



Do Boys and Girls Visualise and Interpret Story Differently? A Gender-Based Study with EFL Learners Using Pop-Up Books

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ABSTRACT

This study investigates how boys and girls process the meaning of stories differently through the use of a pop-up book in an English as a Foreign Language (EFL) classroom in Aceh, Indonesia. Sixty fifth-grade students, consisting of 30 boys and 30 girls with intermediate English proficiency, participated in a series of tasks after reading a pop-up book entitled “Dreamworks Dragons: Adventures with Dragon: A Pop-up History”. Using a mixed-methods approach, this study assessed students’ visual recall, conceptual understanding, and emotional engagement through drawing, written responses, and interviews. Findings revealed that although boys and girls performed similarly in recalling visual scenes, girls demonstrated significantly stronger conceptual and emotional engagement. Girls’ responses often reflected empathy, moral reasoning, and character identification, whereas boys were more focused on action sequences and plot events. These differences suggest the importance of recognising gender-based narrative processing tendencies in designing EFL reading materials.

Keywords: *EFL learners, pop-up books, gender differences, conceptual understanding, emotional development.*

1. INTRODUCTION

Reading stories in a second language classroom is not only about vocabulary acquisition but also developing empathy, moral reasoning, and comprehension. Pop-up books play a vital role in supporting young EFL learners by combining text with multimodal elements like texts, 3D visuals, and moving parts, which enhance engagement, comprehension, and memory (Arisandi & Rafi, 2019). Beyond visual appeal, these books also convey emotional journeys and moral lessons, which are critical to foster empathy and critical thinking.

Recent studies highlight the benefits of multimodal materials in boosting critical thinking, emotional growth, moral understanding (Puspitasari et al., 2015), reading interest (Saputri et al., 2024; Yusuf et al., 2023), reading comprehension (Arifin, 2019; Arisandi & Rafi, 2019), vocabulary (Susrianty, 2024), and linguistic intelligence (Rusanti, 2023). Research also suggests gender differences in story engagement: girls often respond more emotionally and focus on moral lessons, while boys tend to prioritise plot and action (Chaplin & Aldao, 2013; Tenenbaum et al., 2010). However, few studies explore how gender shapes story interpretation in EFL contexts using interactive materials like pop-up books.

To address this gap, this study examines how boys and girls differ in their conceptual understanding and visualisation of pop-up storybooks in an EFL classroom. Focusing on emotional engagement, moral interpretation, and character identification, the findings aim to reveal gender-based patterns and support the creation of more inclusive, effective reading materials.

2. METHODS

This study employed a mixed-methods approach, involving 60 grade-5 EFL learners in Aceh, Indonesia (30 boys and 30 girls) with intermediate English proficiency. All participants read the same English pop-up storybook, *DreamWorks Dragons: Adventures with Dragon: A Pop-up History* (Pruett & Diaz, 2019), which tells the story of a dragon named Toothless and a Viking boy, Hiccup, whose unlikely friendship faces many challenges in the dragon-hating land of Berk. The book, featuring interactive pop-ups and moral themes, was chosen for its suitability for young EFL learners.

Following the reading, the students completed two tasks: (1) a visual recall task, drawing a memorable scene, and (2) a conceptual understanding task, explaining the story’s message and characters’ behaviour. Responses were scored on a 1–5 scale for accuracy, clarity, and depth.



Twelve students (6 boys, 6 girls) were then interviewed to explore their interpretations, emotional engagement, and character connections. Interviews were conducted primarily in English, with Indonesian used for clarification. Transcripts were analysed thematically following Braun and Clarke's (2006) framework, identifying patterns related to emotional engagement, moral interpretation, and character identification, with attention to gender-based differences.

The interviews were conducted primarily in English, as the participants were intermediate-level EFL learners. However, Indonesian was used when students had difficulty understanding the questions or expressing their thoughts in English. Students responded in both languages, depending on their comfort and comprehension. This flexible approach ensured clarity, reduced anxiety, and allowed for more accurate and meaningful responses. However, for the purpose of presentation in this paper and readers' understanding, the transcripts were translated into English by the researchers. The translation was then cross-checked by two certified translators to ensure translation accuracy, naturalness, and appropriateness.

