

**Un livre numérique pour un apprentissage inclusif**

## **Analysis of Flex Picture Ebook questionnaires, series 2 (spring 2024)**

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## Presentation and table of contents

A field survey was carried out in France, Italy and Lithuania in spring 2024. A total of 246 children and 48 teachers and parents were accompanied in their discovery of the book *Ben wants a bat* by the project partners. The aim was to gather information on the uses and needs of the children and accompanying adults, and to use this feedback to improve the EPUB3 Flex Picture Ebook. The accompanying adults were given a teaching guide to help them make the most of the many possibilities offered by this digital book.

At the end of the reading session, the children and accompanying adults each completed a 42-question questionnaire.

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## Results of the children's questionnaire (246 responses) by type of profile

With a "visually impaired" profile	No specific profile	With other profiles with specific needs than visual impairment
<p><b>41 children (17 in Italy, 14 in Lithuania, 10 in France), 93% visually impaired and 7% blind</b></p> <ul style="list-style-type: none"> <li>• 3 blind from birth</li> <li>• 1 late blind</li> <li>• 34 visually impaired from birth</li> <li>• 4 late visually impaired</li> </ul> <p>3 children have another disability or associated disorder (intellectual disability, deafness, <b>highly developed memory</b>)</p> <p><b><i>Is this considered a disability or disorder?</i></b></p>	<p><b>118 children (77 in France, 41 in Lithuania, 0 in Italy)</b></p>	<p><b>87 children (58 in France, 26 in Lithuania, 3 in Italy)</b></p> <ul style="list-style-type: none"> <li>• mild intellectual disability x 16</li> <li>• Attention deficit x4</li> <li>• Highly developed memory x 3</li> <li>• Well-developed memory x 2</li> <li>• Attention deficit disorder with or without hyperactivity x 2</li> <li>• Autism spectrum disorder x 2</li> <li>• learning in a language other than the mother tongue x3</li> <li>• Multiple developmental disorders x 3</li> <li>• Hearing impairment at birth</li> </ul>



