

Reading Through Gaming in Primary School

A Pilot Study

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Introduction

- Game-based learning (GBL) was found to enhance students' language acquisition and reading comprehension (Ghazy et al., 2021; Rakimahwati & Roza, 2020; Sinaga, 2018).
- However, there are limited studies on the identification of appropriate games for students across levels.
- Hatcher (2000) identified 5 variables that predict a unique book level variance. Our team has previously worked on adapting the Grading System to suit websites, we hope to extend our findings to boardgames.

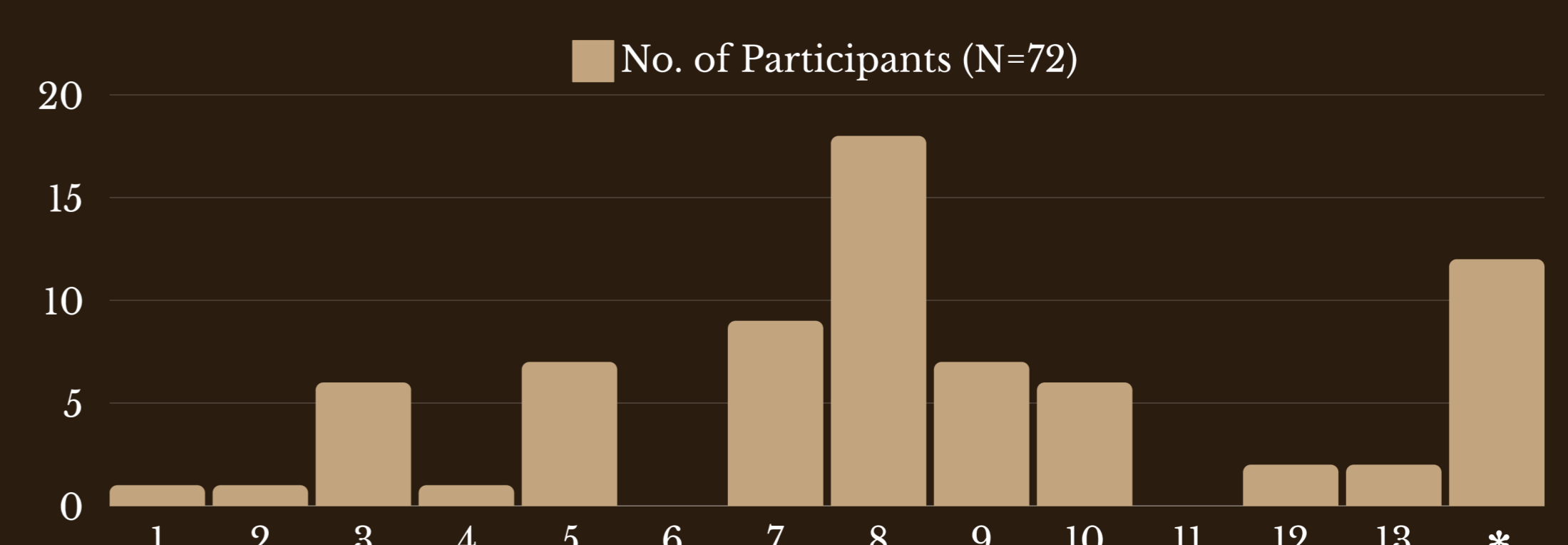
Aim

- Establish a positive correlation between participants' reading accuracy in gameplay and their reading levels.
- Identify variables that predict a boardgame's reading difficulty.
- Create a formula so that laymen can use it to grade boardgames and choose the appropriate game that balances entertainment and learning.

Methodology

- The sample included all students aged 5-8 in Years 1 to 3 at a UK primary school, excluding two mute students in Year 2. A total of 7 games were used and 114 running records were collected.
- The research took place in the school library. Participants were grouped in small groups of 2-6, matched by similar reading levels where possible. On average, each group would play a board game for 30 minutes.
- One researcher was the dedicated "teacher", other two researchers completed the running records, each taking half of the participants. The reading accuracy of the participants was collected.