3. RESULTS & DISCUSSION

3.1 Conceptual Understanding

The analysis of the conceptual understanding task showed a clear difference between the performance of boys and girls. On a 5-point scale, girls achieved an average score of 4.1, while boys averaged 3.2, as presented in Table 1.

Table 1. The scores of junior boys and girls in conceptual understanding.

Gender	Avg. Score	SD
Boys	3.2	0.75
Girls	4.1	0.68

The average score difference between boys and girls in the table suggests that girls had a deeper understanding of the story, including its emotional and moral aspects, compared to boys who tended to summarise the events or focus on the surface-level plot.

Furthermore, girls were more likely to explain what the characters learned or how the events reflected moral lessons. Their responses showed empathy and abstract reasoning. In contrast, boys generally described what happened without offering much interpretation or emotional insight. This can be seen in the following excerpts:

Table 2. Excerpts from students' conceptual understanding task.

Gender	Student Quote	Gender	Student Quote
Girl 1:	<i>"The people of Berk hated dragons but then they changed."</i>	Boy 1:	<i>"We have to be brave."</i>
Girl 2:	<i>"The story tells us not to judge something. Dragons might look scary but they can be kind."</i>	Boy 2:	<i>"It is about a friendship between a boy and a dragon."</i>
Girl 3:	<i>"Hiccup was timid, but then he became brave!"</i>	Boy 3:	<i>"Hiccup saved the dragon and trained it."</i>
Girl 4:	<i>"He was kind. He didn't like to kill like others."</i>	Boy 4:	<i>"This dragon might kill him, but he saved it anyway."</i>
Girl 5:	<i>"They changed from enemies to good friends."</i>	Boy 5:	<i>"They fought the big dragon and won!"</i>
Girl 6:	<i>"Friends should be like that, protecting each other."</i>	Boy 6:	<i>"Hiccup and Toothless beat the monster dragon."</i>



Girls' responses often highlighted moral lessons, emotions, and character development. For example, they noted changes in attitudes toward dragons, Hiccup's growth from timid to brave, and the meaning of true friendship, reflecting deeper moral reasoning. In contrast, boys' answers were more event-focused and less elaborative, often describing actions without interpreting their significance or underlying values.

These differences suggest that girls tend to process stories more holistically, connecting events to emotional and moral insights, while boys focus more on plot and action. This aligns with prior studies (Bohanek & Fivush, 2010; Tenenbaum et al., 2011), indicating girls' greater attention to emotional content. Overall, girls demonstrated stronger conceptual understanding through moral interpretation and emotional awareness.

3.2 Visual Recall Task

In the visual recall task, the students were asked to draw a scene from the story they remembered the most. The scores assessed how accurately and meaningfully their drawings represented key events, characters, and emotions. Below are the scores:

Table 3. Visual Recall Task Scores by Gender.

Gender	Avg. Score	SD
Boys	3.6	0.81
Girls	4.7	0.76

Although boys and girls performed similarly in terms of scores, boys scored an average of 3.6 and girls 3.7 out of 5, differences emerged in the types of scenes they chose to draw and how they represented them, as reflected in the following excerpts:

Table 4. Excerpts from students' visual recall task (drawing descriptions).