<p>68% of the children read the book using the 'book' software on an iPad, 17% using Thorium on a computer and 15% using Radium on a tablet.</p> <p>90% of children say they liked the story</p> <p>87% of children say they liked the illustrations</p> <p>30% of the children said they had read the story themselves, and 20% said they had read part of it.</p> <p>The children said they listened to 85% of the story read by the actor.</p>	<p>68% of children read the book using the "book" software on an iPad, and 32% using Radium on a tablet.</p> <p>90% of children say they liked the story</p> <p>87% of children say they liked the illustrations</p> <p>36% of the children said they had read the story themselves, and 19% said they had read part of it.</p> <p>82% of children said they listened to the story read by the actor</p> <p>When it comes to children's listening comprehension, 87% of them understand complex</p>	<ul style="list-style-type: none"> <li>● Late-onset hearing loss (from age 3)</li> <li>● Auditory hypersensitivity</li> <li>● Visual hypersensitivity</li> <li>● Thinking in pictures</li> <li>● anxiety</li> <li>● Language deficiencies in production and comprehension, poor working memory. Socio-cultural disadvantage.</li> <li>● Dysphasia</li> <li>● learning difficulties</li> <li>● Di Georges syndrome</li> <li>● Down's syndrome</li> <li>● Neurological disorder + language disorder</li> </ul> <p>60% of the children read the book using the "book" software on an iPad, 38% using Radium on a tablet and 2% using Radium on a tablet.</p> <p>71% of children say they liked the story</p> <p>70% of children say they liked the illustrations</p> <p>59% of the children said they had read the story themselves, while 13% said they had read part of it.</p> <p>70% of the children said they listened to the story read by the actor.</p> <p>When it comes to children's listening comprehension, 68% of them understand complex</p>
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<p>When it comes to children's listening comprehension, 71% of them understand complex sentences (with subordinates).</p> <p>In terms of reading skills, 37% can read and 17% can decode, while 27% know the alphabet and 14% cannot read.</p> <p><b>68% used the different levels of illustration</b>, citing the following reasons: `. <i>liked it to see the images change, to see better by removing distracting details, to test, to see the best image</i></p> <p><b>78% used the ZOOM function</b> for the following reasons: `. <i>to see the drawings better, to see things bigger, to see the details of the face, to have fun.</i></p>	<p>sentences (with subordinates), 12% simple sentences (with subordinates) and 12% complex sentences (with subordinates).</p> <p>In terms of reading skills, 50% can read, 28% can decode, while 20% know the alphabet and 2% cannot read.</p> <p><b>63% used the different levels of illustration</b>, citing the following reasons: `. <i>it helps me, So that I understand better, because I thought it was prettier and there were fewer patterns, To see the details and without the details, Useful function, I was curious, it's funny, Liked to click and see what changes, I liked pressing the buttons and choosing the most beautiful image, Likes to click and see what happens, what changes, to try it out, To find the differences, Because it made me laugh to remove and put back the details, Very beautiful</i></p> <p><b>45% used the ZOOM function</b> for the following reasons: <i>like it, fun, funny, helps you see better, interesting, I don't know, wanted to see a detail, wanted to test everything</i></p>	<p>sentences (with subordinates), 32% understand simple sentences (with subordinates) and 32% understand complex sentences (with subordinates).</p> <p>39% can read, 26% can decode, while 31% know the alphabet and 3% cannot read.</p> <p><b>51% used the different levels of illustration</b>, citing the following reasons: `. <i>I liked pressing the buttons, Out of curiosity, I wanted to see how it changed, I don't know, It helps me, I don't know, It was interesting, Function you don't really need, I liked, I could see better, To understand the images, Not very useful, He liked comparing each image in the different layers He didn't like dark spots to see the image better with less confusion, to try out the buttons, a new feature in the reading experience Appreciated and beautiful</i></p> <p><b>45% used the ZOOM function</b> for the following reasons: ... <i>To see better, Wanted to test the function, to look closer, because it was fun to zoom in, Would like to see individual details better, I needed, I wanted a bigger picture, It was interesting, Because I prefer the bat to be giant and catch the mouse and the mosquito, to see Émile's emotions, but I would have</i></p>
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<p><b>54% used the POINTING function</b> for the following reasons: <i>to see one thing at a time, to see better, to avoid clutter, for fun</i></p> <p><b>95% heard sound animations</b> for the following reasons: <i>interesting, fun, out of curiosity, helps you understand, to listen to sounds and guess</i></p> <p><b>46% of children changed the background colour of the text</b> for the following reasons: <i>they like black, they can see better, it's better for my eyes, they want</i></p>	<p><b>33% used the POINTAGE function</b> for the following reasons: <i>it also helps me, to see better, curiosity, I like it, it makes the image look good, I wanted to test everything, to see a specific element, to try it out.</i></p> <p><b>95% heard sound animations</b> for the following reasons: <i>likes the sounds, it's more interesting, it was better, helps to understand the story better like that, I liked that it moved, I wanted to, I don't know, it was fun, I wanted to compare it with cartoons, because it was good, Because it's a change from paper stories, Because it was very interesting to hear what was happening, to get information, to get the whole story, to discover the noise, to test, to see the moving image, everyone liked it, once because I was intrigued by this animation</i></p> <p><b>78% of children changed the background colour of the text</b> for the following reasons: <i>It suits the letters very well It was fun, Nice colour, It was pretty, I like yellow It's my favourite colour, I couldn't see very well, I don't know, I prefer dark colours,</i></p>	<p><i>liked to be able to zoom in the whole picture, change the colours. draw on the tablet</i></p> <p><b>37% used the POINTING function</b> for the following reasons: <i>It was interesting, It helps me too, Like a game, I wanted to, Because it was great, Because I wanted the bat to feel at home, To learn, To see better, To look on my own, To see if it's going to work, Without doing it on purpose</i></p> <p><b>83% heard sound animations</b> for the following reasons: <i>It was interesting, because I love it, They were beautiful, To understand, I like it, Because the sound voices were good, Because I pressed the button it helps me to understand the story, because they're so funny, out of curiosity It helped me understand the story better. Much more comfortable, after the teacher showed it to me, I liked the way the picture moved.</i></p> <p><b>52% of children changed the background colour of the text</b> for the following reasons: ... <i>I like the colour, Because I can follow better, I like because I like it, because I can see better, Beautiful colour, Because I love yellow, I liked making the adjustment and it was more pleasant to read, on the</i></p>
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<p><i>to try it out, it's more practical, they feel more comfortable.</i></p> <p><b>56% of children have changed the font for</b> the following reasons: <i>see better, nicer, more visible, clearer, more comfortable, easier to read, it's better for me, because it's the same as the one we use in the notebook.</i></p> <p><b>29% of visually impaired children have changed the font size</b> (as a reminder, 54% of children can read or decode). They give the following reasons: <i>to see better, to be able to read better, etc.</i></p> <p><b>98% of the children used the buttons</b> (reading by the actor, image adaptation levels, animations), 37% of them with help for the following reasons: <i>I needed help to turn the page because the buttons were too small for me and I didn't know what they did, because it was the first time I'd used the mouse, to do it properly....</i></p>	<p><i>Because that's the colour bats like. Because I find it easier to read the text in white. To try, To see better</i></p> <p><b>77% of the children changed the font</b>, giving the following reasons: <i>It's a bit easier Nice letters, It's the one I know best, because I like the way it's written, I don't know, That way I can see the letters better, I liked it. I know these letters. I love it when it's thin and when it becomes thick, I like to change, because I have astigmatism, I prefer this one because it's thinner, I prefer thicker, To see better, The letters are the most visible, Because I needed, To see better.</i></p> <p><b>89% of children changed the font size</b> (remember that 78% of children can read or decode). They gave the following reasons: <i>I don't like lower case, to see better, I liked it, easier to read, to test,</i></p> <p><b>98% of children used the buttons</b> (read by the actor, image adaptation levels, animations), 37% of them with help, for the following reasons:</p>	<p><i>fly, to get more light, the yellow background gives the impression of an aged book</i></p> <p><b>61% of children changed the font for</b> the following reasons: <i>Because it was pretty, To make it easier for me to read, To try, Better visibility That way I can see the letters better, and I like to change to understand the text. for better reading</i></p> <p><b>16% of children have changed the font size</b> (as a reminder, 65% of children can read or decode). They give the following reasons: <i>To read better, to try, to feel more comfortable, to improve the appearance of letters</i></p> <p><b>88% of the children used the buttons</b> (read by the actor, image adaptation levels, animations), 15% of them with help, for the following reasons: <i>It was my first time. It didn't work every time, It helped me understand the story better. I needed encouragement and confirmation of my abilities. I hadn't tried it on my own, I didn't know what the buttons were for. I didn't know you could press the button.</i></p>
