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ABSTRACT

Picturebooks blend visual and textual elements to engage and educate young readers, which Nikolajeva and Scott describe as their dual quality: “The unique character of picturebooks as an art form is based on a combination of two levels of communication, the visual and the verbal” (Nikolajeva & Scott, 2006, p. 1). This means that picturebooks engage the reader both intellectually and emotionally to understand and appreciate the visual/verbal art form.

But a new trend is evolving: an ever-growing presence of AI generated content. Algorithms used by AI are trained on extensive datasets and have the ability to produce coherent and contextually appropriate content. AI-generated content is now widely used across diverse industries, such as marketing, journalism, and academic writing (Gison, 2024b). In order to contribute to the discourse surrounding the role of picturebooks in the environment of increasing influence of artificial intelligence, this thesis aims to explore how Ammar Reshi’s AI-generated picturebook *Alice and Sparkle* functions as a picturebook, if at all, by comparing it to the picturebook *Boy + Bot*, written by Ame Dyckman and illustrated by Dan Yaccarino, in a small-group read-aloud with young learners. The thesis aims to observe and analyze the reactions of young learners during and after the read-aloud session, as well as to examine their interpretations of the two picturebooks. Using the interview method, and by discussing both picturebooks, it can be concluded that young learners engage and connect more with the human-authored picturebook *Boy + Bot*, rather than the AI-generated one, *Alice and Sparkle*.

Keywords: artificial intelligence, picturebooks, text-image dynamics

SAŽETAK

Narativne slikovnice spajaju vizualne i tekstualne elemente kako bi angažirale i obrazovale mlade čitatelje, što Nikolajeva i Scott opisuju kao njihovu dvostruku kvalitetu: „Jedinstveni karakter slikovnica kao umjetničkog oblika temelji se na kombinaciji dviju razina komunikacije, vizualne i verbalne“ (Nikolajeva & Scott, 2006, str. 1). To znači da slikovnice angažiraju čitatelja intelektualno i emocionalno kako bi razumio i cijenio njihov vizualno/verbalni umjetnički oblik. No, u tijeku je razvoj jednog novog trenda: sve veće prisutnosti sadržaja generiranog umjetnom inteligencijom. Algoritmi kojima se umjetna inteligencija služi trenirani su na opsežnim bazama podataka i imaju sposobnost stvaranja koherentnog i kontekstualno prikladnog sadržaja. Sadržaj generiran umjetnom inteligencijom sada se široko koristi u raznim industrijama, kao što su marketing, novinarstvo i akademsko pisanje (Gison, 2024b). Kako bi doprinijeli raspravi o ulozi slikovnica u okruženju sve većeg utjecaja umjetne inteligencije, cilj ovog rada je istražiti funkcionira li slikovnica *Alice and Sparkle* Ammara Reshija, generirana umjetnom inteligencijom, kao slikovnica tako što će je se usporediti sa slikovnicom *Boy + Bot* koju je napisala Ame Dyckman, a ilustrirao Dan Yaccarino, u čitanju naglas u maloj skupini mladih učenika. Rad također ima za cilj promatrati i analizirati reakcije mladih učenika tijekom i nakon čitanja naglas, kao i ispitati njihove interpretacije dviju slikovnica. Istraživanje je pokazalo da se mladi učenici više povezuju sa slikovnicom koju je napisao čovjek nego sa slikovnicom koju je generirala umjetna inteligencija.

Ključne riječi: umjetna inteligencija, slikovnice, dinamika između slike i teksta

1. INTRODUCTION

In order to understand the term "picturebook", it will be useful to know the definitions of the words "picture" and "book" which create this compound noun. A picture is "a design or representation made by various means (such as painting, drawing, or photography) (Merriam-Webster dictionary), and "A book is a three-dimensional object that contains information" (Kümmerling-Meibauer, Meibauer, Nachtigäller, & Rohlfing, 2015, p. 1). When observing the definition of a book from a cultural-historical perspective, it is "the most important medium for the communication of ideas by means of printed texts" (Kümmerling-Meibauer, Meibauer, Nachtigäller, & Rohlfing, 2015, p. 1). Picturebooks have been defined as "books intended for young children which communicate information or tell stories through a series of many pictures combined with relatively slight texts or no texts at all" and are thus "unlike any other form of verbal or visual art" (Nodelman, 1988, vii) Likewise, Barbara Bader (1976) states that the picturebooks is not only "text, illustrations, total design" but also "an item of manufacture and a commercial product; a social, cultural, historical document; and foremost an experience for a child" (p.1).

The goal of this thesis was to compare the reactions of young learners to two different picturebooks: one generated by artificial intelligence (*Alice and Sparkle* by Ammaar Reshi, 2022) and one created by human authors (*Boy + Bot*, written by Ame Dyckman and illustrated by Dan Yaccarino). *Alice and Sparkle* is among the first picturebooks written and illustrated by AI, making it a unique subject for comparison. This research aims to analyze how young learners respond to these two picturebooks, exploring the differences in their reception and evaluating what elements contribute to a picturebook being recognized and appreciated as such.

This chapter briefly describes the history of picturebooks, introduces the concept of artificial intelligence and explains its connection to picturebooks. The second chapter details the research part of the thesis. A read-aloud was conducted with a small group of fourth-grade students in which the abovementioned picturebooks were compared. Using the interview method, the learners' opinions, statements, questions, and observations were documented. The third chapter examines the results of the research. This is followed by a chapter on topics for future potential studies and research, particularly artificial intelligence in the field of literature, and specifically

picturebooks. The final chapter is a summary of the main findings and arguments presented in the research.

1.1. Picturebooks, history and AI

Picturebooks are a unique form of storytelling that blend visual and textual elements to engage young readers. They play a crucial role in early childhood development by fostering creativity, language skills, and emotional understanding. Through the combination of illustrations and narrative, picturebooks create immersive experiences that captivate the imagination and help children connect with the world around them.

Barbara Bader (1976) explains: "As an art form [the picturebook] hinges on the interdependence of pictures and words, on the simultaneous display of two facing pages, and on the drama of the turning of the page. On its own terms its possibilities are limitless" (p. 1). The experience of reading picturebooks includes examining what lies on their pages, the suspense that occurs when turning the page to find out what will happen next, the emotions that the story elicits, and the emotional connection that the reader can develop while reading the story.

Nodelman (1988) states that picturebooks designed for young children convey information or stories primarily through a series of images, often accompanied by minimal or no text. This form of storytelling is distinct from other types of visual or verbal art, as the images and text in picturebooks communicate in a unique way compared to those in other contexts. While paintings in art galleries are typically meant to provide visual stimulation or evoke an aesthetic response, the illustrations in picturebooks serve a different purpose—they primarily exist to aid in storytelling. Picturebooks are often one of the first kinds of literary works that a child encounters in their life. Serafini (2014) uses the word as a compound noun because it "suggests the unity or cohesiveness of visual images, design elements, and written language that is part of all true picturebooks" (p. 72).

Looking back at the beginnings of picturebooks, according to Matulka (2008), the evolution of childhood and children's literature took a turn in the seventeenth century when things began to change. Before then, childhood as a distinct concept did not exist, and early children's books were

didactic and used mainly for instruction rather than entertainment. Illustrations were decorative rather than integral to the text. John Locke and Jean Jacques Rousseau challenged traditional views of childhood, emphasizing children's unique needs and abilities. John Newbery recognized the potential of a children's book market and published the first true children's book in 1744, titled *A Little Pretty Pocket-Book*. Such developments laid the foundation for modern children's publishing, which categorizes literature by age, a concept pioneered by Locke, Rousseau, and Newbery (p. 9-10). Matulka further explains how the origins of picturebooks could be traced by their evolution from early illustrated books for children. Johannes Amos Comenius's *Orbis Sensualium Pictus* is often regarded as the first true picturebook, published in 1658 (p. 10).

Due to technological developments over the last fifteen years, the process of creating picturebooks has been greatly improved. Computers have become an integral part in modern art studios, significantly impacting picturebook production despite introducing new challenges. As Matulka (2008) describes, digital illustration, facilitated by software like Adobe PhotoShop and Illustrator, offers extensive possibilities for artists. Techniques include scanning images, experimenting with color and texture, and creating entirely digital artwork using graphic tables and styluses. Even traditional artists benefit from computer technology, using it to scan and distribute their work digitally (p. 19). Artificial intelligence has also been improving for the past several years, and is described as "a system that has the ability to correctly interpret external data, and to use and learn from such data, and use those learnings to achieve specific goals and tasks through flexible adaptation" (Kaplan & Haenlein, 2018, p. 15). Artificial intelligence, as Kaplan & Haenlein (2018) further explain, is more of an idea of "intelligence" according to which computers are prone to "think for themselves" or think as humans, and it has been discussed for more than half a century, in part due to the seminal work of computer scientist Alan Turning. To better understand what AI is and how it works, Kaplan & Haenlein (2018) explain the three stages/generations of artificial intelligence (AI) by comparing them with Siri, the operative system and digital assistant. First generation AI applications applied artificial intelligence only to specific tasks and are therefore labeled artificial narrow intelligence (ANI), a near ubiquitous type of AI. Comparing ANI to Siri, in this stage Siri can have voice recognition but cannot drive a car. Second generation AI is called artificial general intelligence (AGI), and this generation might be more widely used in the future because it will be able to reason, plan and autonomously solve problems

they were not originally designed for. If comparing it to Siri, that would mean that Siri would be a humanoid robot with wide capabilities including voice recognition, coffee preparation, and writing skills. Third generation AI could also arrive in the future, and it would represent artificial super intelligence (ASI). This would be a truly self-aware, conscious system that in a certain way might make humans redundant. In this stage/generation, Siri would develop super-human capabilities such as solving complex mathematical problems or writing a bestseller (p. 16).

1.2. AI-generated illustrations – AI, thief of creativity?

Kaplan and Haenlein (2018) define AI "as a system's ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation" (p. 17). AI uses external information from different data sources as input to identify underlying rules and patterns. It relies on machine learning approaches, which broadly refer to methods that enable computers to learn without being explicitly programmed (Kaplan and Haenlein, 2018, p.17).

The presence of artificial intelligence in art generation has sparked significant debate within the artistic community. Prominent artists such as Sarah Andersen and Dave McKean view AI-generated art as a direct threat to their professional livelihoods and creative integrity. Andersen, a cartoonist and best-selling author, has taken legal action by joining a class-action lawsuit against companies like Stability AI and MidJourney. These companies are accused of using AI models to create art without obtaining consent or providing compensation to the original artists. Critics argue that AI image generators "often exploit the unique styles of artists, reducing their work to mere filters or cheat codes" (The Washington Post, 2023).

