less than classic search engines and academic journals.

When gathering information on an unfamiliar topic to write an academic paper, roughly two-thirds (67.8%) of teens indicated that they often or almost always trust search engines and 67.7% reported that they trust published books or journals. Less than half (45.3%) of teens, however, said that they often or almost always trust Generative AI to give them accurate or factual information.

How much do you trust each of the following sources to give you accurate/factual information?

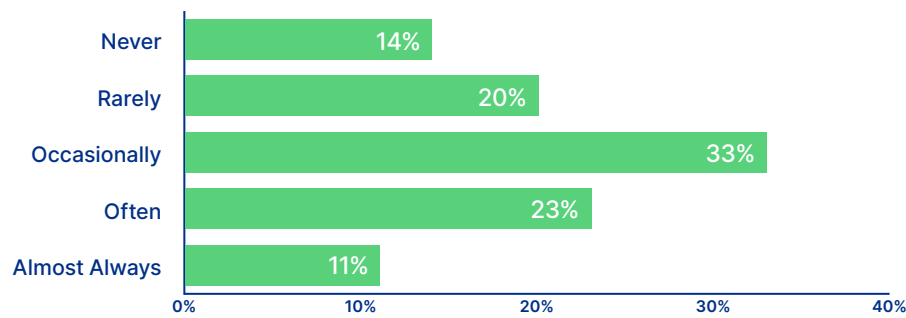


KEY FINDINGS

About one-third of teens who use Generative AI never or rarely verify the information they gather from it.

33.3% of teens often or almost always check additional sources to verify the information they collect from Generative AI (GenAI) tools, and 32.5% occasionally check. 19.7% of teens rarely check the accuracy of the information they collect from GenAI resources, and 14.4% never do so. When teens do check on other sources, they most often turn to search engines (73.5%), social media platforms (46.4%), and asking friends or family (44.4%).

How often do you check additional sources to verify information from Generative AI?

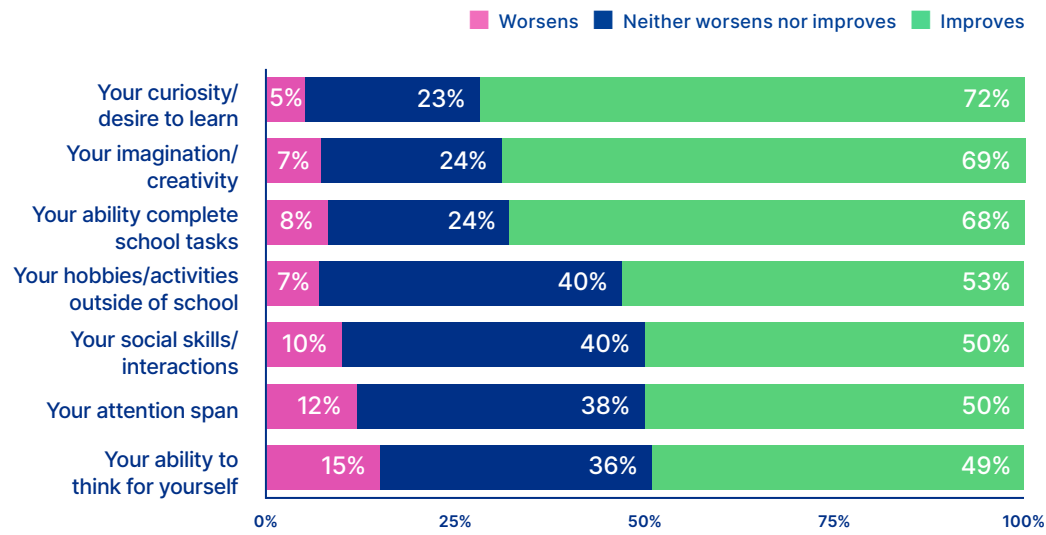


Teens were optimistic about Generative AI’s potential to improve their imaginative, learning, and productive capabilities.

Almost three-quarters (72.6%) of teens believe that GenAI improves their curiosity and desire to learn, and 68.3% believe that these tools will strengthen their imagination and creativity. 67.9% see GenAI as tools that can improve their ability to complete school tasks.

Additionally, roughly half of teens believe GenAI can help them with hobbies or activities outside of school (53.6%), their social skills (50.3%), their ability to think for themselves (49.2%), and their attention span (49.7%). Notably, over one-third of teens felt neutrally about GenAI’s ability to help them with these tasks and skills; these findings suggest that teens may see these tools as better equipped to help with specific tasks as opposed to developing higher-level skills like attention and critical thinking.

How do you think using Generative AI influences your ability in each of the following areas?

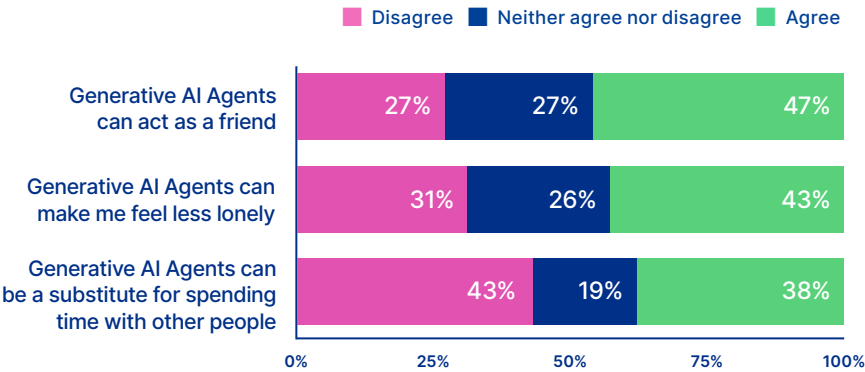


KEY FINDINGS

Almost half of teens agreed that Generative AI can act as a friend.

43.4% believe that Generative AI (GenAI) can make them feel less lonely, and roughly one-third (37.7%) believe that these tools can be a substitute for spending time with other people.

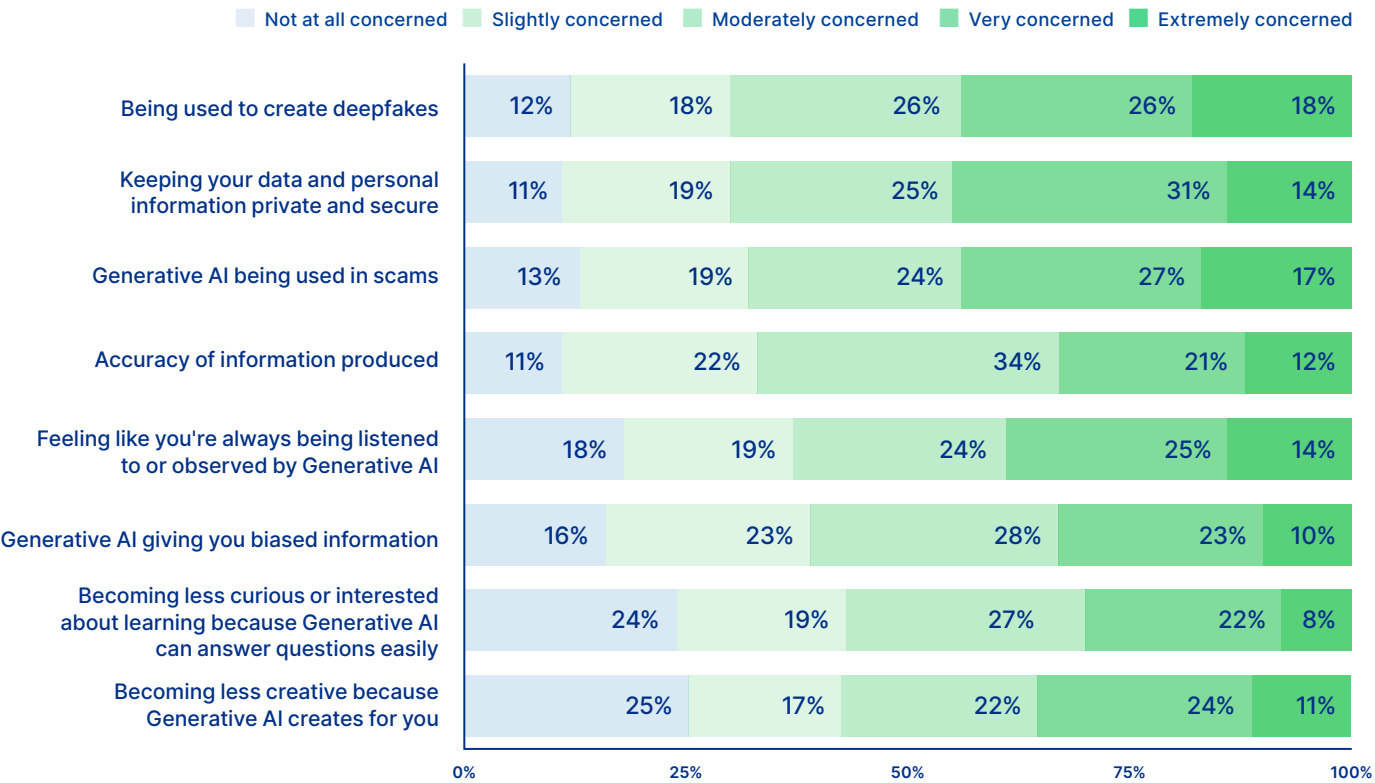
How much do you agree or disagree with the following statements about Generative AI Agents?



Teens who use Generative AI cited concerns about the ways in which it can be misused.

Specifically, they were concerned about keeping their personal information private, encountering false or deceptive information, and seeing GenAI used for creating scams. Almost three-quarters (70.2%) of teens are moderately to extremely concerned about keeping their data and personal information private. Additionally, 69.6% reported concern about their likeness being used to create deepfakes, and 68.1% are concerned about GenAI being used in scams.

How concerned are you about the following issues related to using Generative AI?



KEY FINDINGS

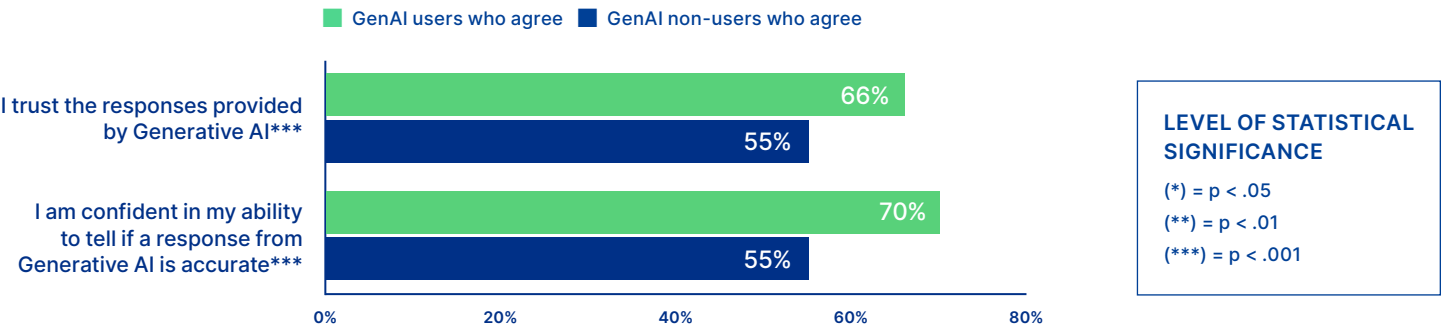
Comparing Generative AI Users and Non-Users

Note: In this section, “users” (N = 773) refer to teens who have used Generative AI (GenAI) before, while “non-users” are those who are aware of GenAI but have never used it (N = 474); these questions were not applicable to teens who were entirely unfamiliar with the technology.