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<p>To the question, "What helped you understand the story?" visually impaired children answered YES to</p> <p><b>80%: Sounds and animations</b>  <b>75%: The story read by the actor</b>  <b>48%: Zoom on images,</b>  <b>46%: The different levels of image adaptation</b>  <b>41%: Highlighting an image detail</b></p> <p>To the question, "Did anything else help you understand the story?"</p> <p>out of 13 responses to this question,</p> <ul style="list-style-type: none"> <li>• 8 responded by handling objects in volume linked to history (fabric bats, oven gloves, reproductions of caves),</li> <li>• 2 responded to questions and discussions with the teacher,</li> <li>• 1 replied to mime the story,</li> <li>• 1 read by a familiar voice,</li> <li>• 1 read it several times</li> </ul> <p>To the following questions, the answers to which are based on observation of the illustrations</p> <ul style="list-style-type: none"> <li>• "In the cave, what position are the bats and Émile in? 90% correct answers</li> <li>• "What sounds do you hear in the cave? 73% correct answers</li> </ul>	<p>To the question, "What helped you understand the story?" visually impaired children answered YES to</p> <p><b>75%: Sounds and animations</b>  <b>68%: The story read by the actor</b>  <b>36%: The different levels of image adaptation</b>  <b>18%: Zoom in on images,</b>  <b>15%: Highlighting an image detail</b></p> <p>To the question, "Did anything else help you understand the story?"</p> <p>out of 17 responses to this question,</p> <ul style="list-style-type: none"> <li>• 15 responded by handling objects in volume linked to history (fabric bats, oven gloves, reproductions of caves),</li> <li>• 1 was answered by questions and discussions with the teacher,</li> <li>• 1 I already knew Émile</li> </ul> <p>To the following questions, the answers to which are based on observation of the illustrations</p> <ul style="list-style-type: none"> <li>• "In the cave, what position are the bats and Émile in? 73% correct answers</li> <li>• "What sounds do you hear in the cave? 73% correct answers</li> </ul>	<p>To the question, "What helped you understand the story?" visually impaired children answered YES to</p> <p><b>66%: Sounds and animations</b>  <b>57%: The story read by the actor</b>  <b>37%: The different levels of image adaptation</b>  <b>31%: Zoom in on images,</b>  <b>25%: Highlighting an image detail</b></p> <p>To the question, "Did anything else help you understand the story?"</p> <p>out of the 7 answers to this question,</p> <ul style="list-style-type: none"> <li>• 2 responded by handling objects in volume linked to the story (bats made of fabric, oven gloves, reproduction of a cave),</li> <li>• 1 was answered by questions and discussions with the teacher,</li> <li>• 1 I already knew Émile</li> <li>• 1 the text</li> <li>• 1 Text with coloured aids</li> <li>• 1 listen and see</li> </ul> <p>To the following questions, the answers to which are based on observation of the illustrations</p> <ul style="list-style-type: none"> <li>• "In the cave, what position are the bats and Émile in? 75% correct answers</li> <li>• "What sounds do you hear in the cave? 63% correct answers</li> <li>• "What happens in the picture when Emile turns off the light? 30% correct answers (the bat appears).</li> </ul>
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<ul style="list-style-type: none"> <li>• "What happens in the picture when Emile turns off the light? 34% correct answers (the bat appears).</li> <li>• "What do bats eat? 68% correct answers.</li> <li>• "What is Emile's idea at the end of the story? 44% correct answers (adopt an octopus).</li> </ul> <p>From the book menu: <b>the chosen font is</b></p> <ul style="list-style-type: none"> <li>• firefly at 39</li> <li>• 24% arial bold</li> <li>• 20% bold firefly</li> <li>• 12% verdana</li> <li>• verdana bold 5% discount</li> </ul> <p>66% of the children chose to read the text in upper case letters and 34% in lower case letters.</p> <p>The children chose to read the text with white (41%), black (29%) and beige (5%) as the background colour.</p> <p>The children chose to <b>read the illustrations with the level of adaptation</b> of images n°1 (44%), n°2 (15%), n°3 (29%), n°4 (2%) and n°5 (10%).</p> <p><b>93% of the children</b> chose to read the illustrations in <b>full colour and 7% in black and white.</b></p>	<ul style="list-style-type: none"> <li>• "What happens in the picture when Emile turns off the light? 45% correct answers (the bat appears).</li> <li>• "What do bats eat? 88% correct answers.</li> <li>• "What is Emile's idea at the end of the story? 40% correct answers (adopt an octopus).</li> </ul> <p>From the book menu: <b>the chosen font is</b></p> <ul style="list-style-type: none"> <li>• arial bold at 36</li> <li>• 35% firefly</li> <li>• 26% verdana</li> <li>• 4% bold firefly</li> <li>• verdana bold 5% discount</li> </ul> <p>The children chose to read 45% of the text in upper case and 55% in lower case.</p> <p>The children chose to read the text with white (41%), black (28%), beige (32%) or grey (3%) as the background colour.</p> <p>The children chose to <b>read the illustrations with the level of adaptation</b> of images n°1 (74%), n°2 (10%), n°3 (7%), n°4 (2%) and n°5 (7%).</p> <p>The children chose to read <b>94% of the illustrations in full colour and 6% in black and white.</b></p>	<ul style="list-style-type: none"> <li>• "What do bats eat? xx% correct answers.</li> <li>• "What is Emile's idea at the end of the story? xx% correct answers (adopt an octopus)</li> </ul> <p>From the book menu: <b>the chosen font is</b></p> <ul style="list-style-type: none"> <li>• 37% firefly</li> <li>• 15% verdana</li> <li>• 10% arial bold</li> <li>• opendys at 10% discount</li> <li>• 9% bold firefly</li> <li>• verdana bold 8% discount</li> </ul> <p>The children chose to read the text in upper case letters (31%) and lower case letters (69%).</p> <p>The children chose to read the text with white (44%), black (30%), beige (23%) or grey (3%) as the background colour.</p> <p>The children chose to <b>read the illustrations with the level of adaptation</b> of images n°1 (74%), n°2 (10%), n°3 (6%), n°4 (2%) and n°5 (8%).</p> <p><b>91% of the children</b> chose to read the illustrations in <b>full colour and 9% in black and white.</b></p> <p>9 children used the Thorium reading software:</p> <ul style="list-style-type: none"> <li>• the character size chosen is size 20 at 67%, size 24 at 25% and size 26 at 8%.</li> </ul>
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<p>For the 12 children who used the Thorium reading software:</p> <ul style="list-style-type: none"> <li>• the chosen font size is 26 at 58% and 20 at 42%,</li> <li>• word spacing from 0 to 0.33 for 78% and from 0.33 to 0.66 for 22%,</li> <li>• the spacing between characters from 0 to 0.15 for 67% from 0.15 to 0.3 for 33%,</li> <li>• the spacing between lines: from 1 to 1.3 for 55%, from 1.3 to 1.6 for 22% and from 1.6 to 2 for 22%.</li> </ul> <p>Finally, <b>56% of the</b> children chose to have the story read by the <b>actor, 20% independently and 22% mixed.</b></p>	<p>Finally, <b>48% of the</b> children chose to have the story read by the actor, <b>17% independently and 35% mixed.</b></p>	<ul style="list-style-type: none"> <li>• word spacing of 0 to 0.33 for 78%, 0.33 to 0.66 for 11%, 1 to 1.33 for 11%,</li> <li>• the spacing between characters from 0 to 0.15 for 88% and from 0.3 to 0.5 for 12%,</li> <li>• line spacing from 1 to 1.3 for 100%.</li> </ul> <p>Finally, <b>36% of the</b> children chose to have the story read <b>by the actor, 35% independently and 29% mixed.</b></p>
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## Results of adult questionnaire (48 responses)