Organizations such as the National Cartoonists Society and the Society of Illustrators are advocating for enhanced protection and recognition of artists in the face of AI advancements. They demand credit, consent, and compensation from AI art companies and are actively pushing for legislative and ethical reforms. Jason Chatfield, president of the National Cartoonists Society, and Tim O'Brien, past president of the Society of Illustrators, underscore the necessity of public debate and legal measures to regulate the impact of AI technology on the art industry. As O'Brien asserts,

“We can shrug or do the braver thing: To come out in favor of human creators and not accept this form of artistic automation” (The Washington Post, 2023). The integration of AI in art generation raises critical ethical and creative questions. The article underscores the conflict between technological progress and artistic originality, questioning “whether AI can truly replicate the human elements of creativity and intent that define traditional art” (The Washington Post, 2023). This ongoing debate highlights the need for a balanced approach that respects the contributions of human artists while embracing the potential benefits of AI technology. Therefore, the rise of AI-generated art presents both challenges and opportunities for the artistic community. While there are legitimate concerns about the exploitation of artists' unique styles and the potential loss of creative integrity, there is also a recognition of AI's ability to revolutionize art. Moving forward, it is imperative for stakeholders to engage in meaningful dialogue and develop frameworks that protect artists' rights while fostering innovation in the art world.

To conclude, the evolution of picturebooks, from their early beginnings to the present day, reflects a fascinating journey of artistic and technological advancements. The early works were primarily didactic, using illustrations as decorative elements rather than integral parts of storytelling. It wasn't until the seventeenth century, with the influence of thinkers like John Locke and Jean-Jacques Rousseau, that the concept of childhood as a distinct stage of life began to shape the development of literature specifically tailored for children. Over time, picturebooks became more cohesive, integrating visual and textual elements to create immersive storytelling experiences. This evolution was further enhanced by technological advances. Because of it, artificial intelligence has been advancing rapidly, influencing various fields, including creative industries. This technological progression parallels the development of picturebooks, as AI now has the potential to generate illustrations and narratives, introducing new dimensions to storytelling. The integration of AI into picturebook creation represents a significant leap from traditional methods. AI-generated picturebooks, like *Alice and Sparkle* by Ammaar Reshi, showcase how technology can produce content quickly and innovatively. However, this raises important questions about the role of human creativity in storytelling. As picturebooks continue to evolve, the combination of traditional artistic techniques with advanced AI technologies could redefine how stories are told, blending the artistic heritage of picturebooks with the limitless possibilities of digital innovation. The future of picturebooks lies in understanding how AI can

complement human creativity, enhancing the storytelling experience while maintaining the emotional and developmental impact that has been central to the genre's success. Differences in creativity, emotional depth, and narrative complexity can be revealed by comparing picturebooks created by AI with those authored by humans. This comparison not only highlights the strengths and limitations of AI in artistic expression and storytelling but also provides valuable insights into how technology can complement human creativity. Such insights are crucial for producing engaging and meaningful content for readers.

2. RESEARCH

2.1. Procedure, purpose and participants

The research study was conducted on 29 May 2024 at The American International School of Zagreb in Croatia. The purpose of the research was to explore the reactions of students to the differences between AI-generated and human-authored picturebooks. The picturebooks that were compared in this research were *Alice and Sparkle* (generated by AI) and *Boy + Bot* (human-authored). By comparing the two picturebooks in read-alongs with young children, the goal was to contribute insights to the field of education and enhance the understanding of how technology might influence reading experiences.

A small group of five children, consisting of three girls and two boys, all aged 10, were selected to participate in the research study. The learners were chosen by their homeroom teacher based on their understanding of the English language. Participation in the study was entirely voluntary, and the students had the option to withdraw from the study at any time without any consequences. The research was approved by the lower school principal, and the parents signed a consent form, allowing their child to take part in the research.

2.2. Methodology

The research was based on a small group reading and discussion of the picturebooks *Alice and Sparkle* and *Boy + Bot* over the span of approximately one school lesson (45 minutes). One of the aims was to see whether the students would be able to notice the involvement of AI in the creation *Alice and Sparkle* without being told about it prior to the read-aloud. The students discussed both the stories of *Alice and Sparkle* and *Boy + Bot* and how they are conveyed to the reader. The method used in the research was the interview method, and the students were asked questions that were related to the picturebooks. Their answers, opinions, and observations were first recorded by a voice-recorder, and then later transcribed. The questions were mostly open-ended questions. The study also made sure to follow all ethical guidelines and to ensure the confidentiality and anonymity of the participants. Once data collection was completed, the voice

recordings were deleted, and the transcription has no names associated with any of the children (see Appendix B)

3. RESULTS AND DISCUSSION: *ALICE AND SPARKLE* vs. *BOY + BOT*

This part of the thesis focuses on the research results by examining the data, analyzing the young learners' responses and reactions to the two selected picturebooks. This comparison will provide better insight into the quality of both picturebooks, how they portray language development, visual literacy, moral and ethical lessons, and emotional effectiveness.

3.1. The creation of *Alice and Sparkle*

As previously mentioned, Ammaar Reshi's picturebook *Alice and Sparkle* was created with the help of artificial intelligence, specifically using two AI tools: ChatGPT to generate text and MidJourney to generate illustrations. To understand the outcome of the final generated text and images, it is useful to understand something about the process behind it. As he proudly announced on the platform X on November 12, 2022, previously known as Twitter, Ammaar Reshi, a product designer based in Silicon Valley, "spent a weekend playing with ChatGPT, MidJourney, and other AI tools", which resulted in a 12-page children's book, *Alice and Sparkle* (Reshi, "I spent the weekend"). In that post, Reshi attached a photograph of himself holding the book and was seemingly excited and happy with his creation. The back cover of the 2023 hardback edition of the book contains the following summary:

> This is a story about a young girl named Alice who discovers the magic of artificial intelligence. She creates her own AI, named Sparkle, and together they go on adventures and use their combined knowledge to make the world a better place. The story explores the incredible abilities of AI and the importance of using them for good. It is a tale of friendship and exploration, filled with magic and wonder.

Although this is an example of using AI tools that highlights the capabilities of artificial intelligence in producing creative content quickly and was as such shared on social media, it

sparked a debate about the ethics of AI-generated art, with critics arguing that AI exploits artists' work without consent, potentially harming their future artistic and creative development. Immediately upon release, Alice and Sparkle mostly received favorable responses, and the comments praised Reshi for his "amazing", "genius", and "innovative" effort. The comments were more centered around the process, inquiring about the tools Reshi used and the input he gave ChatGPT in order to create the story, and what character descriptions he used in Mid Journey to generate such illustrations for the book. The praise did not last long, as critics started questioning the authenticity and authorship of the book, as well as questioning whether Reshi had effectively stolen from the work of other artists to create his own "art". The loudest critics commented on both the lacking storytelling and the obvious flaws in the AI-generated illustrations.

Alice and Sparkle is not the only picturebook produced using AI assistance. There are other picturebooks such as *Robot Ranger: Robot Ethics for Children* (2020), written by William Barry, illustrated by Cressy Tylavsky, and co-written by the AI android Maria Bot; *If Animals Had Jobs* (2022), written by Dennis DeRobertis and illustrated with images generated by DALL-E 2, *Bedtime Stories: Short and Sweet, For a Good Night's Sleep* by Kamil Banc (2022), written by ChatGPT and illustrated by an AI image generator, and many others. Thanks to advancements in technology, a variety of specialized websites now allow users to create their own children's books with the help of AI and have them printed and delivered for a price. Other websites offer instructions in how to use freely available software for the same purpose of creating a children's book. Some of the better known websites for creating a children's book using AI tools are *BookBildr* and *Child Book*.

Upon introducing *Alice and Sparkle* and during the read-aloud, the students were asked to follow along – not only by listening to the text as the researcher was reading, but also by focusing on the illustrations. Shortly after the read-aloud ended, the students began sharing their opinions about the picturebook by answering the researcher's questions. One of the questions was: "What did Alice do in the story?", to which GIRL 2 answered: "Just makes a robot, an AI." The students answered all of the questions clearly and confidently, showing a positive response to the picturebook and its storyline. One of the following questions was about the illustrations. The students were asked to share what they noticed in the illustrations.

GIRL 1: "I realized that these pictures are probably AI generated. Like because if you search on AI like try to make something, all the pictures look different from the little girl. Like that

picture [pointing to the picture in the book] looks completely different from the other picture: she looks younger, more happy. And then that picture [points again] she looks completely different. […]"

BOY 2: And then also the cover picture is completely different from this picture.

BOY 1: [Interrupts BOY 2]: And the bot keeps on changing colors.

As Nodelman (1988) explains: "While much of the meaning of visual objects is imposed from without, in terms of the contexts that give them significance, much of it come from within a picture itself, in terms both of the visual qualities of individual objects and of the varying weights of different objects in relation to each other" (p. 125). In other words, he suggests that the meaning of visual objects in a picture comes from two main sources: external context and internal composition. The external context is part of the meaning that is imposed from external factors, such as the context or how the surrounding environment or cultural references influence the interpretation of the objects, whereas the internal composition is part of the meaning that comes from within the picture itself. That includes everything that is visible in that picture: the shapes, colors, and sizes of objects, and how those objects interact with each other within the composition. Furthermore, the balance between different objects in the image also contributes to the overall meaning.

The students did not know beforehand that one of the two picturebooks was made by AI, so it is interesting to see how they quickly realized the inconsistencies in the illustrations and, because of their previous knowledge about artificial intelligence, concluded that the illustrations must have been made using AI. That is why the consistency in the illustrations throughout the picturebooks is important. The relationship between the objects in the images, combined with the overall context of the illustration, helps the reader to find the meaning in the story. During the discussion it was revealed to the students that *Alice and Sparkle* was made using AI tools, confirming their assumption. As mentioned above, today there are websites that offer the service of creating a children's book using AI tools. This raises the question about the time required to create such a book. During the discussion, the students reached the following conclusion:

GIRL 1: This probably took not a lot of time to do it, like a normal book.

GIRL 2: Yeah so it probably took the other author at least three months to illustrate it.

BOY 1: A book made by an author takes years, but a book made by AI takes seconds, maybe more.

Kiefer (1995) says that studying the work of one illustrator can help children learn more about the creative process and understand the expressive potential of art in picturebooks (p. 152). Considering that this was the students' first encounter with *Alice and Sparkle*, it is notable that their observations of the picture-text relationship and the illustrations' contribution to the overall quality of the picturebook led to strong reactions. This observation supports Kiefer's statement effectively, and is a first major sign of a visible difference between illustrations created by AI and illustrations created by humans that was identified by the students during the read-along.

