



# Augmented Reality (AR) Books and Reading Engagement of Child Readers



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Supervised by:

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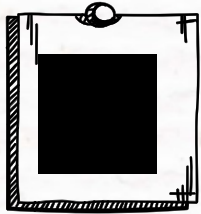




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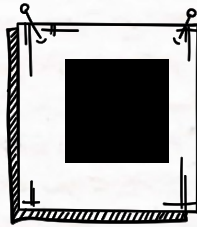


## Related work:



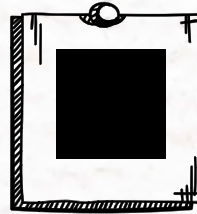
Cognition and  
listening skills

● (Yilmaz et al., 2017)



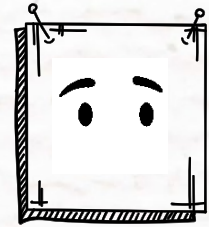
Reading  
comprehension

● (Danaei et al., 2020)



Reading  
motivation

● (Roumba & Nicolaidou, 2022)



Attention

● (Polyzou et al., 2022)





**Study1**

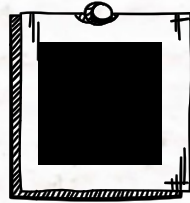
**Examining children's reading engagement with Augmented Reality books**



# Reading Engagement:

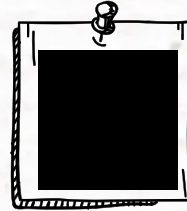
**01**

Behavioral engagement



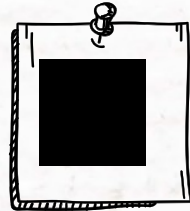
**03**

Affective engagement



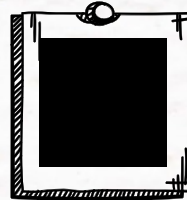
**02**

Cognitive engagement



**04**

Social engagement

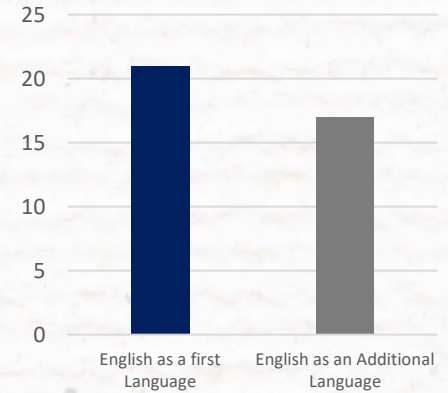
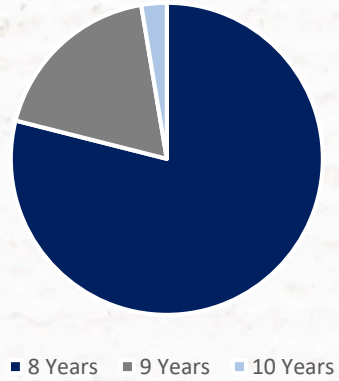
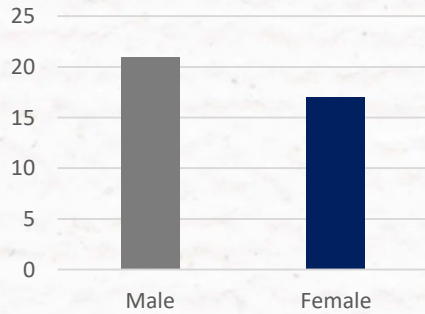


