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Exploring children's embodied story experiences: a toolkit for research and practice

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Abstract

Literacy research and practice are invigorated by evidence that stories enhance empathy and concentration. Both benefits are associated with attending to inner sensory states afforded by stories. Yet children are rarely asked about how stories, steeped as they are in characters' bodily actions, affect them in bodily terms. We have conducted a qualitative study inviting 9- to 12-year-olds (N = 19) to share their embodied story experiences. To this end, we developed a toolkit of story excerpts and activities supported with bespoke props that can be adopted in research but also in classrooms and other practice. The toolkit was tested in school-based focus groups (accompanied by in-class observations) and home-based individual interviews. We introduce the toolkit and discuss some of the key prerequisites of its use. Further, we present three main types of embodiment statements provided by our participants: what-statements about the trigger of one's embodied experience, how-statements about the sensory or motor quality of the experience and what-and-how statements combining both aspects. We consider the distinct potentials of these statement types for fostering children's embodied self-awareness and story awareness in educational settings and beyond.

Key words: embodiment, primary education, multimodality, reading for pleasure, everyday literacies, story, children's experiences, literacy, methodology, reader response

Introduction

Engagement with stories in various forms benefits children's personal development (Jerrim and Moss, 2019; Quinlan and Mar, 2020). A prime capacity of stories, especially fiction, is the invocation of multifaceted inner experience, contributing to what reader response researchers call 'aesthetic stance' (Kucirkova and Cremin, 2020; Rosenblatt, 1978). Selected facets of such experience, for example, emotions and empathy towards characters, are relatively widely explored (Kucirkova, 2019; Kumschick et al., 2014). Yet other facets still await systematic scrutiny. Among these are basic embodied sensations such as inner perceptions, bodily tension, imagined movement and so forth (Kuzmičová, 2014) which intersect with but are conceptually distinct from emotions and empathy. Given the primacy of characters' bodily actions and perceptions in stories, and the known educational benefits of attending to one's body states within mindfulness practice (Meiklejohn et al., 2012), it is time children's inner embodied story experiences were more systematically explored in research.

We have conducted a qualitative study in which we invited 9- to 12-year-olds in Czechia to share their embodied story experiences. The study focused primarily on stories as experienced through reading, being read to and watching, but inquired also about stories as lived through playing, dancing, artmaking and so forth. To these ends, we developed a toolkit consisting of story excerpts, props and activities that can be readily adopted in research but also in classrooms, especially as part of reading for pleasure practice. In this article, we pursue three objectives: First, we present our toolkit and overall design. Second, zooming in on the parts of the study which dealt with specific stories in text and video, we point to the importance of distinguishing between a child's interest in embodied story contents and their embodied story experience proper. Third, we outline what emerged as three distinct types of response to one of our focal questions, "What is it like, from within your body, to be engaging with this story?", and we discuss their educational implications.

The SARS-CoV-2 pandemic forced a methodology shift in this research, from school-based focus groups (13 participants) to home-based individual interviews (6 participants) before all live participant interaction had to be discontinued and replaced with remote designs. Changes between these two phases were, however, minimal.

Embodiment from without, embodiment from within and literacy experience

Researchers increasingly call for bodily movement- and drama-based approaches to learning in both STEM subjects (Branscombe, 2019; Shapiro and Stolz, 2019) and arts and literacy (Lenters and Whitford, 2018; Medina et al., 2021). These voices argue against the widespread neglect of the body in education and point at children's inclination for corporeally enacting meaning through gesture, whole-body movement and so forth. While also acknowledging the importance of embodied experiences that are manifest *from without*, this article deals primarily with embodiment *from within*, that is, inner bodily sensations triggered by written and multimodal texts during reception, when the body is largely inactive. When embodied story experiences are mostly covert in this sense rather than partially observable through spontaneous play (Lewis et al., 2021) or drama activity (Medina et al., 2021), they are difficult to study. Authors in empirical literary studies and education-based reader response research, two traditions informing our endeavour, comment on this difficulty explicitly: "part of the reason why bodily aspects are little reported (…) is that no one actually asked readers about them" (Kuijpers and Miall, 2011, p. 3); "It is possible that (…) the best indication of such an experience is not verbal response, but silence" (Sipe, 2000, p. 267).