3.2. Picturebook design

Serafini (2014) explains that images in picturebooks are most often experienced as multimodal ensembles, a type of text which combines written language, design elements, and visual images (p. 2). The common saying "Don't judge a book by its cover" warns us not to jump to conclusions when meeting someone for the first time or, to take it literally, choose a book just because of its front cover. That also implies that by choosing a picturebook, one must question and be aware of the quality of the picturebook's content. By comparing the two picturebooks, *Alice and Sparkle* and *Boy + Bot*, we can notice that both of them have the same format and vertical layout. Major differences lie in the illustrations and the design. *Alice and Sparkle* uses colder tones, and the color blue dominates the cover. The main characters are enlarged, presented in the foreground, and clearly visible to the reader. Alice is in the front, somewhat bigger than the AI robot Sparkle, who is standing behind her, which could indicate a hierarchy: Alice is the one that is in charge, and Sparkle is the one that follows her orders. The white title of the picturebook covers part of Alice's head, but it does not disturb the whole composition. On the cover of *Boy + Bot* the two main characters are also in the foreground, but the white background gives prominence to the two characters. They are seen standing side by side, which indicates to the reader that they are presented as equals. The primary and secondary colors used to introduce the two characters are carefully chosen to avoid distracting the reader from the overall composition.

Before the start of the read-aloud, the picturebooks were shown to the learners and they were asked if they had ever come across these picturebooks. These are their answers:

RESEARCHER: *Boy + Bot* and *Alice and Sparkle*. Please take a second to look at both picturebooks. Have you ever read any of these picturebooks?

BOY 1 and BOY 2: No.

GIRL 3: I am pretty sure I read that one [pointing to *Boy + Bot*].

RESEARCHER: *Boy + Bot*. Do you perhaps remember what it is about?

GIRL 1: I feel like I know the cover.

GIRL 2: I feel like I've seen some in the bookstore. Like I've seen the *Alice and Sparkle* but I've not read any of them.

BOY 2: Same.

The visual aspect of the picturebooks, even just from the front cover, is of great significance because it leaves a trace, an imprint of sorts in the child's mind. Indeed, "students nowadays rely more and more on visual images and design features which help them communicate ideas, and make sense of our world" (Serafini, 2014, p. 4). Students can explain their thoughts better and give opinions more easily, make predictions, and share ideas just by looking at illustrations.

RESEARCHER: At first glance, what do you think *Alice and Sparkle* will be about?

GIRL 2: Um, so, I think it's probably gonna be like about a girl and she found an alien, and I don't know if you read *Lost and Found* [Jeffers, O. (2005)], something like that, they will become really good friends, and go on different adventures together.

RESEARCHER: That's a good idea.

BOY 1: I think it's about a little girl and a bot, and it's about their friendship.

RESEARCHER: Okay. Good.

BOY 2: So basically, there is that little girl, probably she finds a robot, and becomes good friends.

RESEARCHER: Okay! Good predictions. And now comparing this to *Boy + Bot*, what do you think this picturebook [*Boy + Bot*] will be about?

GIRL 3: A boy and a bot.

GIRL 1: The same thing. Kind of like, these people won't be friends at first but then they become good friends.

From this discussion, it can be concluded that the participants anticipate *Alice and Sparkle* will revolve around a friendship between a girl and a robot, which is similar to the story of *Boy + Bot.* Those conclusions were made simply by analyzing the front covers of the picturebooks. They expect the narrative to involve the girl finding the robot and developing a close bond through shared adventures, as well as a friendship developing between a human boy and his robotic character. This expectation stems from an overall understanding of the relationship between the characters depicted on the front covers.

3.3. Setting

Nikolajeva & Scott (2006) state that the setting in a picturebook establishes the situation and world in which the story unfolds. It provides a sense of time and place, and influences genre expectations, emotional tone, plot development, and character portrayal. Unlike novels, picturebooks use both text and visuals to convey setting, with visuals offering more flexibility and often providing a richer depiction of spatial dimensions. The interaction between text and images can range from direct replication to contrasting elements that create irony or dreamlike sequences. They further explain how picturebooks may feature varied approaches to setting, from minimal or abstract depictions to detailed and immersive environments. Visual settings in picturebooks can be elaborate or simple, realistic or symbolic, and may include various techniques like panoramic views or multiple scenes on a single page, as in *Boy + Bot* (p. 20–21). The setting in a picturebook provides a sense of time and place, creating the world where the story occurs. It sets genre expectations by helping define the genre, such as fairy tales or fantasy. It also creates an emotional climate by evoking specific emotions (e.g. nostalgia) (p. 61–81). Nikolajeva & Scott (2006) further claim that, unlike novels, picturebooks can visually show settings, thereby providing spatial details more effectively than via words. Visual setting in picturebooks can range from minimal to fully depicted.

Alice and Sparkle begins with the phrase, “Once upon a time, in a land far, far away”, which immediately evokes the familiar structure of traditional fairy tales. Because *Alice and Sparkle* was created using AI tools, it can be considered a type of hybrid text which disrupts conventional practices of reading and can bring readers to a state of confusion because it lacks details and

consistency. As Allan (2017) suggests, before reading a picturebook, readers already bring to it their interests and expectations. When readers encounter the phrase "Once upon a time", their previous experiences with fairy tales shape their expectations, whether they are aware of it or not. Hybrid texts mix elements from various genres, which often necessitates more complex reading strategies (p. 205). This means that readers are likely to approach *Alice and Sparkle* with certain expectations shaped by their past encounters with similar stories. However, unlike straightforward fairy tales, *Alice and Sparkle* is a combination of elements from different genres, which can require more sophisticated reading strategies to fully understand and appreciate the narrative.

In the following discussion, it becomes clear that a lack of detail in both the text and illustrations can result in confusion, as well as a lack of interest in the story:

> RESEARCHER: My first question for you is: What is this picturebook about?
>
> GIRL 2: So technically it's about Alice and making this AI or whatever it was. And like they became really good friends and, like he helped her with everything. But she was also kind of scared of him. Because like as he grew more powerful, as said, he made his own decisions. She was scared like what if he would do something bad but it turns out he didn't. But also it was kind of sudden when it's [going towards] the end, it was kind of boring. Like, THE END. I thought like when she said like "He grew more powerful, and he made his own [decisions]", I thought he would do something bad. But then it just stopped.
>
> RESEARCHER: Thank you for sharing.
>
> GIRL 1: Like GIRL 2 said, this book doesn't really have any type of meaning to it. It's just a girl creates a robot and shares everything to the world. It's nothing exciting and nothing like that [can] attach the reader to it.

Sometimes pictures expand on the text, or there may be an intentional contrast between words and images. At other times, as shown in the example above, lack of detail and meaning can result in a complete disinterest in the story, undermining the "the drama of the turning of the page".

As previously mentioned, the setting can range from minimal to fully depicted. Minimal or reduced setting is usually connected with the post-World War 2 "hyperrealism" in children's literature, according to Nikolajeva & Scott (2006), and that kind of setting is more focused on the familiar and the everyday of the child's surroundings. This approach assumes a full depiction of

pictorial space is unnecessary, as the reader's attention should be on the character and a few essential details like a piece of furniture or a toy. This is a style which reflects specific educational and aesthetic purposes of picturebooks. Prominent Swedish picturebook creators from the 1950s and 1960s, such as Inger and Lasse Sandberg, Gunilla Bergström, and Gunilla Wolde, became renowned for this type of minimal setting (p. 63). In *Alice and Sparkle*, each illustration depicts the characters in different surroundings, shapes, and colors, leading to inconsistencies in their portrayal. The girl Alice appears different in almost every picture and Sparkle the robot is also depicted in different ways. While the illustrations are arguably aesthetically pleasing, they do not contribute significantly to the overall setting or cohesion of the story. The story follows Alice as she creates her very own AI robot in hope of using it for good in the world. Alice and Sparkle become friends and live "happily ever after spreading the magic of artificial intelligence to everyone they met" (Reshi, 2023, p. 22). Compared to *Alice and Sparkle*, the illustrations in *Boy + Bot* are simple and consistent, and could effectively convey the story even without the accompanying text. This consistency and simplicity make the setting easy to understand. The story, centered on the friendship between a boy and a robot, is similar to *Alice and Sparkle* in theme. However, in *Boy + Bot*, the minimal text and cohesive illustrations depict the instant friendship between Boy and Bot. When Bot gets switched off, Boy thinks he is sick, and when Boy falls asleep, Bot thinks he is malfunctioning. Each character tries to help the other using their own understanding, with Boy feeding Bot applesauce and Bot trying to give Boy fuel, both treating each other as equals despite their differences. Both stories are entirely fictional and unrealistic, but they serve as examples of how the relationship between text and illustrations in picturebooks, as well as the depiction of characters, can help create meaning.

In the Sandbergs' books, whether the characters are children or imaginary beings, the settings are familiar and ordinary, often depicted with just the objects essential for the plot, surrounded by negative space. This approach results in stories that are timeless and not easily outdated. For instance, *Dusty Wants to Help* (1983) is set in a kitchen with minimal elements like a stove and sink, while *Look There, Dusty Said* (1983) includes rural details like a road, flowers, and insects. In the *Little Ghost Godfrey* series, there is a contrast between fairy-tale elements and everyday objects (p. 63–65). In both *Alice and Sparkle* and *Boy + Bot*, each story features one realistic character—Alice and Boy—and one unrealistic character—Sparkle, the AI robot, and Bot.

The focus of both picturebooks is the relationship between those characters within ordinary settings, despite their extraordinary natures. In *Alice and Sparkle*, Alice creates Sparkle, and they become friends. Similarly, after Boy meets Bot, their friendship grows, and they are willing to help each other when challenges arise. The illustrations in *Alice and Sparkle* are simple, typically depicting Alice and her robot in various settings, often just the two of them. In contrast, the illustrations in *Boy + Bot* also feature the two main characters but include various activities that help the reader better understand the story.

Furthermore, Nikolajeva & Scott (2006) mention that the *Thomas, Betsy and Alfie Atkins* books focus on essential details, with settings acting as backdrops that encourage quick page-turning to follow the plot. The *Sam* books by Barbo Lindgren and Eva Eriksson, while not using negative space, also feature minimal settings, maintaining the trend of focusing on essential plot-related details. This minimalistic approach in picturebooks keeps young readers engaged by emphasizing characters and plot over elaborate setting (p. 63–65). When comparing *Alice and Sparkle* with *Boy + Bot*, the minimal settings in both picturebooks contribute to making the stories easy for readers to understand. The details in the illustrations help establish the setting, which can either confuse the reader or, conversely, make them more curious and invested in the story. While talking about the story in *Boy + Bot*, it is amazing how young readers notice details in the illustrations, even when these details are small and not immediately obvious, as demonstrated in the following dialogue:

> GIRL 3: They both don't know what to do [with] each other, and Bot doesn't know that normal people sleep, and Boy doesn't know that Bot has a power mode, and they are probably a little dumb both of them because they don't know what to do with each other, and they have to realize that none of them are sick but they just can't realize because none of them are sick. The other guy has a power mode that you can just turn back on. And I'm confused, it's kind of obvious that doesn't he have like a toy robot? Like a mini one? I have seen in the book… let me see…
>
> [The student takes the book, and the other students agree with the statement.]
>
> GIRL 1: When the Boy was sleeping, there was like a mini robot next to the bed.