# The AR Storybook:



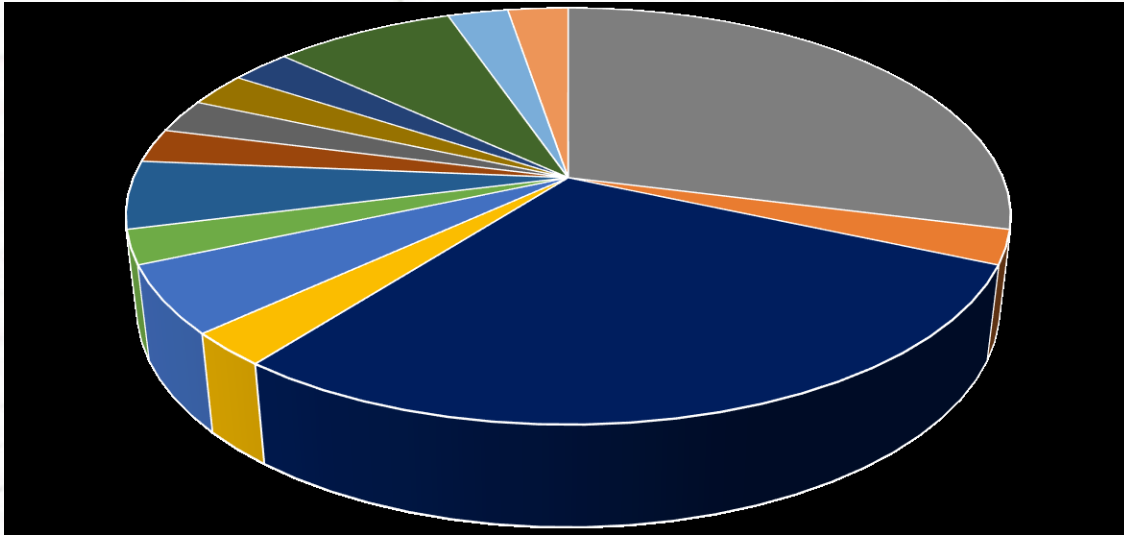
















## Details of sample:



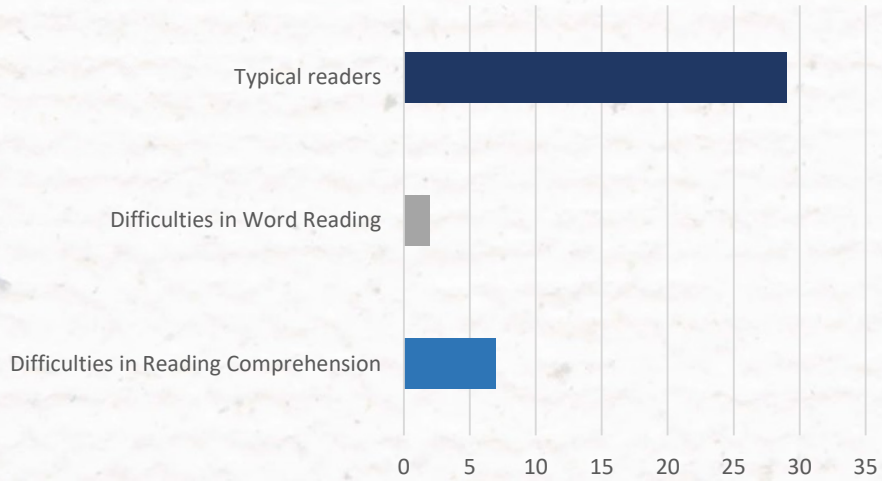


 Ethnicity

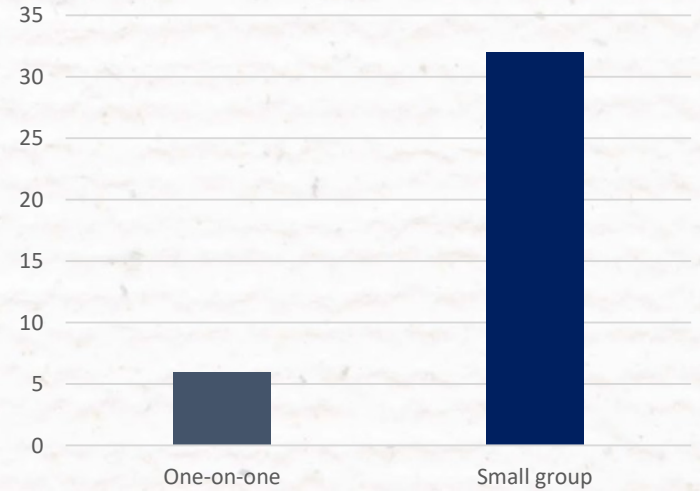


- |   |   |  |   |   |  |   |
|---|---|--|---|---|--|---|
|  England |  US      |  Scotland |  Italy |  Indonesia |  Tiwan  |  Poland  |
|  Egypt   |  Alpania |  China    |  India |  Spain     |  Africa |  Germany |