### *Number of adults responding to questionnaires*

48

- 19 in France
- 22 in Italy
- 7 in Lithuania

### *Number of children tested according to adults who responded*

349

- 203 in France
- 103 in Italy
- 43 in Lithuania

### *For each statement, select your level of agreement/disagreement.*

- This book enabled me to interact with the children: 98% YES
- While using the book, the children asked me questions: 69% YES
- When I discovered the book, I had to guide the children by directing their hands: 50% YES.
- The children showed their enthusiasm when they discovered the book: 90% YES
- I would like to have more digital books with interactive illustrations and customisable text: 100% YES

This book helped me to better understand what a complex illustration is (legibility, comprehension) and how to make it more accessible: 88% YES.



*"I found it particularly useful..." (several answers possible) :*

- Interactive illustrations: 63% YES
- Text read by the narrator: 44% YES
- Configurable written text: 40%YES.
- Illustrations described (if you used Thorum): 8% YES

*"I found this book easy to use": 98% YES*

*"If not what did you find complex about the book?"*

- It was not easy for the child to switch from the book to the guide at the end. It would be better if the guide were separate and not at the end of the book.
- Audiodescription is read on several pages, which then needs to be flipped through.
- Installation on a computer
- When there is a "bug" when using it with a student

*"I encountered technical problems with this book": 40% YES*

- The audio version is slow to start up as soon as the button is pressed (lack of immediate feedback for children)
- Deactivate the computer-generated voice to hear only the actor's voice;
- Buttons on the tablet to activate text reading or sound are too small and there is not enough contrast to make them stand out from the rest of the display.
- When the text is on 2 pages and the audio is activated, the audio continues while the child only has the first page in front of him/her, so he/she has to change the page and lose track of the text.