BOY 1: There is a robot right here [the student is pointing to the mini robot on the illustration], and there is a drawing of a Bot [page 7].

GIRL 2: I am pretty sure that they have something here, and I'm confused how he […] because it's really obvious here – [the on/off switch] – and I'm pretty sure because he [Boy] didn't see him [Bot] when he was awake because he was asleep so he just noticed it here but why do you need to give him fuel.

The details in the illustrations sparked interest and curiosity among the students, and as they focused more on both the illustrations and the text, the meaning of the story became clearer.

The setting of *Alice and Sparkle* is minimalistic, allowing the characters to stand out in the plot due to their intentionally understated aesthetic. However, as a student mentioned, "But also it was kind of sudden when its [going towards] the end, it was kind of boring. Like, THE END". The minimalist approach, while visually striking, may have contributed to an interrupted plot with an abrupt finish, leaving students wondering about the meaning behind the story - or if there was any meaning at all."Nikolajeva & Scott (2006) explain symmetrical and duplicative settings in picturebooks, where the interaction between text and illustrations is almost symmetrical, with verbal descriptions closely mirroring the images. Visual details enhance the narrative, but the pictures primarily serve a decorative function, aiming to educate young readers while evoking nostalgia for older audiences (p. 65–66). In the case of Alice and Sparkle, the illustrations do not align with the text, leaving young readers confused and questioning the story's meaning. It is safe to say that the visuals in *Alice and Sparkle* do not enhance the narrative. In contrast, in *Boy + Bot*, the illustrations closely follow the text, and because of their detailed nature, they do more than just serve a decorative function—they actively contribute to telling the story.

In the following discussion, the students were more engaged because the storyline of *Boy + Bot* was easier to follow compared to *Alice and Sparkle*. With a stronger picture-text relationship, the students had more opportunities to connect with the characters, providing more examples when answering questions. They were also able to offer more details while describing and summarizing the storyline in *Boy + Bot*:

RESEARCHER: First question, what is this picturebook about?

GIRL 2: So I can now really say that we can describe more about it than the other one, and I liked it better than the other one. So it's about a boy and a robot, like [they] live together, and they were just… I just thought it's kind of weird how they just met suddenly, and how the Boy didn't just [get] startled, and they just start playing. But when the robot switched off, I don't think the Boy really understood that he switched off, and he could just switch him back on. So [he] brought him home and he fell asleep. His parents [then] opened the door, and turned him back on again. But then the robot also thought that he [Boy] was sick so he takes him in his home. But then the inventor says this is not… it's a boy! And the Boy wakes up and... I would be really feeling scared if I was there, and confused, and the Boy just woke up, and like: [the student joyfully shouts] BOT!

RESEARCHER: Yes, that is true. Thank you for sharing. GIRL 1?

GIRL 1: I feel like this is not that different it kind of, it's like the same characters' kind of from the other book but this time it has a completely different story. Bot doesn't understand Boy, Boy doesn't understand what Bot is, but they've probably heard of each other before. But they just don't know what they look like, so when Boy thought that Bot was sick he did all the things that a human would do.

In conclusion, the dialogue reveals that the picturebook in question presents a unique and engaging story involving a boy and a robot who live together and experience various misunderstandings. One student appreciated the story's originality and expressed surprise at the initial interaction between the boy and the robot, noting that the boy's reaction was more curious than startled. The student's description highlights the plot twist where the robot mistakenly believes the boy is sick, leading to a humorous and somewhat confusing situation. Another student observed that while the characters might resemble those from another book, the story's fresh narrative distinguishes it by exploring the complexities of their interactions. Overall, the dialogue highlights the picturebook's creative storyline and the humorous misunderstandings between the characters. The students also drew a useful comparison to *Alice and Sparkle* in terms of character dynamics. While there are some differences between the characters in both books, the primary distinction lies in how the stories are told and the unique approaches of each narrative.

3.4. Characters

When examining the front covers, students were asked questions designed to deepen their understanding of the storylines and to inspect their possible emotional connection with the characters. Questions like: *Who are the main characters? How are they similar, and how are they different and why? How would you describe the characters?* In the following dialogue, the goal was to see whether the students would notice differences between the characters in the two picturebooks, even though from looking at the front covers, the characters might appear quite similar to each other, hinting that the storylines in the picturebooks could be somewhat similar too. The young learners were first asked to describe the characters in *Alice and Sparkle*.

RESEARCHER: How would you describe the main characters? Think about their struggles and wants, how would you describe them?

BOY 1: Smart and intelligent.

BOY 2: Also probably like BOY 1 said, smart.

GIRL 2: Um, the author doesn't really say anything about it so if I have to put together a story – a girl makes a robot, and they just share stuff in the world. And the author does not say anything so we can't really know.

GIRL 1: Well both are really, really smart, but I am pretty sure the robot is even smarter because it's AI, and can create anything.

RESEARCHER: GIRL 3, would you like to add anything, do you have any ideas?

GIRL 3: I think it's just that a boring book overall. I don't know.

BOY 2: I expected it to be like the robot does something bad.

[Other students agree with BOY 4's statement.]

Interestingly, the children had little to say about the main characters. In fact, there is a lack of emotion, details, and events that could make the characters seem more interesting or more approachable to the young readers. There is disappointment because of the lack of details. One can say that the characters are flat. Matulka (2008) explains that in the picturebooks, there are round and flat characters. Round or three-dimensional characters are written in a detailed and realistic way, so that the reader will not have a problem imagining the characters. There are flat or two-dimensional characters that are distinguished by their lack of detail and nuance. Matulka explains that while a flat character may have a detailed description, their portrayal typically lacks depth and focuses on just one characteristic (p. 125). This is clear from the discussion, since the students only

describe the characters as “smart” or “intelligent” because of the lack of detail, and those claims were made mainly as an assumption: Alice “must be smart” because she created a robot and Sparkle “must be intelligent” because it is a programmed robot. Matulka (2008) also adds that characters are typically depicted through their actions, speech, thoughts, and physical descriptions, and that is why authors use the point of view to bring characters to life (p. 124–125). She further explains that the point of view depends on who the narrator is and how much the narrator knows.

In the following dialogue, students share their thoughts on the main characters from the picturebook *Boy + Bot*. The students share their candid opinions, humorously pointing out the perceived flaws in the characters' actions and intelligence. The discussion reveals their critical thinking as they question the logic behind the characters' decisions, particularly the Boy's handling of the Bot. The conversation also highlights the students' ability to connect with the story and the illustrations, leading to a lively exchange of ideas. This dialogue offers insight into how young learners perceive and interpret the behavior of those two fictional characters.

RESEARCHER: That’s true, thank you. So, you already mentioned the main characters and who they are. How would you describe the main characters? What comes to mind first?

GIRL 3: Well I think the Boy is kind of stupid.

[The rest of the students laugh and nod in agreement.]

RESEARCHER: Alright, let’s be kind.

GIRL 3: And I think Bot is, even though he’s a robot, I think the inventor did something wrong.

[The rest of the students burst into laughter.]

RESEARCHER: There was a malfunction?

GIRL 3: Yeah.

GIRL 1: I thought, as GIRL 3 said, Boy doesn’t know how to take care of a full-sized bot, who is probably triple his size, but just wants to treat it like a normal robot. They are both kind of dumb.

RESEARCHER: GIRL 2?

GIRL 3: They both don’t know what to do [with] each other, and Bot doesn’t know that normal people sleep, and Boy doesn’t know that Bot has a power mode, and they are probably a little dumb both of them because they don’t know what to do with each other, and they have to realize that none of them are sick but they just can’t realize because none of them are sick. The other guy has a power mode that you can just turn back on. And I’m confused,

it's kind of obvious that doesn't he have like a toy robot? Like a mini one? I have seen in the book… let me see…

[The student takes the book and the other students agree with the statement.]

GIRL 1: When the Boy was sleeping, there was like a mini robot next to the bed.

BOY 1: There is a robot right here [the student is pointing to the mini robot on the illustration], and there is a drawing of a Bot [page 7].

GIRL 2: I am pretty sure that they have something here, and I'm confused how he […] because it's really obvious here – [the on/off switch] – and I'm pretty sure because he [Boy] didn't see him [Bot] when he was awake because he was asleep, so he just noticed it here but why do you need to give him fuel.

BOY 1: Fuel him.

GIRL 1 & GIRL 3: And give him batteries.

GIRL 2: Exactly. I am pretty sure this is a human [page 13], and I think this is the other guy, and I'm pretty sure this is the only person in the entire story that isn't dumb.

In the following discussion, the researcher and the students discuss the relationship between the main characters of the picturebook *Boy + Bot*. The conversation centers on the characters' similarities and their attempts to solve problems. The students highlight that both characters struggle to understand each other and their respective issues. They recall that at the start of the story, Bot gets shut down and the Boy mistakenly thinks Bot is sick. The dialogue reveals the characters' mutual desire to help each other despite their misunderstandings. From the answers, it is clear that the connection between the text and illustrations was much stronger in *Boy + Bot*, while in *Alice and Sparkle*, this connection was nearly absent. Additionally, there is a humorous element in Boy + Bot that the researcher did not fully explore. Overall, the young learners had a better connection with the storyline and characters in *Boy + Bot* compared to *Alice and Sparkle*.

RESEARCHER: Alright, let's move away from that word "dumb". But I see your point. You already kind of answered the questions that I wanted to ask you. We know that Bot is a robot, obviously. And Boy is a boy, he is human. But how are they similar? Are they even similar?

GIRL 1: They both don't know what to do with each other?

RESEARCHER: When there was a problem they don't know how to fix it?

GIRL 1: Yeah, they don't know how to fix it.

RESEARCHER: What was the main problem? What was the issue in this picturebook?

GIRL 2: There was no issue!

BOY 2: They want to fix each other.

RESEARCHER: And first in the beginning of the picturebook? In the beginning of the picturebook, what happened with Bot?

BOY 2: He got shut down.

RESEARCHER: Then what was the problem? The Boy thought..?

STUDENTS: The Boy thought Bot was sick.

RESEARCHER: And then Boy went to sleep and then who thought what?

BOY 1 & GIRL 3: Bot thought he [Boy] got shut down.

RESEARCH: But the main thing is what they wanted to do to each other. They wanted to…?

STUDENTS: Help!

RESEARCHER: Yes, that's it!

In the discussion about *Boy + Bot*, there is a trace of empathy in the story, which the young learners recognized. Stephens (2018) explains that this empathy arises from cognitive processes when readers interpret the scene and feel empathy on two levels: the character within the story and toward the characters themselves. In the picturebooks, empathy is shaped by how the text and illustrations together guide the reader (p. 144).

BOY 1: They are trying to rescue each other.

GIRL 2: Wasn't he ready to make him like a robot?

RESEARCHER: Well Bot can't comprehend.

BOY 2: The robot would cut him open [the Boy] and put the batteries in.