Users were more likely than non-users to trust Generative AI’s responses and their own ability to determine if a response is accurate.

Teens who use GenAI are more likely to trust responses from this technology than non-users (66.1% vs. 54.5%); and users are more confident in their ability to tell if its response is accurate when compared to non-users (69.9% vs. 55.2%).

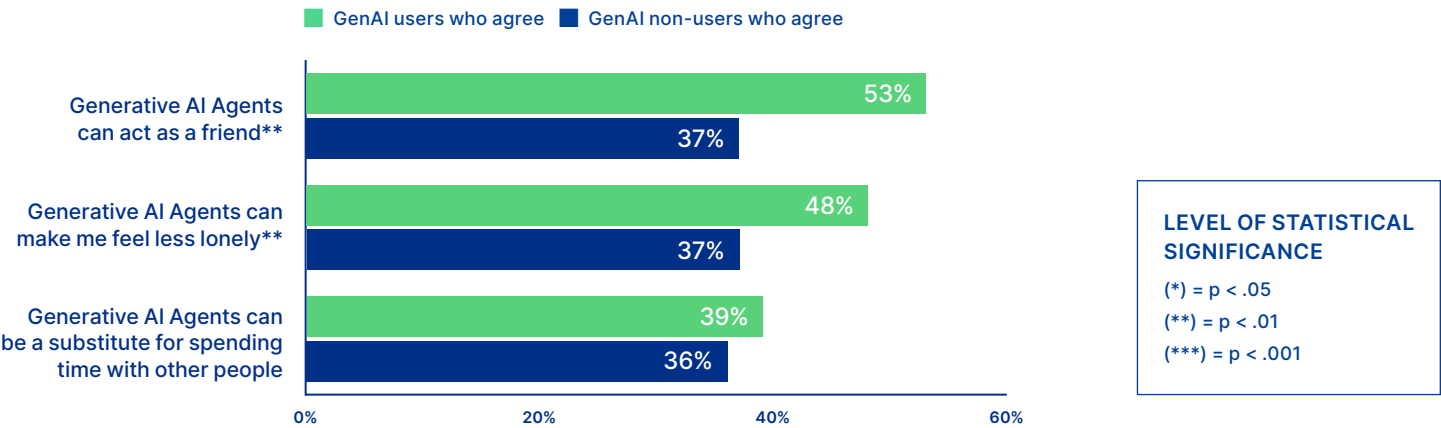
To what extent do you agree with the following statements?



Teens who use Generative AI were more likely than non-users to see this technology as having interpersonal potential.

Users are much more likely to agree that GenAI Agents “can act as a friend” than non-users (53% vs. 36.6%). Users are also more likely to agree that GenAI Agents “can make me feel less lonely” when compared to non-users (47.5% vs. 36.7%).

How much do you agree or disagree with the following statements about Generative AI Agents?

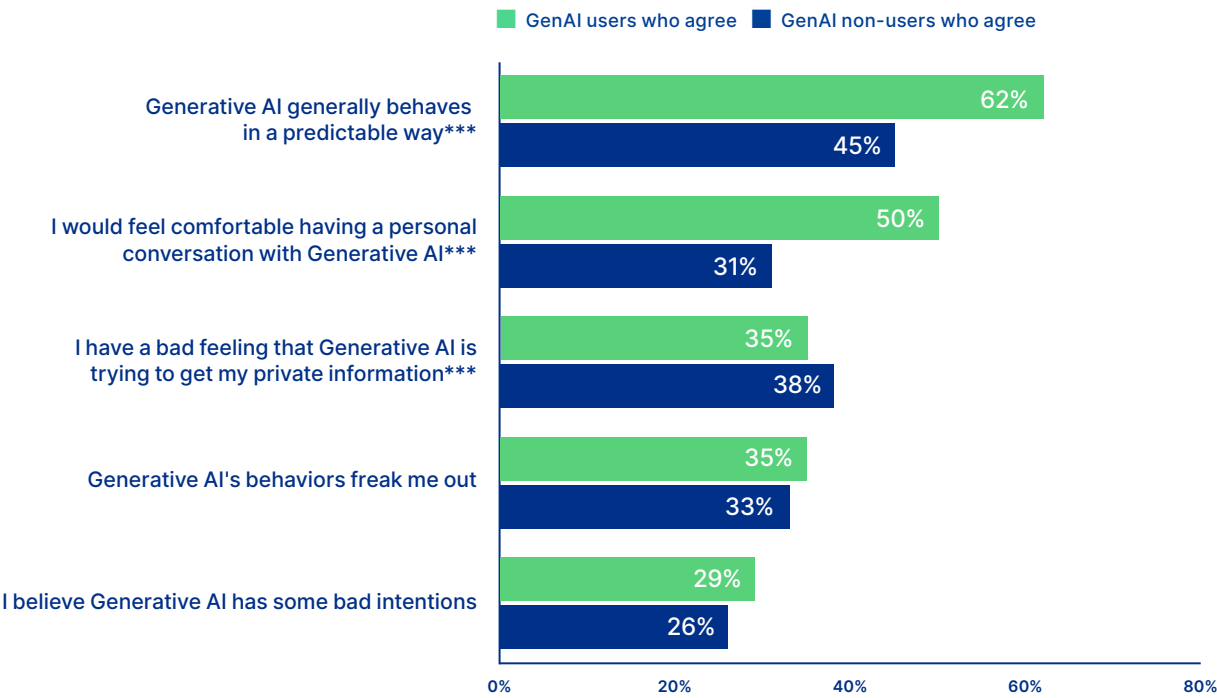


KEY FINDINGS

Teens who use Generative AI were more likely to agree that this technology “generally behaves in a predictable way.”

61.8% of users agree with this statement, compared to 45.4% of non-users. Additionally, users were slightly less likely to agree that “Generative AI is trying to get my private information” when compared to non-users (35.2% vs. 38.4%). For the statement, “I have a bad feeling that Generative AI is trying to obtain my private information,” 29.3% of non-users and 42.8% of users disagreed.

How much do you agree or disagree with each of the following statements about Generative AI?



LEVEL OF STATISTICAL SIGNIFICANCE: (*) = p < .05 (**) = p < .01 (***) = p < .001

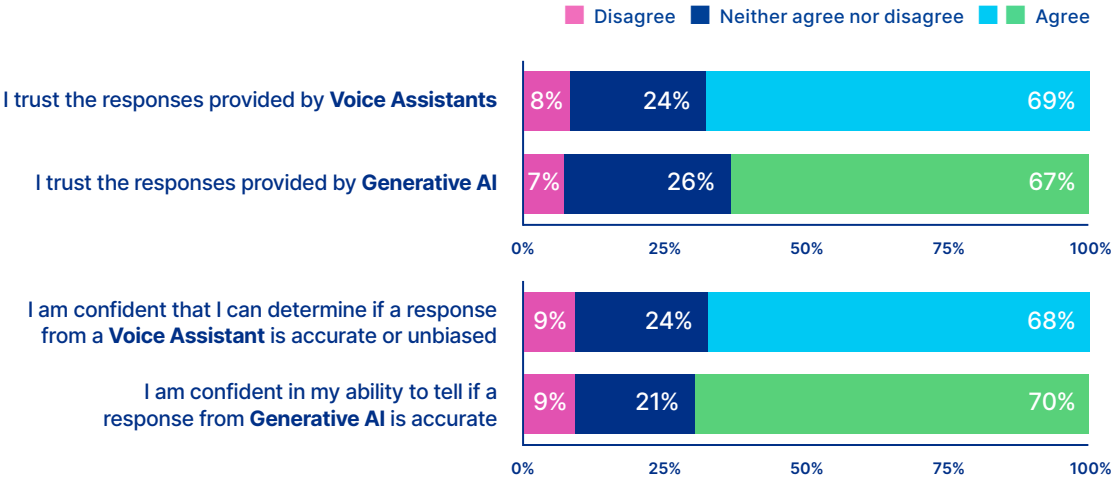
KEY FINDINGS

Do Teens View Voice Assistants and Generative AI Differently?

This section explores whether teens perceive Voice Assistants (VAs) and Generative AI (GenAI) differently. For teens who used both (N = 741), we used a within-subject analysis to assess individual-level differences in perceptions and attitudes toward the two technologies.

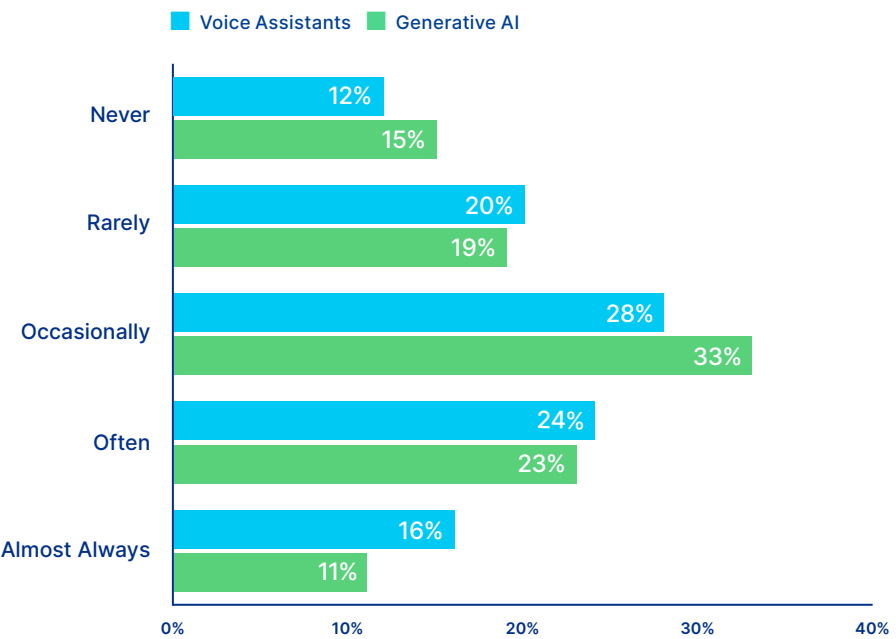
Overall, teens who use both Voice Assistants and Generative AI reported similar levels of trust in information sourced from these tools, including concerns about accuracy and bias.

To what extent do you agree with the following statements?



However, teens who use both tools reported verifying the accuracy of information generated by VAs with additional sources significantly more often than they did for information from GenAI. This may reflect differences in how these tools are used – for example, teens may consult VAs for more fact-based or practical inquiries compared to more creative or exploratory uses for GenAI.