- Difficulty installing it on a computer
- On 2 occasions, the actor was unable to read the text; I took over at these times.
- It was not always possible to read the text in capital letters, even though it had been selected.
- THE NEED TO CLICK TWICE TO TURN PAGES
- page rotation is not always smooth. If the pages are turned while the voice is reading the text, the voice is sometimes cut off.
- The black background chosen for reading the text also appears as a background in the images.
- Touching the tablet often causes problems for children, who move pages and touch by mistake.
- The audio sometimes freezes and has to be restarted. Children who have not yet read the whole sentence don't know that it has stopped in the middle.
- The button for enlarging the character is not visible (for everyone, not just the visually impaired).
- The parameters of the reader sometimes exceed those of the book.
- Images are small and animations cannot be enlarged
- Sometimes the screen doesn't even come up when you rotate it.
- The visually impaired child had difficulty seeing and pressing the buttons underneath (play, 1-2-3-4-5 and colour) while reading, and could not see the details to press (such as the pillows in the cave, the flying bat).
- It should be possible to change the text settings even while reading (for example, a button that opens the settings for each page, so that if the child changes their mind about the font size, etc., they can do so without having to go back).
- Some of the animations are not clearly visible (flying bats).
- The settings menu is written in lower case. If the book is given to a child who cannot read, they will find it difficult to find the settings independently.
- the text parameters chosen at the start of playback have not been saved
- The font was not always the same on each page.
- Some sound animations were activated at the end of the text (if the text was read by the actor) before moving on to the illustration page with the famous sound animation (page 26, sound of bat wings flapping).
- If you set the background to black using the player, you can no longer zoom in on the image (double image, no background behind the zoomed image).
- When it's in upper case, the end of the text doesn't appear
- Sometimes the book returns to the home page
- During use, there were times when the book got stuck.



- problems accessing the text being read and moving from one page to another...

*"I think most children could learn to use this book very quickly": 98% YES*

*"I think that most professionals (teachers and educators) or parents could learn to use this book very quickly": 98% YES*

*"How would this book be useful to you in your educational practice with the individual child?"*

- access to autonomy and awareness of the possibilities for adaptation (clean up images/select fonts for visual comfort)
- IN ORDER to hook students who are reluctant to read because they are having difficulty
- Improve reading and listening skills, vocabulary, coherent language and knowledge of the world.
- improve visual and auditory skills
- Capturing attention and illustrating stories
- This book helps to enrich vocabulary, facilitate understanding and offer perspectives and reflections on various subjects.
- This would enable me to see his / her strengths and areas for improvement.
- Diversifying the education process
- It can fascinate children and motivate them to read, because the animated illustrations and the song make the reading experience easier and more comprehensible, giving the child a much more meaningful and exciting experience.
- It can help me to simplify the images, to make the child concentrate on certain details and to observe elements that would otherwise be barely visible.
- In independent activities and in APC,
- Interacting with the image
- by interacting with various sound animations, I can broach the subjects, I can draw on the child's culture
- Encouraging interest in reading and books in a fun and interactive way
- is easily adapted to the needs of each child
- Making the pupil who has difficulty an active participant in the classroom



- Listening and attention training. Encouraging comprehension of a listened text
- thanks to its interactivity.
- It would be useful for me to adapt the text to the reader.
- It allows children to get more involved in reading and to check their comprehension straight away.
- It can help me refine a sensory profile and set up an independent activity.
- Illustrate the content you read, supplement it with audiovisual information
- using this tool has many positive implications for children with peripheral and central visual deficits. i find it a useful tool in rehabilitation practice for working on visual attention, visual exploration, visual spatiality, listening practice and facilitated reading. In children with multiple disabilities, I find it a versatile and inclusive tool that can facilitate the use of a book (even a commercial book) that would otherwise be unusable due to its complexity.
- Motivation and interest in the instrument allow for a structured and shared activity with the child, different from the normal one, where new questions can emerge in the child's attempts to answer them.
- The text, rhythm and, above all, the illustrations can be adapted to the needs of the pupil.
- read and understand a text using images and/or visual and sound animations.
- Better understanding of the adaptations chosen by the child, work on awareness of the visual problem, work on posture and adaptations to the environment that are conducive to reading.
- Gain a better understanding of pupils' sensory abilities and their comprehension of books
- allows interaction with the child, the use of sound stimuli and visual animations to coordinate the eye and hand and use the vicarious senses
- Allows interaction, for example by imitating sounds or movements.
- It's a fun way to get excited about reading.
- For pupils who do not have comprehension problems, this tool will help them to read independently. The use of the reading by an actor option (rather than an artificial voice) allows children to check their reading or manage their fatigue or stress page by page: short text: the child reads (then listens to the actor if necessary); long text: the child listens spontaneously to the actor.
- For individual use, you need headphones (and a tablet that can be used with them).
- For blind or severely visually impaired children, I don't think this is useful.
- For the visually impaired, this provides interesting access to the text with the possible settings and, above all, the image descriptions and zoom, so you can work on visual cues.