RESEARCHER: That's too extreme, I would not go there.

GIRL 2: But like, how is he like [Boy], so like, happy, like, "Everything is so normal here".

GIRL 3: Yeah it would be a little scary if you woke up next to a giant bot next you, and a bald man.

[The students all agree and laugh at this statement.]

BOY 1: It wouldn't be scary; it would be weird.

GIRL 2: I would scream to death!

Nikolajeva & Scott (2006) explain that in verbal narratives, character portrayal involves techniques like narrative description, which includes visual and psychological details, and the character's actions and dialogue, providing a direct and immediate sense of character. In the picturebooks, the techniques expand, with text and images working together to convey character. Images provide efficient physical descriptions and convey emotions through gestures and facial expressions, while words handle psychological depth and narrative perspective (p. 81–83).

In other words, the visual and psychological details portrayed in *Boy + Bot*, are much more expressive than they are in *Alice and Sparkle*, and that is the reason why the young learners had a significantly harder time establishing a connection with *Alice and Sparkle*.

3.5. Picture-text relationship in picturebooks

The picture-text relationship in picturebooks is almost as important as the relationship that the reader establishes with the storytelling. In this part of the research, the participatins actively listened to the read-aloud, simultaneously following the text and paying close attention to the illustrations.

> RESEARCHER: You had a chance to look at the illustrations, right? What did you see? What did you notice?
>
> GIRL 1: I realized that these pictures are probably AI generated. Like because if you search on AI like try to make something, all the pictures look different from the little girl. Like that picture [pointing to the picture in the book] looks completely different from the other picture: she looks younger, more happy. And then that picture [points again] she looks completely different.
>
> BOY 2: And then also the cover picture is completely different from this picture.
>
> BOY 1: [Interrupts BOY 2]: And the bot keeps on changing colors.
>
> RESEARCHER: GIRL 3, what did you want to add?
>
> GIRL 3: I don't know, it's like I don't think the person who made it, like they used AI

It is important to note that the students were not told about the assistance of AI in *Alice and Sparkle* prior to the read-aloud. It is an interesting conclusion that, even though the illustrations in the

picturebook were esthetically pleasing, the students noticed that the illustrations were not human-authored.

Nodelman (1988) explores how words and pictures interact in picturebooks, discovering that words and images initially appear to mirror each other's narrative. Separating them, however, shows that they tell separate stories in different ways (p. 193).

> RESEARCHER: Alright. Did you have a chance to look at the illustrations as I was reading?
> STUDENTS: Yes.
> RESEARCHER: What did you see? What did you notice? Did the illustrations help you somehow, to better understand the story? Because you see that there is not a lot of text, right? But there are a lot of illustrations. So how did they help?
> GIRL 2: Because, for example, here [the student takes the picturebook and shows us pages 20 and 21] it just says: "And the friends did". You can obviously see that they are playing, like they are making drawing of each other, hugging each other. And they made a lot of illustrations but we were given only one sentence, so there are more illustrations it was like *Stick and Stone* [Ferry, 2015].

This discussion shows that words and pictures communicate differently, often leading to exaggerated perceptions of their differences. As Nodelman (1988) explains, our brains have two hemispheres, and the left one is in charge of the analytical and sequential thinking, and it controls language, while the right hemisphere manages the holistic and simultaneous thinking, and controls visual and spatial capacities. In order to understand the relationship between the text and the illustration, one must engage different cognitive processes. Words tell stories in a linear, causal sequence, focusing attention explicitly on specific details. In contrast, pictures are experienced all at once, offering a diffuse focus where multiple elements compete for attention. Therefore, these differing modes of communication highlight how words and images complete each other in storytelling (p. 197).

3.6. Theme – Does it exist in both of the picturebooks?

As Nikolajeva & Scott (2006) show, the interplay between textual and visual storytelling serves as a significant focal point for conveying the theme of a book. It underscores how both written words and visual elements contribute uniquely to the narrative's message. This tension highlights the complementary roles of text and images in enhancing understanding and engagement with the theme (p. 181-185). When asked about the themes of both picturebooks, the students had to say the following:

> RESEARCHER: Thank you! And just a quick question, now that we know the picturebooks, what would you say, what is the theme of *Alice and Sparkle*, and what is the theme of *Boy + Bot*?
> GIRL 2: For *Boy + Bot* is that friends can come from all the different places but they can be friends no matter who they are, no matter where they are from. And *Alice and Sparkle* is just that I don't really get the theme. But there wasn't really a theme in there just this robot who tried to help the world.
> GIRL 1: The theme with *Alice and Sparkle* was probably that Alice wanted to help the world with Sparkle's creation, and AI, and also another difference between those two is AI generated the illustrations [pointing towards *Alice and Sparkle*], and the illustrator actually did that one [pointing towards *Boy + Bot*].

The seemingly obvious themes in both of the picturebooks suggest that there are few differences between them. However, closer examination showed that the students were able to recognize a clear theme in *Boy + Bot*, while their discussion moved towards questioning the very existence of any themes in *Alice and Sparkle*. By balancing textual narrative with iconic imagery, *Boy + Bot* effectively communicates its underlying message(s) to the reader. This interplay then invites readers to interpret and explore the theme through multiple dimensions, enriching their overall experience of the story, a quality which the students found was absent from *Alice and Sparkle*.

3.7. The problem of authorship

> RESEARCHER: Great! Talking about AI, do you know what AI stands for?
> STUDENTS: Artificial intelligence.

RESEARCHER: You already kind of noticed that this picturebook [*Alice and Sparkle*] was completely made by artificial intelligence, both illustrations and the text.

GIRL 1: Wait, so it isn't really made by Ammaar Reshi?

Girl 1's reaction is a justified and expected one when discussing a text or illustration that was made by AI, since the question of authorship or ownership inevitably emerges. *Alice and Sparkle* is only one of many books that are intended for children but are a product of AI assistance. Other examples include *Robot Ranger: Robot Ethics for Children* (2020), written by William Barry, illustrated by Cressy Tylavsky, and co-written by the AI android Maria Bot, and *If Animals Had Jobs* (2022), written by Dennis DeRobertis and illustrated with images generated by DALL-E 2. The appearance of AI generated picturebooks confirms that artificial intelligence is developing faster than expected. For instance, *If Animals Had Jobs* (2022) was published less than a month before *Alice and Sparkle* (2022); after that came *Bedtime Stories: Short and Sweet, For a Good Night's Sleep* by Kamil Banc (2022), which was written by ChatGPT and illustrated by an AI image generator. There is also Anitha Rathod's *Tick-Tock Tantrums* (2023), a picturebook in which the rhyming style of the story and the images are created by AI tools.

In a 2023 article, Caldvell explains the situation in the U.S. regarding authors and authorship. Artists creating AI art face the challenge of meeting the human authorship requirement. While the U.S. Constitution and Congress do not explicitly require human authorship, the U.S. Copyright Office insists on it. Historically, U.S. copyright law has linked authorship with originality and creativity, as seen in the landmark Burrow-Giles Lithographic Co. v. Sarony case, which recognized photography as copyrightable due to the photographer's creative input. Subsequent cases have upheld the idea that only humans can be authors, excluding animals and divine beings from copyright protection. The recent case of Thaler v. Perlmutter highlights the ongoing debate, with the court denying copyright to AI-generated art. Unlike the U.S., other countries like the UK, India, and New Zealand recognize AI art's copyrightability. To address this issue, the U.S. could expand its definition of authorship to include AI art. The argument is that human end users, who control and direct AI systems, should be considered authors. This approach would align U.S. copyright law with global trends and recognize the collaborative nature of AI art creation. (61 Hous. L. Rev. 411, 2023).

Because of the complexity of authorship in modern publishing and the question of the author-illustrator in children's literature, the question of authorship is still a question that is hard to answer because laws and copyright guidelines differ from country to country.

RESEARCHER: Ammaar was the one who was putting input, so you know how, while you're using artificial intelligence you need to put like information, or what do you want ChatGPT to do. Have you heard about ChatGPT?

GIRL 1 and GIRL 3: Yeah.

RESEARCHER: So ChatGPT generated this text actually, by following instruction from Ammaar. And another tool that was used was MidJourney – that illustrated the illustrations.

BOY 1: That's why at one point the girl is cute, and on the other one she's literally creepy.

GIRL 2: But AI is just a computer program, isn't it?

Even if ChatGPT is only a program, it can be considered a co-author of *Alice and Sparkle*. Mallan (2018) explains the concept of the "author-illustrator", drawing on Roland Barthes's *The Death of the Author* and Michel Foucault's *What Is an Author*? to examine authorship. Barthes's essay shifted focus from the author to the reader, suggesting that texts derive meaning from readers rather than the author, challenging traditional notions of authorial intent. Foucault, in contrast, emphasized the enduring role of authors within cultural and market contexts, coining the term 'author-function' to describe the author's role in text circulation and reception. She examines how digital technologies and market forces have transformed authorship, with authors increasingly engaging in multimedia spaces. It also discusses the fluid identity of author-illustrators, who combine writing and illustrating, and the implicit hierarchy in the designation 'author-illustrator.' The collaborative nature of picturebook creation, involving editors, designers, and even community contributions raises questions about ownership and interpretation.

3.8. Individual investigation

In this part of the investigation, the learners had the opportunity to look at the picturebooks without the interruption of the researcher. The purpose of individual investigation was to give the students complete freedom so they could focus on each page, check each illustration, compare the picturebooks by themselves, notice any similarities and differences, and maybe even spot

something they had missed in the previous observation of the picturebooks. It was interesting to see how the students felt excited when they got the chance to investigate the picturebooks by themselves. The two boys paired up and first took *Boy + Bot*, while the girls took *Alice and Sparkle* Despite that, the students got the chance to look at both of the picturebooks one more time.

RESEARCHER: When you were looking at these illustrations in both of the picturebooks, were they clear?

GIRL 3: That one wasn't [pointing at *Alice and Sparkle*], this one was [pointing at *Boy + Bot*].

[The rest of the students agree with GIRL 3.]

RESEARCHER: Do the illustrations match the text? Do they make sense?

GIRL 3: This one those [pointing at *Boy + Bot*], but this one doesn't [pointing at *Alice and Sparkle*] because everything changes every five seconds.

[Everybody got excited to share their point of view, and to share what they have noticed.]

RESEARCHER: Can we share one at a time, please.

BOY 2: The girl keeps on changing look.

RESEARCHER: Okay good, what else did you notice?

GIRL 3: I mean they said that the Bot shapeshifts, I think that's just because they used AI but I don't know why the girl looks different on every single page.

BOY 1: This is kind of creepy.

GIRL 2: I don't know how like the girl in one page stands like this with her hair down, and on the next page it's like...

RESEARCHER: Alright, great observation. If there was no text, would you still be able to know what's going on in *Alice and Sparkle*?

STUDENTS: NO!