Specific predictions as to how such experiences are prompted by stories abound however in cognitive scholarship including educational psychology. Based on *objective* evidence from behavioural tasks, researchers in this area concur that inner sensory experiences simulate the dynamics of characters' perceptions (visual, tactile, gustatory etc.) and motor actions (e.g. Zwaan, 2004). Under such view, all story users vicariously enter the world of the story and the shoes of characters. Embodied themes, such as portrayals of physical effort or movement, are then assumed particularly effective at prompting inner sensory response. While the principle of embodied simulation has been successfully exploited in reading comprehension interventions (Glenberg, 2011), the notion of simulating characters' perceptions and actions does not quite exhaust the full range of embodied story response; moreover, individuals differ in how they subjectively experience any such response (Mackey, 2019).

Our aim here was therefore to probe the *subjective* tenor of the simulation view, innovatively shifting focus from objective measures to children's lived experiences of embodiment from within, and to begin sampling the varied embodied responses that can be communicated among young learners in the first place. In doing so we followed prominent literacy scholars who suggest that children should feel invited to employ their bodies in story-based meaning-making (Medina et al., 2021) but also to *talk* about their inner states, thus letting language feed back into their experiences (Kucirkova, 2019) all the while learning to abandon "the presumption that everyone reads the same way" (Mackey, 2019). Yet introducing new discourse focusing on the body generates novel experiences as much as channels pre-existing ones. Some of these experiences may be constraining to what a child wishes to take from a story, or even uncomfortable. Bodily self-awareness and overall willingness to share also varies individually (Mackey, 2019). Care must therefore be taken that nobody feels pushed to engage in embodiment-related activities. Finally, it should be noted that the distinction between embodiment from without vs. within is not categorical. For example, subtle reflexive movement can give away covert responses such as tension due to suspense, as shown below.

Research design and toolkit

The research took place in Czechia where discussions of embodied story experience fall outside the pedagogical mainstream and where school-based story activities traditionally rely on the whole class reading the same fiction excerpts and discussing them from largely academic angles. Meanwhile, we shared text and video excerpts and invited open discussion – as well as conversation on other stories in the participants' lives – with the following key question in mind: "What is it like, from within your body, to be engaging with this story?"

Such a question can arguably pose difficulty even to adults (Bálint et al., 2016) and requires especially careful qualitative staging in work with children. Our participants' reflections were facilitated through various means and the focal question was presented as part of a set (our toolkit) along with other story-related questions and activities. Centred on written stories and videos, the toolkit was purposefully designed to explore overlaps rather than presume differences between the two story modes, while also bringing in connections with other story-related activities, as a growing body of research suggests that children should be given freedom to draw distinctions across modes where they feel proper (Pahl and Rowsell, 2020; Parry and Taylor, 2018).

Following earlier studies into children's story and media engagement (e.g. Kumschick et al., 2014), bespoke material props were used to enable the communication of experiences through a combination of words and nonverbal actions. The nature of these props ranged from multiple types of picture cards to

book packages, toys and colour-coded mats. The two props central to our current key question were a *canvas doll* that could be used as a proxy for one's embodied self and a set of *transparent sheets* representing various experiential spaces linked to story engagement (details below and Tables 1 and 2, Figure 1).

School-based focus groups

The research began in early 2020; plans were in place to conduct 14 focus groups across 7 classes, each class in a different primary school. Both traditional schools and those with less conventional (e.g. Montessori) approaches had been recruited. The focus groups would be preceded by in-class participant observations. Two focus groups, accompanied by 10 hours of observation, took place before school-based research became impossible due to the SARS-CoV-2 pandemic.

