Audiobooks and literacy

A rapid review of the literature

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Introduction

Thomas Edison started recording stories onto phonographs in the 1870s, when he had a vision of literature being democratised through devices for storytelling in every home.¹ Practical limitations cut Edison’s ambitions short, but the idea of the recorded novel persisted. Most early experimentation occurred in the US, but Britain became involved when Captain Ian Fraser, injured in the First World War and left blind, had the idea of recording a book. He was put in charge of a team at the Royal National Institute of the Blind (RNIB) to develop this technology, initially recording some poems as an experiment. After some failed attempts at creating machines to read the books, the RNIB set up its own recording studio in 1934 to press volumes onto shellac discs.²

Both in the UK and US, the availability and popularity of the medium grew in line with its technological development. Duvall Hecht set up Books on Tape Inc. in 1975 – the first distributor of its kind – and, by the 1990s, new technology facilitated a range of digital formats including MP3 downloads.³

Today, audiobook listenership continues to grow: in the first quarter of 2018, sales rose by 28.8% over the previous year, while Audible UK alone had a profit growth of 45% on the previous year in 2017.⁴ Children’s books represent a healthy proportion of these sales: in that

³ Rubery, The Untold Story of the Talking Book.
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same year, in the UK, of the 14 million units sold, approximately 18% were for children. More recently, a report issued by the Insight People found that since January 2018, as smart speaker consumption by children has increased, audiobook popularity has increased by 138%, with over 34% of children listening to audiobooks for 15 minutes a week.

There has also been a growth in the range of access points for children’s audio: alongside services like Audible being available on smart speakers there are a range of other storytelling apps now available (many of them interactive), including, most recently, Pickatale for 0-12 year-olds.

Despite debate around the benefits and risks of promoting audio as a way of consuming stories, there is strong evidence to suggest that engagement with audiobooks can impact positively on reading skills and enjoyment. This literature review will explore the role of audiobooks in supporting children’s literacy inside and outside the classroom. It will show that audiobooks can help develop reading skills, such as decoding and comprehension, but also build on the positive outcomes that reading fosters, such as wellbeing and emotional intelligence.

For the purposes of this review, audiobooks are defined as adapted from books created originally in written form, either as print or e-publication, and with a narrative layout (as opposed to, say, verse or dramatic script). They may be fictional or non-fictional. The audio productions themselves may take the form of a single reader (in most cases either an actor or the author, but teachers and parents making recordings will also be considered) or multiple readers, perhaps with actors performing the speech of different characters. This review will cover various formats, including vinyl, tape and CD. However, most statistics and research quoted here are concerned with digital recordings.

It should also be noted that the studies here pertain to children’s literacy in their first language. A significant amount of study has been done on the use of audio in second language learning, particularly around comprehension. Such work is beyond the scope of this review.

Lastly, audiobooks have been discussed at length in relation to additional needs, particularly dyslexia. Again, this is beyond the scope of this review but research shows both improved reading accuracy and more general learning motivation.

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8 See, for example, İzzettin Kök (2017): Relationship between Listening Comprehension Strategy Use and Listening Comprehension Proficiency, International Journal of Listening

9 See, for example, Anna Milani, Maria Luisa Lorusso and Massimo Molteni, “The effects of audiobooks on the psychosocial adjustment of pre-adolescents and adolescents with dyslexia”, Dyslexia 16: 87–97 (2009) and The
Engagement with audiobooks

An audiobook can be listened to while completing other tasks, such as travelling or doing housework. This practicality of consumption, coupled with the accessibility offered when the words of a book do not need to be decoded on the page, seems to be the dominant discourse on audiobooks amongst publishers, writers and journalists, many of whom have written impassioned defences of the audiobooks as a medium.\(^\text{10}\) The removal of the obstacles that reading can face – anything from tired eyes to a difficulty in decoding written text – enables the consumer to access a higher number and a broader range of texts. Publishing director Helen Atwan, for example, writes in 2016:

‘[I]t’s true that I often find myself turning on an audiobook at the end of a long day, when my eyes are too fried to stay open. It’s lazy, I recognize, but I am getting in 20 or 30 more minutes of a book when I would otherwise simply have to close my eyes and sleep, or pry them open with toothpicks to zone out in front of another episode of Transparent.’\(^\text{11}\)

Of course, there is an argument that while listening is physically more passive than reading, it is not actually lazy – actively listening to a narrative requires some level of concentration. But, certainly, it is something that can be accessed more readily for the tired listener, just as it can be accessed by the listener tied up with other activities, such as cooking or driving. Atwan’s comment about stamina, though, is key here – she can access more of a book through listening than through reading. This point is also made by Laura Miller in War and Peace Made Easy: this article is used to model ease of reading in scholarly studies such as Rogowsky (see later) but also Miller presents the audiobook as a pathway to accessing more difficult and time-consuming books.\(^\text{12}\) Of course, the concept of difficulty is relative: for an educated journalist, War and Peace may be intellectually ambitious but achievable, where this may not be the case for a less confident reader. The fact remains, however, that a person’s reading repertoire can be extended when they are not held back by the demands in attention, reading skills and time that are presented by engagement with a physical book.

Engagement amongst younger readers

The popularity of audio is growing amongst younger readers. For example, 23% of adults aged 18-29 have listened to an audiobook in the past 12 months, but for those over 65 the figure

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is only 8%. While it is important to note that this is still a low percentage of all 18-29-year-olds, the figures suggest there is more potential now than with previous generations. However, much like physical book ownership, consumption levels are higher amongst those in higher income brackets.

There are several factors that could contribute to this but the technological aspect of audio (the device on which it is played, such as a smartphone or MP3 player) may be particularly appealing in terms of its ‘cool factor’, which is seen as particularly pertinent for reluctant male readers. For example, according to American children’s writer Jon Scieszka (2008):

‘In my Guys Read work, I’ve met all kinds of boys who are crazy for audiobooks. I think it’s partially because audiobooks appeal to a lot of guys’ love for messing around with any kind of technology. ... Guys also think they are getting away with something by listening instead of reading. We don’t have to tell them that they are learning vocabulary, story structure, sentence composition, and a dozen other literacy skills.’ (quoted in Grover & Hannegan, 2012, p.12)

Other contributing factors include accessibility and convenience (e.g. with streaming services such as Audible and Libby), which modern consumers are very familiar with in relation to other media, such as music and films, because it boosts their visibility. Stacey Waite’s PhD thesis Embracing Audiobooks as an Effective Educational Tool connects millennials’ increased engagement with technology, and its central role in socialised operations, with its role in education:

‘This doesn’t mean that the classics of literature cannot be taught. In fact, it is imperative that they are, but rather than signing out a dusty old copy of The Great Gatsby from the library, students should have the option to listen to it narrated through their Beats on their iPhone.’ (Waite, 2018, p.10)

Similar patterns were noted in relation to other digital formats like ebooks. For example, a 2015 study found that, after being given the opportunity to take part in an ebook intervention, the percentage of boys who felt reading was cool increased from 34.4% to 66.5%. More recently, the National Literacy Trust’s 2019 report on children, young people and digital reading shows that disengaged boy readers are more than twice as likely to say that they read fiction on screen compared with their more engaged peers (25.4% vs 9.8%) (Clark & Picton, 2019).

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14 See, for example, “Book ownership, literacy engagement and mental wellbeing,” Christina Clark & Irene Picton, 2018
Benefits of engagement

In the consumer market, the main benefits of audiobooks are presented to be convenience and ease. As an activity, they are positioned largely in addition to reading and as a way to pass time in a more constructive or healthy way than gaming or using social media apps. This was made clear in Audible’s campaigns17 and ‘Mindful Moments’18, and by the many editorial and opinion pieces praising the way audiobooks facilitate multi-tasking.19

However, there are many more advantages beyond these, particularly for children and young people, and this has been explored both in the consumer market (via parents) and in the classroom.