RESEARCHER: Why not, why yes?

GIRL 1: I feel like some of the pages in *Boy + Bot.*

RESEARCHER: Let's focus on *Alice and Sparkle* for now.

GIRL 1: Okay. Well, no. Because these pages are the same thing all over again, we the same poses. Just, Alice searching up on the web [for] something…

GRIL 2: In *Alice and Sparkle* definitely not, because what is it here? So Alice keeps changing [in] every page, and one day like, she is just searching something her computer, [the student took the picturebook to show the pages as she was giving examples] and here she is just

typing something. And what is this? Like here is bot, Sparkle again, does she own like 15, 000 Sparkles?

Given the results of the discussion above, the AI-generated illustrations lose against human authored one, and the reason is the lack of text-picture relationship. The illustrations and the text seem to function like two different worlds, seemingly in conflict with each other, which confuses the reader. The illustrations could not stand alone, and if there was no text following the illustrations, there would be little to no story to be told. On the other hand, the illustrations in *Boy + Bot* elicited completely different reactions among the readers:

RESEARCHER: Thank you. Same question for *Boy + Bot*; If there was no text, would it be clear for you, would you be able to know what is going on in the picturebook, and give examples?

GIRL 3: I feel like on some pages, maybe I wouldn't. Like when he had the battery [page 12], but on some pages I would because it's pretty clear.

GIRL 1: Like GIRL 3 said, on the pages where like Bot falls down [pages 4 and 5], you wouldn't be able to find out that he got hit by a rock, and his power switch turned off – which is the illustration.

RESEARCHER: Good example.

GIRL 2: Probably in some pages I probably would know, but in the page where he gets hit by a rock, it doesn't really show that. But on the last pages [pages 20 and 21] where they are playing it's obvious because there are so many illustrations.

During the read-aloud, the children were focused and engaged the entire time, but during their own investigation, they were also excited to explore and look at the details for themselves. They had a chance to study the artistic techniques used by the authors in both picturebooks, but they also had a chance to look at both of the stories from their own perspectives, which then resulted in them noticing some details that they did not notice during the first reading. That is why individual investigations during which the young reader has a chance to explore the picturebook repeatedly are beneficial and should happen in the classroom as often as possible.

3.9. Learners' opinions after the discussion

Towards the end of the research, the young learners had a chance to share their own opinion of the picturebooks:

RESEARCHER: My last question, you all did very well, I'm very proud of you. This is a question for each of you. Did you learn anything new from reading these two picturebooks?

STUDETNS: No!

BOY 2: Definitely not.

GIRL 1: No, nothing that we can use in life.

RESEARCHER: Alright, last question. Even though that was supposed to be the last question. Are you now interested a little bit more in reading books written by AI?

STUDENTS: NO!

GIRL 1: It doesn't make sense.

BOY 1: There isn't a theme, and it doesn't make sense.

GIRL 1: It doesn't show enough information in that illustration.

RESEARCHER: Do you think that there will be more pieces of literature such as books, novels, chapter books, stories, and picturebooks written by AI?

GIRL 1: I mean, yeah.

GIRL 3: Yeah.

GIRL 1: This probably took not a lot of time to do it, like a normal book.

GIRL 2: Yeah so it probably took the other author at least three months to illustrate it.

BOY 1: A book made by an author takes years, but a book made by AI takes seconds, maybe more.

RESEARCHER: Now that you had a chance to compare two picturebook with similar topics, similar themes, what would you say, which picturebook has more quality?

GIRL 3: That one! *Boy + Bot*.

The general opinion of the young learners is that the reason why they prefer *Boy + Bot* is because of the better understanding of the general idea of the picturebook and the story that it tells. The characters were depicted nicely, and they were concise and consistent throughout the whole picturebook, giving the young readers a sense of stability and safety, even though the actions of the characters sometimes confused them. This study has observed how the students reacted to an AI-generated picturebook when compared to a human-authored one. The conclusion is simple: the

human-authored picturebook tended to resonate more emotionally and intellectually with the young readers as they connected more deeply with the narratives, characters, and art style crafted by human authors.

4. IDEAS FOR FURTHER RESEARCH

Nikolajeva (2018) discusses emotions in picturebooks, emphasizing the lack of a full range of emotional schemas and empathy skills in young readers. She also highlights the role of picturebooks in enhancing young readers' emotional intelligence. Young readers gradually develop those sets of skills, and they can train those skills through picturebooks. Picturebooks convey emotions via both images and words, engaging the right brains' hemisphere more effectively than novels. Emotions are often better represented through images than words, as visual cues like facial expression and body posture provide immediate emotional signals to the brain (p. 114–117).

Nikolajeva continues to explain that picturebooks, including wordless ones, use images to evoke emotions, even those beyond a child's direct experience, thus enhancing their empathy and mind-reading skills. Experimental research shows children's strong responses to emotionally charged images that have some of the same qualities of real-life experiences, indicating the right hemisphere's influence. Picturebooks help readers distinguish between their emotions and those of fictional characters, fostering empathy. Non-verbal response methods like drawing and play reveal children's comprehension of emotional content. Basic emotions, processed by the right hemisphere, are universal, while social emotions require more complex visual cognitive cues (p. 114–117).

Considering that Reshi's AI-generated project garnered praise in the beginning for its ingenuity, but also faced criticism for ethical concerns regarding AI-generated art, it would be interesting to see what the future for AI-generated illustrations holds, and in which direction they will evolve. Future research could study how empathy is portrayed in illustrations made by AI, which also raises the question of whether an AI tool can generate illustrations and use them as a form of art to teach empathy to young learners.

5. CONCLUSION

Analyzing the responses of the grade four students to Reshi's AI-generated picturebook *Alice and Sparkle* reveals how the focus easily shifts from narrative content to the controversial creation process. This shift sparks debates on authorship, copyright, metafictional elements, and most importantly, on how the picturebook is portrayed and its story understood. Compared to the reactions after the read-aloud of *Boy + Bot*, a human-authored picturebook, the children's responses clearly showed that the simplicity in the illustrations and the consistent depiction of characters had a more positive impact on the young learners. Additionally, the meaningful relationship between the pictures and text helped the children develop a connection to the characters, ultimately enhancing their comprehension of the storyline.

Through the analysis and empirical insights, it becomes evident that picturebooks created by human authors often connect and resonate more profoundly with young readers compared to those generated by artificial intelligence. The reason for this is that children apparently prefer human-authored picturebooks, which typically offer greater depth in character development and narrative coherence compared to their AI-generated counterparts. Characters in human-authored picturebooks often have complex emotions and motivations, which foster empathy and deeper engagement among young readers. Moreover, human authors infuse their works with personal experiences, cultural nuances, and artistic sensibilities that resonate authentically with children's developmental need and emotions.

In contrast, while AI-generated picturebooks are technically competent in combining visual and textual elements, they often fall short in capturing the nuanced interplay between words and images that defines effective picturebook storytelling. The mechanistic approach of AI algorithms, although capable of producing coherent narratives, tends to prioritize formulaic storytelling over spontaneous creativity and the creation of emotional resonance. This mechanization reduces the immersive and imaginative experience that children look for in their reading.

As we look toward the future of picturebooks in the age of AI, it is crucial to consider the ethical, cultural, and developmental implications of AI-generated content. While AI offers unprecedented opportunities for innovation and accessibility in literary creation, its role raises fundamental questions about authorship, creativity, and the integrity of artistic expression. The

appeal of AI comes from its ability to streamline production and make literature more accessible to everyone. However, the essence of storytelling is rooted in imagination, empathy, and emotional connection, and that should remain a unique characteristic of literature created by human authors.

In conclusion, while AI-generated picturebooks are likely to keep increasing in number, particularly in educational and commercial settings, the lasting appeal of human-authored works such as picturebooks lies in their ability to resonate authentically with young readers. As educators, researchers, and creators explore the changing world of children's literature, it is crucial to maintain the importance of human creativity and imagination. This will ensure that future generations continue to experience the deep and meaningful impact of literature in its most human and heartfelt forms.

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APPENDICES

Appendix A: Research questions

1) INTRODUCING BOTH PICTUREBOOKS:
- The picturebooks that we will be reading today are called: *Alice and Sparkle*, and *Boy + Bot*. - Please take a second and look at both picturebooks. Have you ever read any of these picturebooks? Are they familiar to you?
- At first glance, what do you think *Alice and Sparkle* is about?
- And comparing to *Alice and Sparkle*, what do you think *Boy + Bot* is about?
- Now look at the illustrations on both front covers of these picturebooks? What is different, and what is similar? Describe what you see.

2) READING *Alice and Sparkle*
- What is this picturebook about?
- Who are the main characters?
- How would you describe the main characters? What are they like? (Think about the physical appearance, wants and struggles, strengths and weaknesses that we have been talking about in the past…)
- What is the main problem/issue in this story?
- What did Alice do? What did she realize?
- Now look at the illustrations, what can you see? What do you notice?
- Do the illustrations themselves tell you a story, or help you understand the text better? (If yes, how do they do that)
- What is the main message of the story, and does this story even have a message?

3) READING *Boy + Bot*
- What is this picturebook about?
- Who are the main characters?
- How would you describe the main characters? What are they like? (Think about the physical appearance, wants and struggles, strengths and weaknesses that we have been talking about in the past…)
- What is the main problem/issue in this story?
- What did the Boy do? What did the robot do?
- How are the Boy and Bot similar, and how are they different? Give examples.
- Now look at the illustrations, what can you see? What do you notice?
- Do the illustrations themselves tell you a story, or help you understand the text better? (If yes, how do they do that)
- What is the main message of the story, and does this story even have a message?

4) COMPARING THE TWO PICTUREBOOKS
- Now that we covered both picturebooks, let us compare them: first, what is the same in these two picturebooks?
- What is different in these picturebooks?
- What would you say is the theme of *Alice and Sparkle*, and what is the theme of *Boy + Bot*?

5) EXPLORING THE PICTUREBOOKS AND COMMENTING ON THEM BY THEMSELVES
- When you were looking at the illustrations, were all the illustrations clear?
- Do the illustrations match the text? Do they make sense?
- If there was no text, would you still be able to tell what is going on in *Alice and Sparkle*? Give examples.
- If there was no text, would you still be able to tell what is going on in *Boy + Bot*? Give examples.

6) TALKING ABOUT AI
- When you look at these picturebooks, what would you say, which book could have been written by AI?
- Do you know what AI stands for?
- *Alice and Sparkle* is actually written and illustrated by AI. Now that you know this, do you look at the picturebook differently? Does it make you change your point of view on the answers you gave earlier?
- Take a look at the picturebook a little bit better. Do you notice something else that you maybe missed, now that you know that this picturebook was written and illustrated by AI?