Gender	Student Quote	Gender	Student Quote
Girl 1:	<i>"This is when Hiccup helped injured Toothless. It was sad."</i>	Boy 1:	<i>"These are Hiccup and Toothless flying over the ocean."</i>
Girl 2:	<i>"Hiccup felt sad when his father and tribe ostracised him for refusing to kill a dragon."</i>	Boy 2:	<i>"This is the moment when the dragon breathed fire to attack the people of Berk."</i>
Girl 3:	<i>"Hiccup didn't use his knife to kill Toothless. He used it to cut the rope that entangled him."</i>	Boy 3:	<i>"The boy went into a cave and found his mother and a secret place where dragons lived."</i>
Girl 4:	<i>"This is when Hiccup tried to touch Toothless for the first time, and they became friends."</i>	Boy 4:	<i>"The boy and all his friends had a dragon friend. They flew together in the cloud."</i>
Girl 5:	<i>"This is when Hiccup met his mother. She's so beautiful. Sad she went missing for 20 years."</i>	Boy 5:	<i>"The monster came out and they fought together."</i>
Girl 6:	<i>"These are Toothless and his female dragon mate. She's beautiful."</i>	Boy 6:	<i>"The monster's lost. Its tusk pierced its underside."</i>

The girls' drawings and comments often focused on emotional moments, such as sadness, bonding, and happiness. For instance, they depicted scenes like the dragon being injured, the boy's rejection by his tribe, reunions with family, and dragon relationships, highlighting affective engagement. In contrast, the boys illustrated action-oriented scenes, including battles, flight, exploration, and thrilling discoveries, showing a preference for dynamic and adventurous elements.

These patterns suggest gender-based tendencies in narrative recall: girls leaned toward emotionally significant content, while boys favoured high-action moments (Bohanek & Fivush,



2020). Girls also portrayed both male and female characters, whereas boys focused more on male and powerful figures, aligning with the finding of Hsiao et al. (2021) in which boys have more androcentric representations in storytelling.

3.3 Qualitative Interview Data

The interviews provided deeper insight into how students processed the story beyond just test scores and drawings. Three recurring themes emerged, as follows:

3.3.1 Emotional Engagement

Girls were generally more expressive when discussing how characters felt and how those emotions influenced their understanding of the story. Boys, on the other hand, tended to focus more on actions and events, showing less verbal reflection on emotions.

Table 5. Student excerpts related to emotional engagement.

Gender	Student Quote	Gender	Student Quote
Girl 1:	<i>"I feel sad when seeing Toothless hurt."</i>	Boy 1:	<i>"He chased his mum and found many cool dragons!"</i>
Girl 2:	<i>"I love Toothless. He's so cute like a cat."</i>	Boy 2:	<i>"The best part was when they flew on the ocean with the tail fin he made."</i>
Girl 3:	<i>"I cried when all the people of Berk and dragons united to fight Alpha."</i>	Boy 3:	<i>"The scene I like most is when Toothless challenged the Alpha to protect the boy. Scary but fun!"</i>
Girl 4:	<i>"Hiccup was angry when he met his mum. I'd be angry too if my mum left me."</i>	Boy 4:	<i>"The big Alpha showed up, and they fought it! Yeah!"</i>
Girl 5:	<i>"I was afraid that the big monster killed them."</i>	Boy 5:	<i>"The Alpha is so big and so strong."</i>
Girl 6:	<i>"The ending makes me happy."</i>	Boy 6:	<i>"Toothless saved Hiccup from death, and that was cool."</i>

Table 5 shows that the girls' comments reflected a more empathetic connection to the characters. For instance, Girl 1 empathised with the character's pain; Girls 2 and 6 described moments of joy; Girl 3 said that she was emotional about the reunion of characters that used to be enemies when fighting against the true villain; Girl 4 understood the reason behind the character's anger; Girl 5 expressed her worry when the main characters were in a state of danger. In contrast, the boys mainly described events or physical actions, even when they did mention fear or helping others. Their responses suggest a more external engagement with the story, appreciating what happened rather than how it felt. This pattern is consistent with studies suggesting that girls tend to be more emotionally responsive in narrative contexts, while boys often engage more with the physicality and progression of story events (Shima, 2015).

3.3.2 Moral Interpretation

In discussing the story's message, girls and boys also display some differences, as illustrated in the following excerpts:

Table 6. Student excerpts related to moral interpretation.