The research was approved by the Ethics Committee of Charles University, Faculty of Arts, decision number UKFF/126413/2020. GDPR-compliant parental consent was obtained. The focus groups were video-recorded and anonymised upon transcription; handwritten fieldnotes from classroom observations were likewise transcribed. As an artefact of the research schedule, all 13 participants of the focus groups

Table 1: Original toolkit, designed for school-based focus groups

	Activity	*Tool (procedure)*
I. General reading preferences – What do you like to read?		
1	***My favourite***: Which book did you bring, and is there a character you like?	Children's own favourite books. (Participants take turns in a circle.)
2	**Looking in & out**: Is this book more like a mirror of yourself and your world, or is it more like a window into a different world?	Window & Mirror of glossy card. (Passed around as participants take turns explaining.)
3	**Pretend library**: Which of these other books would you take home if you saw them in a library? Think of those you have not read.	Books from Activity 1 and books brought by researchers placed together in the middle of a circle. (Picked individually, then discussed in turns.)
4	**Decision making**: When you select story books, which of the following aspects is the most important (pick 1–2) and which is the least important (pick 1–2)?	Book aspect picture cards representing "What happens," "Where it happens," "Who is the protagonist," "Who made the book," "How it looks" + Window, Mirror. (Picked individually, then aggregated on shared mats and discussed collectively card by card.)
II. Embodiment from without – What does it look like when you read?		
5	**Body positions**: What are your typical body positions when reading in school vs. at home (and where in the home are you)?	Child's own body. (Enacting reading positions anywhere in the room, then commenting.)
III. Embodiment from within – Now we know what it looks like. But what is happening within?		
6	***'Mindfulness exercise'*:** (Adapted from Johnson et al., 2013.)	Guided mental imagery. (Participants lie down and imagine seeing, manipulating and tasting a lemon.)
7	***Embodiment of reading and watching – 'doll activity'***: What was it like for you from within to listen to/watch this story?	Canvas doll, two pre-selected texts (read aloud) and two video excerpts. (After each excerpt children are invited to share/enact embodied story experiences using a canvas doll as a proxy for themselves.)
IV. Inner experience across modes – How do your experiences compare across these different activities?		
8	**Reading vs. watching**: What gave you more inner experience – the read alouds or the videos?	Discussion. (Referring back to Activity 7.)
9	**Complex story experience:** How would you sort your inner experiences of different story activities according to strength (Strong, Medium, Weak)?	Story mode picture cards representing "Reading," "Watching," "Listening," "Talking about," "Writing," "Artmaking," "Singing/dancing/acting," "Playing." (Sorted individually onto colour-coded mats.)

Bold type in activity description indicates activity heading. Italicised activity heading = selected findings based on activity appear in current article. Underlined activity heading = activity is focal to embodiment from within and current article.

Table 2: Activities added and modified in the toolkit for home-based individual interviews

Added activity	*Added tool (procedure)*
II. Embodiment from without – "What does it look like when you read, watch, listen etc.?"	
10 **Introductory guided tour:** Where in your home, on what devices, with whom, in what position, do you read/watch/listen etc.? (*Replaces Activity 5*.)	**Home environment and child's own body.** (Interview begins with child showing typical places in the home and body positions associated with story engagement – not limited to text and video.)
III. Embodiment from within – "Where are you when you listen to/read/watch this or other stories?"	
11 ***Here & there – 'sheet activity'*:** Are you mostly HERE (in the room), THERE (in the story world) or ELSEWHERE (in other thoughts and memories), or somewhere in between?	Transparent sheets of different colours & finger-sized toy figure. (Child shows notional position in relation to different books, text/video excerpts, and reading/watching in general, superimposing sheets as needed; *Joint with Activities 1, 7, 8*.)

Modified activity	*Tool (procedure)*
1 ***My favourite***: Tell me about your favourite books. What do you like about them? Is there a character you like? A particular scene that you remember well?	Child's favourite books; canvas doll; transparent sheets & toy figure. (Child is asked a few days in advance to indicate/prepare two favourite books; *Tools for Activities 7, 11 are used when discussing favourite scenes*.)
7 ***Embodiment of reading and watching – 'doll activity'***: What was it like for you from within to listen to/watch this story?	Canvas doll, two text (read aloud/silently) and two video excerpts. (One text and video are excerpted from child's favourites as indicated prior to the session, others are chosen by the researcher. Child can opt for silent reading. After each excerpt, child is invited to share/enact embodied experiences using canvas doll; *Joint with Activity 11, tool also used in Activity 1*.)

Bold type in activity description indicates activity heading. Italicised activity heading = selected findings based on activity appear in current article. Underlined activity heading = activity is focal to embodiment from within and current article.