How often do you check additional sources to verify the truth/accuracy of the information you get when using AI tools?***



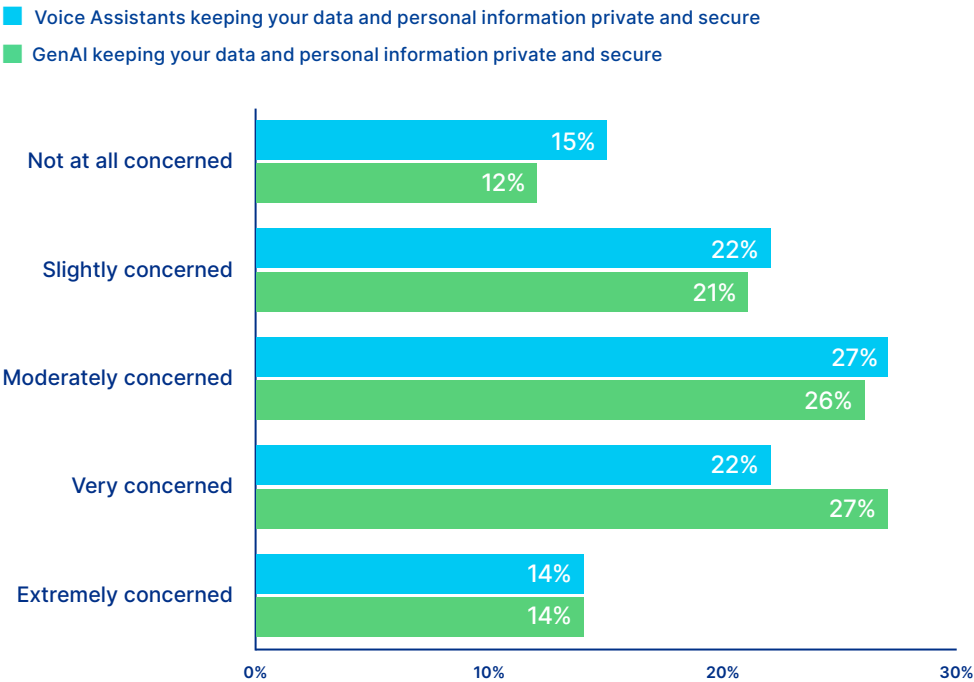
LEVEL OF STATISTICAL SIGNIFICANCE: (*) = p < .05 (**) = p < .01 (***) = p < .001

KEY FINDINGS

Significantly more teens said they are concerned about keeping their personal information private with Generative AI than with Voice Assistants.

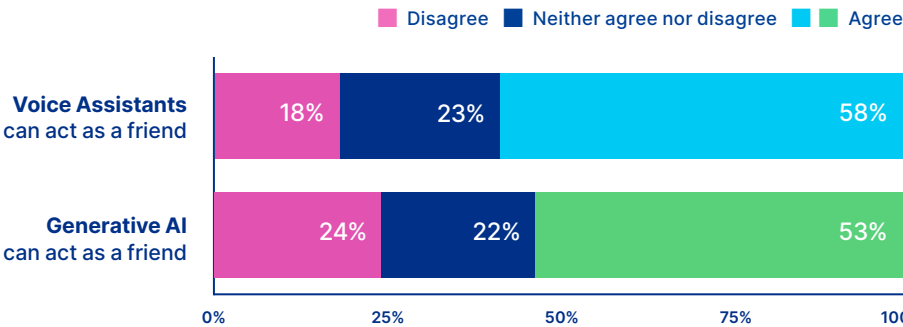
However, a majority of teens were concerned about their privacy when using both technologies. 67.1% of teens reported that they were moderately to extremely concerned about keeping their personal information private when using Generative AI (GenAI), compared to 62.7% who expressed this concern about Voice Assistants. These differences may stem from the novel, rapidly evolving nature of GenAI, which offers powerful new capabilities that users are still trying to grasp.

How concerned are you about the following issues related to using AI tools?***



A larger proportion of teens seemed to view Voice Assistants as social companions compared to Generative AI.

How much do you agree or disagree with the following statement?*



LEVEL OF STATISTICAL SIGNIFICANCE: (*) = p < .05 (**) = p < .01 (***) = p < .001

Education, Information, and Guidelines Around Artificial Intelligence

Teens use AI-powered tools in different settings, each with different sets of expectations, guidelines, and rules for how they can interact with these technologies. Survey participants shared how parents discuss and set guidelines around AI use, as well as their experiences with school instruction and classroom rules related to AI.

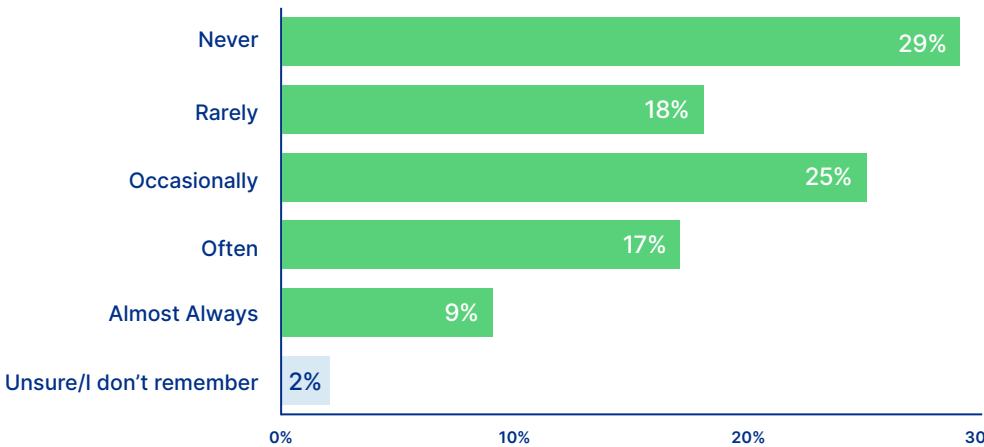
Artificial Intelligence at Home

Among teens who have used Generative AI, around a quarter reported frequent parental monitoring or using these tools together with their parents.

How teens use GenAI with their parents varies, with over one-quarter (28.2%) often or almost always using this technology together. Rather than co-use, roughly half of teens reported being monitored by their parents: a quarter (24.7%) say their parents monitor their use occasionally, and another one-quarter (25.5%) indicate that their parents often or almost always monitor their use of this technology.

Many teens report using Generative AI tools with some degree of parental observation.

How often do your parents/ caregivers monitor your use of Generative AI tools?



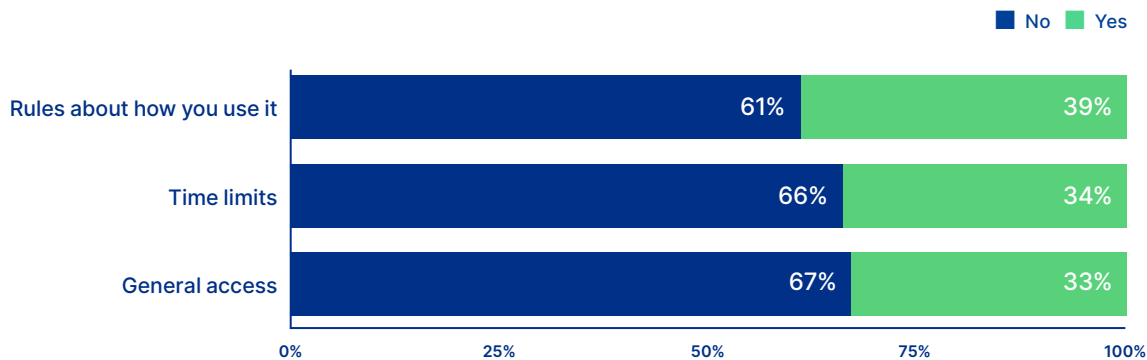
About one-third of teens indicated that their parents have rules or restrictions regarding their use of Generative AI.

Over 60% of teens indicated that their parents do not have rules around general access, time limits, or how they can use this technology. However, when parents do restrict their use of GenAI, teens generally agree with these measures. Specifically, more than three-quarters (78.1%) of teens indicated that they agree with these rules or expectations for using GenAI.

KEY FINDINGS

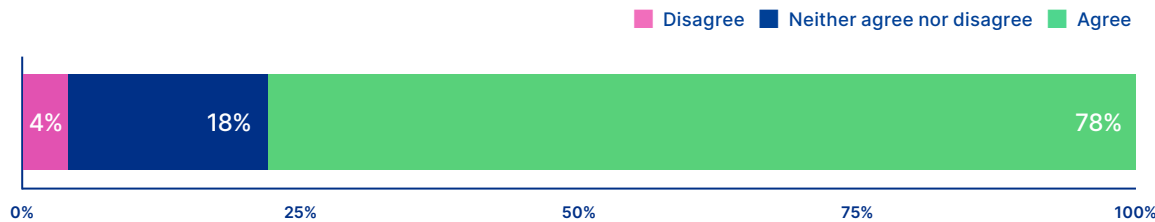
The majority of teens are using Generative AI without parental rules or restrictions.

Do your parents have rules regarding your use of Generative AI in the following area?



When parents do restrict their use of Generative AI, teens agree with these measures.

How much do you agree with your parents' rules/expectations on how you use Generative AI?



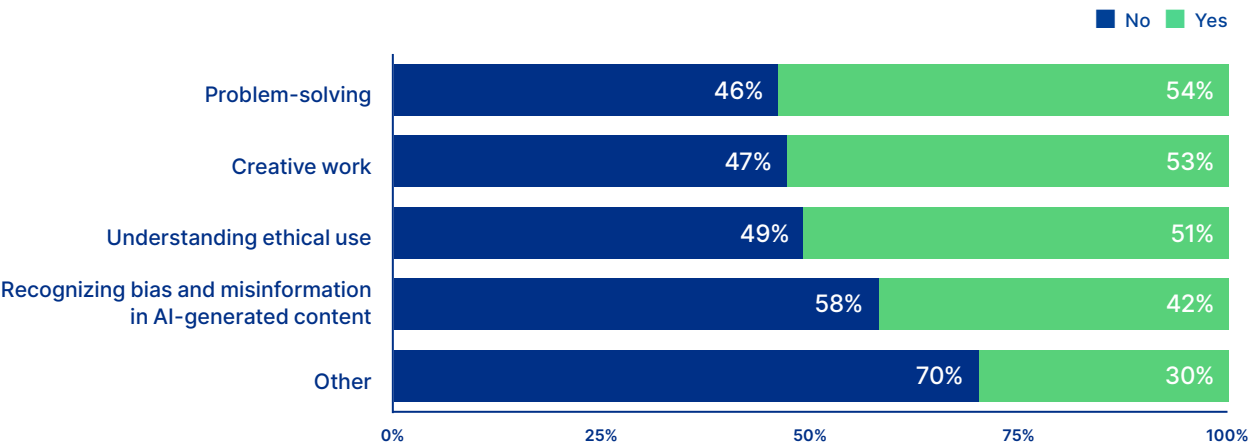
KEY FINDINGS

Artificial Intelligence at School

Roughly half of teens reported having received some level of formal instruction related to using Generative AI.

Types of instruction included: how to use Generative AI (GenAI) for problem solving (54.2%), creative work (52.9%), and understanding the ethical use of these tools (51.4%). Over half (58.2%) of teens reported that they have not received instruction on recognizing bias and misinformation in AI-generated content.

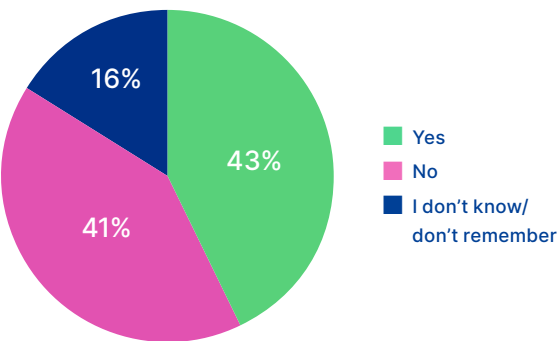
Have you ever received formal instruction related to the following uses of Generative AI?



