



Informing Accessible Design of AI Literacy Apps through Practices of Blind Parents Reading with Sighted Children

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Abstract

Being involved in teaching children to read, especially to decode (i.e., to translate written words to oral speech) is important and crucial to development. There is an increasing number of AI tools and educational apps aimed at teaching sighted children to read. However, many commercial literacy apps are not accessible, few studies of such apps exist, and studies rarely include blind parents as participants. Thus, we conducted an exploratory interview study with four blind parents about their decoding practices with their sighted children, literacy app accessibility, and AI decoding apps. We found that blind parents are motivated to teach their children literacy skills such as decoding; leverage (largely inaccessible) technology and techniques to support decoding; and want to be able to teach alongside the AI literacy apps and to make the AI teach like they do. We conclude with a discussion of design implications for AI literacy apps.

CCS Concepts

• **Human-centered computing** → Empirical studies in accessibility; • **Social and professional topics** → People with disabilities.

Keywords

co-reading, books, literacy, blind, accessibility, AI

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1 Introduction and Background

Parent involvement in shared reading practices with children has long been established to improve child's literacy development

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[1, 4, 16, 20], social and emotional skills [16], and reading comprehension [29]. More recently, scholars in the field of Education have examined how families of varied cultural backgrounds [12, 30, 33] and levels of income [17, 18] read together. Parent's involvement in teaching children to decode—i.e., to translate written words to oral speech [10]—is also important for reading development. Decoding is typically regarded as a reading skill [6, 10]. However, decoding has also been studied as a social practice via a family's interactions and interruptions when reading together [12]. Parents and children are increasingly using reading technology such as e-books [13] or educational apps. Yet, many educational literacy apps are not accessible to blind parents.

There is an increasing number of artificial intelligence (AI) tools and educational apps aimed at teaching sighted children to read, but few studies of these AI apps exist. HCI research has documented several examples of systems for children reading with parents [7, 8] or with grandparents [25, 26]. Applications such as conversational agents for children's literacy development have been studied [34]. Some research has utilized AI for interactive reading with parents [35] and for generating questions for parents to ask children while reading [8]. Another study proposed an AI-based conversational agent for children reading with family [33]. Consumer apps for AI literacy are also available (e.g., Amira [15], Ello [9], Plabook [23], Readability [27], Readlee [28], and Microsoft Reading Coach [19]), which typically analyze children's pronunciation [31], thus focusing on children's ability to decode. Some apps claim to be backed and evaluated by research [21], but none have been evaluated for accessibility for blind parents.

While research has considered how families use reading technologies together, very few studies document how blind parents read with their sighted children [5, 32]. Further, to the best of our knowledge, none delve into how blind parents teach literacy skills such as decoding to their sighted children. To address this gap, we conducted an exploratory qualitative study to answer the following research question: How do blind¹ parents (want to) support literacy, and specifically decoding, skills development while co-reading with their sighted children? We interviewed four blind parents who read with their sighted children. We found that blind parents are motivated to teach their children literacy skills such as decoding; leverage technology and strategies that are often inaccessible to

¹In this paper, we use the word blind to refer to people who access print with braille or screen readers.

support decoding; and want to be able to teach alongside the AI literacy apps and make the AI teach like they do.

2 Methods

We recruited participants from prior contacts and from snowball sampling. Eligible participants were blind parents or guardians who read with sighted children between the ages of 4 and 8 (the age that children develop the skill of decoding varies [22]). We intentionally included braille readers and non-braille readers, since braille literacy is uncommon and recruited two who did not read braille. See Table 1 for demographics.

We conducted semi-structured interviews via Zoom for 1 to 2 hours, with an average of 1.25 hours. Each interview was audio-recorded and transcribed by a professional transcription service. In our interview, we asked participants questions about reading level, preparing to read with their children, current reading practices including how they read physical books and use reading technology with their children, and involvement in educational reading. In our final portion of the interview, we also asked participants how they would imagine using (or not) Amira [15], an AI literacy app that teaches decoding skills, with their children. We used Amira as an example of the class of AI literacy apps that focus on the decoding skill of children, to anchor the conversation about AI decoding apps. We told participants that we are studying a reading technology named Amira Learning. We described how Amira works and provided an example of what it does when a child gets stuck on a word. We then asked them about their opinions, concerns, thoughts on accessibility, and what questions they would have if they were to use an app like that with their child.