(9 girls and 4 boys; ages 9–12, mean age 10.0) came from one mixed-age Montessori class. Within that setting, conventionally associated with relatively nurturing home literacy environments, the two focus groups were composed for maximum diversity of individual attitudes to reading, as advised by the class teacher. The children were asked to bring their favourite book and told that we would talk about what it is like for them when they enjoy stories.

Each focus group session lasted 1 hour and consisted of nine activities (see Table 1). The activities were based on empirical phenomena discussed in our earlier work on children's affective reader response (Kuzmičová and Cremin, 2022) and media practice (Woodfall and Zezulkova, 2016), respectively, which nevertheless explored other questions and relied on other methodologies. Following four thematic clusters I.–IV., the global design progressed from a wide focus (preferences) on a relatively narrow literacy phenomenon (reading) to a more narrowly focused (embodiment) discussion of stories in a much wider sense (across modes). This was inspired by recent literacy research showing that, although reading is a separate discipline in the curriculum, children's self-reflection as story users and makers can only reach its full potential when conceived holistically, 'in the round' (Parry and Taylor, 2018).

The story excerpts were selected to cater to varied tastes within the class as well as to feature compelling contents as per the idea of embodied simulation. They consisted of two text–video pairs linked, respectively, by two themes: fairy tale adventure (modern retellings of *Sleeping Beauty* in feature film and story book, different creators) and computer gaming (a *Minecraft* let's play video and story book, different creators). The written texts were read aloud and intentionally kept unimodal, featuring no illustrations. The decision to introduce common themes between text and video was likewise informed by a holistic understanding of literacy: characters and other story features appearing across platforms have been observed to merge within the 'phenomenological hub' (Woodfall and Zezulkova, 2016) that is the child, their different instantiations connecting with each other through 'remindings' (Kuzmičová and Cremin, 2022) evoked in the child's story engagement. Using thematically

Fig. 1: Main props for embodiment from within: canvas doll (left) and HERE – THERE – ELSEWHERE sheets with toy figure (right).

interlinked excerpts thus promised experiences akin to children's authentic practice.

Home-based individual interviews

Following school closures, the script was repurposed for individual home-based interviews. These were carried out with six children (3 girls and 3 boys; ages 9–12, mean age 10.17), between the first two waves of the SARS-CoV-2 pandemic, early autumn 2020. Unlike our focus group participants, these children attended traditional schools. They were a heterogeneous group insofar as the prominence of print in their homes, as well as their own attitudes to reading, varied. GDPR-compliant parental consent was obtained and the Ethics Committee was informed about the alteration. The interviews lasted between 40 and 70 minutes and were video-recorded and transcribed.

Individual in nature, the home-based interviews were adapted to each participant's domestic literacy practice, experiences and story preferences. Two new activities were added. Activity 10 replaced Activity 5, exploring participants' typical body positions across story modes (reading, watching, listening etc.) in different parts of their homes. Activity 11 introduced a new tool (transparent sheets) and perspective on embodiment from within, modelled bottom-up on responses provided by several focus group participants during Activity 7. These participants spontaneously used the canvas doll to show their notional whole-body position relative to the story world/experience overall, rather than locating their discrete sensations within the doll's body. Two other existing activities, Activities 1 and 7, were modified. Apart from these alterations, further explained in Table 2, the original focus group script was followed as closely as possible. Overall, the toolkit was enjoyed and proved effective in enabling participants in both cohorts, *all of them* evidently unused to reflecting on the topic, to convey embodied experiences by supplementing words with nonverbal means according to preference.

In what remains of this article, we primarily report findings based on Activity 7 (doll activity) and, to a limited degree, Activity 11 (sheet activity). These two activities afforded the most articulate expressions of embodiment from within, providing us with a rich self-contained data strand. In our preliminary reflection (next section), we additionally rely on data from Activities 1, 6 and the in-class observations. However, data from *all* activities in our toolkit supported our formulation of the main findings.

Preliminary reflection: enjoying embodied content vs. reporting embodied experience

Upon coding our transcripts, we gleaned an unexpected variety in what embodied experience can mean to individual participants. Before we present the main types of response, however, we wish to point to an important proviso attached to any future study of children's embodied story experiences: that of

distinguishing between a child's interest in embodied story content and their conscious inner embodiment proper.

