



**Boston Children's**  
Digital Wellness Lab

# Use of Voice Assistants and Generative AI by Children And Families

## Recommendations for Industry

Date of Release: February 2024



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HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL



**Boston Children's Hospital**



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## Research Context

In our latest Pulse Survey of nearly 1,500 parents of children ages 3 to 12, we investigated emerging trends related to how families use AI-powered Voice Assistants, such as Alexa, Siri, and Google Assistant, as well as newer Generative AI technologies such as ChatGPT. We looked at use within the household, children and parents' relationships with these tools, and their perceived impact on children's learning and development.

Read the full report at: <https://digitalwellnesslab.org/pulse-surveys/use-of-voice-assistants-and-generative-ai-by-children-and-families/>



## Summary of Findings

The research shows that Voice Assistants have found a place in the homes of American families.

The parents\* surveyed report that their children use them for reasons from educational support to simply being entertained, with the majority of parents viewing Voice Assistants as having a positive impact on their family connection as well as the education and social skills of their children. Parents hold similarly positive views about Generative AI, with some reporting that it will likely have beneficial effects on their child's learning and development as they age. Many parents did indicate concerns about these technologies, especially related to issues of exposure to strangers, monitoring behavior, data privacy, exposure to marketing, and biased information.

Following is summary of industry- and practice-related findings and practical recommendations for platform and policy developers around Voice Assistants and Generative AI.

### Finding

Children are active users of Voice Assistants and use them as resources for connecting with other people, as a support for learning, and having fun. Children do differ by age in the amount they use, and how they use, Voice Assistants.

### Recommendation

Design Voice Assistants specifically for age groups/developmental stage and ideal use case. Don't assume kids want to use these technologies in the same way adults use it, or that all kids use it the same way.

- The most common daily activities for children 1-12 years old are entertainment-based. Because younger children were more inclined to listen to stories on these devices, **educational content presented in a narrative format** could be especially well received.
- For 10-12 year-olds, educational activities are also a fairly common use case, so creating **educational-related products specifically for this age group** may make youth's interaction with and use of these devices for this purpose more seamless.
- According to parents, younger children typically use Generative AI for **creative activities**, whereas older children use it for **seeking information**. Providing applications of this technology that cater to those needs would be advantageous for users and developers.

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

## Finding

Many children seem to form relationships with Voice Assistants, and younger children are more likely to believe that Voice Assistants have qualities of real people.

## Recommendation

While it may be tempting to capitalize on this finding and design general-use Voice Assistants and related products to be more personable to build stronger relationships with children, this is a step that should be taken with extreme caution for general home-based products. Children's ability to differentiate between animate or inanimate objects is a cognitive process that develops over time (Xu & Warschauer, 2020). Currently, there is not sufficient research on the developmental impact of forming parasocial relationships with generative agents in early childhood. We do know that younger children are less able to discern the nuance and, therefore, can be at risk of being exploited by advertising messages, misinformation, or values potentially inconsistent with parental viewpoints (Fu et al., 2022). Due to lack of evidence-based insights, we join other experts in recommending that products and platforms limit opportunities for parasocial bonding with AI-powered Voice Assistants, unless they are designed explicitly for educating young children (Hiniker et al., 2021). In addition we recommend:

- Within organizations, as well as externally in positions of influence, product and platforms should **promote clear design distinction between AI and humans** (and educational versus commercial products) both in product development and policy decisions.
- **Build products that actively educate users on the inanimate status of the technology they're using**, capitalizing on prior research that demonstrates children prefer a clear distinction between conversational agents and people (Hiniker et al., 2021). This can be done by revealing design "seams" to remind the young user that they're interacting with a piece of technology. Examples of these seams include opting for the agent to have a robotic voice and pattern of speech, and emphasizing in product-user interactions that the child is interacting with a computer and not something magically animate, etc.
- **Offer in-product digital literacy education for children and parents** in the form of games, quizzes, or other interactive and entertaining formats. This could include how to discern factual from non-factual information, as well as promoting healthy digital habits and relationships with technology.

## Finding

Many parents see Voice Assistants as having a positive impact on their children's learning and social development.

## Recommendation

Voice Assistants and other character-based AI hold great potential as educational tools for younger children. New research tells us that AI conversational agents can be useful in educational endeavors with young children (Xu et al., 2022), such as dialogic reading activities and other informal learning experiences.

- In order to reach groups who may be less comfortable with the technology and its educational use-cases (especially prevalent in parents with lower levels of educational attainment), offer **easy to understand information** covering how these technologies may be beneficial to their children.
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## Finding

Many parents – especially those with young children – are concerned that Voice Assistants may expose their children to strangers and put their private information at risk. Parents are involved in how their children use Voice Assistants, with many of them (roughly three-quarters) reporting that they talk with their children about the use of these devices.

## Recommendation

- Within the products' application, parents should be given **full and clear information about what data the app is collecting and how to control the privacy of this data**. Optimize for visual and easy-to-understand language. Avoid legalese and overly sophisticated explanations.
- Develop **age-appropriate filters and restrictions** on content for different age groups that are **pre-set upon sign up**. Parents should have **agency to adjust setting brackets** up or down depending on their comfort level and their unique child.
- Parental education is a valuable tool to provide within the platform experience. Offer **talking points and guidance** on how parents can speak with their children about the use of AI devices and products depending on their child's age and developmental stage.

## Finding

Parents see Voice Assistants as beneficial to family connection and functioning, such as enhancing communication and shared experiences.

## Recommendation

Parents use Voice Assistants to help manage their families and tools designed to serve family needs could be especially useful if native to the product. Beyond serving as family management tools, Voice Assistants seem to be contributing to key aspects of family interaction and communication by providing opportunities to enjoy content together. Designers can encourage this use case by **producing more opportunities for this type of shared experience** or offering prompts at designated “family time” hours in the day, etc.

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## Finding

About half of parents indicated they were “Moderately” or “Slightly” familiar with Generative AI applications.

The report “Generative AI: Emerging Habits, Hopes and Fears” (FOSI, 2023) cited similar findings, suggesting there is ample opportunity for increasing parent and caregiver familiarity and comfort with this emergent technology. Interestingly, about 25% of parents report using generative AI at least daily, representing an opportunity to further investigate this group’s mediation or encouragement of their children’s use.

## Recommendation

**Build in-product education for parents** (whether within their own interface, or when onboarding a child’s account) to help them make informed decisions about their children’s use of AI technologies, as well as their own use. Highlight in-platform AI-related literacy touchpoints throughout onboarding and continued use experiences.

# References

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**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.**

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The Digital Wellness Lab convenes supporters from healthcare, technology, media, and entertainment to deepen our understanding and address the future of young people's healthy engagement with media and technology. If your organization is interested in becoming involved as a financial supporter, please email us at [dwl@childrens.harvard.edu](mailto:dwl@childrens.harvard.edu)

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