Investigating the Influence of Comprehension Questions on Readers' Gaze in Graphic Narratives

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Introduction:

Graphic narratives are written in a semi-guided format, which means the readers have more freedom to choose how they navigate through the information on the page. Approaches to reading change, however, when readers have a certain goal in mind or task they need to accomplish. By closely examining the dynamic shifts in readers' gaze patterns in response to narrative and detail comprehension questions, this study provides valuable insights into the intricate interplay between cognitive engagement and visual storytelling.

A distinct research gap has been identified, specifically in exploring diverse reading approaches influenced by assigned comprehension tasks, especially in academic settings such as classrooms. This study seeks to bridge this gap by shedding light on the multifaceted ways in which undergraduate candidates' approach and interpret comics, with a particular focus on the nuanced insights provided by their eye movements. By taking an analysis of the eye movements associated with different comprehension tasks, the study aims to map out the cognitive processes at play when individuals interact with graphic narratives.

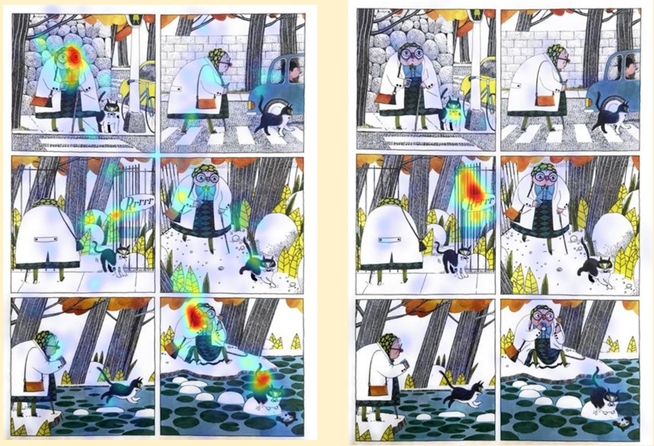
Methods:

Participants: Twenty Three Student Volunteers were recruited through emails for this study. Participants were randomly assigned to either the control group or the experimental group.

Stimuli: 4 pages of graphic narratives were selected for the study

Data Analysis:

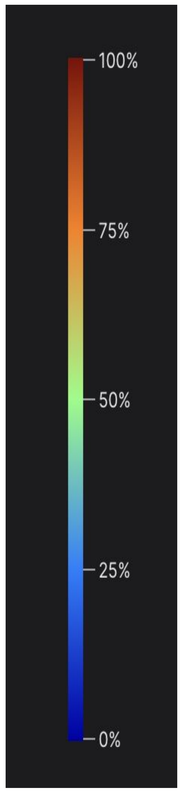
1. Eye-tracking data was analyzed to determine key eye movement metrics such as fixation duration, saccade amplitude, and number of fixations.
2. Participants' gaze patterns were compared between the control and experimental groups, as well as across different types of comprehension questions.
3. Statistical analysis were conducted using PupilCloud to assess differences in eye movement patterns and fixation locations between conditions and question type categories.

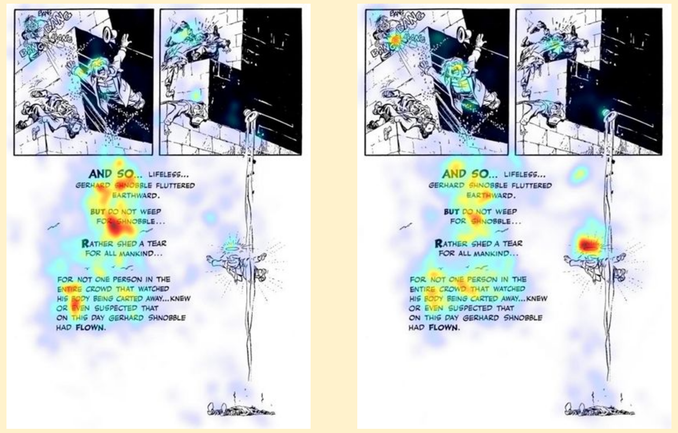


Stimulus 1 (Narrative Comprehension Question)
1. This graphic narrative shows the passing of what?

Control Group (n=11) - question after reading
Experiment Group (n = 12) - question before and after reading

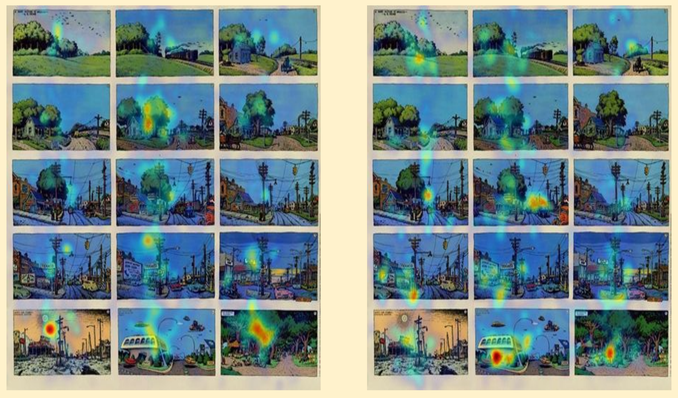
Stimulus 2 (Narrative Comprehension Question)
1. Lucy is the character in the blue dress. What point is she trying to make?



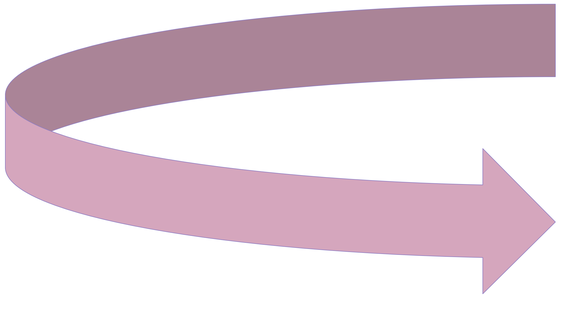


Stimulus 3 (Detail Comprehension Question)
1. What does Gerhard Shnobble turn into?

Control Group (n=11) - question after reading
Experiment Group (n = 12) - question before and after reading



Stimulus 4 (Detail Comprehension Question)
1. What sound does the gate make when it opens up?



Results and Discussion:

The results of the study provided quantitative and qualitative insights into how readers' gaze on comics changed when presented with different types of comprehension questions. Understanding how different types of questions influence gaze patterns can help educators and designers create more effective instructional comic materials, improving readers' content comprehension and engagement.

Sources

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