During in-class observations, we noted many episodes when participants appeared to be highly stimulated by book contents that zoomed in on bodily sensations. For instance, Julie (10; all names are pseudonyms, ages are shown in brackets upon first mention) reports how a tale collection with explicit imagery caused a stir in the class: *"Our teacher's had to take this one away and put it on her shelf. It's like a horror, like sexual too. There's someone eating a person's leg on the cover!"* Later during break, Julie is inspired by the book to initiate a drawing contest: *"Hey, who can draw the most disgusting picture!"* Meanwhile, Jakub (11) and Mario (12) pick up a picture book and dwell at length on close-up drawings and verbal descriptions of a baby being changed, bathed and burped. Elsewhere in the classroom, Barbara (9) and Emma (9) are passing time with a first aid handbook, inspecting pictures of bleeding wounds and other injuries. Both pairs of friends respond vividly to the body images, chuckling, pointing at them and even stroking them.

In the home-based interviews, when asked about memorable book passages and story features (Activity 1), participants likewise cited contents that stand out as distinctly embodied, although in this case the books chosen were only minimally illustrated. Lucie (10) and Tom (11) defined the virtues of their respective favourite books (*Six of Crows* by L. Bardugo and *Ranger's Apprentice* by J. Flanagan) primarily in terms of the physical abilities of their characters: knowing how to slow down one's heartbeat at will or having extraordinary equestrian skills, respectively. Vera's (12) favourite book is *Black Beauty* by A. Sewell. When asked about any special passages, Vera singles out a passage where Black Beauty, the horse, is ridden to the limit of his strengths and breaks his leg. Anna (10), a keen reader of the *Chronicles of Narnia* by C. S. Lewis, picks a scene where Edmund is riding a sleigh while eating Turkish delight.

However, we found that the intuitive attraction of sensory content did not necessarily entail sensory experiences for our participants. When Vera is invited to talk about how her favourite passage in *Black Beauty* affects her from within her body, she replies: *"I don't know. I mean I really mind blood and there was blood in the book."* Vera knows what made her note the passage, that is, verbal (not pictorial) renditions of the horse bleeding after being injured, but it does not come naturally to her to define her response in terms of bodily sensations.

Similarly, when Anna is invited to elaborate on her experience of her favourite *Narnia* passage, she does not link the scene with gustatory experience, although she asserts that she normally enjoys the taste of Turkish delight. She also denies having a vicarious sense of movement simulating a sleigh ride. Instead, she sums up her experience as follows: *"It's just something I can see in my head."* At the same time, we know that Anna *can* have vicarious motor experiences. After being asked to imagine manipulating and tasting a lemon in the mindfulness exercise (Activity 6), she describes her experience solely as follows:

> *Anna: It was as if my knees were bouncing up and down.*
> *Researcher: As if your knees were bouncing? When you imagined licking some lemon juice? (…) And do you like the taste of lemon?*
> *Anna: Mm-hmm.*

Anna recognises the phenomenal salience of tasting lemon juice. Yet her reported experience bypasses taste and touch, the two sensory modalities that cognitive theories of embodiment (e.g. Zwaan, 2004) would predict to dominate in her processing of the mindfulness instruction. Likewise, although Julie, Mario and Barbara later willingly share their experiences in the focus groups, there is relatively little in their statements to suggest a straightforward, simulation-type relationship between their reported embodied experiences and the experiences *represented* in the story excerpts (see below). Anyone potentially wishing to inquire about children's inner embodiment, with or without our toolkit, should therefore refrain from assuming the primacy of such predictable relationships.

Three perspectives on embodiment from within: telling an experience's trigger in the story, quality to the senses or both

Three distinct perspectives emerged in participants' varied engagements with the doll (Activity 7) and sheets (Activity 11). A participant sharing their story-elicited inner experience may be expected to account for its phenomenal quality (e.g. visualisation, imagined movement or chest tension) and its trigger in the story (a circumscribed expression/event or a specific feature of the plot/creative style). Such comprehensive accounts were obtained, for example, by Bálint et al. (2016) who interviewed adults about their absorbing story experiences in books and films. We have also noted such comprehensive statements, or *what-and-how statements*, in our data.