7) ASKING THE FINAL QUESTIONS TO EACH PARTICIPANT (STUDENT)
- Did you learn anything new from reading these two picturebooks?
- Are you more interested in reading books written by AI?
- Do you think that there will be more pieces of literature such as books, novels, chapter books, stories, and picturebooks written by AI?
- Now that you had a chance to compare two picturebook with similar topics, similar themes, what would you say, which picturebook has more quality?

Appendix B: The transcript of the small-group discussion

RESEARCHER: *Boy + Bot* and *Alice and Sparkle*. Please take a second to look at both picturebooks. Have you ever read any of these picturebooks?
BOY 1 and BOY 2: No.
GIRL 3: I am pretty sure I read that one [pointing to *Boy + Bot*].
RESEARCHER: *Boy + Bot*. Do you perhaps remember what it is about?
GIRL 1: I feel like I know the cover.
GIRL 2: I feel like I've seen some in the bookstore. Like I've seen the *Alice and Sparkle* but I've not read any of them.
BOY 2: Same.
RESEARCHER: At first glance, what do you think *Alice and Sparkle* will be about?
GIRL 2: Um, so, I think it's probably gonna be like about a girl and she found an alien, and I don't know if you read *Lost and Found*, Jeffers, O. (2005), something like that, they will become really good friends, and go on different adventures together.
RESEARCHER: That's a good idea.
BOY 1: I think it's about a little girl and a bot, and it's about their friendship.
RESEARCHER: Okay. Good.
BOY 2: So basically, there is that little girl, probably she finds a robot, and becomes good friends.
RESEARCHER: Okay! Good predictions. And now comparing this to *Boy + Bot*, what do you think this picturebook [*Boy + Bot*] will be about?
GIRL 3: A boy and a bot.
GIRL 1: The same thing. Kind of like, these people won't be friends at first but then they become good friends.
RESEARCHER: We will start with *Alice and Sparkle*. I will be reading this first out loud, both of them. Then we will talk about them, and then you will have time to check the picturebooks yourselves. And that's it! So we're reading two picturebooks, and comparing them, and we will be talking about them, and that is it. Do you all see it clearly?
STUDENTS: We see it clearly.
RESEARCHER: Okay. So, what I want you to do is, as I am reading look at the pictures, the illustrations, look at the text. Follow as much as you can. And then we will talk about it.
[After the read-aloud.]
RESEARCHER: My first question for you is: What is this picturebook about?
GIRL 2: So technically it's about Alice and making this AI or whatever it was. And like they became really good friends and, like he helped her with everything. But she was also kind of scared of him. Because like as he grew more powerful, as said, he made his own decisions. She was scared like what if he would do something bad but it turns out he didn't. But also it was kind of sudden when its [going towards] the end, it was kind of boring. Like, THE END. I thought like when she said like "He grew more powerful, and he made his own [decisions]", I thought he would do something bad. But then it just stopped.
RESEARCHER: Thank you for sharing.
GIRL 1: Like GIRL 2 said, this book doesn't really have any type of meaning to it. It's just a girl creates a robot and shares everything to the world. It's nothing exciting and nothing like that [can] attach the reader to it.

RESEARCHER: How would you describe the main characters? Like think about the struggles and wants, how would you describe them?
BOY 1: Smart and intelligent.
BOY 2: Also probably like BOY 1 said, smart.
GIRL 2: Um, the author doesn't really say anything about it so if I have to put together a story – a girl makes a robot, and they just share stuff in the world. And the author does not say anything so we can't really know.
GIRL 1: Well both are really really smart, but I am pretty sure the robot is even smarter because it's AI, and can create anything.
RESEARCHER: GIRL 3, would you like to add anything, do you have any ideas?
GIRL 3: I think it's just that a boring book overall. I don't know.
BOY 2: I expected it to be like the robot does something bad.
[Other students agree with BOY 4's statement.]
RESEARCHER: So in the story, what did Alice do? What does she do?
GIRL 2: Just makes a robot, an AI.
RESEARCHER: She created her own AI, robot. And what did she realize by creating it?
GIRL 1: The way that it behaves is the way that she guides it. If she behaves it bad, [s]he acts out.
RESEARCHER: You had a chance to look at the illustrations, right? What did you see? What did you notice?
GIRL 1: I realized that these pictures are probably AI generated. Like because if you search on AI like try to make something, all the pictures look different from the little girl. Like that picture [pointing to the picture in the book] looks completely different from the other picture: she looks younger, more happy. And then that picture [points again] she looks completely different.
BOY 2: And then also the cover picture is completely different from this picture.
BOY 1: *Interrupts BOY 2*: And the bot keeps on changing colors.
RESEARCHER: GIRL 3 what did you want to add?
GIRL 3: I don't know, it's like I don't think the person who made it, like they used AI.
RESEARCHER: And last question for this picturebook is what is the main message of the story? Do we even have a main message at all?
STUDENTS [unanimously]: No.
RESEARCHER: Okay. Let's take a deep breath, in and out, because we are going to read another picturebook: *Boy + Bot*.
GIRL 2: Have you read both of them or is this your first time? Did you choose both of them on purpose?
RESEARCHER: I will tell you everything at the end. Okay again, two tasks while I'm reading. So as you are focusing on the text and what is happening in the story make sure to also see the visuals, see the illustrations.
[The researcher proceeds to read the picturebook.]

NOTE: The students were more engaged during the read-aloud of this picturebook, than they were during the read-aloud of the first picturebook. Sometimes they repeated the words as the researcher was reading, sometimes they would comment something during the read-aloud, or they would giggle or laugh at moments.

RESEARCHER: First question, what is this picturebook about?

GIRL 2: So I can now really say that we can describe more about it than the other one, and I liked it better than the other one. So it's about a boy and a robot, like [they] live together, and they were just.. I just thought it's kind of weird how they just met suddenly, and how the Boy didn't just [get] startled, and they just start playing. But when the robot switched off, I don't think the Boy really understood that he switched off, and he could just switch him back on. So [he] brought him home and he fell asleep. His parents [then] opened the door, and turned him back on again. But then the robot also thought that he [Boy] was sick so he takes him in his home. But then the inventor says this is not… it's a boy! And the Boy wakes up and.. I would be really feeling scared if I was there, and confused, and the Boy just woke up, and like: [the student joyfully shouts] BOT!
RESEARCHER: Yes, that is true. Thank you for sharing. GIRL 1?
GIRL 1: I feel like this is not that different it kind of, it's like the same characters' kind of from the other book but this time it has a completely different story. Bot doesn't understand what Boy is, Boy doesn't understand what Bot is, but they've probably heard of each other before. But they just don't know what they look like, so when Boy thought that Bot was sick he did all the things that a human would do.
RESEARCHER: That's true, thank you. So, you already mentioned the main characters and who they are. How would you describe the main characters? What comes to mind first?
GIRL 3: Well I think the Boy is kind of stupid.
[The rest of the students laugh, and nod in agreement.]
RESEARCHER: Alright, let's be kind.
GIRL 3: And I think Bot is, even though he's a robot, I think the inventor did something wrong.
[The rest of the students burst into laughter.]
RESEARCHER: There was a malfunction?
GIRL 3: Yeah.
GIRL 1: I thought, as GIRL 3 said, Boy doesn't know how to take care of a full-sized bot, who is probably triple his size, but just wants to treat it like a normal robot. They are both kind of dumb.
RESEARCHER: GIRL 2?
GIRL 3: They both don't know what to do [with] each other, and Bot doesn't know that normal people sleep, and Boy doesn't know that Bot has a power mode, and they are probably a little dumb both of them because they don't know what to do with each other, and they have to realize that none of them are sick but they just can't realize because none of them are sick. The other guy has a power mode that you can just turn back on. And I'm confused, it's kind of obvious that doesn't he have like a toy robot? Like a mini one? I have seen in the book… let me see…
[The student takes the book self-initiated, and the other students agree with the statement.] [page 7]
GIRL 1: When the Boy was sleeping, there was like a mini robot next to the bed.
BOY 1: There is a robot right here [the student is pointing to the mini robot on the illustration], and there is a drawing of a Bot. [page 7]
GIRL 2: I am pretty sure that they have something here, and I'm confused how he […] because it's really obvious here – [the switch] – and I'm pretty sure because he [Boy] didn't see him [Bot] when he was awake because he was asleep so he just noticed it here but why do you need to give him fuel.
BOY 1: Fuel him.
GIRL 1 & GIRL 3: And give him batteries.
GIRL 2: Exactly. I am pretty sure this is a human [page 13], and I think this is the other guy, and I'm pretty sure this is the only person in the entire story that isn't dumb.

RESEARCHER: Alright, let's move away from that word "dumb". But I see your point. You already kind of answered the questions that I wanted to ask you. We know that Bot is a robot, obviously. And Boy is a boy, he is human. But how are they similar? Are they even similar?
GIRL 1: They both don't know what to do with each other?
RESEARCHER: When there was a problem they don't know how to fix it?
GIRL 1: Yeah, they don't know how to fix it.
RESEARCHER: What was the main problem? What was the issue in this picturebook?
GIRL 2: There was no issue!
BOY 2: They want to fix each other.
RESEARCHER: And first in the beginning of the picturebook? In the beginning of the picturebook, what happened with Bot?
BOY 2: He got shut down.
RESEARCHER: Then what was the problem? The Boy thought..?
STUDENTS: The Boy thought Bot was sick.
RESEARCHER: And then Boy went to sleep and then who thought what?
BOY 1 & GIRL 3: Bot thought he [Boy] got shut down.
RESEARCH: But the main thing is what they wanted to do to each other. They wanted to…?
STUDENTS: Help!
RESEARCHER: Yes, that's it!
BOY 1: They are trying to rescue each other.
GIRL 2: Wasn't he ready to make him like a robot?
RESEARCHER: Well Bot can't comprehend.
BOY 2: The robot would cut him open [the Boy] and put the batteries in.
RESEARCHER: That's too extreme, I would not go there.
GIRL 2: But like, how is he like [Boy], so like, happy, like, "Everything is so normal here".
GIRL 3: Yeah it would be a little scary if you woke up next to a giant bot next you, and a bald man.
[The students all agree, and laugh at this statement.]
BOY 1: It wouldn't be scary; it would be weird.
GIRL 2: I would scream to death!
RESEARCHER: Alright. Did you have a chance to look at the illustrations as I was reading?
STUDENTS: Yes.
RESEARCHER: What did you see? What did you notice? Did the illustrations help you somehow, to better understand the story? Because you see that there is not a lot of text, right? But there are a lot of illustrations. So how did they help?
GIRL 2: Because, for example, here [the student takes the picturebook and shows us pages 20, 21] it just says: "And the friends did." You can obviously see that they are playing, like they are making drawing of each other, hugging each other. And they made a lot of illustrations but we were given only one sentence, so there are more illustrations it was like *Stick and Stone* (Ferry, B., 2015).
RESEARCHER: Very good observation. And the last question for this picturebook: What is the main message? What would you say the main message is?
GIRL 1: Friends can go through tough and rough [times], and whatever else.
RESEARCHER: Yes, so it is about friendship.
GIRL 2: Also that two friends could, well, we see two friends from a completely different category or a completely different thing, can make a friendship together, and like be friends so quickly. And because one was a robot, one was a human, and they just made a friendship very quickly. And there were two different categories in the friendship.