Building comprehension skills

Several studies have shown that comprehension skills transcend modality, that is, the business of understanding and retaining information works the same at a cognitive level whether read or heard. For example, a 1990 study by the University of Oregon found that test subjects showed similar competencies whether reading or listening to test materials. However, they say the same for non-linguistic modalities in wordless film or cartoon sequences where subjects would comprehend the same narrative as a verbal narration of the same sequence. Experiments showed that they remembered and forgot the same elements regardless of format.20

This being the case, it would make sense that listening to a book or story helps develop the skills needed to process information, unhindered by the additional challenges presented by decoding and work recognition. This does not need to be to the detriment of reading practices: Pam Varley comments that different parts of the brain work harder when listening compared with reading, but for both activities the language comprehension part of the brain works in the same way. So where previous detractors might suggest that listening to an audiobook does not require the same cognitive skills as reading in print, studies suggest that, in fact, the opposite can be true.

More recently, a 2016 US study tested the comprehension skills of 91 students after accessing a digital ebook and audiobook, or both together, and found no significant difference between outcomes relating to each condition.

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20 Beth A. Rogowsky, Barbara M. Calhoun, and Paula Tallal, “Does Modality Matter? The Effects of Reading, Listening, and Dual Modality on Comprehension,” SAGE Open 6, no. 3 (July 1, 2016)
This approach has been confirmed by a recent neurological study: in August 2019, the Society of Neuroscience published research showing that the brain registers and recognises words and information in almost identical ways whether written or spoken.\textsuperscript{21}

**Comprehending non-fiction**

It should be noted, however, that these studies (including Rogowsky) use ebooks as the reading source rather than printed text. Other studies, such as Daniel and Woody (2010), show that when compared with printed texts, students are able to recall more information from reading than from listening, particularly in the case of non-fiction podcasts.\textsuperscript{22} From this, they concede that while podcasts should not be relied on to deliver primary material, they might be well placed to enrich the study of a subject. Podcasts as an entity are beyond the scope of this review but this idea supports the notion that audio can/should be used to enrich existing practices rather than replacing them.

**Reading While Listening (RWL)**

Reading while listening as a practice is largely used as a way of learning a second language but, historically, in the US it has been used as a way of developing native language reading skills. While not broadly used in the UK and not suggested here as a use of audiobooks, it is important to acknowledge its use historically as impacting on more recent studies. Studies have shown that when the two tasks are performed together, the cognitive processes are the same and they behave as a single, unified task. For example, Margaret McMahon’s 1983 study used a mismatch test, asking pupil subjects as young as First Grade (beginning readers) to identify when the word they heard was different from the word they read. The majority of pupils performed well in this, with false positives being identified largely in cases where a child was met with a particularly difficult word. Also, these false positives (those being identified by a child more than 10 words after the fact) were lower than would have been expected.\textsuperscript{23}

There is also evidence in these studies to suggest that having individual control over a listening experience – as in, being able to stop and start playback – is beneficial for developing readers. Ofer Bergman’s 1999 study sought to prove that children with poor reading skills would test better when they controlled the narration in RWL, which it succeeded in doing. Bergman characterises RWL as a model that ‘allows children to shift their attention from the laborious effort of reading individual words to the far more interesting job of understanding the narrative’. He highlights McMahon’s observation that lower levels of fluency and


\textsuperscript{22} David B. Daniel and William Douglas Woody, “They Hear, but Do Not Listen: Retention for Podcasted Material in a Classroom Context,” \textit{Teaching of Psychology} 37, no. 3 (July 2010): 199–203

\textsuperscript{23} Margaret L. McMahon, “Development of Reading-While-LISTENING Skills in the Primary Grades,” \textit{Reading Research Quarterly} 19, no. 1 (1983): 38–52
understanding for some RWL subjects is attributable to the lack of control over narration speed.24