Most of our participants' statements, however, fall within two other categories: *what-statements* and *how-statements*. What-statements explicitly or implicitly identified a circumscribed trigger in the story alongside an inner experience that, albeit clearly linked to one's embodied sense of self, did not suggest a specific quality in sensory (visual, tactile, gustatory etc.) or

motor terms. How-statements, inversely, related sensory or motor qualities without pinning them down to circumscribed moments, or aspects, of the story. Examples in each category are reported below, alongside information on complementing prop actions (doll and sheets) in upper italics and square brackets (see also Figure 2).

What-statements: identifying triggers in the story (→ emotions)

The bare what-statements were overwhelmingly linked to *emotional experiences*. For example, focus group participants Maxim (9) and Alice (11) responded compassionately to a specific point in a film when a mare was swept to the ground by an expanding rosebush. In addition, Alice reported a fearful moment in a following shot where a skeleton is shown hanging in the rosebush. Maxim and Alice communicate their inner embodiment as follows:

> *Researcher: Alice, did you want to go next and show us what it was like for you?*
> *Maxim (snatches doll): Boohoo! [DOLL WIPING EYES]*
> *Researcher: How come?*
> *Maxim: Because of the horsie.*
> *Alice (picks up doll): I felt sorry for the mare and I also, I closed my eyes [DOLL COVERING EYES; Figure 2] when that skeleton showed up.*

Likewise compassionate, individual interviewee Anna reads an adventure story excerpt where a girl slits her arm with a rusty knife as an act of allegiance with a gang. This makes one of the girl's friends throw up, for which he is ridiculed. When asked to reflect on her embodied story experience, Anna quickly asserts: *"I feel for the boy. (…) Not her. She just wants to be part of the gang. She does not care he's throwing up."*

Although Anna later points at specific parts of the doll to demonstrate that the story also gave her sensations in her tummy (throwing up) and arms (knife wound), she leaves her most salient, emotional response undescribed in terms of its sensory or motor qualities. Julie's response to one story excerpt, a *Minecraft*-themed video, is similarly underspecified. Expressing anger, Julie just says: *"I was imagining, I felt real angry [DOLL SHAKING VIOLENTLY] that you have to pay money to play Minecraft."*

In all these instances, inner bodily experience primarily means emotion to our participants. This willingness to contribute emotions was noteworthy as our questions about bodily experiencing, as worded in Czech, did not obviously connote emotion and as all our participants, including the Montessori pupils, signalled that they were unused to expressing their subjective story experiences to begin with. Our set of what-statements convey emotions along with their specific trigger in the story: a character experiencing hardship, an inaccessible game being chosen and so forth. While the emotion feels to be inside one's body, it is further specified neither verbally nor nonverbally in terms of *how* it feels. Maxim and Alice use the doll to show conventional gestures for their emotions; Anna refrains from demonstrating hers altogether. Julie comes closest to conveying inner motor qualities by resorting to agitated movements, but we still know relatively little about her within-body experience. In all these cases, however, the doll activity served as a catalyst for the emotions to be expressed, possibly even noted, in the first place.

Fig. 2: Examples of the three statement types accompanied by doll actions: what-statement (Alice), how-statement (Zuzana) and what-and-how statement (Jakub).

How-statements: sensory and motor qualities (→ imagining)

The how-statements in turn all concerned general ways of *imagining*, conveying the sensory and motor modalities and notional vantage points involved in our participants' inner world-building. Am I there in the story world or outside of it? Can I see it? Can I do things in the story world? In this context, a vast majority of our participants cited vision as their main or, more often, only sensory conduit into the story worlds. In the following exchange, focus group participants were discussing their experiences of a written story about a group of friends who enter the world of *Minecraft*.