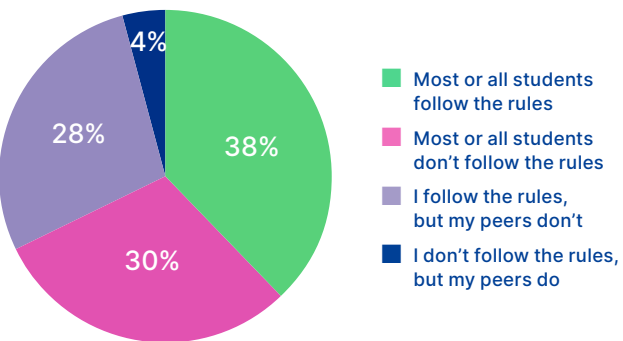
About 40% of teens reported having educator-driven rules about using Generative AI for schoolwork, and whether they followed these rules varied.

Whether teens’ educators develop rules for how they can use this technology is fairly split: 42.6% of teens indicated they have rules; 41.3% said they do not. Teens are also split on whether they follow these rules or not. Over one-third (37.7%) of teens report that all or most students follow the rules, another third (30.4%) indicate that most or all students do not follow the rules, and roughly one-quarter (27.7%) share that they follow the rules but their peers do not. Interestingly, one-quarter (25%) of teens reported having been accused of inappropriately using GenAI for their schoolwork.

Does your school or your teachers have rules about using Generative AI for schoolwork?



Do you and your peers generally follow the rules about using Generative AI for schoolwork?

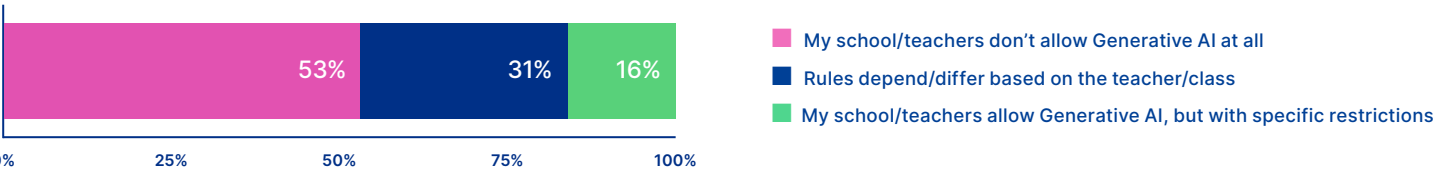


KEY FINDINGS

Over half of teens reported that their school or teachers do not allow them to use Generative AI at all in the classroom.

Whether teens are allowed to use Generative AI (GenAI) at all in the classroom depends on their educational setting. In addition to the half of teens who reported not being allowed to use GenAI at all, a third (30.9%) indicated that rules around use differ based on the teacher. Only 16% said that their school or teachers allow the use of GenAI, but with specific restrictions.

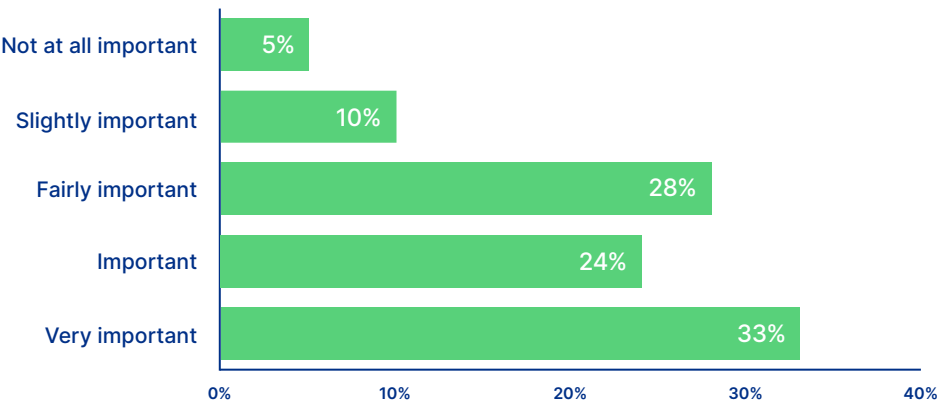
What rules do your school/teachers have about using Generative AI for schoolwork/homework?



The vast majority of teens reported that they believe it is important for young people to learn how to use Generative AI in ways that follow laws and rules about plagiarism.

Despite their mixed experiences with how they are trained and permitted to use GenAI, it is clear that most teens believe it is important to learn how to use these tools ethically. Only 5% of respondents indicated that they believe it is not at all important to learn how to use GenAI in accordance with these best practices.

How important is it for young people to learn how to use Generative AI in ways that follow laws and rules about plagiarism and information sharing?



KEY FINDINGS

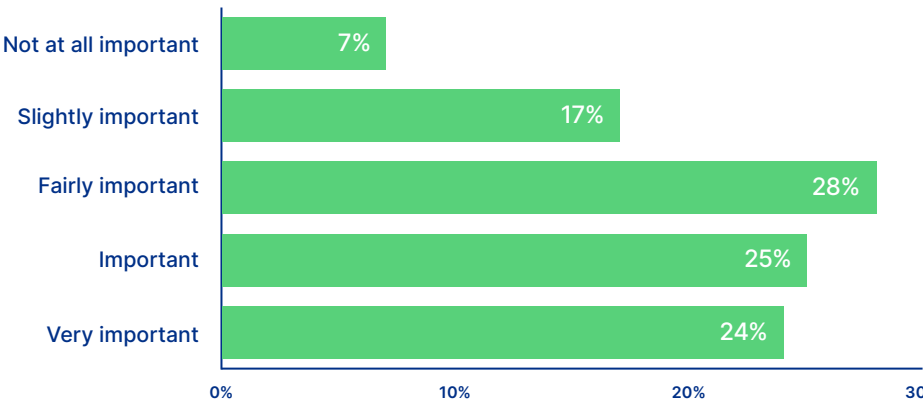
Teens and Artificial Intelligence: Where Do We Go From Here?

In this last section, we explore future-facing questions that teens responded to regarding Generative AI (GenAI). Teens answered questions about how they view GenAI’s impact, who they see as most knowledgeable about this technology, and who they see as responsible for ensuring that their generation has positive experiences with these tools.

Teens see Generative AI an important tool for achieving their goals efficiently, and one that will have a positive impact on their future opportunities and creative drive.

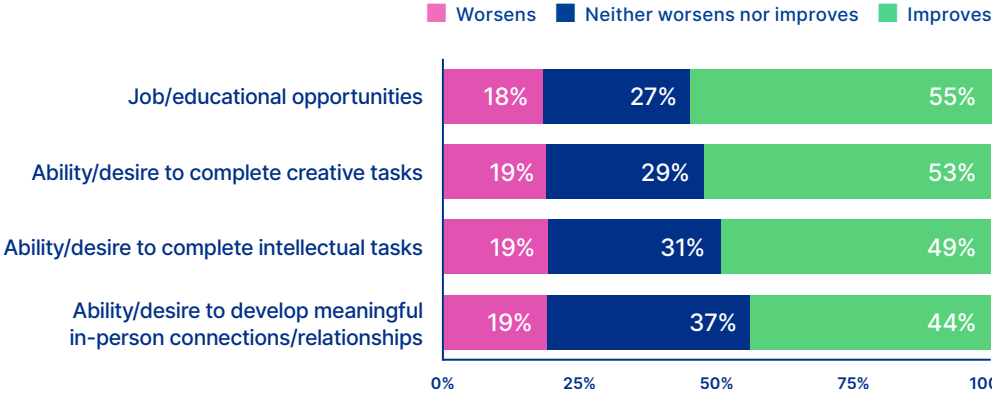
Teens are optimistic about GenAI’s potential to improve their ability to achieve goals in the present and future. 77% of respondents indicated that they think it is important for young people to learn how to use GenAI to accomplish what they want without wasting time or effort. More than half (54.7%) of teens indicated that they believe GenAI will improve their future professional and educational opportunities and reported that these tools will improve the ability and desire to complete creative tasks (52.1%).

How important is it for young people to learn how to use Generative AI to accomplish what they want without wasting time or effort?



More than half of teens believe that Generative AI will have a positive impact on their future opportunities and creative drive.

What impact do you think the future developments of Generative AI will have on your generation for each of the following?

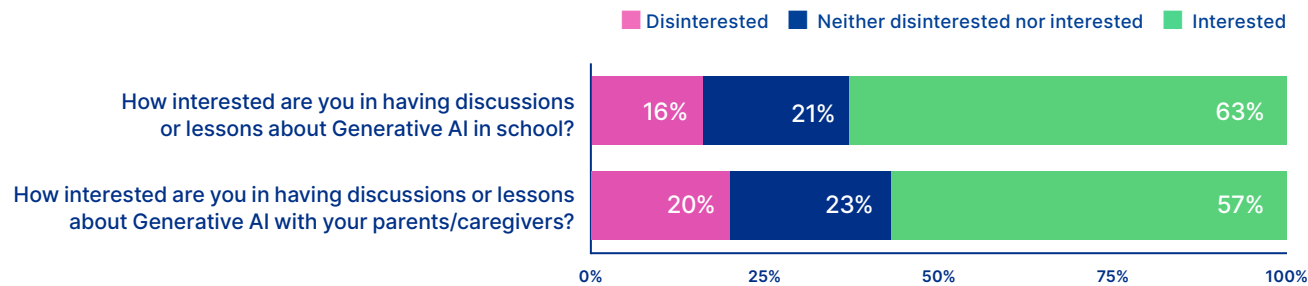


KEY FINDINGS

About two-thirds of teens said they want to have discussions about Generative AI, both in school and at home.

63% of teens reported that they would be interested in talking about Generative AI (GenAI) in educational settings, while 56.4% of teens said they would be interested in having these conversations with their parents or caregivers.

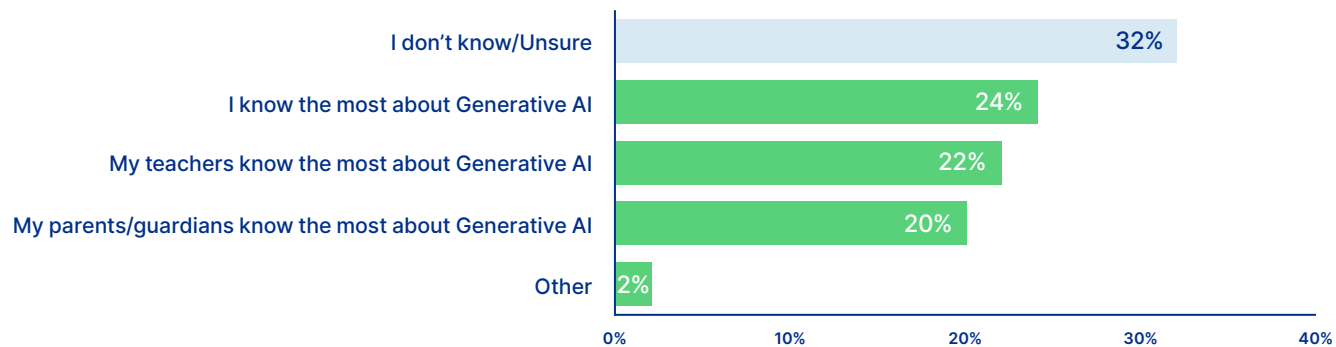
How interested are you in having discussions about Generative AI in school and at home?



Teens are divided on who knows the most about Generative AI, with nearly a third indicating that they are unsure.

When asked who they think knows the most about GenAI, teens are relatively split: 31.9% are unsure, 24.5% think they know the most, 22.2% think their teachers know the most, and 19.8% think their parents know the most.

In your opinion, who generally knows the most about Generative AI?