## Reading level



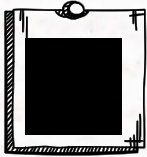
## Reading session



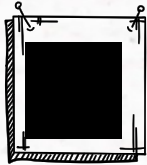


# Data collection methods:

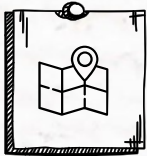
## Observation



Unstructured



Approximately 15m

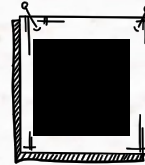


At the library

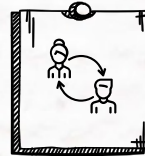
## Interview



Semi-structured



Approximately 15m



One-on-one and small group



## Data analysis process:

- (Braun & Clarke, 2006)
- Pre-registration: <https://osf.io/9q678>





## Behavioural engagement:

"If there is another book like this, I would read it. I would want to read it"

"If you got another one, I will go to the library and read it."

"I am going to be excited to read another one"

"I haven't got how to describe it is I think a little bit waste of time"



## Cognitive engagement:

"It's more understanding because the AR pictures make more sense than the real pictures on the book"

"the pictures when they come to life, they help me stay in track"

"because it is 3D so I can actually see what's going on and how it actually happens"

"It's kind of like reading the same text twice"; "I do understand the text. So, I don't really need the picture"



## Cognitive engagement:

"But this book a lot easier to imagine in your head because it has the movement and sounds"

"Here you can imagine it in your head and seeing it".

"When I read a paper book, I imagine it, but this showed how it really would be like, so it helped me to understand the story more as what is going on"

"I like to imagine the pictures in my head, even if the book has pictures, I imagined how they move, but this book showed me how the author really, really thought how the book would"



## Affective engagement:

"Yeah. It feels like **amazing** mixing with happiness into like one"

"A bit different than normal book, different in a **fun** way, not different in difficult way"

"Quite **impressive!** I thought of 3D you need to wear glasses"

"Makes you feel a bit **weird**, but this is all part of the fun".





## Affective/cognitive engagement:

"Words are kind of confusing. So, if every book has this, it would be a lot easier to help you understand what's going on and so it just it helps a lot"

"I like about it is that when you don't understand it, it shows you so you understand it"

"If you don't use like the app to make the things pop up, it's kind of difficult book"

"Find it easier to learn and understand stories"



## Social engagement:

"We like to share thoughts and then we share thoughts about what's funny and why that's funny, and then we laugh about it"