We conducted a thematic analysis [3] using a constructivist approach. The first two authors separately created initial codes for each piece of data, meeting frequently to discuss initial codes and emerging themes. They then generated themes across the participants' initial codes. We then reviewed themes, resulting in the final themes that map to the headers and subheaders in the Findings.

3 Findings

3.1 Teaching Literacy is Essential to Parenting

Participants were highly motivated to engage in shared reading with their sighted children and expressed a strong desire to maintain an active parental role, emphasizing literacy teaching (reading) as a crucial aspect of parenting. However, inaccessible reading materials hindered their ability to parent and teach their children to read:

"Accessibility is huge when it comes to being able to help our kids, because ... I want to teach, I want to parent my child myself—and his father—we want to parent our child. So, I don't want to have to ask other people to help me step in and do it for me, simply because I don't have access." (P3)

Participants desired active involvement in shared reading so that they could extend learning to everyday life. For example, P2 shared, *"I want to know what he's doing—learning—so maybe I can include it in other parts of our life"* (P2). P2 further described teaching her child more about money outside of an inaccessible reading app.

While reading apps can facilitate teaching literacy, participants also expressed concerns about their impact on the parent-child dynamic. P4, P1, and P3 feared that their children would start deferring to technology like inaccessible reading apps rather than their parents as a knowledge source. For example, P4 shared a concern that his child's use of AI when reading might lead his child to *"trust a piece of software more than me"* (P4), affecting the parent-child bond and reducing opportunities to demonstrate competency as a parent. While parents find literacy apps helpful for children's learning, their inaccessibility can hinder the parents' involvement.

3.2 Inaccessibility and Access Labor of Teaching Literacy

As participants teach their children to read, they described encountering various accessibility challenges and having to perform additional access labor, thus hindering their involvement as parents.

3.2.1 Inaccessible Text and Decoding Practices. When participants' children read to them, participants (P1, P3) shared that they listen and *"wait for context clues, or for [child] to have trouble with a word"* (P1) to determine if the child mispronounced a word. Since they did not have access to the text, all four participants described coaching their children to spell out the words they had trouble reading aloud, increasing access labor when teaching. For example, P2 shared:

"If I don't know the text well enough to guess at it, I'll ask him to spell it. Then we talk about how we would break that word down into chunks that we know. Like, does it start with a C-H, or a T-H, or... S-P-L. ... Then, is this vowel long or short? ... Then we put all the pieces together." (P2)

Notably, access labor of children to learn decoding with blind parents also increased since they need to spell aloud.

Blind parents employed various workarounds for decoding with their children as they used an inaccessible print copy, such as following along with an e-book or a braille display. Many of these workarounds came with time and financial costs, increasing access labor to reading with children. For example, P2 shared that she *"took time to do all of them [Bob Books] in braille"* (P2), but her child quickly surpassed them. To reduce cost, P3 described acquiring free books and purchasing accessible e-book copies: *"I was only paying for one of them, but I had two copies. ... I also follow along with him that way, in case he gets stuck"* (P3). Often, participants had to adapt when braille was no longer viable for reading longer books with their children. For instance, P2 *"used audiobooks as a way to help him with larger chapter books that I can't get in braille, and that have maybe culturally-specific words that there's no way he's going to pattern on those"* (P2). Notably, not only are participants having to purchase more expensive audiobooks, but the workarounds can impede on the child's reading and parents are no longer involved in the decoding process.

3.2.2 Literacy Apps are Rarely Accessible. There are various literacy apps that support child literacy development effectively, but most are inaccessible to blind parents. Participants searched for and tested many apps for using with their children, but they *"had trouble finding ... apps that were accessible"* (P3). Unfortunately, when participants received app recommendations from sighted parents, they were inaccessible: *"I would hear app recommendations from friends,*

Table 1: Demographics. All demographics are self-reported by participants.