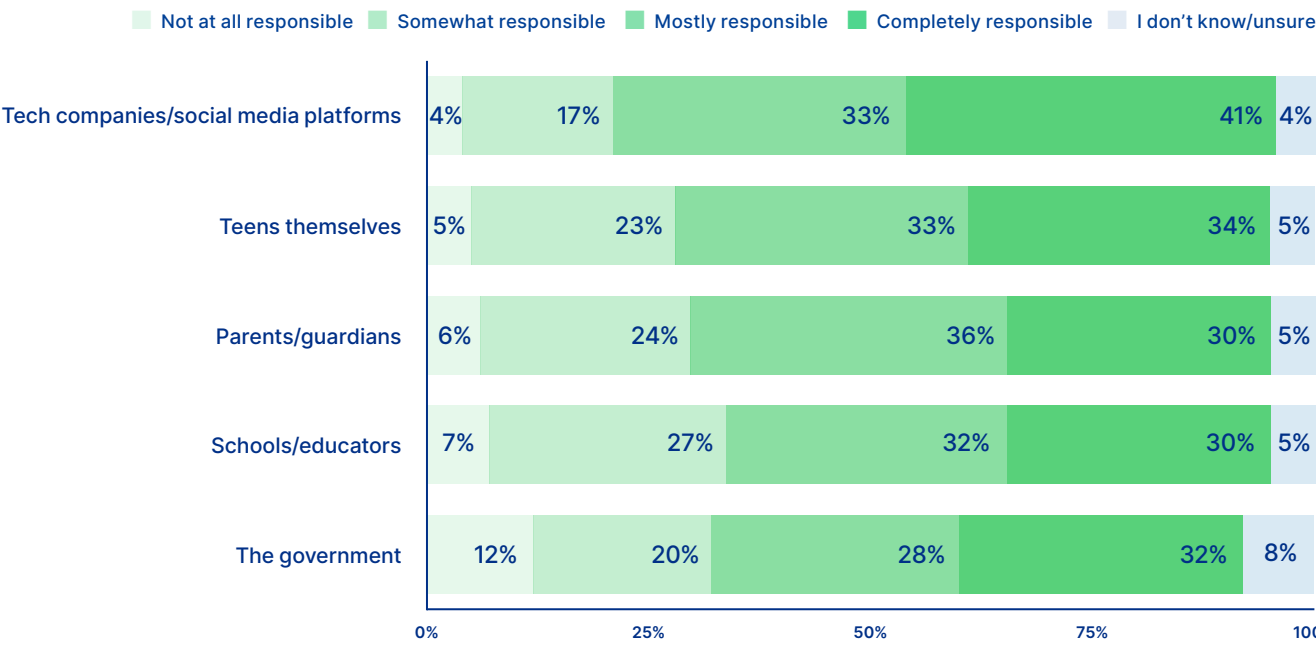
KEY FINDINGS

The largest proportions of respondents think that tech companies and teens themselves bear responsibility for making sure that young people have positive experiences when using Generative AI.

74.3% of teens see tech companies as mostly or completely responsible for ensuring that they have positive experiences with Generative AI (GenAI), and 66.6% of teens see themselves as mostly or completely responsible.

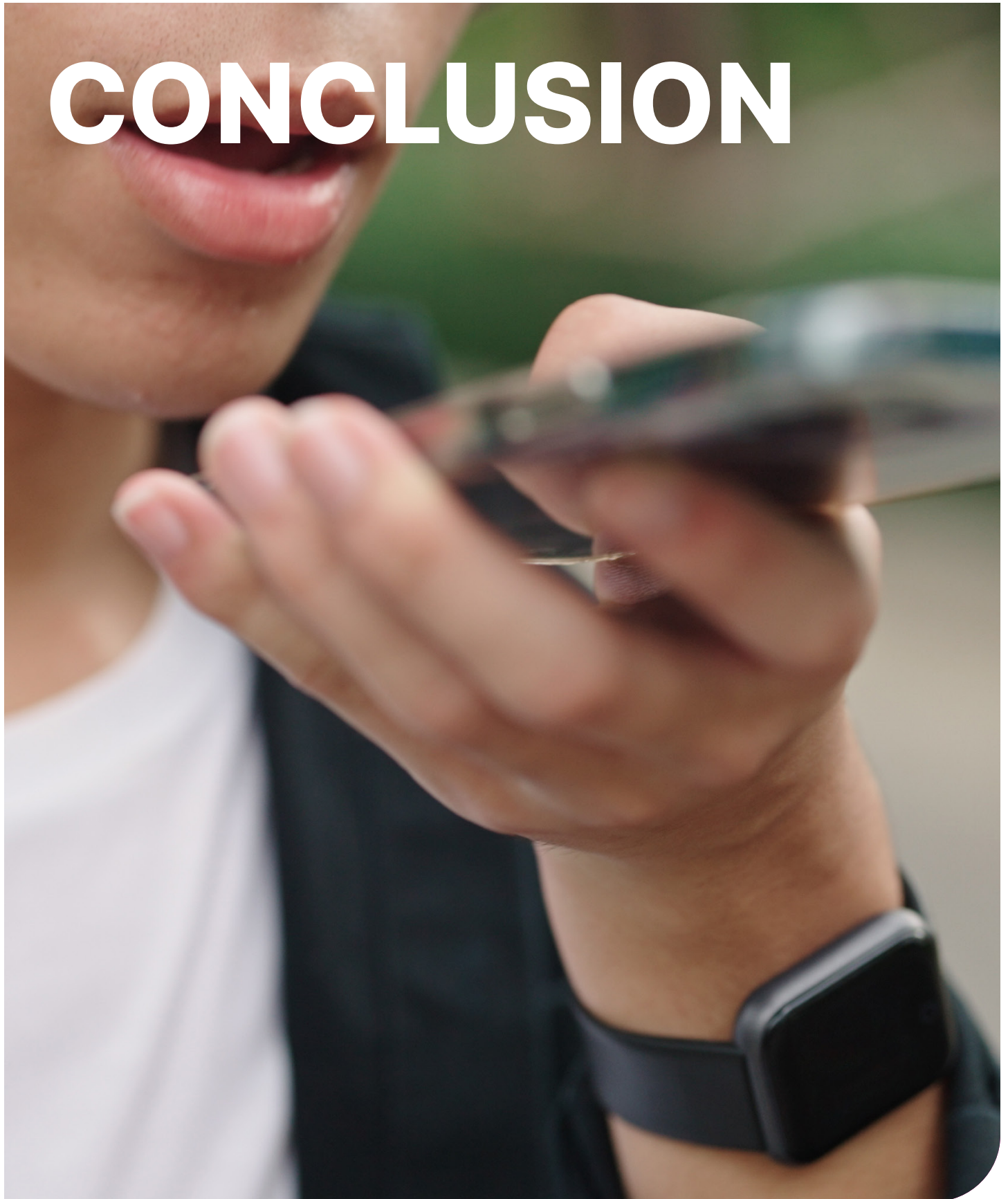
However, a majority of teens also see their parents (65.4%), educators (61.6%), and even the government (60.2%) as mostly or completely responsible for making sure that they have positive experiences with GenAI.

How responsible should each of the following groups be in making sure young people have positive experiences when using Generative AI?





CONCLUSION





Conclusion

Overall, this report clearly illustrates that teenagers are adopting Artificial Intelligence (AI) in their daily lives, whether they are entertaining themselves at home, conducting research for a school project, or discussing the technology with parents and teachers.

The majority of teens in our sample reported at least some experience with AI-supported tools, especially Voice Assistants, which they have largely used since childhood. However, a sizable number of teenagers still do not use Generative AI on a regular basis: almost half of teens said they had never used Generative AI, and among those who had, less than one-third reported using these tools daily. Our data also suggest that use of Generative AI is more common among teens who are boys, White, attend private schools, have highly-educated parents, and/or are the primary users of devices like smartphones. Although many young people who do not fit this profile are using Generative AI (e.g., 49.5% of girls, 45.2% of Black non-hispanic youth), this points to a potential “digital divide” between teens who have traditionally had access to cutting-edge technology and those who may lack the resources or support to fully leverage these new tools. Therefore, future research should track differences across these demographic groups to determine the need for interventions that support equitable access.

Additionally, teens’ reported use of AI highlights the importance of digital literacy education. Despite expressing concerns over the accuracy of information provided by Voice Assistants and Generative AI, many teens are not verifying the information provided by these tools using additional sources. Similarly, less than half of teens have reportedly received formal instruction about recognizing bias and misinformation in AI-generated content. Thankfully, our findings also show an opportunity here for additional guidance: most teenagers expressed interest in having more discussions about Generative AI at home and at school, and they overwhelmingly agreed on the importance of learning to use Generative AI in ways that follow laws and rules about plagiarism.

Our results also reveal clear trends in how teenagers use and view newer Generative AI tools differently from traditional Voice Assistants. Teens see distinct applications and benefits for each type of AI: Voice Assistants increase access to information and aid in the completion of daily tasks, while Generative can improve imagination, learning, and productive capabilities. They also recognized risks with these tools, such as Voice Assistants providing inaccurate or biased information and misunderstanding requests, or Generative AI being misused for deepfakes and scams. Notably, while most teens thought Voice Assistants had positive impacts on their academic functioning, they were fairly split on whether GenAI would enhance fundamental abilities like social skills, attention span, and independent thinking. In other words, it seems that teenagers recognize the duality of Generative AI, including its most promising impacts on their lives as well as its most detrimental uses.

CONCLUSION

Notably, teenagers consistently ranked issues related to privacy (e.g., protecting personal information, feeling like they are always being listened to/observed) as major concerns with both Voice Assistants and Generative AI. As AI-supported tools become more sophisticated in their ability to collect and synthesize information from different sources, it is more important than ever for these tools to clearly communicate what data is collected and how it is used. While teenagers placed the responsibility for ensuring their safety and wellbeing within these platforms primarily onto the tech industry, they also saw themselves, their teachers, their parents, and the government as responsible for ensuring positive experiences. Fortunately, these responses indicate that teens are willing to work with educators, parents, and the tech industry to find solutions together rather than turning against one another.

The findings from our research reinforce results from other recent large-scale surveys, which have shown a similar tension between teens' optimistic adoption of GenAI and anxiety around potential negative impacts. Our results align with these other reports in identifying teens' fears about GenAI's potential to steal their private information, provide inaccurate or biased information, and contribute to accusations of cheating or plagiarism, as well as the shortage of education and guidance addressing these concerns; on the positive side, teens from all these studies have viewed GenAI as an important part of their learning process and potentially beneficial for enhancing creativity and social connection (FOSI, 2023; Hopelab et al., 2024; Madden et al., 2024).

Lastly, it is important to explore an aspect of AI that sets it apart from any prior technology, namely the ability to mimic a thinking, social being. During adolescence, a stage of life where social connections with peers and role models are highly valued, it is particularly important to examine how teenagers view artificially intelligent agents on a social and emotional level. Roughly half of teens in our sample indicated an openness to forming parasocial relationships, or one-way and non-reciprocal emotional attachments, with Voice Assistants and/or Generative AI tools. Interestingly, Voice Assistants were seen by teens as potential social companions more often than sophisticated GenAI tools. This may be primarily explained by differences in how these tools are designed and used, as VAs are best suited for simple, conversational interactions via spoken word, while GenAI tools, although powerful and versatile, often involve text-based interfaces and less personal interactions. Furthermore, one-third of our sample expressed feelings of uneasiness around Generative AI (i.e., these tools “freak me out” or “have some bad intentions”), and such feelings could reflect a general distrust that may inhibit feelings of social connection. Regardless of what may be driving this social engagement between teenagers and AI, it will be necessary to understand why teens are drawn to these types of interactions and relationships, whether they are healthy and fulfilling, and what types of safeguards should exist to protect young people from exploitation by anyone who may wish to use these tools for malicious purposes.