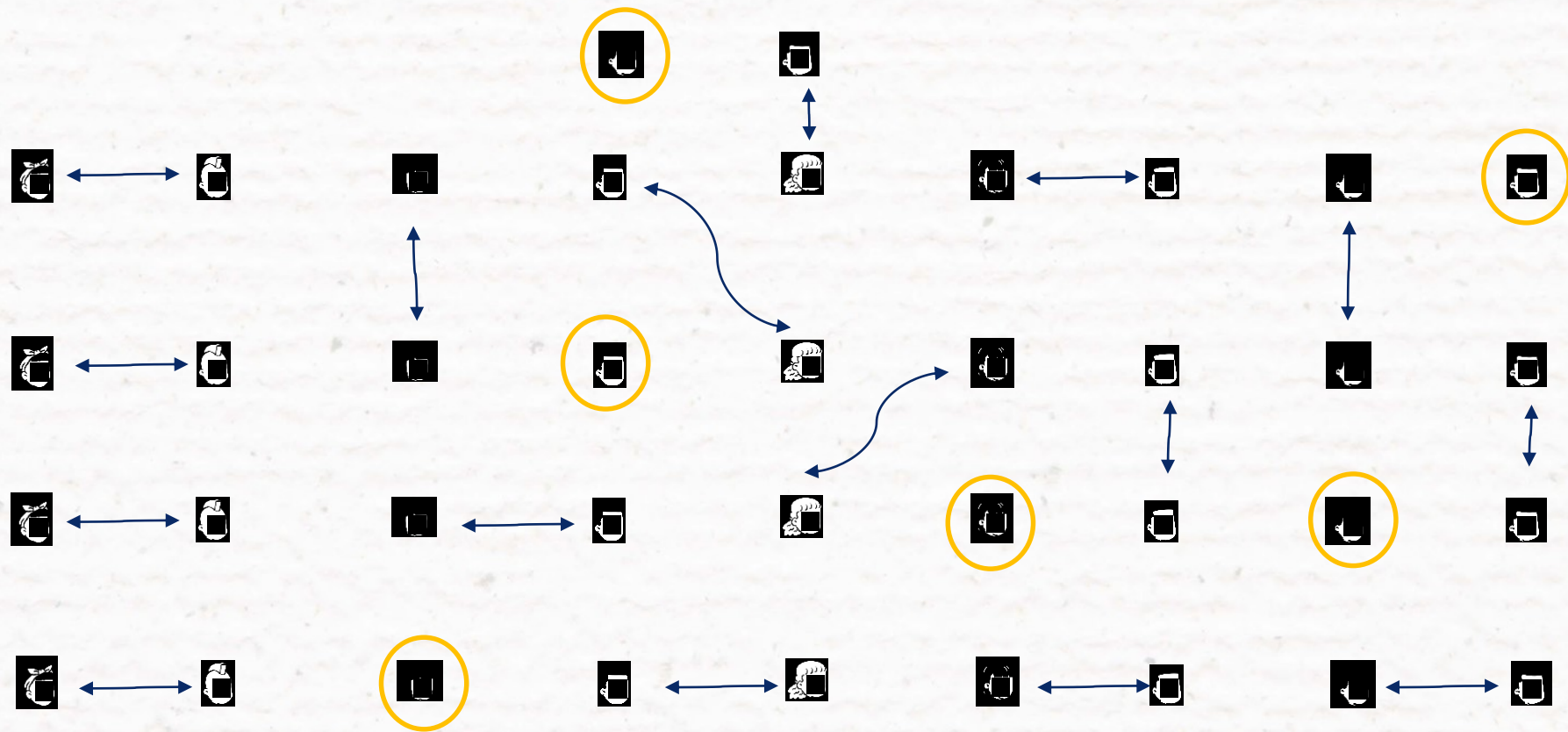
"Reading with my own wouldn't let to show all the cool pictures to someone, and it's just not as fun of experience"

"You can talk to other people about it"