ID	Vision Ability	Assistive Technology for Reading	Gender	Age of Child	Child's Reading Level
P1	Light Perception	braille display, screen reader	Woman	8 years	between fourth/fifth-grade levels
P2	Totally Blind	braille display, screen reader	Woman	6 years	at about a third-grade level
P3	Completely Blind	screen reader	Woman	6 years	at a third or fourth-grade level
P4	Legally Blind	screen reader	Man	4.75 years	can read alphabet and spell words

and try them, but they were all inaccessible” (P1). For example, P3’s lack of access to the app hindered her from being able to support her child’s reading with the app: “But he’s doing it on his own. That’s not me helping him” (P3). Due to this lack of fully accessible apps, some participants had to opt for platforms that offered only partial accessibility through reports in a parental portal. Participants were thus excluded from active participation when reading via apps with their children, further excluding them from parenting. Often, blind parents chose to prioritize their child’s access and enjoyment of reading at the expense of their own access or comfort, as P3 shared, “I’d rather be the one that’s uncomfortable, rather than him” (P3).

3.3 AI Apps Should Support and Not Replace

AI reading apps such as Amira should enable blind parents to teach alongside the AI and to control the AI to teach their children as they do. Participants were interested in Amira as a “supplement” (P3), and they expressed concerns that the AI app could “replace my reading time” (P2) with their children.

3.3.1 Enable Parents to Teach Alongside the AI. Participants desired AI literacy apps that allow them to teach their child alongside the AI app. This is inline with their current practices: “95% of the time, I’m next to him, listening to what he’s doing. I’m not exactly doing it with him, but I’m aware of the material” (P2). They also expressed interest in reading via a “shared medium” (P4) or via an accessible companion app: “There could be a companion app where we could be in it at the same time, and I could be watching where, or hearing what she’s doing, or able to interact with it, with her” (P1).

Participants were also interested in accessing app data about the child’s reading sessions after reading. Participants suggested an accessible parent portal with logs showing the child’s “strengths and weaknesses that might need to be worked on outside of the app” (P2) and “what it [AI app] has helped her with, so we can go back and say, ‘it told her this, but I don’t think that’s entirely right’” (P1). Participants desired a method to track the child’s progress as well as determine if the AI mis-corrected the child.

3.3.2 Enable Parents to Make the AI Teach Like They Do. Participants also desired the ability to make the AI correct their child as they would. Most participants (P1, P2, P3) described delaying correcting their child, either to a later point in the same reading session or to another reading session entirely. For example, P3 would not interrupt “if [child]’s really in a groove” (P3), rather returning later to the mispronounced word shortly after or the next time they read the book together, or she “would purposely incorporate it in something I said like the next day” (P3). Additionally, participants didn’t want children to lose motivation for reading or get “frustrated quickly” (P3), especially since some children had ADHD or

were sensitive to critiques. Finally, participants wanted to delay correction until the child reached certain developmental stages in reading. P2 and P3 wanted to tell the AI to ignore certain kinds of pronunciation errors at certain periods of the child’s development. P2 described “wondering if the app could be made to adapt to” (P2) a child’s speech development in order to not over-correct. Specifically, P2 suggested: “Have a parent be able to put in the software, ‘When a W sound comes for an L, skip that correction for the next month, and then try it again’” (P2). The participants’ practice of delayed correction shows a desire for agency in deciding the AI’s correction frequency, or in other words, a desire for making the AI take their parenting approach to decoding corrections.

4 Discussion

We found that blind parents are motivated to teach their children literacy skills such as decoding; leverage technology and strategies that are often inaccessible to support decoding; and want to be able to teach alongside the AI literacy apps and make the AI teach like they do.

We found that blind parents want access to literacy apps, but often apps are not accessible. Some researchers have proposed AI reading apps that support parent-child reading [33, 35]. Yet, most existing apps (research and on the market) are designed for children to use individually and do not explicitly assume that parents are in the loop, providing reports for parents or educators (e.g., [15, 27, 28]). However, our participants reported that the apps and reports are typically not designed with blind parents’ access needs in mind. Additionally, we found that parents do extra access labor to read with their children and prioritize their children’s access to reading over their own, which aligns with prior work [5, 32]. We add that parents also engage in access labor when teaching literacy and incorporating literacy apps into their reading practices.

When we design AI literacy apps, we should be sensitive to the parent’s and child’s disabilities and developmental needs and support parent’s agency in making the AI teach literacy as they would. When thinking about incorporating AI literacy apps into their reading practice, participants wanted to have agency over how the AI corrects their children when decoding; they were especially mindful of their children’s frustration levels due to children’s disabilities including speech differences and ADHD. Speech recognition algorithms have been proposed that identify pattern errors in children’s speech [34]. In the accessible computing field, some work has been done on the use voice assistants by people with speech differences [2, 14, 24]. AI literacy apps could detect if children have speech differences and both adapt to them and enable parents to control the corrections.