Modelling reading
Hearing a story being read can give a learning reader a better understanding of pronunciation and tone, as well as helping them understand the emotional pitch of a story. Author Pam Varley notes, for example, how hearing Harry Potter gives children a better idea of how to pronounce ‘Hermione’. Also, accessing audiobooks increases the opportunity to benefit from so many of the other skills that reading fosters. Gene Wolfson (2008) writes:

Since the reading process develops through our experiences with oral language, audiobooks simply provide another opportunity to increase the understanding and appreciation of the written word. Audiobooks can model reading, teach critical listening, build on prior knowledge, improve vocabulary, encourage oral language usage, and increase comprehension. Essentially, reading audiobooks supports the development of all four language systems: phonological, semantic, syntactic, and pragmatic. 25

Wolfson goes on to note that, particularly in secondary school where literacy demands are so numerous and opportunities for reading for pleasure much fewer, audiobooks can be a good way of maintaining young people’s engagement with reading.

Access to a wider range of books
As suggested earlier, many struggling, less advanced or less confident readers will be able to access a wider range of stories where difficulty in decoding or comprehending the written text may act as a barrier. If these students are given access to a more diverse range of texts, then their opportunities to enjoy stories increase. Audio in this context is particularly useful when considering class texts in a group where ability differs. Wolfson notes that:

[r]emoving the restraints of a student’s word recognition and decoding skills provides a very positive approach to focusing on the meaning behind the author’s words ... this provides an opportunity for many students ... to be able to experience the same books[...]

Moreover, compared with each student in a class reading a book individually and at a speed consistent with their ability, as a class they can enjoy stories together when they are read aloud.

24 Bergman, Wait for Me! Reader Control of Narration Rate in Talking Books., 4
Emotional response and development
There are several ways in which audio more readily elicits the emotional responses to a text that are not always present in reading physical books, particularly for struggling readers. Moore and Cahill (2016) describe an action research project involving 31 secondary students who had been identified as struggling readers. The project found these students reacted positively to having a murder mystery story read aloud to them over several weeks. They remark:

Following the readings, the previously disenfranchised students enthusiastically engaged in in-depth discussion that employed critical thinking. The students also conversed about literary elements and defined unfamiliar vocabulary based on context clues in passages (Zientarski and Pottorff 1994). Thus, the experience seems to have affected psychological and ecological components of the reading process as described by Aaron et al. (2008).

This may also suggest that the auditory presence of a human voice, whether recorded or live, as in read by a teacher or parent, could stimulate a stronger response than the written narrative. Waite interrogates this, referring to the ‘emotional cortex’ of the brain as the part that responds to human voices telling a story, and that where adolescents are more and more at risk of isolation, it is important to keep in touch with this.

Research also shows that audiobooks elicit higher levels of emotional engagement than filmic experiences of the same stories. In a 2018 study run by the Experimental Psychology department at UCL, subjects were played both audio and film adaptations of a selection of popular novels from different genres, including titles ranging from The Hound of the Baskervilles (1887) to The Girl on the Train (2015). After experiencing each of these, subjects answered questions about their levels of engagement but also had their physiological responses measured in terms of heart rate (linked to information processing) and body temperature (linked to emotional arousal) to assess less conscious forms of engagement. The results showed that while subjects reported the videos to be more engaging than the audiobooks, their physiological changes suggested that they were in fact more engaged with the audiobooks than the films.

Parental engagement
The ability to listen to a book as a family, whether while engaged in other tasks or as a bedtime story, is an important way of getting books into the home. Crucially, this will help families where parents themselves struggle to read or lack confidence reading to their children.

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28 Daniel C. Richardson et al., “Measuring Narrative Engagement: The Heart Tells the Story,” preprint (Neuroscience, June 20, 2018)
rise of smart speakers has also helped facilitate the sharing of stories, with many services such as the BBC now launching storytelling apps.  

This form of shared listening also offers up opportunities where busy families may not have time for reading together. Picton (2018) notes that:

‘You can listen any time: in the car, the bath, at bedtime to help your child wind down, or just have one on in the background during the day... Children go through phases when they’re less interested in reading, so listening to audiobooks can keep up their exposure to literature.’