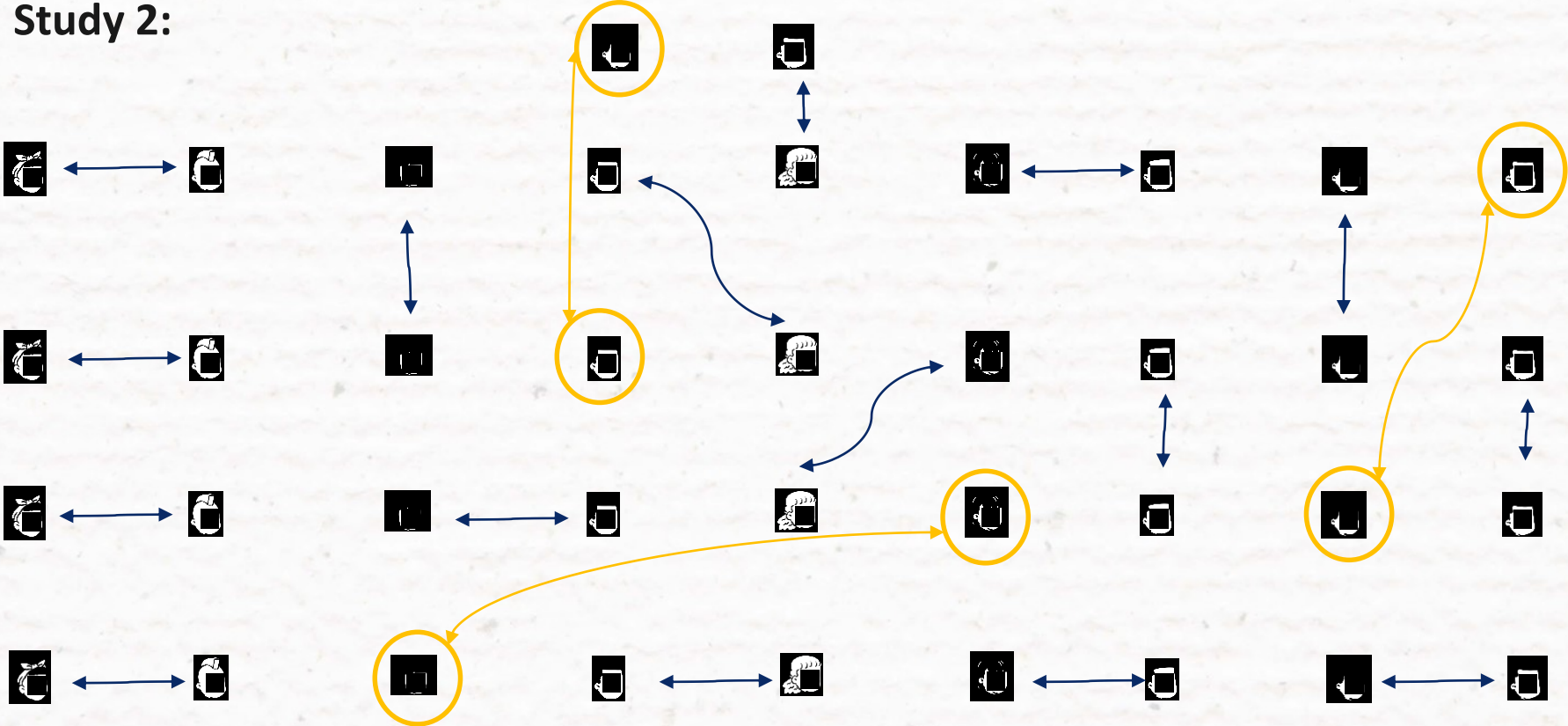
"I enjoy more reading with not reading with people because I can go with my own pace. Meaning I do not have to wait, or they have to wait for me"



# Study 1:



**Study 2:**



\*Level of confidence: reading and discussing books.





## Study 2

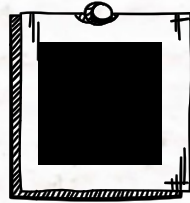
**Shared book reading: Comparing Augmented Reality (AR) and non-AR book reading among children with below-average reading skills.**



# Reading Engagement:

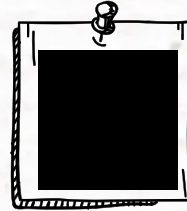
**01**

Behavioral engagement



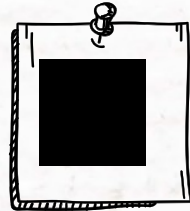
**03**

Affective engagement



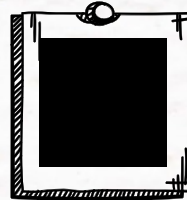
**02**

Cognitive engagement



**04**

Social engagement



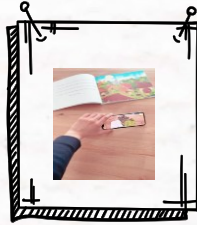


# Data collection methods:



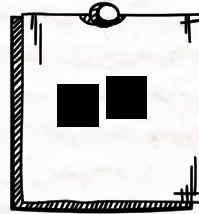
## Part 1

- Reading the book together
- Conversation



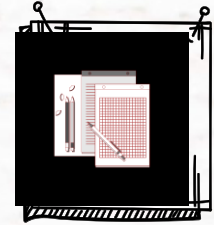
## Part 2

- Reading the book together
- Conversation



## Part 3

- Talking about reading together



## Part 4

- Survey









# References:

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# Thanks!



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🌐 <https://blogs.ed.ac.uk/literacylab/current-projects/ar-books/>