Finally, future AI reading technologies should consider supporting parents, especially parents with disabilities, in using the apps and not replacing them as reading partners. Rather, we should think more about how parents with disabilities might be included in the child-AI dynamic, as some prior work has considered [35]. Parents reading with children is important to children's development and the parent-child relationship [11]. Further, blind parents revealed that reading with their sighted children helps them demonstrate their competency and fulfill their role as parents. Designers can also consider building AI literacy apps that include blind parents and sighted parents reading together with their children. When incorporating AI into the family reading practice, parents should be placed at the forefront, with AI playing a supporting role.

5 Conclusion and Future Work

Through semi-structured interviews with four blind parents, we found that they are motivated to teach their children literacy skills such as decoding; leverage technology and strategies that are often inaccessible to support decoding; and want to be able to teach alongside the AI literacy apps and make the AI teach like they do. As this is an initial study with a small number of participants, the sample is skewed towards parents who want to be involved in reading and may have higher literacy levels than other parents. Future work includes recruiting parents with diverse reading practices, observing sighted children reading to their blind parents in order to witness decoding practices, as well as observing blind parents using an AI literacy app such as Amira in order to further ascertain participant opinions of accessibility and usability.

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References

- [1] Linda Baker, Kirsten Mackler, Susan Sonnenschein, and Robert Serpell. 2001. Parents' Interactions with Their First-Grade Children During Storybook Reading and Relations with Subsequent Home Reading Activity and Reading Achievement. *Journal of School Psychology* 39, 5 (Sept. 2001), 415–438. [https://doi.org/10.1016/S0022-4405\(01\)00082-6](https://doi.org/10.1016/S0022-4405(01)00082-6)
- [2] Stacy M. Branham and Antony Rishin Mukkath Roy. 2019. Reading Between the Guidelines: How Commercial Voice Assistant Guidelines Hinder Accessibility for Blind Users. In *The 21st International ACM SIGACCESS Conference on Computers and Accessibility*. ACM, Pittsburgh PA USA, 446–458. <https://doi.org/10.1145/3308561.3353797>
- [3] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3, 2 (Jan. 2006), 77–101. <https://doi.org/10.1191/1478088706qp0630a> Publisher: Routledge.
- [4] Adriana G. Bus, Marinus H. van IJzendoorn, and Anthony D. Pellegrini. 1995. Joint Book Reading Makes for Success in Learning to Read: A Meta-Analysis on Intergenerational Transmission of Literacy. *Review of Educational Research* 65, 1 (March 1995), 1–21. <https://doi.org/10.3102/00346543065001001> Publisher: American Educational Research Association.
- [5] Cameron Tyler Cassidy, Isabela Figueira, Sohyeon Park, Jin Seo Kim, Emory James Edwards, and Stacy Marie Branham. 2024. Cuddling Up With a Print-Braille Book: How Intimacy and Access Shape Parents' Reading Practices with Children. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24)*. Association for Computing Machinery, New York, NY, USA, 1–15. <https://doi.org/10.1145/3613904.3642763>
- [6] Jennifer P. Cheatham and Jill H. Allor. 2012. The influence of decodability in early reading text on reading achievement: a review of the evidence. *Reading and Writing* 25, 9 (Oct. 2012), 2223–2246. <https://doi.org/10.1007/s11145-011-9355-2>
- [7] Drew Cingel and Anne Marie Piper. 2017. How Parents Engage Children in Tablet-Based Reading Experiences: An Exploration of Haptic Feedback. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW '17)*. Association for Computing Machinery, New York, NY, USA, 505–510. <https://doi.org/10.1145/2998181.2998240>
- [8] Griffin Dietz Smith, Siddhartha Prasad, Matt J. Davidson, Leah Findlater, and R. Benjamin Shapiro. 2024. ContextQ: Generated Questions to Support Meaningful Parent-Child Dialogue While Co-Reading. In *Proceedings of the 23rd Annual ACM Interaction Design and Children Conference (IDC '24)*. Association for Computing Machinery, New York, NY, USA, 408–423. <https://doi.org/10.1145/3628516.3655809>
- [9] Ello. 2024. Read With Ello. <https://www.ello.com/>