> *Julie: I was imagining a tree levitating in the air.*
> *Researcher: You mean the tree that remains in place when you take out one of the wooden blocks? And how about when the girl bashed it, did anyone feel as if they were bashing, too, or was this more like something you just saw? (Participants responding simultaneously:)*
> *Mario: It was like …*
> *Julie: Just saw.*
> *Emma: Just saw.*
> *Mario: … I saw it, as if I were a ghost hovering.*

The stories, however, were at times also understood as spaces where one could *do* things, bodily movement included, rather than just watch. After viewing a *Minecraft*-themed video, Mario says: *"It was as if I were playing the game myself* [DOLL SEATED, ARMS FLAILING IN FRONT]*."* Zuzana (10) comments in turn: *"as if I were a ghost – or as if I were walking right behind him* [DOLL UPRIGHT, FORWARD MOVEMENT; Figure 2]*."*

Statements like Mario's and Zuzana's inspired the sheet activity for the home-based interviews. When asked to locate himself using the sheets in relation to his selected book, *Ranger's Apprentice*, Lukas (9) asserts: *"I was there, in the story, except … except I do not feel like anyone of them … more like an observer, from a distance* [TOY FIGURE PLACED CENTRE 'THERE' SHEET]*."* Like Mario and Zuzana, Lukas reports being an additional character in the story world. This type of imaginative experience is also known to Vera, but only in relation to written stories. Upon being presented with the sheets, Vera says: *"With books I can imagine I am there doing things* [TOY FIGURE PLACED CENTRE 'THERE' SHEET] *but not with films because then it's all shown to me* [TOY FIGURE PLACED CENTRE 'HERE' SHEET; 'HERE' & 'THERE' SHEETS PARTLY OVERLAP]*."*

For some of our participants, becoming absorbed in a story world entailed assuming multiple perspectives. Like Lukas, Ben (9) calls himself an 'observer' after being read to from R. Dahl's *Charlie and the Chocolate Factory* and then repeats this several times during the interview. At one point, however, he watches an excerpt from his favourite film, a lengthy scene of chasing and shooting between a native tribe and a criminal gang in the American frontier. When asked what he felt as he was watching this, he responds: *"I felt part of it, and I felt like both playing the part of the bandits and the Indians."* When the researcher then asks whether Ben felt to be in any of these characters' *physical* position, he rushes to answer in the negative and reiterates that he was *"just observing* [DOLL STANDING UP]*."* At the same time, Ben's leg bounces throughout the video excerpt and when reminded about this later he confesses that this was because the scene, though watched many times before, made him tense.

Altogether, the how statements suggest a variety of imaginative styles which emerged despite an overall dominance of vision, the sensory modality most amenable to verbal report. Moreover, participants showed confidence as well as pleasure in their reflections as to how they imagined overall. Although the doll activity in these cases mainly served to communicate notional body position rather than localised inner bodily states (beyond those inside one's mind), its outcomes clearly speak to integrating such reflections in the teaching of literacy.

What-and-how statements: what in story, how for body

Ben's combined statements make it difficult to infer a specific trigger, the 'what' dimension of his experience. We can only speculate that the tension he later mentions arose from, for example, closeup scenes of both groups of characters dodging bullets in the fight. Whether or not this was the case, Ben's experience attests to an important aspect of story response that is left largely unaddressed in work on embodied narrative processing. Namely, assuming a character's mental perspective does *not* seem to necessarily entail assuming the same character's sensory vantage point, and *vice versa*.

Several of our participants' what-and-how statements are therefore remarkable insofar as they not only pinpoint exact triggers of sensory or motor effect in stories but also express these experiences jointly with emotions. For example, Barbara (9) describes anxious, suspended feelings in response to a particular passage in a read aloud from a *Sleeping Beauty* adaptation, as follows: *"I think I saw it from inside my tummy* [DOLL'S TUMMY SQUEEZED DOWN]*. Like when the fire started, it would all burn down and everything, there'd be nothing left. None of them would survive!"* Responding to a video

excerpt of similar content, Jakub uses the doll to enact a moment of identification, inner motor experience included, triggered by a 2-second scene of fighting against a moving rosebush: *"What was it like for me? Grrr! Hit! Hit!* [Jakub growling, *DOLL CHARGING FORWARD, ARMS FLAILING*; Figure 2]" Likewise responding to a film excerpt, Lucie even locates her emotional-embodied response on a timeline: *"When that tiger jumped up (…), it gave me shivers down my spine* [*FINGER MOVEMENT DOWN DOLL'S BACK*]. (…) *Then, when he fell, I relaxed a bit. Because I was tense before* [*DOLL STRETCHED LENGTHWISE*]."