Undoubtedly, Artificial Intelligence has become an increasingly important part of teenagers' daily lives and holds immense potential to shape their education, leisure activities, social lives, and future career prospects. At this key juncture, stakeholders such as researchers, parents, teachers, tech industry professionals, and policymakers have an opportunity to work collaboratively with young people to support the positive and ethical use of these technologies. While teenagers have told us they are willing and ready to take these next steps, they will need our support to do so.



APPENDIX

Methodology

We addressed our research questions by conducting an online survey of 1,440 adolescents aged 13-17 across the United States. The survey was administered from August 2 to 6, 2024. We utilized Alchemer, an online research platform, to recruit participants. Alchemer connects with over 350 survey panels, encompassing a global network of over 437 million users. For our study, American adolescents who were pre-registered with these panels were invited to participate. To ensure a representative and diverse sample, we established quotas based on age, gender identity, race/ethnicity, and type of school, with participation from each of the 50 states.

Demographic Breakdown

- **Age:** 20.5% 13-year olds (N = 295), 20.2% 14-year olds (N = 291), 20.2% 15-year olds (N = 291), 19.4% 16-year olds (N = 280), 19.7% 17-year olds (N = 283).
- **Gender identity:** 49.2% girl (N = 709), 49.3% boy (N = 710), 0.6% non-binary (N = 9), 0.3% different identity (N = 4), 0.6% prefer not to answer (N = 8).

Note on Gender: In this study, the number of participants who identified as non-binary or a different gender identity was not sufficient to generate the statistical power necessary for meaningful comparison. We acknowledge the importance of considering gender beyond the binary framework and recommend future research with larger sample sizes to explore these experiences more comprehensively.

- **Race/ethnicity*:** 50.8% White/non-Hispanic, 27.2% Hispanic, 13.4% Black/African American, 4% multiracial, 1.6% American Indian/Alaskan Native, 1.3% Asian, 0.3% Native Hawaiian, 0.3% Middle Eastern, 0.8% Other, 0.3% Prefer not to answer.
- **Grade:** 27.9% in middle school (5-8, N = 121), 70.8% in high school (9-12, N = 1019), 1.3 % not in school (N = 19).
- **Type of school:** 86.7% in public school (including charter schools, N = 1248), 8.7% in private school (including religious or secular schools, N = 123), and 3% in homeschool (N = 42).

Prior to the main data collection phase, a preliminary soft launch of the survey was conducted to assess completion rates and response patterns. This pilot test involved 99 respondents, whose data were subsequently excluded from the final analysis to reflect adjustments made after the soft launch.

The Boston Children's Hospital IRB reviewed and approved this study and waived the need for parental consent. All participants were part of Alchemer's survey network and had previously agreed to be contacted for survey opportunities, providing an initial layer of consent. At the beginning of our survey, participants were presented with detailed information about the study, including its purpose, potential risks, compensation details, contact information for the research team, and other pertinent details. By proceeding with the survey (clicking the "next" button), participants acknowledged their understanding of this information and consented to participate, with the option to withdraw at any time.

**Respondents could choose as many categories as they wanted; in order to avoid counting participants twice, those who selected multiple choices are included in the "Multi-racial" category. Any respondent who selected "Hispanic" was included only in the Hispanic category regardless of other race/ethnicity selections they made. This approach results in the above-listed mutually exclusive categories.*

APPENDIX: METHODOLOGY

Participants received compensation from their respective survey companies in the form of points, proportional to the survey's length. These points could be redeemed for various rewards such as Amazon gift cards, PayPal deposits, or upgrades to certain services, in accordance with each company's specific agreement. Compensation structures varied slightly between companies.

To ensure participant engagement and attention, we incorporated two “attention-check” questions throughout the survey. Participants who failed to answer these questions correctly (N = 676) were disqualified and redirected to an external webpage. We rigorously reviewed and cleaned the final data set to exclude incomplete or low-quality responses.

Data Analysis

- In addition to descriptive analysis, we conducted chi-square tests, ANOVA, and repeated measures analysis to explore different research questions.
 - Chi-square tests examine associations between categorical variables, e.g., examining how Generative AI users differ from non-users in terms of gender, age, school type, and parental education.
 - ANOVA assesses mean differences in continuous variables, e.g., analyzing whether users and non-users of Generative AI differ in their level of trust in the information generated by AI.
 - Repeated measures analysis evaluates changes across conditions within the same respondents, e.g., understanding how the same teens perceive voice assistants compared to generative AI (i.e. within-subject comparisons).
- Statistically significant results are reported with a p-value of $<.05$, indicating less than a 5% probability that these results occurred by chance. For simplicity, we use asterisks (*) to denote varying levels of significance: $p < .05$ (*), $p < .01$ (**), and $p < .001$ (***). These symbols indicate increasingly strong evidence that the findings are not due to random chance, with three asterisks (***) representing the highest level of statistical significance.
- Throughout this report, numerical values might not sum precisely to 100% due to rounding, the presence of multiple response options, or instances of skipped questions or responses.

References

- Cha, I., Kim, S.-I., Hong, H., Yoo, H., & Lim, Y.-k. (2021). Exploring the Use of a Voice-based Conversational Agent to Empower Adolescents with Autism Spectrum Disorder. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (no. 42). <https://doi.org/10.1145/3411764.3445116>
- Common Sense Media. (2023). New poll finds parents lag behind kids on AI and want rules and reliable information to help them. <https://www.commonsensemedia.org/press-releases/new-poll-finds-parents-lag-behind-kids-on-ai>
- Family Online Safety Institute (FOSI). (2023). *Generative AI: Emerging habits, hopes and fears*. Washington, D. C.: Family Online Safety Institute. <https://www.fosi.org/policy-research/emerging-habits-hopes-and-fears>
- Han, R., Todd, A., Wardak, S., Partridge, S. R., & Raeside, R. (2023). Feasibility and Acceptability of Chatbots for Nutrition and Physical Activity Health Promotion Among Adolescents: Systematic Scoping Review With Adolescent Consultation. *JMIR Human Factors*, 10, e43227. <https://doi.org/10.2196/43227>
- Hoffman, A., Owen, D., & Calvert, S. L. (2021). Parent reports of children's parasocial relationships with conversational agents: Trusted voices in children's lives. *Human Behavior and Emerging Technologies*, 3(4), 606-617. <https://doi.org/10.1002/hbe2.271>
- Hoodbhoy, Z., Masroor Jeelani, S., Aziz, A., Habib, M. I., Iqbal, B., Akmal, W., Siddiqui, K., Hasan, B., Leeftang, M., & Das, J. K. (2021). Machine Learning for Child and Adolescent Health: A Systematic Review. *Pediatrics*, 147(1), e2020011833. <https://doi.org/10.1542/peds.2020-011833>
- Hopelab, Common Sense, Center for Digital Thriving. (2024). *Teen and young adult perspectives on generative AI*. San Francisco, CA: Common Sense. <https://www.commonsensemedia.org/sites/default/files/research/report/teen-and-young-adult-perspectives-on-generative-ai.pdf>
- Lee, V. R., Pope, D., Miles, S., & Zárte, R. C. (2024). Cheating in the age of generative AI: A high school survey study of cheating behaviors before and after the release of ChatGPT. *Computers and Education: Artificial Intelligence*, 7, 100253. <https://doi.org/10.1016/j.caeai.2024.100253>
- Lovato, S. B., Piper, A. M., & Wartella, E. A. (2019). Hey Google, Do Unicorns Exist? Conversational Agents as a Path to Answers to Children's Questions. In *Proceedings of the 18th ACM International Conference on Interaction Design and Children* (pp. 301-313). <https://doi.org/10.1145/3311927.3323150>
- Madden, M., Calvin, A., Hasse, A., Lenhart, A. (2024). *The dawn of the AI era: Teens, parents, and the adoption of generative AI at home and school*. San Francisco, CA: Common Sense. https://www.commonsensemedia.org/sites/default/files/research/report/2024-the-dawn-of-the-ai-era_final-release-for-web.pdf

APPENDIX: REFERENCES

- Moundridou, M., Matzakos, N., & Doukakis, S. (2024). Generative AI tools as educators' assistants: Designing and implementing inquiry-based lesson plans. *Computers and Education: Artificial Intelligence*, 7, 100277. <https://doi.org/10.1016/j.caeai.2024.100277>
- Prothero, A. (2024). New data reveal how many students are using AI to cheat. *EducationWeek*. <https://www.edweek.org/technology/new-data-reveal-how-many-students-are-using-ai-to-cheat/2024/04>
- Rowe, J. P., & Lester, J. C. (2020). Artificial Intelligence for Personalized Preventive Adolescent Healthcare. *Journal of Adolescent Health*, 67(2, Supplement), S52-S58. <https://doi.org/10.1016/j.jadohealth.2020.02.021>
- Rubin, J., Lombard, E. J., Chen, K., Divanji, R. (2024). *Navigating college applications with AI: How high school teachers and students use tools like ChatGPT* [white paper]. Foundry10. https://s3.us-west-2.amazonaws.com/craft-resource-files/AI-Admissions-Key-Findings_Final_2024.07.08.pdf
- Sidoti, O., Gottfried, J. (2023). About 1 in 5 U.S. teens who've heard of ChatGPT have used it for schoolwork. Pew Research Center. <https://www.pewresearch.org/short-reads/2023/11/16/about-1-in-5-us-teens-whove-heard-of-chatgpt-have-used-it-for-schoolwork/>
- Vartiainen, H., Kahila, J., Tedre, M., López-Pernas, S., & Pope, N. (2024). Enhancing children's understanding of algorithmic biases in and with text-to-image generative AI. *New Media & Society*, 14614448241252820. <https://doi.org/10.1177/14614448241252820>

Survey Questions

* Denotes answer required.

Screeners

1. Are you between the ages of 13-17?*

Qualifier: Must answer “yes”.

2. How old are you?* (please only use numbers)

3. What country do you live in?*

Qualifier: Must be in the U.S.

4. Voice Assistants are applications like Siri, Amazon Alexa, and Google Assistant that often run on smartphones, smart speakers, computers, and other similar devices. They can understand voice commands and respond by answering questions, carrying out tasks, or providing different services.

Have you ever heard of or used any Voice Assistants?*(select one)

I have used Voice Assistants like Siri, Alexa, and Google Assistant.

I have heard of Voice Assistants but NEVER used them

I have NEVER heard of Siri, Alexa, Google Assistant, or any other Voice Assistants

Logic: Hidden unless: #4 Question “Have you ever heard of or used any Voice Assistants?” is one of the following answers (“I have used Voice Assistants like Siri, Alexa, and Google Assistant.”)

5. How would you describe your level of experience with Voice Assistants?*(select one)

Low: I have a basic understanding of Voice Assistants and have used them a little

Moderate: I have a good understanding of Voice Assistants and have used them a fair amount

High: I am very knowledgeable about Voice Assistants and have used them extensively

6. Generative AI includes technologies like ChatGPT, Google’s Gemini, and MetaAI. These systems can modify and/or create new content (e.g., text, images, audio) by learning from large amounts of information and generating responses to user prompts.