- [10] Barbara Foorman, Nicholas Beyler, Kelley Borradaile, Michael Coyne, Carolyn A. Denton, Joseph Dimino, Joshua Furgeson, Lynda Hayes, Juliette Henke, Laura Justice, Betsy Keating, Warnick Lewis, Samina Sattar, Andrei Streke, Richard Wagner, and Sarah Wissel. 2016. *Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade*. Technical Report NCEE 2016-4008. U.S. Department of Education. 123 pages. https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/wwc_foundationalreading_040717.pdf
- [11] Fraide A. Ganotice Jr., Kevin Downing, Teresa Mak, Barbara Chan, and Wai Yip Lee. 2017. Enhancing parent-child relationship through dialogic reading. *Educational Studies* 43, 1 (Jan. 2017), 51–66. <https://doi.org/10.1080/03055698.2016.1238340> Publisher: Routledge.
- [12] Amanda K. Kibler, Judy Paulick, Natalia Palacios, and Tatiana Hill. 2020. Shared Book Reading and Bilingual Decoding in Latinx Immigrant Homes. *Journal of Literacy Research* 52, 2 (June 2020), 180–208. <https://doi.org/10.1177/1086296X20915511>
- [13] Ofra Korat and Tal Or. 2010. How New Technology Influences Parent-child Interaction: The Case of e-book Reading. *First Language* 30, 2 (May 2010), 139–154. <https://doi.org/10.1177/0142723709359242> Publisher: SAGE Publications Ltd.
- [14] Colin Lea, Zifang Huang, Jaya Narain, Lauren Tooley, Dianna Yee, Dung Tien Tran, Panayiotis Georgiou, Jeffrey P Bigham, and Leah Findlater. 2023. From User Perceptions to Technical Improvement: Enabling People Who Stutter to Better Use Speech Recognition. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*. Association for Computing Machinery, New York, NY, USA, 1–16. <https://doi.org/10.1145/3544548.3581224>
- [15] Amira Learning. 2024. Amira Learning: The World's First Intelligent Reading Assistant. <https://www.amiralearning.com/>
- [16] Rachael Levy and Mel Hall. 2021. *Family literacies: reading with young children*. Routledge, New York. <https://www.routledge.com/Family-Literacies-Reading-with-Young-Children/Levy-Hall/p/book/9781138488472>
- [17] Rufan Luo, Catherine S. Tamis-LeMonda, Yana Kuchirko, Florrie F. Ng, and Eva Liang. 2014. Mother-Child Book-Sharing and Children's Storytelling Skills in Ethnically Diverse, Low-Income Families. *Infant and Child Development* 23, 4 (2014), 402–425. <https://doi.org/10.1002/icd.1841>
- [18] Patricia H. Manz, Cheyenne Hughes, Ernesto Barnabas, Catherine Bracaliello, and Marika Ginsburg-Block. 2010. A descriptive review and meta-analysis of family-based emergent literacy interventions: To what extent is the research applicable to low-income, ethnic-minority or linguistically-diverse young children? *Early Childhood Research Quarterly* 25, 4 (Oct. 2010), 409–431. <https://doi.org/10.1016/j.ecresq.2010.03.002>
- [19] Microsoft. 2024. Reading Coach Preview. <https://coach.microsoft.com/>
- [20] Suzanne E. Mol, Adriana G. Bus, Maria T. de Jong, and Daisy J. H. Smeets. 2008. Added Value of Dialogic Parent-Child Book Readings: A Meta-Analysis. *Early Education and Development* 19, 1 (Feb. 2008), 7–26. <https://doi.org/10.1080/10409280701838603> Publisher: Routledge.
- [21] Jack Mostow, Greg Aist, Paul Burkhead, Albert Corbett, Andrew Cuneo, Susan Eitelman, Cathy Huang, Brian Junker, Mary Beth Sklar, and Brian Tobin. 2003. Evaluation of an Automated Reading Tutor That Listens: Comparison to Human Tutoring and Classroom Instruction. *Journal of Educational Computing Research* 29, 1 (July 2003), 61–117. <https://doi.org/10.2190/06AX-QW99-EQ5G-RDCF>
- [22] National Institute for Literacy. 2008. *Developing Early Literacy: Report of the National Early Literacy Panel*. Technical Report. National Institute for Literacy. 260 pages.
- [23] Plabook. 2021. Plabook Reading App. <http://www.plabookeducation.com/reading-app.php>
- [24] Alisha Pradhan, Kanika Mehta, and Leah Findlater. 2018. "Accessibility Came by Accident": Use of Voice-Controlled Intelligent Personal Assistants by People with Disabilities. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. ACM, Montreal QC Canada, 1–13. <https://doi.org/10.1145/3173574.3174033>
- [25] Hayes Raffle, Rafael Ballagas, Glenda Revelle, Hiroshi Horii, Sean Follmer, Janet Go, Emily Reardon, Koichi Mori, Joseph Kaye, and Mirjana Spasojevic. 2010. Family story play: reading with young children (and elmo) over a distance. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '10)*. Association for Computing Machinery, New York, NY, USA, 1583–1592. <https://doi.org/10.1145/1753326.1753563>
- [26] Hayes Raffle, Glenda Revelle, Koichi Mori, Rafael Ballagas, Kyle Buza, Hiroshi Horii, Joseph Kaye, Kristin Cook, Natalie Freed, Janet Go, and Mirjana Spasojevic. 2011. Hello, is grandma there? let's read! StoryVisit: family video chat and