Yet other what-and-how accounts were less emotionally charged, for example, Tereza's (9) remark that a text's mention of a fire blazing made her imagine that her hair was on fire, Anna's localising of her reader response to a character's sickness attack inside her abdomen, Lucie's remark that a 'pillow' – 'brick' verbal simile gave her sensations in her head and back and so forth. What applies to all what-and-how statements, however, is that they reveal moments when our participants came, most directly, to link discrete points in story structure with their own inner sensory or motor states, allowing the doll activity to reach what may be its fullest communicative potential.

Conclusions

Empathy and mental stamina, two celebrated benefits of stories, both relate to enlisting inner embodied experience while engaging with written text (Johnson et al., 2013; Mol and Jolles, 2014) and other story modes (Quinlan and Mar, 2020). Yet children are rarely asked about what stories make them experience in embodied terms. Venturing to ask, we obtained answers of three types: what-statements about the trigger of one's experience, how-statements about its sensory or motor quality and what-and-how statements succinctly combining both aspects. Many of these answers, along with our in-class observations, complicate the idea of embodied story reception simulating the bodily vantage points of focal characters (Kuijpers and Miall, 2011). Some responses, such as Julie's flurry about *Minecraft*, were unpredictable based on the story alone.

We propose that all three statement types are important for educational practice. What-statements tended to reveal emotional responses rather than sensory or motor qualities. These were at times compassionate, suggesting that even a gentle reorientation towards inner states may indirectly prompt manifestations of empathy, which can then flourish through joint verbalisation in class (Kumschick et al., 2014). How-statements conveyed notional position and modes of sustained sensory and motor imagining, a known hallmark of a learner's commitment (Mol and Jolles, 2014).

What-and-how statements, finally, connected specific points in a story with inner sensory and motor (and frequently also emotional) states. These spontaneous instances of attending to story detail *and* one's body show promise for educators. They merge immediate self-understanding with inchoate insight into what stories do to affect one's response, attesting to aesthetic stance (Rosenblatt, 1978) wherein links between personal experience, emergent as well as past, and a narrative become salient and amenable to sharing. Similar to drama-based pedagogies which capitalise on whole-body activity, verbal sharing of inner embodied experiences then enables metareflective, "critical understandings that go beyond the retelling of a story" (Medina et al., 2021, p. 138). Such understandings potentially sediment in longer term, enabling children to compare the embodied workings of different stories, or of the same story at different points in time.

We noted a slightly greater ease of sharing, in the doll activity, in response to video which likely ensued from the modal differences that we chose to bracket off here. As Vera put it, in video, *"it's all shown"*. This provides a sensory ground that needs not be articulated and invites complementary, including emotional, responses. In future designs, it may thus be practical to give video a more prominent role in exploring the concept of embodied story experience with children. Furthermore, chosen story excerpts *and* participants' expressions will benefit from targeted analyses of the different 'modal affordances' (e.g. Bezemer and Jewitt, 2010) and, relevant to our in-class observations, also of differences between unimodal print and illustrated books (e.g. Pantaleo, 2017).

Our toolkit opens for novel research avenues by giving structure and material form to elusive, even metaphorical (Activities 2 and 7) inner phenomena, thus facilitating communal reflection on sensory responses as called for in recent literacy scholarship (Mackey, 2019). In addition, the activities in cluster IV. were originally intended to show how different story mode preferences beyond film and book combine in individual children with different embodied response patterns. Relying partly on rating (Activity 9) rather than enriched conversation, this strand of research data unfortunately remained underdeveloped as focus groups had to be cancelled due to the pandemic.

However, we can confirm that the concluding comparisons across modalities inspired several participants to retrospectively expand their responses to the story excerpts as well as revisit and newly "assemble their literacy identities" (Parry and Taylor, 2018, p. 109), first explored in the opening steps of the toolkit. It is therefore with relative confidence that we wish

to invite practitioners – teachers, carers and library workers – to exploit any part of the toolkit when helping children probe their embodied selves and, in line with a holistic understanding of literacy, involving them in the continued bottom-up design of ever new material tools and activities.

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Conflict of interest

No potential conflict of interest was reported by the authors.

Ethics statement

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