- For blind or severely visually impaired children, I don't think this is useful.
- For the visually impaired, this provides interesting access to the text with the possible settings and, above all, the image descriptions and zoom, so you can work on visual cues.
- To support students in their efforts and better understand their needs
- to work on intonation. When they listen after reading.
- To help you learn to read and better understand the text you are reading
- could lead him to be more independent when it comes to reading books
- Encourage children to explore a story on their own.
- Reinforce children's interest by enriching their vocabulary
- A text read by the narrator would help pupils who cannot read.

### *How would this book help you in your educational and teaching practice with a small group of children or a whole class?*

- The book will give the children some quiet time.
- To hook students who are reluctant to read
- Helping to optimise the organisation of activities linked to the content of the text read
- improve visual and auditory skills
- autonomy in the progression of discovering the album
- This book helps even young children to expand their vocabulary, facilitates understanding and offers insight and reflection on a variety of subjects.
- What is written for the individual child also applies to the group and the class as a whole. This makes the reading experience more meaningful and exciting, because it is easier to understand and achieve. The opportunity to play with the illustrations can make the group reading experience particularly attractive, as it also allows everyone to explore their own tastes and preferences and interact with the text and story to fully experience its emotions.
- This type of tool helps to create a climate of inclusion in the classroom by encouraging children's learning.
- This type of tool helps to create a climate of inclusion in the classroom, thereby promoting children's learning.
- Creating a moment of integration and sharing





- In the narration and interaction with the images
- In a small group, this allows children to work independently and to vary the texts according to the needs and level of the pupils.
- give the group the opportunity to share an accessible book and support visually impaired children
- Interesting reading format.
- It would allow students to personalise their reading, helping them to better understand the text they are reading.
- It can help me encourage children to read
- Information for all, differentiated education.
- Group interaction
- I don't know
- I am a parent
- The interactivity of the book makes it attractive to all children.
- the ability to stay focused on the same objects, by sharing the book on the interactive whiteboard so that we can all see it together
- the book can be shared on the interactive whiteboard and all the children can look at the same image, using the sounds and animations to better understand the story and extend attention spans
- The book presented in this way is very attractive and captures the attention of many children. It will keep as many children as possible interested while reading.
- Small groups are a great way to develop cooperation and peer tutoring.
- As a whole class, this makes for a collective time where the support of each student is adapted to their needs.
- Small groups are a great way to develop cooperation and peer tutoring.
- As a whole class, this makes for a collective time where the support of each student is adapted to their needs.
- Individual work is an advantage
- reading and staging of the text
- not working in groups
- Yes
- Yes for reading in small groups
- multi-level sharing and inclusion



- Not useful in a whole class, as the benefits of adaptation are lost.
- Give children access to a simple story, but one that is rich in opportunities for interaction.
- full of album situations with the added bonus of voice acting
- to maintain attention, work on vocabulary, description and the order of images.
- To find out more about students' needs
- To motivate students...
- If everyone has their own tablet, the child can get closer to the screen.
- Once the parameters have been chosen, the child can work independently.
- If everyone has their own tablet, the child can get closer to the screen.
- Once the parameters have been chosen, the child can work independently.
- work on comprehension, vocabulary, oral reading
- Independent listening to a story
- It didn't provide any real digital skills, but it did enable a Year 1 class to tackle computers as well as reading, animations as well as text, a new and complex type of communication, and such an experience greatly enriches all the other skills the children take with them or will learn in the future.
- autonomy
- We learnt how to observe a detail by enlarging it and how to leaf through an ebook.
- Active, personal participation in reading the text
- conscious and independent use of IT aids by the child. increased awareness and self-esteem.

*Have you developed new skills by using the Flex picture ebook in class? **48% YES***

- a tool that can complement work on visual functions, particularly the most complex at school age.
- How to use an e-book.
- I learnt how to use the instrument and its controls.
- Wide range of book reading options
- Simplifying an image

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- Using a tablet
- use of new programmes
- use of thorium

### *In the book menu, you'll find it useful...*

- font type setting: 96% YES
- font size settings: 94% YES
- background colour settings: 88% YES
- levels of adaptation of the illustration: 98% YES
- the choice of black and white or colour: 90% YES

### *If you've used Thorium reader software, have you found it useful...*

- setting the spacing between words: 96% YES
- the setting of the spacing between characters: 96% YES
- the setting of the spacing between lines: 96% YES

### *"Are there any additional settings you would like to see added?"*

- Slow animation
- choose the size of the different buttons and their position on the screen
- On the tablet, change the text size and line spacing.
- break down a complex word to read