Distribution of Reading Level

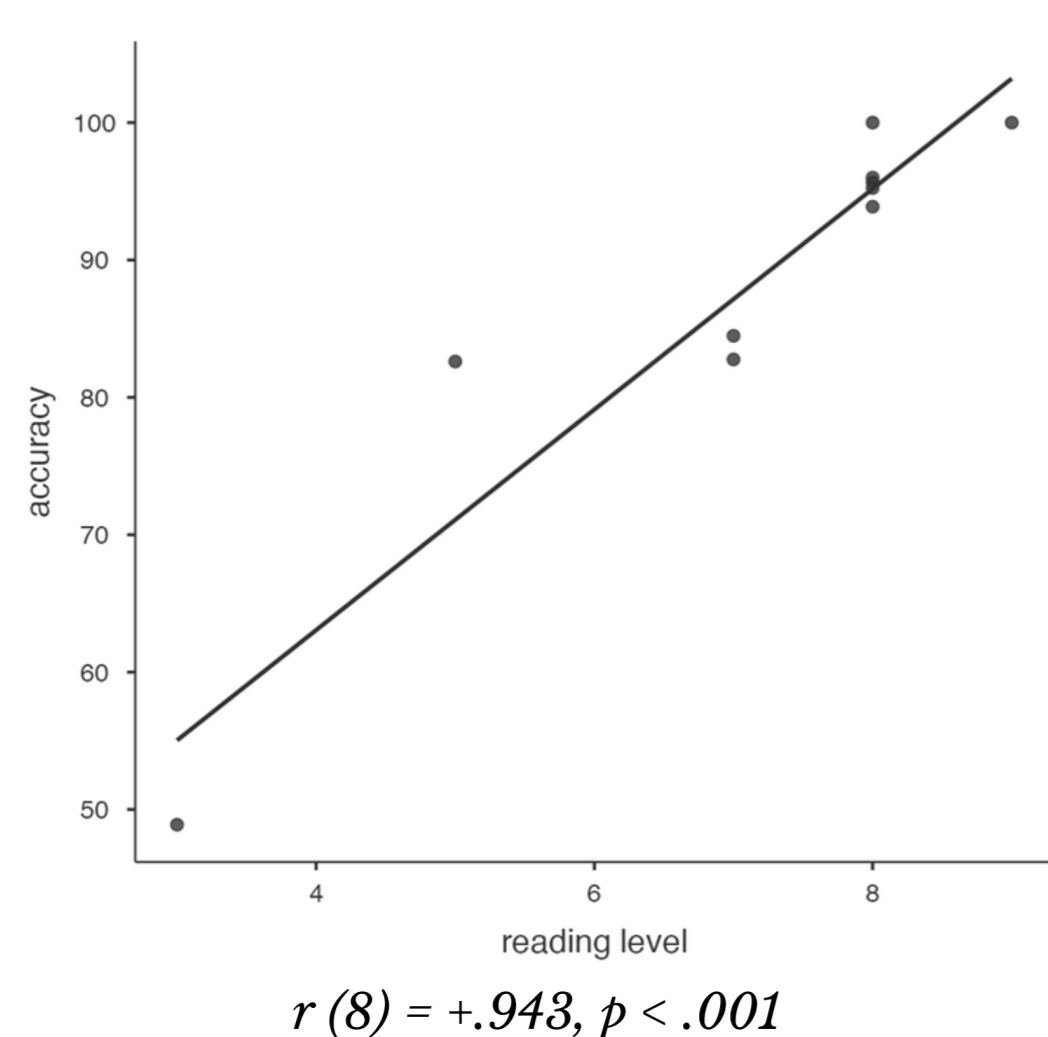


*The reading levels have to be double-checked with the school

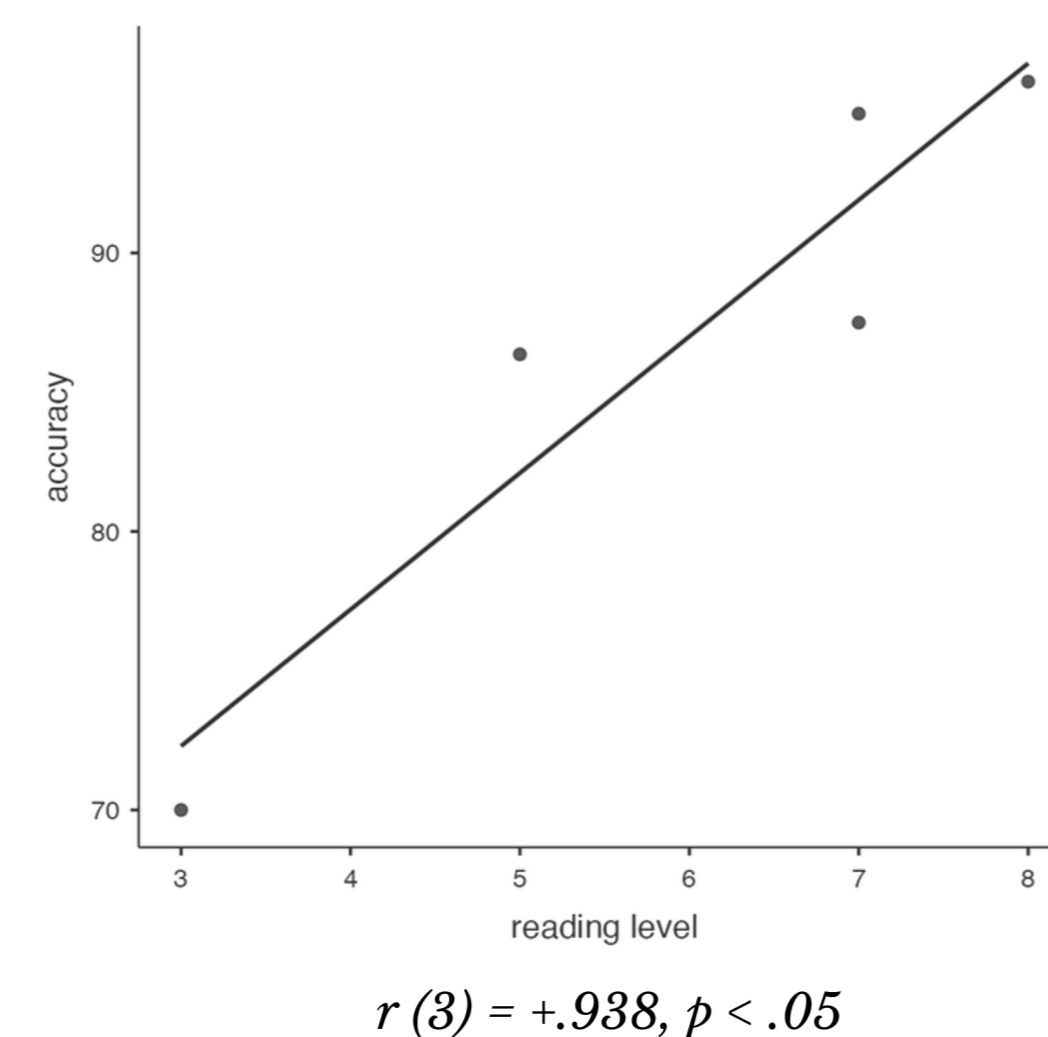
Results

A Pearson Correlation examined the relationship between the reading level of the participant and their reading accuracy. Reading accuracy is the total number of words read correctly divided by the total number of words read (Khor et al., 2014). A perfect correlation was observed in 5 Second Rule ($r(8) = +.943, p < .001$) and Junior Colour Brain ($r(3) = +.938, p < .05$). A very strong correlation was observed in Monopoly Junior - Level 1 ($r(13) = +.898, p < .001$). A strong correlation was observed in Monopoly Junior Peppa Pig ($r(13) = +.592, p < .05$). No statistically significant correlation was found in BrainBox: Animals ($r(15) = -.112, p = .668$), Unstable Unicorns for Kids ($r(13) = +.021, p = .940$) and Cluedo ($r(14) = +.307, p = .247$).