Have you ever heard of or used any Generative AI tools?*(select one)

I have used Generative AI like ChatGPT, Gemini, MetaAI

I have heard of Generative AI but NEVER used it

I have NEVER heard of ChatGPT, Gemini, MetaAI, or any other Generative AI tools

Logic: Hidden unless: #6 Question “Have you ever heard of or used any Generative AI tools?” is one of the following answers (“I have used Generative AI like ChatGPT, Gemini, MetaAI”)

APPENDIX: SURVEY QUESTIONS

7. How would you describe your level of experience with Generative AI?* (select one)

- Low: I have a basic understanding of Generative AI and have used it a little
- Moderate: I have a good understanding of Generative AI and have used it a fair amount
- High: I am very knowledgeable about Generative AI and have used it extensively

Demographics

8. What state do you live in?*

Alabama	Hawaii	Massachusetts	New Mexico	South Dakota
Alaska	Idaho	Michigan	New York	Tennessee
Arizona	Illinois	Minnesota	North Carolina	Texas
Arkansas	Indiana	Mississippi	North Dakota	Utah
California	Iowa	Missouri	Ohio	Vermont
Colorado	Kansas	Montana	Oklahoma	Virginia
Connecticut	Kentucky	Nebraska	Oregon	Washington
Delaware	Louisiana	Nevada	Pennsylvania	West Virginia
Florida	Maine	New Hampshire	Rhode Island	Wisconsin
Georgia	Maryland	New Jersey	South Carolina	Wyoming

9. What grade will you be entering in Fall 2024?*

- | | | |
|-----------|------------|---------------|
| 5th grade | 8th grade | 11th grade |
| 6th grade | 9th grade | 12th grade |
| 7th grade | 10th grade | Not in school |

10. What kind of school will you be attending in Fall 2024?*

- | | |
|---------------------------------------|----------------------|
| Public school | Homeschool |
| Private school (religious or secular) | Prefer not to answer |

11. What is your gender identity?*

- | | |
|-----------|------------------------------|
| Girl | Other (please specify) _____ |
| Boy | Prefer not to answer |
| Nonbinary | |

12. What is your race/ethnicity?* (check all that apply)

- | | |
|---|---------------------------------|
| American Indian or Alaskan Native | Middle Eastern or North African |
| Asian | White |
| Black or African American | Other (please specify) _____ |
| Hispanic or Latino | Prefer not to answer |
| Native Hawaiian or Other Pacific Islander | |

13. Have you been diagnosed by a doctor with any of the following disorders?* (select all that apply)

- | | |
|-----------------------------------|--|
| Depression | Eating disorder |
| Anxiety | Other mental or behavioral disorder not listed |
| Autism Spectrum Disorder (ASD) | None of the above |
| Attention Deficit Disorder (ADHD) | Prefer not to answer |
| Learning disorder | |

APPENDIX: SURVEY QUESTIONS

14. What is the highest degree of education one of your parents has obtained?*

- No degree
- High school degree or GED
- Associate’s degree
- Bachelor’s degree
- Master’s degree
- PhD/MD/JD or other advanced degree
- I’m not sure
- Prefer not to answer

Device Usage

Page exit logic: Skip / Disqualify Logic IF: (#4 Question “Have you ever heard of or used any Voice Assistants?” is one of the following answers (“I have NEVER heard of Siri, Alexa, Google Assistant, or any other Voice Assistants”) AND #6 Question “Have you ever heard of or used any Generative AI tools?” is one of the following answers (“I have NEVER heard of ChatGPT, Gemini, MetaAI, or any other Generative AI tools”) THEN: Jump to page 13 - Thank You! Flag response as complete

Page exit logic: Skip / Disqualify Logic IF: #4 Question “Have you ever heard of or used any Voice Assistants?” is one of the following answers (“I have heard of Voice Assistants but NEVER used them”) THEN: Jump to page 7 - Attitudes Toward Voice Assistants

Page exit logic: Skip / Disqualify Logic IF: (#4 Question “Have you ever heard of or used any Voice Assistants?” is one of the following answers (“I have NEVER heard of Siri, Alexa, Google Assistant, or any other Voice Assistants”) AND #6 Question “Have you ever heard of or used any Generative AI tools?” is one of the following answers (“I have heard of Generative AI but NEVER used it”) THEN: Jump to page 10 - Guidance/Information Received on GenAI Use

Page exit logic: Skip / Disqualify Logic IF: (#4 Question “Have you ever heard of or used any Voice Assistants?” is one of the following answers (“I have NEVER heard of Siri, Alexa, Google Assistant, or any other Voice Assistants”) AND #6 Question “Have you ever heard of or used any Generative AI tools?” is one of the following answers (“I have used Generative AI like ChatGPT, Gemini, MetaAI”)) THEN: Jump to page 8 - Generative AI

15. Which of the following devices do you own and/or have access to at home? (“Primary user” means you have your own account/login and are the main person who uses the device, even if it’s a school-issued device or someone else bought it for you.)

	Do not own or have access	Has access, but do not own	I’m the primary user
Smartphone (e.g., iPhone, Android)			
Smart Speaker (e.g., Amazon Echo, Google Nest, Apple HomePod)			
Smartwatch (e.g., Apple Watch, Samsung Galaxy Watch)			
Tablet (e.g., iPad, Amazon Fire)			
Laptop (e.g., Chromebook, MacBook Air)			
Desktop Computer (e.g., Dell, iMac)			
SmartTV (e.g., LG with ThinQ AI, Samsung with Bixby, Fire Stick with voice remote)			
Gaming Console (e.g., Xbox, PlayStation, Nintendo Switch)			

APPENDIX: SURVEY QUESTIONS

16. At about what age did you first start using a Voice Assistant?

- Under 4 years old
- 6-7 years old
- 10-11 years old
- I don't know/I don't remember
- 4-5 years old
- 8-9 years old
- 12+ years old

17. When you first started using Voice Assistants, how often did you use them?

- Rarely
- Frequently (several times a week)
- I don't know/I don't remember
- Occasionally (a few times a month)
- Very frequently (daily)

18. When you first started using Voice Assistants, how often did you use them for the following activities?

- Never: I never used Voice Assistants for this activity.
- Rarely: I use Voice Assistants for this activity once or twice.
- Occasionally: I used Voice Assistants for this activity a few times, but not regularly.
- Often: I frequently used Voice Assistants for this activity.
- Almost Always: This activity was one of the main things I used Voice Assistants for.

	Never	Rarely	Occasionally	Often	Almost always
Asking questions for fun (e.g., how much wood can a woodchuck chuck?)					
Asking questions to learn/find out something (e.g., what is the weather?)					
Listening to music					
Listening to stories					
Playing game or quizzes					
Controlling smart home devices					

19. Over the last 30 days, how often have you interacted with a Voice Assistant (e.g., Siri, Alexa, Google Assistant) on the following devices?

	Not at all	A few times a month or less	Once a week	A few times a week	Once a day	More than once a day
Smartphone						
Smart Speaker						
Smartwatch						
Tablet						
Laptop						
Desktop Computer						
SmartTV						

APPENDIX: SURVEY QUESTIONS

20. Over the last 30 days, which of the following Voice Assistants have you interacted with on any device?

(check all that apply)

Google Assistant Siri Other (please specify) _____
Alexa Bixby

21. Which voice assistant do you interact with the most? (select one)

Google Assistant Siri Other (please specify) _____
Alexa Bixby

22. How frequently have you used Voice Assistants for the following tasks? (Please rate each task using the scale provided.)

	Not at all	A few times a month or less	Once a week	A few times a week	Once a day	More than once a day
Call someone						
Message someone						
Set reminders, timers, or alarms						
Schedule calendar events or activities						
Control smart home devices (e.g., lights, thermostat)						
Check weather forecasts, sports scores, news updates						
Inquire about time, date, calendar events						
Get help with homework or other educational activities						
Exploring a topic that you're curious about						
To look up a specific fact						
Listen to music						
Listen to podcasts and/or audiobooks						
Play games, take quizzes, or do other activities for fun						
Tell/hear jokes or riddles						
Purchasing items (e.g., placing online orders)						
Finding recommendations for products/items						
Talk to the voice assistant about your personal experiences (e.g., details about your day)						
Ask the voice assistant questions about themselves (e.g., "Alexa, what is your favorite food?")						
Ask for advice or opinions (e.g., relationship advice)						

APPENDIX: SURVEY QUESTIONS

23. How often do you check additional sources to verify the truth/accuracy of the information you get from voice assistants?

- Never
- Often
- Rarely
- Almost Always
- Occasionally
- Not Applicable

24. How do you think using voice assistants influences your ability in each of the following areas?

	Worsens a lot	Worsens a little	Neither worsens nor improves	Improves a little	Improves a lot
Access to accurate and factual information					
Time management and organizational skills					
Focus on homework and educational activities					

Interaction Styles with Voice Assistants

25. When talking to a voice assistant, how often do you use polite language like “please” and “thank you?”

- Never
- Often
- Rarely
- Almost Always
- Occasionally
- Not Applicable

26. When referring to a voice assistant, do you use person pronouns, like “he/she/they”, or do you:

- Always use a person pronoun (e.g., he, she, they)
- Usually use a person pronoun
- Use a person pronoun and “it” about the same amount of time
- Usually say “it”
- Always say “it”

Page exit logic: Skip / Disqualify Logic IF: #6 Question “Have you ever heard of or used any Generative AI tools?” is one of the following answers (“I have NEVER heard of ChatGPT, Gemini, MetaAI, or any other Generative AI tools”) THEN: Jump to page 13 - Thank You! Flag response as complete

Page exit logic: Skip / Disqualify Logic IF: #6 Question “Have you ever heard of or used any Generative AI tools?” is one of the following answers (“I have heard of Generative AI but NEVER used it”) THEN: Jump to page 10 - Guidance/Information Received on GenAI Use

Attitudes Toward Voice Assistants

27. How much do you agree or disagree with the following statements about Voice Assistants?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Voice Assistants can act as a friend					
Voice Assistants can make me feel less lonely					
Voice Assistants can be a substitute for spending time with other people					

28. How much do you agree or disagree with each of the following statements about Voice Assistants?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Voice Assistants generally behave in a predictable way.					
Voice Assistants have some bad intentions.					
I would feel comfortable having a personal conversation with a Voice Assistant.					
Voice Assistants' behaviors freak me out.					
Voice Assistants are trying to get my private information.					

29. How concerned are you about the following issues related to your child's use of Voice Assistants:

	Not at all concerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned
Keeping your personal information private (e.g., location, messages, search data)					
Having advertisements or promotions					
Misunderstanding requests (e.g., unintentional purchases)					
Giving inaccurate or biased information					
Feeling like you're always being listened to					
Getting in the way of in-person connections/relationships					

APPENDIX: SURVEY QUESTIONS

30. To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I trust the responses provided by Voice Assistants.					
I am confident that I can determine if a response from a Voice Assistant is accurate or unbiased.					