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- Different reading levels.
- multiple-image questions at the end of the reading
- reading guide and visual monitoring of reading by the narrator/ systematic font settings (not available on upad books) / reading speed settings
- there may be questions of comprehension
- It would be interesting if, if the child chooses the reading by the adult, each word (or even each syllable) was highlighted (in a special colour or underlined) when it was read, to enable the child to try to follow.
- The ability to enlarge the function keys (audio, image simplification level, animation playback)
- The possibility of recording one's own voice or that of another reader, or even the child himself, who can then listen to the reading of the text in his own voice or that of someone more familiar to him.
- The possibility of highlighting the line read by the child (to avoid line errors).
- The ability to visually follow the text read by the actor (colouring in words as they are read, for example).
- The possibility of the text being read at the same time as the image.
- The level of the text, if possible, so that listening comprehension is adapted to certain children
- more sound effects
- Work on vocabulary beforehand on a tablet (combining images, writing and oral reading of the word)
- A lineage system to guide the student's gaze.
- Coloured background every other line perhaps?

### *How did you find the human voice to tell the story?*

- adapted to the context, pleasant, expressive, captivating, appropriate,
- Much better than artificial voices!
- Clear, but not particularly expressive
- Highlighting the differences between the narrator and the characters' voices could be a plus to make it easier for pupils with a lower level of understanding, and to work on the concepts linked to dialogue (punctuation, etc.).



- It would be interesting if each word (or even each syllable) were highlighted (in a special colour or underlined) as it was read, so that the child could try to follow it. very good intonation and tone, but too fast for reading follow-up

*Are the 5 levels of adaptation of the illustrations relevant and understandable for children with disabilities?* **92% YES**

*Is it useful to be able to click on illustrations to enlarge them?* **98% YES**

*Are the activities on offer useful?* **100% YES**

*Would you have liked more entertainment?* **60% YES**

*Are the sound effects useful?* **100% YES**

*Would you have liked more sound effects?* **65% YES**

*I used some of the ideas in the mediation guide* **38% YES**

*I found this part of the mediation guide very useful...*

*(The results presented below relate to the total response sample and not just to the 38% of respondents who used some of the ideas in the guide)*

- Individual use,

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- before reading: Knowing the appliance: 60% AGREE
- before reading: Preparation and configuration 46% TOTALLY AGREE
- before reading: Presentation of the story 56% STRONGLY AGREE
- during reading 46% STRONGLY AGREE
- after reading 27% STRONGLY AGREE
- Use in the classroom
- group reading on interactive whiteboard AGREE (19%)
- group reading with students with an intellectual disability 23% STRONGLY AGREE
- Activities to take you further 33% STRONGLY AGREE
- 21% AGREE WITH colouring
- File of relief illustrations to print out and emboss with a PIAF oven 27% AGREE

*I used additional tactile aids (plastic figurines, plush toys, etc.)* **52% YES**

*Did I advise the children to adapt the illustrations as a starting point?* **25% YES** (level 2, as required)

*I found answers to my questions in the mediation guide* **42% AGREE**

*Possibility of differentiating the presentation of disabled children from that of children with severe and multiple disabilities*

*The wording of the mediation guide is clear.* **75% AGREE**

- clear sequence
- clear structure

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- Clear and easy to use
- divided into functional chapters
- clear and increasingly complex division of the guide
- is very comprehensive and contains ideas that are easy to apply
- was clearly organised
- was functional for the administration.
- Thanks to the table of contents.
- It is divided into chapters and guides you step by step through the presentation.
- It is precise and explains the different situations that can arise.
- It provides a better understanding of the book
- appropriate instructions
- I found it simple and clear in its description, easy to access. Even though it was my first time, I understood how to use it straight away.
- The explanations are clear
- because it is explicit
- because it's complete
- For the language used
- answers questions simply
- Simple and divided into levels of use.
- simply neutral
- As well as providing technical information, it is very detailed, giving an in-depth understanding of every aspect and every possible use of digital books.  
The language is clear and understandable.
- Everything is clearly explained.
- everything is clearly explained

*The step-by-step scenario ideas are clear.*

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**STRONGLY AGREE (71%)**



- well exposed
- Because it's detailed step by step.
- in some cases, yes, in others, too general
- detailed suggestions
- give clear instructions on how to use the device.
- it was easy to follow them
- It provides a step-by-step guide to using the tool. The index is also very useful for quickly finding answers to any doubts you may have.
- They explain in detail how to present digital books
- They enable a complete study of the book
- I haven't had time to try everything out
- The advice is very clearly explained and the illustrations make it easier to understand and use the various functions.
- the ideas are coherent and clear
- The suggestions are relevant and varied.
- The suggestions are clear because they are expressed in a language that can be understood by all types of users of the book.
- because they provide a fairly comprehensive overview
- Because it was clear to whom the story could be addressed.
- because they are specific and comprehensive
- for greater clarity
- why operational
- Scenarios = classroom activities?
- The proposed activities seem clear to me.
- are clearly organised, starting with the child's first needs
- follow the logical thread and prepare adults and children for reading with the ebook
- Concentrated information