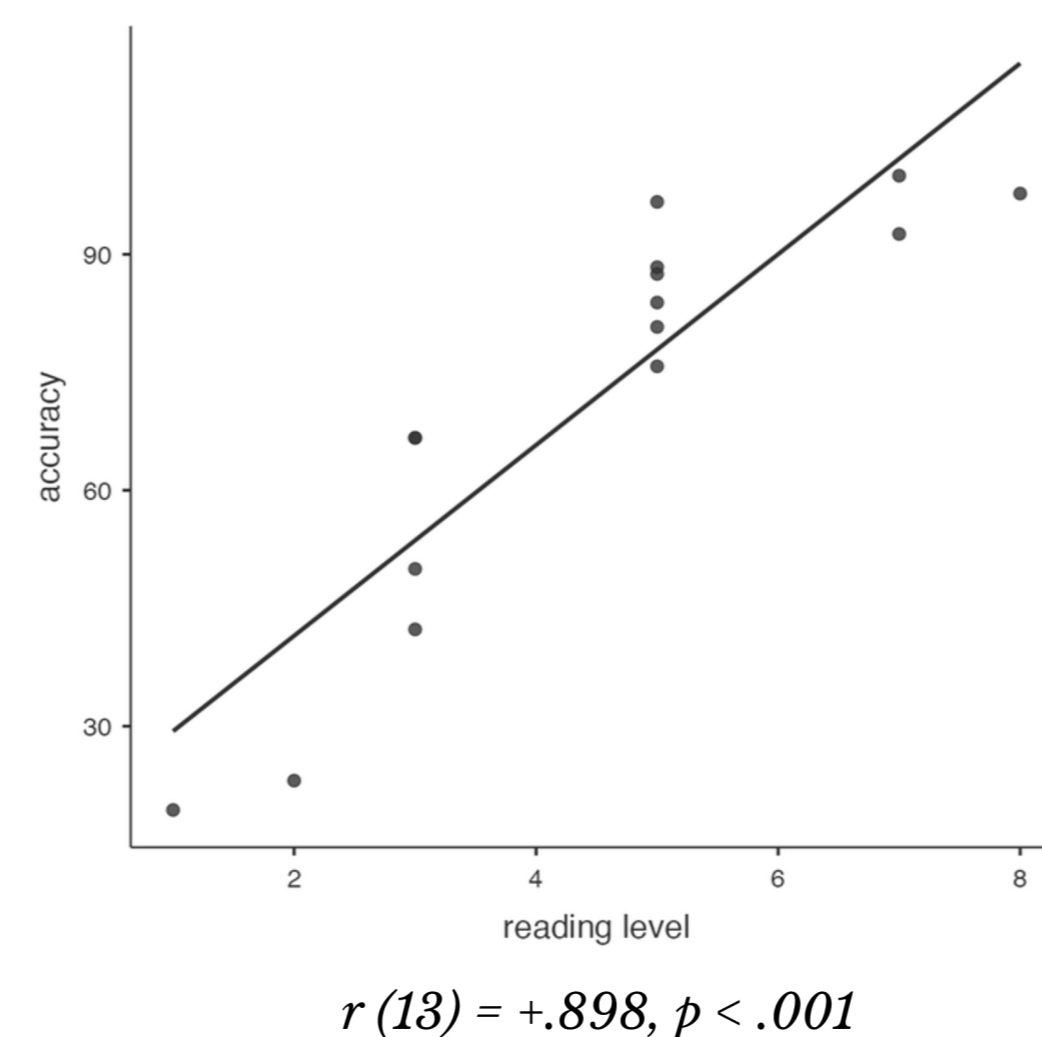
5 Second Rule



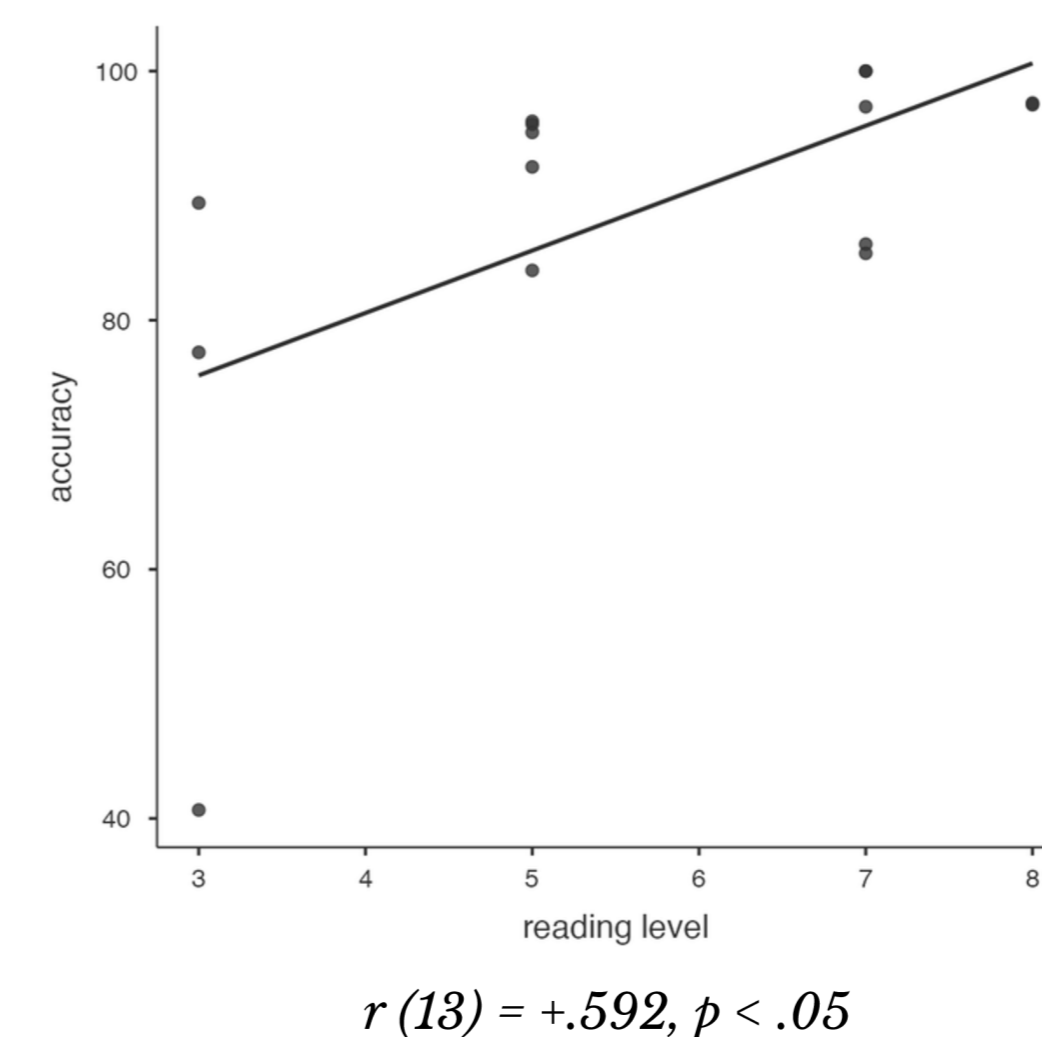
Junior Colour Brain



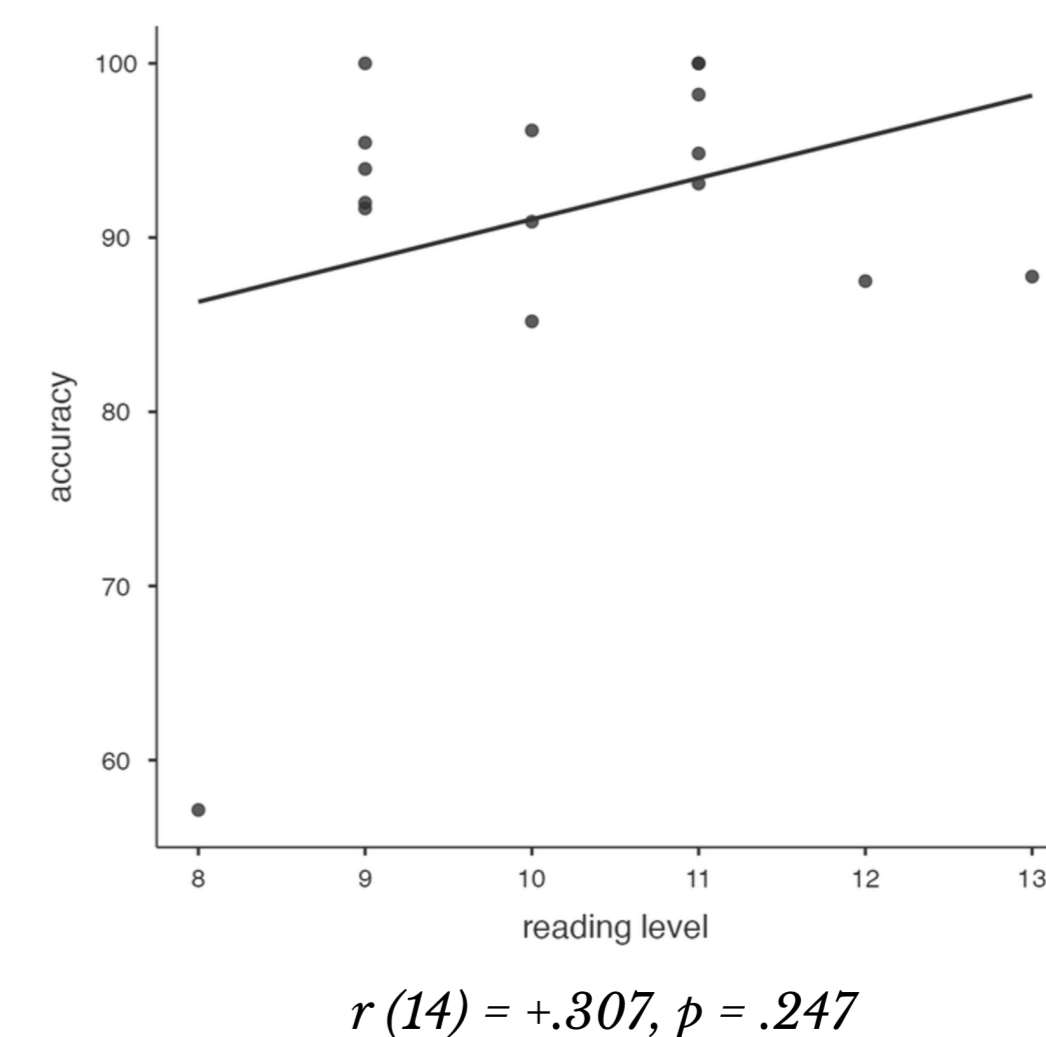
Monopoly Junior - Level 1



Monopoly Jr.: Peppa Pig Edition



Cluedo



*The scatterplot for Brainbox: Animals and Unstable Unicorns for Kids is not presented here

Discussion

We observed that games with strong positive correlation are more consistent in terms of the vocabulary difficulty each player will come across within and among gameplays. There are several factors that affect the reading process.

- Participants' keen enthusiasm for playing resulted in a rapid reading pace, leading to the missing of words or even entire sentences
- Other players frequently read out words for their peers, inadvertently providing hints.
- Participants' hesitation often resulted in mumbling, making it challenging to determine the accuracy.

It should be reminded that the sample size for a few games is exceptionally small after exclusion.

Limitation

- The representativeness of the study is limited. Convenience and quota sampling method were used; hence the sample is highly subjected to research biases.
- Participants were limited to a specific age group at a single primary school.
- The sample size is small, with each game having less than 20 samples after exclusion.
- The accuracy of the reading level provided might be inaccurate, as multiple versions of the reading scale were used in the school.

Other factors like player sequence, preference for games and the presence of researchers might also influence the performance of the participant.

Conclusion

Due to the study's limitation, it is too early to conclude the correlational relationship between reading level and reading accuracy. However, the pilot study highlighted that variations in reading levels affect players' reading accuracy during gameplay, indicating the potential for future research. When the sample size is sufficient, we will run a regression model to identify boardgame features that predicts its reading difficulty.

References

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