BOY 2: And that is in both of the books.
BOY 1: But in the second book the girl made the bot.
GIRL 3: Yeah, the girl new what to do with it.
RESEARCHER: Yes! Basically you are already answering the questions that I wanted to ask you. We read these two picturebooks, and we covered both of them, and you kind of said already what is different between them, but what is the biggest difference between these picturebooks? What stands out almost immediately, now that we finished both of them?
BOY 2: It's not actually about the difference but why does the Bot and the Boy look like a soldier? [looking at the front covers] Why are they standing like that?
RESEARCHER: It's just a choice of illustrating them like that. It's like the freedom of illustration, I would say. But let's return to the question: what is the biggest difference?
GIRL 2: The biggest difference? The Boy and Bot become, like, Boy immediately trusts Bot, but the girl Alice, didn't trust Sparkle at first because she thought, she was always worried what Sparkle might do next.
BOY 1: It's a twist.
GIRL 3: Alice knew what to do with Sparkle, she knew that he had like a power switch, and stuff, I guess. And she made Sparkle. And in *Boy + Bot*, Boy didn't know what to do with Bot.
BOY 1: And Bot didn't know what to do with Boy.
BOY 2: And also one is *Boy + Bot* and the other one is girl + bot.
GIRL 2: The illustrations are completely different. In one area Boy is feeding him apple sauce, and in *Alice and Sparkle*, Alice knew that Sparkle doesn't need anything. And with *Boy + Bot* the illustrations are also completely different. Boy and Bot just became friends, but Alice made Sparkle, and she didn't seem at all confused with him because she knew what to do.
GIRL 2: Alice made Sparkle to help the world, to understand the magic that he does, like AI. And *Boy + Bot* aren't here to help the world, it's just them having a wonderful friendship.
RESEARCHER: Thank you! And just a quick question, now that we know the picturebooks, what would you say, what is the theme of *Alice and Sparkle*, and what is the theme of *Boy + Bot*?
GIRL 2: For *Boy + Bot* is that friends can come from all the different places but they can be friends no matter who they are, no matter where they are from. And *Alice and Sparkle* is just that I don't really get the theme. But there wasn't really a theme in there just this robot who tried to help the world.
GIRL 1: The theme with *Alice and Sparkle* was probably that Alice wanted to help the world with Sparkle's creation, and AI, and also another difference between those two is AI generated the illustrations [pointing towards *Alice and Sparkle*], and the illustrator actually did that one [pointing towards *Boy + Bot*].
RESEARCHER: Now you will have 2 minutes to go over the picturebooks yourselves, I won't intervene. And then I will ask you a few more questions, and that will be it. Look at the illustrations, go over the text again, see what is different in the picturebooks, what is the same. Make sure you look at both of them.

NOTE: The boys first took *Boy + Bot* into their hands and went over the picturebook, while the girls took *Alice and Sparkle* first to examine it. The girls immediately noticed the different hairstyles in the illustrations of Alice. They commented more and more how none of the pictures are alike, and the only consistency with Alice is that she has curly hair in every illustration. The more they were observing the illustrations, the more they commented how it is visible that the illustrations were made by AI. Upon taking *Boy + Bot*, and after looking at the pages one boy

asked: “Why is the robot in only one color?” The boys mainly commented how it is impossible to give a human oil and how it is funny that the robot read to the Boy an instruction manual. After the students switched the picturebooks, the girls started commenting how it is unnatural that a robot gave a human oil, and how scary and intimidating must be to wake up next to a scientist and a robot. The boys on the other hand also commented on Alice’s appearance and how she looks like a different person in each of the illustrations, but they were more focused on her eyes than the hair. The boys also quickly noticed Sparkle’s transitions, and how in one illustration Sparkle looks like a robot, and in one it looks like a computer.

RESEARCHER: When you were looking at these illustrations in both of the picturebooks, were they clear?
GIRL 3: That one wasn’t [pointing at *Alice and Sparkle*], this one was [pointing at *Boy + Bot*].
[The rest of the students agree with GIRL 3.]
RESEARCHER: Do the illustrations match the text? Do they make sense?
GIRL 3: This one those [pointing at *Boy + Bot*], but this one doesn’t [pointing at *Alice and Sparkle*] because everything changes every five seconds.
[Everybody got excited to share their point of view, and to share what they have noticed.]
RESEARCHER: Can we share one at a time, please.
BOY 2: The girl keeps on changing look.
RESEARCHER: Okay good, what else did you notice?
GIRL 3: I mean they said that the Bot shapeshifts, I think that’s just because they used AI but I don’t know why the girl looks different on every single page.
BOY 1: This is kind of creepy.
GIRL 2: I don’t know how like the girl in one page stands like this with her hair down, and on the next page it’s like...
RESEARCHER: Alright, great observation. If there was no text, would you still be able to know what’s going on in *Alice and Sparkle*?
STUDENTS: NO!
RESEARCHER: Why not, why yes?
GIRL 1: I feel like some of the pages in *Boy + Bot.*
RESEARCHER: Let’s focus on *Alice and Sparkle* for now.
GIRL 1: Okay. Well, no. Because these pages are the same thing all over again, we the same poses. Just, Alice searching up on the web [for] something…
GRIL 2: In *Alice and Sparkle* definitely not, because what is it here? So Alice keeps changing [in] every page, and one day like, she is just searching something her computer, [the student took the picturebook to show the pages as she was giving examples] and here she is just typing something. And what is this? Like here is bot, Sparkle again, does she own like 15, 000 Sparkles?
RESEARCHER: Thank you. Same question for *Boy + Bot*; If there was no text, would it be clear for you, would you be able to know what is going on in the picturebook, and give examples?
GIRL 3: I feel like on some pages, maybe I wouldn’t. Like when he had the battery [page 12], but on some pages I would because it’s pretty clear.
GIRL 1: Like GIRL 3 said, on the pages where like Bot falls down [pages 4 and 5], you wouldn’t be able to find out that he got hit by a rock, and his power switch turned off – which is the illustration.
RESEARCHER: Good example.

GIRL 2: Probably in some pages I probably would know, but in the page where he gets hit by a rock, it doesn't really show that. But on the last pages [pages 20 and 21] where they are playing it's obvious because there are so many illustrations.
RESEARCHER: Great! Talking about AI, do you know what AI stands for?
STUDENTS: Artificial intelligence.
RESEARCHER: You already kind of noticed that this picturebook [*Alice and Sparkle*] was completely made by artificial intelligence, both illustrations and the text.
GIRL 1: Wait, so it isn't really made by Ammaar Reshi?
RESEARCHER: Ammaar was the one who was putting input, so you know how, while you're using artificial intelligence you need to put like information, or what do you want ChatGPT to do. Have you heard about ChatGPT?
GIRL 1 and GIRL 3: Yeah.
RESEARCHER: So ChatGPT generated this text actually, by following instruction from Ammaar. And another tool that was used was MidJourney – that illustrated the illustrations.
BOY 1: That's why at one point the girl is cute, and on the other one she's literally creepy.
GIRL 2: But AI is just a computer program, isn't it?
RESEARCHER: Yes, that's correct. So knowing now that *Alice and Sparkle* was made by AI, do you want to change your answers that you gave previously or are you sticking with them?
STUDENTS: No. We are sticking with them.
RESEARCHER: Take another look now that you 100% know that this picturebook was made by AI. Take a closer look at the illustrations.

NOTE: The picturebook was placed in the center of the table so that all of the students can take a closer and better look at everything.

BOY 1: Look at this, he's such a fuzz-ball [Sparkle].
GIRL 2: Look, let me just show you something, she has her hair down obviously...
BOY 1: And here she's literally…
BOY 2: Look! She just teleports into a cartoon.
GIRL 2: Yeah, and there is no text on this page other than this one just saying: "Sparkle says hello to the world." [pages 12 and 13]
GIRL 3: Yeah! Sparkle says hello to the world, and then here Alice has, like she took a photo shoot. [page 13]
BOY 1: [Sparkle] and now, one point he's a computer, and here he's just a [robot]. [page 13]
BOY 2: And that's not possible.
GIRL 3: And in this picture [the middle one on page 13] he's cut off.
GIRL 1: [page 15] Look, he's smiling in this.
BOY 1: Oh yeah, he is!
GIRL 2: Look look!
GIRL 3: Now she has hazel eyes! [Page 17]
BOY 2: And now she teleported into a cartoon again. [page 17]
GIRL 1: And look at her hair!
BOY 1: And now she teleported into the realistic world. [page 19]
GIRL 1: And she looks older. [page 21]
BOY 2: Look at this! How does Sparkle turn into this? [page 21]
GIRL 1: Yeah! Like every page she either gets younger or older.

GIRL 2: [Comparing pages 19 and 21] And look at that: isn't this supposed to be like on the same day? Like look at it, actually! Like what is she wearing here [page 19] and look at bot here [page 19], and then look at it there [page 21].
BOY 1: And then it stops.
GIRL 2: THE END.
GIRL 1: Yeah the ending was really weird.
GIRL 2: I thought that bot, um Sparkle, is going to do something bad in the world.
BOY 1: Just call it a bot, because he literally is one.
RESEARCHER: My last question, you all did very well, I'm very proud of you. This is a question for each of you. Did you learn anything new from reading these two picturebooks?
STUDETNS: No!
BOY 2: Definitely not.
GIRL 1: No, nothing that we can use in life.
RESEARCHER: Alright, last question. Even though that was supposed to be the last question. Are you now interested a little bit more in reading books written by AI?
STUDENTS: NO!
GIRL 1: It doesn't make sense.
BOY 1: There isn't a theme, and it doesn't make sense.
GIRL 1: It doesn't show enough information in that illustration.
RESEARCHER: Do you think that there will be more pieces of literature such as books, novels, chapter books, stories, and picturebooks written by AI?
GIRL 1: I mean, yeah.
GIRL 3: Yeah.
GIRL 1: This probably took not a lot of time to do it, like a normal book.
GIRL 2: Yeah so it probably took the other author at least three months to illustrate it.
BOY 1: A book made by an author takes years, but a book made by AI takes seconds, maybe more.
RESEARCHER: Now that you had a chance to compare two picturebook with similar topics, similar themes, what would you say, which picturebook has more quality?
GIRL 3: That one! *Boy + Bot*.
RESEARCHER: Thank you for everything. This interview is now over.

Izjava o izvornosti diplomskog rada

Izjavljujem da je moj diplomski rad izvorni rezultat mojeg rada te da se u izradi istoga nisam koristila drugim izvorima osim onih koji su u njemu navedeni.

Zagreb, rujan 2024.

Damjana Kolednjak