*The scenario ideas proposed are easy to apply* **60% AGREE**

- because, depending on the context of the ebook, certain suggestions may be preferred to others.
- depends on the characteristics of the child and the operator
- proposals that are feasible in our context
- They were simple and immediate.
- This is a difficult question to answer, as it largely depends on the child's subjectivity.
- they were easy to apply
- These are progressive activities designed to explore the subject of the text in greater depth at different age levels.
- Intuitive
- I didn't have time to test everything with my students.
- activities and ideas are easily adaptable
- Activities can be personalised
- The activities are easy to implement.
- The suggestions are easy to apply because they are expressed in a language that can be understood by all types of users of the book.
- because they are suitable for children
- Because they take into account the different needs of children
- because they are intuitive
- why operational
- Why simple, suitable and useful with children
- are simple and clear
- not all are applicable
- everything was clear to me

*Scenario ideas enable inclusion* **60% AGREE**

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- The features of the tool make it even easier for children with special needs to share the same game (book) with their peers.
- With pupils who have language or comprehension difficulties, the step by step mediation of an adult is necessary, as it is when reading on paper. However, digital media have the advantage of being more interactive, and are therefore generally perceived as more attractive.
- Because these ideas make it possible to adapt to the needs of the student
- Clear
- depends on the situation
- engaging ideas
- facilitating access to shared experience
- They make it possible to adapt the offer to learning difficulties and to the various specific characteristics encountered in the class group.
- They provide a personalised reading experience
- They simplify and attract attention
- The creation of characters intrigued the children in the class, who asked the little girl questions to find out what it was all about. Presenting the book to the class allowed the child to prove herself an expert and teach her skills to her classmates.
- help us to understand the difficulties the child may be experiencing.
- Because they allow the digital book to be used together by children. What's more, each child can follow the story by setting the text and illustrations differently to meet his / her specific needs.
- Because they place the child at the centre of his or her learning, taking account of his or her characteristics
- because they take account of pupils' difficulties
- Because they adapt to each child's needs and difficulties
- Because the activity is designed for and involves everyone, whatever the uniqueness of the individual.
- because the book adapts to the child and not the other way round.
- enabling accessible activities to be carried out jointly
- Motivated scenario
- suggest useful strategies
- you can share the same book with everyone, adapting it to the child's visual needs



### *Do you have any other ideas for scenarios and activities to enhance the mediation guide?*

- Add even more interactive games and activities
- Using a recurring character and adapting a series of books, rather than a single album, seems to me to be a motivating idea for children.
- diversify according to the child's age and developmental situation
- It's all very clear.

### *Analysis of teachers' questionnaires by Valentine Daures and Géraldine Blasco, specialist teachers at the Fondation IJA (Toulouse, France).*

All the teachers who responded to the teachers' questionnaire recognised the facilities offered by Flexpictureebook: the animations, the text read by the narrator, the illustrations and the various possibilities offered by the font settings, enabling a personalised reading of the book. The child is in control of the choices he or she makes to discover the story. The FPE makes it possible to adapt reading to the specific learning difficulties and particularities encountered in the class group. The child is placed at the centre of his or her learning. The Flexpictureebook offers remedial approaches that take account of the child's characteristics. Similarly, the accompanying guide seems to satisfy most teachers.

To the question: "How would this book be useful to you in your educational practice with individual children", the teachers' answers can be grouped according to different items.

The Flexpictureebook :

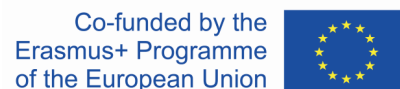
- Encourages a taste for reading,
- Allows independent activities,
- Develops reading skills,
- Encourages differentiation (activities based on the specific needs of each child),
- Promotes the inclusion and self-esteem of children

with difficulties,

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- Encourages sharing and interaction within the class.

Some teachers recognise that the conscious and independent use of a tablet with the Flexpicturebook as a reading aid boosts self-esteem, especially for pupils with difficulties. The Flexpicturebook also enables the class to approach the tablet tool through content geared towards learning to read and, above all, to enrich it with an innovative reading experience.

To the question "Are there any additional parameters you would like to see added", the most frequent answers are as follows:

- Suggested questions using images at the end of the reading
- Suggest highlighting each word or syllable when the actor reads to enable the pupil to try to follow.
- Suggested work on vocabulary beforehand on a tablet (combine images, writing and oral reading of the word)
- You can record your own voice or that of another reader, or even that of the child himself, who can then listen to the reading of the text in his own voice or that of someone more familiar to him.
- Suggestion that there should be comprehension questions
- Proposals to add even more parts and interactive activities

Above all, they offer additional suggestions for teaching methods that will enable teachers to use the material in a variety of ways, from several different angles. They also address the skills expected in school curricula (work on oral expression and comprehension, for example).