Children’s publisher Scholastic have reached out to parents in offering five reasons why audio is good for children. Interestingly, they conflate portability and multi-taskability into one benefit – ease – and by noting that a child could listen while, for example, cleaning their room, there is a clear appeal here in terms of convenience for the parents. The further four points, on the other hand, focus more on intrinsic benefits to the children. These are:

- Introduction of new vocabulary and development of word-recognition skills – exposure can increase word-recognition ability
- As noted earlier by Miller (2010), access to higher level texts can improve comprehension and give struggling readers access to content more appropriate for their age and interests
- As has often been acknowledged with ebooks (for example, Kozlowski, 2012), audiobooks can be a private experience, with the title unknown to others, meaning that if a child does want to ‘read’ a lower-ability or -aged book they can do so without scrutiny from their peers
- Novelty – listening on a device might be considered more ‘fun’ than reading a paper book, particularly when a production features a dramatic reading or famous voice.

This last point on the voice of the audiobook also highlights a crucial point about familiarity, particularly where a protagonist may have a dialect or accent. Book Riot author and blogger Dana Lee acknowledges the way audiobooks reinforce the #ownvoices drive first started by Young Adult author Corinne Duyvis (who also coined the term), suggesting that hearing narration in the voices of authors that share a heritage with the content/characters of the books can be an enriching experience. This is particularly crucial in giving children access to narrators with whom they share a heritage.

On a practical note, it is also worth pointing out that audio has facilitated communication between parents – particularly fathers – and children where they have been separated. For

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example, there are projects for fathers in prisons\textsuperscript{32} and, more recently, opportunities for those in the military\textsuperscript{33} to record themselves reading stories, which can then be played to their children at bedtime.

\textbf{Risks}

Some critics have noted potential issues around learning styles (the practice of listening being less appealing to those who do not consider themselves auditory learners). For example, Jean Brown in 2003 suggested that visual and tactile learners may find extended listening activities frustrating and, as a result, they could be ‘put off’ using audiobooks.\textsuperscript{34} However, much research has been done into the legitimacy of these learning styles, most recently by the Education Endowment Foundation, which found that pupil interventions using perceived learning styles were ineffective.\textsuperscript{35} Of course, this does not account for preference and, as noted earlier by Scieska, there is a certain appeal to some, and by the same token that appeal may be diminished for others.

More specifically, there is a risk that the removal of the decoding process could in fact act against the learner, making it easier for them to be distracted. For example, Waite comments ‘if an adolescent has great decoding skills and considers himself an auditory learner, it is still possible that he might not benefit from listening to an audiobook if the dialect of the narrator is foreign or if he is listening in a distracting environment’\textsuperscript{36}

There is an argument that there is less control over an audiobook than with something physical; there is a physical agency with a print book – even with an ebook – that cannot be achieved through listening, as noted by Pam Varley: “By taking command of a physical book, readers do have an advantage over listeners. The limitation on the listener’s ability to flip back to a particular passage creates a corresponding limitation on which books work in audio format.”\textsuperscript{37} Similarly, a reader can repeat a section, focus on a single word or alter the speed at which they read with minimal disruption to the process – this is more difficult with an audiobook. However, as noted in the more recent work on reading while listening, technology is now available to change the speed of an audio recording without affecting the pitch or quality.\textsuperscript{38}

\textsuperscript{34} Jean E. Brown, “Evaluation of Audio Books: A Guide for Teachers,” The ALAN Review 30, no. 3 (May 1, 2003),
\textsuperscript{36} Waite, “Embracing Audiobooks as an Effective Educational Tool.\textsuperscript{\textdagger},” 19
Audiobooks in the classroom

Much like print books, there seems to be a disconnect between audiobooks used in the classroom (or for educational purposes) and the books listened to by the casual reader. The markets for both, likewise, have developed different trends. This reluctance can be found in the attitudes of teachers and educational establishments: Waite addresses the persistent hesitance of educators to use audiobooks as a pedagogical tool, which she links to the societal cynicism towards audiobooks that still seems to present in literary circles, as noted by Dahl and Atwan. In particular, the idea that it is ‘cheating’: ‘[s]ince the narrator of the story is doing the decoding for the listener, one could argue that half of the work is done already’.39