31. This is an attention check question. Please select C as the answer choice.*

A C D B

Generative AI

32. How often do you use Generative AI overall?

- Never
- Only once or twice in my life
- Once or twice per year
- Once or twice per month
- Once or twice per week
- Almost daily or every day

33. Please indicate your level of skill for each of the following Generative AI tools:

- Not at all skilled: I have no experience or ability with this Generative AI tool.
- Not very skilled: I have minimal experience and struggle to use this Generative AI tool effectively.
- Somewhat skilled: I have a basic understanding and can perform simple tasks using this Generative AI tool.
- Skilled: I have a good grasp of this Generative AI tool and can use it effectively for a variety of tasks.
- Very skilled: I have advanced knowledge and can use this Generative AI tool proficiently for complex tasks and problem-solving.
- I don't know/I don't remember

	Not at all skilled	Not very skilled	Somewhat skilled	Skilled	Very skilled	I don't know/ I don't remember
AI Text Chatbots (e.g., ChatGPT, Gemini)						
AI Audio Generators/Editors (e.g., Suno, Udio)						
AI Image/Video Generators/Editors (e.g., Midjourney, Sora, Canva MagicDesign, Photoshop AI)						
AI Integrated into Social Media Platforms (e.g., MyAI on Snapchat, MetaAI on Instagram)						
AI Integrated into Other Platforms (e.g., Quizlet Q-Chat, Grammarly, GitHub Co-Pilot)						

APPENDIX: SURVEY QUESTIONS

34. What Generative AI platform have you used the most? (Please only list one name.)

Interactions with Generative AI

35. When you use Generative AI, how often have you done each of the following activities?

- Never: I have never used Generative AI for this activity.
- Rarely: I have done this activity once or twice ever.
- Occasionally: I have done this activity a few times, but it is not regular.
- Often: I do this activity frequently.
- Almost Always: I do this activity in most of my Generative AI sessions.

	Never	Rarely	Occasionally	Often	Almost always
Generating/editing images and/or videos					
Creating/editing music and/or audio					
Generating/editing creative writing (e.g., stories, poems)					
Generating/editing a message (e.g., text, email)					
Experimenting/playing around with the tool, no specific goal					
Searching for information or answering a question					
Learning about a medical issue/getting medical advice					
Studying for tests (e.g., creating study guides or quizzes)					
Helping with writing assignments (e.g., essays, reports)					
Helping with math or science homework					
Helping with coding/programming					
Researching for homework or school project					
Asking for advice on personal or relationship questions					
Getting mental health guidance					
Conversing with an AI-powered chatbot (e.g., Character.AI)					

36. What do you use AI to do the most? Please specify one example of a task or activity:

APPENDIX: SURVEY QUESTIONS

37. How often do you check additional sources to verify information from Generative AI?

- Never
- Often
- Rarely
- Almost Always
- Occasionally

Logic: Hidden unless: #37 Question “How often do you check additional sources to verify information from Generative AI?” is one of the following answers (“Rarely”, “Occasionally”, “Often”, “Almost Always”)

38. Have you ever used any of the following sources to verify information from Generative AI? (check all that apply)

- Search engines (e.g., Google, Bing)
- Books or encyclopedias
- Academic journals or databases
- News websites
- Asking friends or family
- Other
- Social media platforms
- Asking teachers or experts

39. How do you think using voice assistants influences your ability in each of the following areas?

	Worsens a lot	Worsens a little	Neither worsens nor improves	Improves a little	Improves a lot
Your ability to complete school tasks (e.g., homework)					
Your hobbies/activities outside of school					
Your curiosity/desire to learn					
Your imagination/creativity					
Your attention span					
Your ability to think for yourself					
Your social skills/interactions					

Guidance/Information Received on Generative AI Use

40. Have you ever received formal instruction related to the following uses of Generative AI?
(e.g., a class at school, workshop, online course)

	Yes	No
Creative work (artwork, stories, music, etc.)		
Problem-solving (e.g., generating solutions or ideas to address specific tasks)		
Recognizing bias and misinformation in AI-generated content		
Understanding ethical use (e.g., plagiarism, copyright)		
Other		

APPENDIX: SURVEY QUESTIONS

41. How interested are you in having discussions or lessons about Generative AI in school?

- Extremely disinterested
- Somewhat disinterested
- Neither disinterested nor interested
- Somewhat interested
- Extremely interested

42. How interested are you in having discussions or lessons about Generative AI with your parents/caregivers?

- Extremely disinterested
- Somewhat disinterested
- Neither disinterested nor interested
- Somewhat interested
- Extremely interested

43. How important is it for young people to learn how to use Generative AI to accomplish what they want without wasting time or effort?

- Not at all important
- Slightly important
- Important
- Fairly important
- Very important

44. How important is it for young people to learn how to use Generative AI in ways that follow laws and rules about plagiarism or information sharing?

- Not at all important
- Slightly important
- Important
- Fairly important
- Very important

45. In your opinion, who generally knows the most about Generative AI?

- I know the most about Generative AI.
- My parents/guardians know the most about Generative AI.
- My teachers know the most about Generative AI.
- I don't know/Unsure
- Other (please specify) _____

46. How responsible should each of the following groups be in making sure young people have positive experiences when using Generative AI?

	Not at all responsible	Somewhat responsible	Mostly responsible	Completely responsible	I don't know/Unsure
Tech companies/social media platforms					
Parents/guardians					
Schools/educators					
The government					
Teens themselves					

47. Does your school or your teachers have rules about using Generative AI for schoolwork?

- Yes
- No
- I don't know/I don't remember

APPENDIX: SURVEY QUESTIONS

Logic: Hidden unless: #47 Question "Does your school or your teachers have rules about using Generative AI for schoolwork?" is one of the following answers ("Yes")

48. What rules do your school/teachers have about using Generative AI for schoolwork/homework?

My school/teachers don't allow Generative AI at all.

My school/teachers allow Generative AI, but with specific restrictions.

(Please specify if known): _____

Rules depend/differ based on the teacher/class.

Logic: Hidden unless: #47 Question "Does your school or your teachers have rules about using Generative AI for schoolwork?" is one of the following answers ("Yes")

49. Do you and your peers generally follow the rules about using Generative AI for schoolwork?

Most or all students don't follow the rules

I follow the rules, but my peers don't

I don't follow the rules, but my peers do

Most or all students follow the rules

50. Have you ever been accused of inappropriately using Generative AI for your schoolwork?

Yes, and I did face consequences

Yes, but the accusation was cleared up without any consequences

No

Parental Mediation

51. How often do your parents talk to you about Generative AI in general?

Never

Rarely

Occasionally

Often

Very Often

Unsure/I don't remember

Logic: Hidden unless: #51 Question "How often do your parents talk to you about Generative AI in general?" is one of the following answers ("Rarely", "Occasionally", "Often", "Very Often")

52. How do your parents usually talk to you about Generative AI?

Mostly about risks/concerns

Equally about potential benefits and risks/concerns

Mostly about potential benefits

None of the above

APPENDIX: SURVEY QUESTIONS

Page exit logic: Skip / Disqualify LogicIF: #57 Question “This is an attention check question. Please select ‘often.’” is not one of the following answers (“Often”) THEN: Disqualify and display: “Sorry, you do not qualify to take this survey.” Redirect to: [www.samplicio.us/s/ClientCallBack.aspx?RIS=30&rid=\[url\(“rid”\)\]](http://www.samplicio.us/s/ClientCallBack.aspx?RIS=30&rid=[url(“rid”)])

53. How often do your parents/caregivers monitor your use of generative AI tools (e.g., watching you while you use them or asking you about your usage)?

- Never
- Often
- Rarely
- Very Often
- Occasionally
- Unsure/I don’t remember

54. How often do you and your parents/guardians use generative AI together (e.g., trying new features, creating things together)?

- Never
- Often
- Rarely
- Very Often
- Occasionally
- Unsure/I don’t remember

55. Do your parents have rules regarding your use of Generative AI in the following areas?

	Yes	No
General access (e.g., you are not allowed to use Generative AI tools)		
Time limits (e.g., how long you can use it)		
Rules about how you use it (e.g., no use of ChatGPT for writing essays)		

Logic: Hidden unless: ((Question “General access (e.g., you are not allowed to use Generative AI tools) “ is one of the following answers (“Yes”) OR Question “Time limits (e.g., how long you can use it)” is one of the following answers (“Yes”)) OR Question “Rules about how you use it (e.g., no use of ChatGPT for writing essays)” is one of the following answers (“Yes”))

56. How much do you agree with your parents’ rules/expectations on how you use Generative AI?

- Strongly disagree
- Agree
- Disagree
- Strongly agree
- Neither disagree nor agree

57. This is an attention check question. Please select ‘often’.*

- Never
- Often
- Rarely
- Almost Always
- Occasionally

Attitudes on Generative AI

58. How much do you agree or disagree with the following statements about Generative AI Agents? (Note: by “agents”, we are referring to chatbot/conversational agents like ChatGPT)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Generative AI assistants can act as a friend.					
Generative AI assistants can make me feel less lonely.					
Generative AI assistants can be a substitute for spending time with other people.					

59. How much do you agree or disagree with the following statements about Generative AI Agents? (Note: by “agents”, we are referring to chatbot/conversational agents like ChatGPT)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Generative AI generally behaves in a predictable way.					
I believe Generative AI has some bad intentions					
I would feel comfortable having a personal conversation with Generative AI.					
Generative AI's behaviors freak me out.					
I have a bad feeling that Generative AI is trying to get my private information.					

60. To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I trust the responses provided by Generative AI.					
I am confident in my ability to tell if a response from Generative AI is accurate.					

APPENDIX: SURVEY QUESTIONS

61. How concerned are you about the following issues related to using Generative AI?

	Not at all concerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned	Not Applicable
Keeping your data and personal information private and secure						
Accuracy of information produced						
Generative AI giving you biased information (e.g., favors a particular perspective/viewpoint)						
Generative AI being used in scams (e.g., impersonating you or someone you know)						
Being used to create deepfakes (i.e. audio/images/video of a person in which their face or body has been digitally altered, usually used to harm/upset others)						
Feeling like you're always being listened to or observed by Generative AI						
Becoming less curious or interested about learning because GenAI can answer questions easily						
Becoming less creative because Generative AI creates for you						

62. Imagine you are writing an academic research paper about a topic you know nothing about. To gather more information on the subject, you plan to consult the following sources. How much do you trust each of the following sources to give you accurate/factual information?

	Never trust	Rarely trust	Sometimes trust	Often trust	Almost always trust
Classic search engine (e.g., Google)					
Generative AI (e.g., ChatGPT)					
Published books or journals					

63. What impact do you think future developments of Generative AI will have on your generation for each of the following?

	Worsens a lot	Worsens a little	Neither worsens nor improves	Improves a little	Improves a lot
Job/educational/opportunities					
Ability/desire to complete intellectual tasks (e.g., math, writing)					
Ability/desire to complete creative tasks (e.g., making art)					
Ability/desire to develop meaningful in-person connections/relationships					

How We Create Impact

The Digital Wellness Lab conducts, translates, and distributes rigorous research on the positive and negative effects of technology and interactive media use on young people to inform our progress towards positive health and development for every child, teen, and young adult.



Our work is grounded in a steadfast commitment to academic integrity, ethics, and independence, ensuring that all research endeavors are driven solely by scientific curiosity and the pursuit of knowledge. While our work is supported in part by donations from technology, entertainment, and healthcare companies; philanthropic organizations; and individuals; we do not engage in research for hire or accept funding that could compromise our autonomy or objectivity. We do not evaluate, endorse, or give preference to specific products or platforms.

Thank You to Our Generous Supporters & Collaborators

SUPPORTERS

- | | |
|-------------|---------------|
| Amazon Kids | Point32Health |
| Aura | Roblox |
| Discord | Snap, Inc. |
| Meta | TikTok |
| Microsoft | Trend Micro |
| Pinterest | Twitch |
| Pinwheel | |

COLLABORATORS

- The Alberta Teachers' Association
- The Joan Ganz Cooney Center at Sesame Workshop
- University of Washington
- University of Michigan
- Wellesley College



Boston Children's
Digital Wellness Lab

The Digital Wellness Lab at Boston Children's Hospital and Harvard Medical School seeks to understand and promote positive and healthy digital media experiences for young people, from birth through young adulthood.

For more information about our work, please contact Cori Stott, Executive Director,
at dwl@childrens.harvard.edu