- connected e-books. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*. Association for Computing Machinery, New York, NY, USA, 1195–1204. <https://doi.org/10.1145/1978942.1979121>
- [27] Readability. 2024. Readabilitytutor: Smart Independent Reading & Comprehension Learning. <https://www.readabilitytutor.com/>
- [28] Readlee. 2024. Readlee. <https://www.readlee.com/>
- [29] E. Reese and A. Cox. 1999. Quality of adult book reading affects children's emergent literacy. *Developmental Psychology* 35, 1 (Jan. 1999), 20–28. <https://doi.org/10.1037//0012-1649.35.1.20>
- [30] Susan Sonnenschein and Brook E. Sawyer (Eds.). 2018. *Academic Socialization of Young Black and Latino Children: Building on Family Strengths*. Springer International Publishing, Cham. <https://doi.org/10.1007/978-3-030-04486-2>
- [31] Samuel Spaulding, Huili Chen, Safinah Ali, Michael Kulinski, and Cynthia Breazeal. 2018. A Social Robot System for Modeling Children's Word Pronunciation: Socially Interactive Agents Track. In *Proceedings of the 17th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS '18)*. International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS), Richland, SC, 1658–1666.
- [32] Kevin M. Storer and Stacy M. Branham. 2019. "That's the Way Sighted People Do It": What Blind Parents Can Teach Technology Designers About Co-Reading with Children. In *Proceedings of the 2019 on Designing Interactive Systems Conference (DIS '19)*. Association for Computing Machinery, New York, NY, USA, 385–398. <https://doi.org/10.1145/3322276.3322374>
- [33] Ying Xu, Kunlei He, Valery Vigil, Santiago Ojeda-Ramirez, Xuechen Liu, Julian Levine, Kelsyann Cervera, and Mark Warschauer. 2023. "Rosita Reads With My Family": Developing A Bilingual Conversational Agent to Support Parent-Child Shared Reading. In *Proceedings of the 22nd Annual ACM Interaction Design and Children Conference (IDC '23)*. Association for Computing Machinery, New York, NY, USA, 160–172. <https://doi.org/10.1145/3585088.3589354>
- [34] Ying Xu and Mark Warschauer. 2020. Exploring young children's engagement in joint reading with a conversational agent. In *Proceedings of the Interaction Design and Children Conference (IDC '20)*. Association for Computing Machinery, New York, NY, USA, 216–228. <https://doi.org/10.1145/3392063.3394417>
- [35] Zheng Zhang, Ying Xu, Yanhao Wang, Bingsheng Yao, Daniel Ritchie, Tongshuang Wu, Mo Yu, Dakuo Wang, and Toby Jia-Jun Li. 2022. StoryBuddy: A Human-AI Collaborative Chatbot for Parent-Child Interactive Storytelling with Flexible Parental Involvement. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22)*. Association for Computing Machinery, New York, NY, USA, 1–21. <https://doi.org/10.1145/3491102.3517479>