To mitigate this, education specialists and academics have offered a range of approaches to make the most of audio in the classroom. For example, Frank Serafini’s much-quoted 2009 article outlines a range of ways audiobooks can be used in the classroom, namely:

- Teasers for books
- Take-home audiobooks to go with reading books [this would most likely have been with reference to books on tape or CD as shared licensing of digital audio can be difficult for schools]
- Modelling effective reading
- Introducing new vocabulary and increasing phonemic awareness40

In terms of practical advice, children’s librarian Lisa Von Drasek in Heard Any Good Books Lately remarks on the ability to ‘settle’ a disruptive class through listening to a book together. She also discusses ‘speed readers’ (or readers who can process and decode efficiently but don’t comprehend, or at least engage with, the text) and suggests that if they are forced to listen to every word, they may engage better with the text.41

More recently, a study by de Boer in 2018 found that the opportunity to listen to audiobooks narrated by teachers increased children’s interest in a kindergarten reading corner by 11%. While concluding ‘audiobooks can be a successful addition to classrooms to reach all types of learners’, the author questioned whether books recorded by non-familiar adults may have had a different effect, suggesting this as an area for further study.42

Of course, there is the question of novelty here – it would be interesting to pursue this study and see if, once the audiobooks have been in place for a length of time (perhaps two terms), the children still choose the space. Also, the practicalities of the study meant that only two pupils could listen at a time. This exclusivity may also have contributed to pupils’ increased desire to participate. De Boer also asks whether books recorded by strangers may have a different effect and suggests this as an area for further study.

39 Waite, “Embracing Audiobooks as an Effective Educational Tool.” 19
42 Marissa de Boer, “The Effects of Teacher Read Audiobooks on Kindergarten Students’ Motivation and Desire to Read at Choice Time,” 2018, 23.
Conclusions and next steps

Dominant discourses around audiobooks show not only that they are increasing in popularity but that their convenience and ease can be of huge benefit in education as well as in a consumer market. However, that convenience does not equate to a shortcut, nor does it adversely affect the process of learning to read if deployed effectively. Indeed, it can boost this and build on the other benefits of wide and frequent reading, such as vocabulary building and emotional intelligence.

More studies should certainly be done in this area. Moore and Cahill note in their conclusion that the majority of classroom-based studies have been done with materials created specifically for the classroom, and little has been explored using commercially produced audiobooks (Moore & Cahill, 2016). While the UCL study did use commercial products, their focus was on measuring modal differences in older, proficient readers, whereas it would be interesting to explore how these sorts of books could be used to motivate and support reluctant or struggling readers.

As shown here, most studies conducted into the efficacy of audiobooks in the classroom have been done in the US, where the context of RWL as a common classroom tool should be considered. There is a question as to whether children educated in a US system are more accustomed to reading, and whether this impacts on the way they engage with audio and what the benefits might be.

However, it should be noted that the focus of these studies is predominantly on listening in relation to reading – how listening can support and encourage a love of reading, build reading skills, or even act as a convenient substitute. Apart from Moore and Cahill, little has been done on the intrinsic benefits of listening and listening for enjoyment, which should be explored further. Perhaps the focus on audiobooks, as audio counterparts to physical books, necessitates this close relationship, whereas to start looking at, for example, podcasts and audio drama might open up a broader discussion about listening for enjoyment. Indeed, most work cited here is on fiction so further work could be done with non-fiction audiobooks.

Of course, by fostering a love of listening it would follow that the extrinsic benefits, such as wider access to books, deeper understanding of a text and opportunities to model effective reading, would also increase. But studying the intrinsic benefits of listening in all its forms – and considering it as a strand of literacy alongside reading, writing and speaking – should also be a priority.
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