Gender	Student Quote	Gender	Student Quote
Girl 1:	<i>"We should be kind to each other."</i>	Boy 1:	<i>"Be kind."</i>
Girl 2:	<i>"Don't hurt others."</i>	Boy 2:	<i>"It's ok to be different."</i>
Girl 3:	<i>"If you are nice to people, people will be nice to you."</i>	Boy 3:	<i>"Help your friends."</i>



Girl 4:	<i>"Friends must help each other."</i>	Boy 4:	<i>"Be smart and strong."</i>
Girl 5:	<i>"We can beat the enemy if we do it together."</i>	Boy 5:	<i>"Be brave."</i>
Girl 6:	<i>"Big doesn't always mean strong. Alpha was big but it was lost to Toothless, a small dragon."</i>	Boy 6:	<i>"Together we are stronger."</i>

Table 6 shows that girls often linked the story's morals to societal values, offering more developed interpretations. For example, they highlighted kindness, friendship, unity, and bravery as key lessons. In contrast, boys' responses, though morally valid, were shorter and framed as simple motivational phrases, mirroring their earlier task responses. This suggests girls provided more nuanced reflections, while boys conveyed general takeaways. These findings align with previous research on gender differences in moral reasoning and narrative expression (Schulkind et al., 2012).

3.3.3 Character Identification

The findings also showed that girls and boys differed in terms of character identification, as follows:

Table 7. Student excerpts related to character identification.

Gender	Student Quote	Gender	Student Quote
Girl 1:	<i>"I'd be sad too if I were him."</i>	Boy 1:	<i>"Hiccup built a tail fin for Toothless."</i>
Girl 2:	<i>"Hiccup is so brave. I want to be brave like him."</i>	Boy 2:	<i>"Hiccup and Toothless worked together to defeat the Alpha."</i>
Girl 3:	<i>"It must be painful to have a broken tail."</i>	Boy 3:	<i>"Compared to other Vikings, he is smaller but smarter."</i>
Girl 4:	<i>"Hiccup was angry when he met his mum. I'd be angry too if my mum left me."</i>	Boy 4:	<i>"They stay friends despite having children years later."</i>
Girl 5:	<i>"His mother was bad. Why did she leave her child? I wouldn't leave my child if I were her!"</i>	Boy 5:	<i>"Alpha forces other dragons to bring it food."</i>
Girl 6:	<i>"The people of Berk made a mistake, but they changed, but I can understand now why they used to hate dragons."</i>	Boy 6:	<i>"Toothless challenged the Alpha to protect his best friend."</i>

From Table 7, it is clear that girls were more likely to engage with the character's inner experience, imagining how it would feel to be in that situation. Girls often used emotional phrases like *"If I were him/her"* or *"I can understand why"*, showing identification and emotional empathy. Boys, in contrast, tended to describe the character from an outside perspective, focusing more on what the characters did or how they viewed the characters than on how it felt to be in their place, suggesting a more observational or goal-oriented view.

This supports previous findings that females' narratives are more evaluative (Schulkind, 2012; Shima, 2015), indicating that they engaged with the story characters internally, while boys tend to provide more objective narratives rather than evaluative ones (Schulkind, 2012), from an observer's point of view.

4. CONCLUSION

The study found that while boys and girls scored similarly in visual recall, girls demonstrated deeper conceptual understanding. They gave longer, more reflective responses, frequently using emotional labels such as *"I feel sad..."*, *"I can understand why..."*, *"happy"*, *"afraid"*, *"cried"*, and



“If I were him/her...”, empathising with characters. Boys focused more on actions and offered shorter, simpler explanations, such as “Be brave” and “Help your friends”. Girls also visualised emotional moments, while boys depicted action scenes, often from an external viewpoint. Boys' responses were more male-centred, showing androcentric tendencies.

These findings suggest pop-up books are effective for EFL story comprehension, but boys may need additional support to engage with emotional and moral aspects. Future research could investigate the reasons behind these gender differences or compare pop-up books with other storytelling formats.

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