

Getting it Write: Investigating the Potential of Digital Pens to Improve Handwriting Skills

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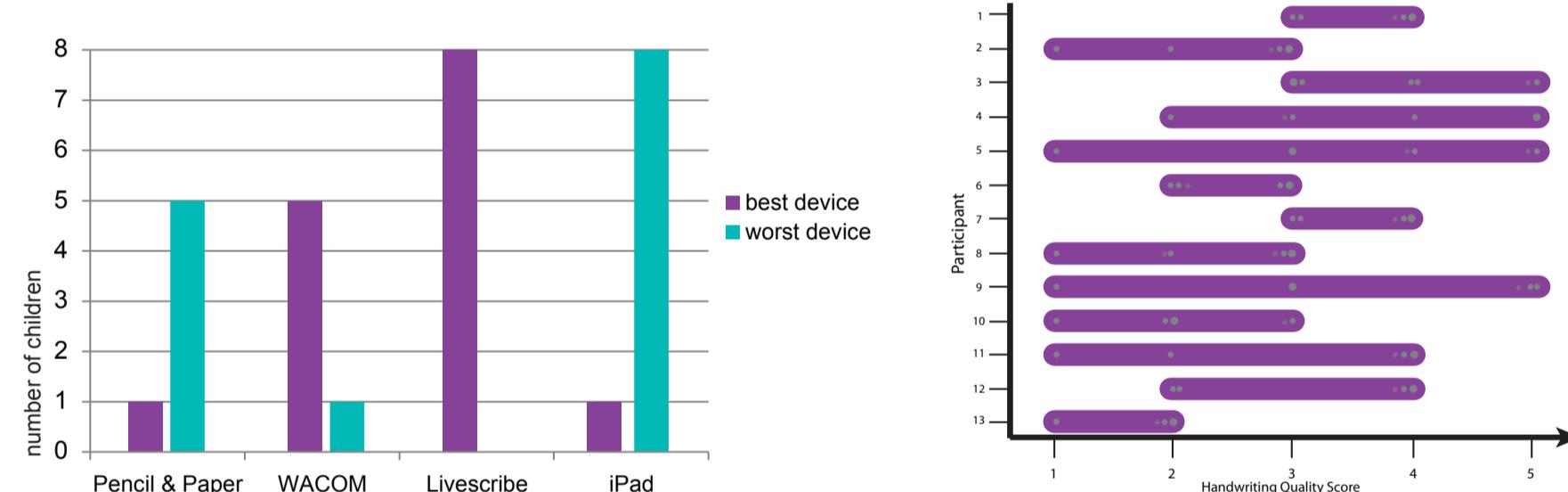
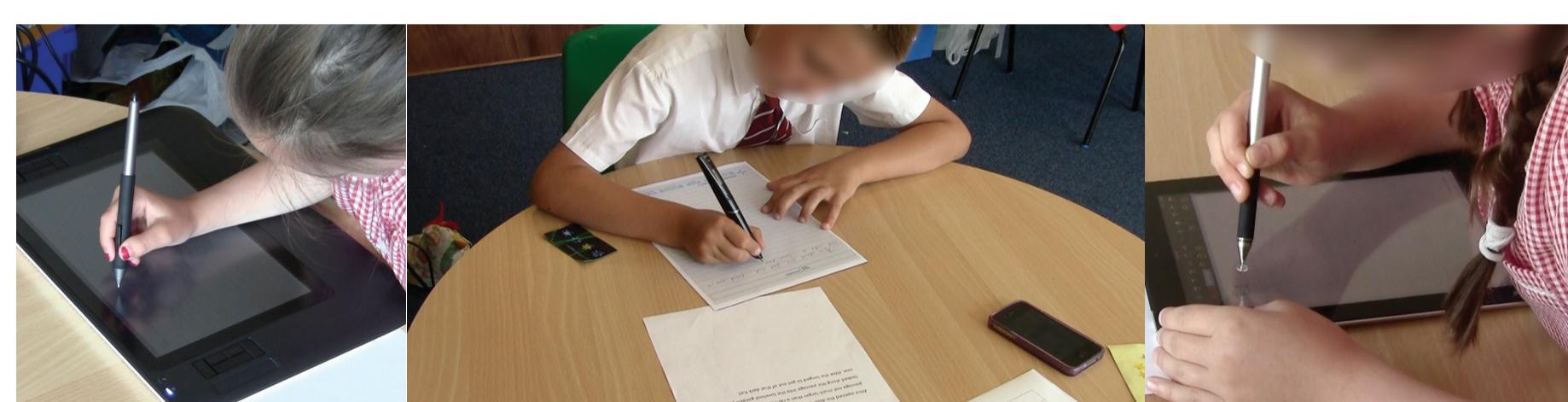
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Background

Learning how to write is an essential skill that dominates the early years of education. Research has shown that there are educational benefits of learning to write using traditional methods [1,3,4].

However, as technology has developed, so too have schools and classroom activities are often facilitated by technology [2,5]. It is likely that in the near future, young children will learn how to write using digital pen and paper, or tablet devices.



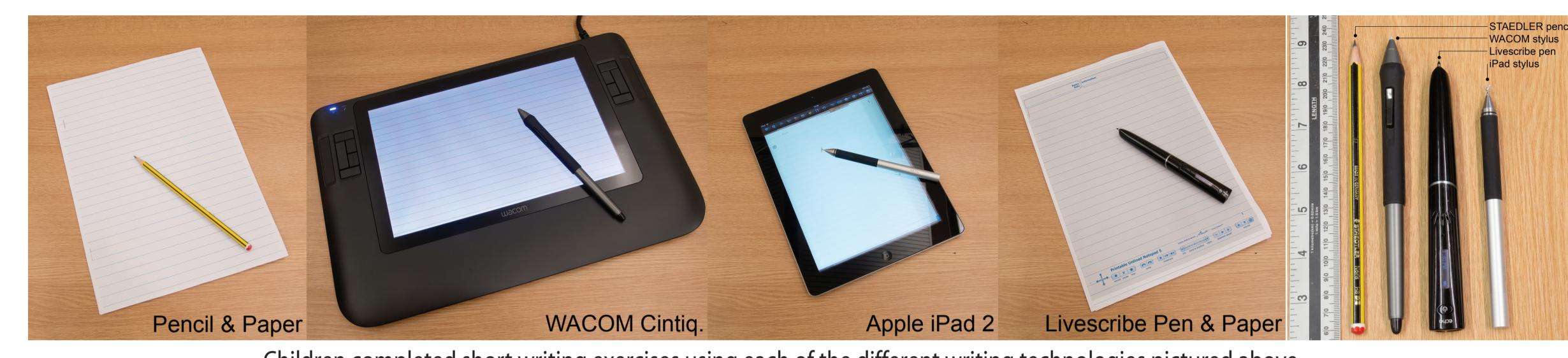
Children indicated which device they liked BEST or LEAST (Left). Children reported ratings for each device: how their writing score varied created a range (Right)

Research Questions

Technology is increasingly found in today's classrooms yet handwriting is still taught using regular pencil and paper. In order to explore the potential of digital writing tools to augment the handwriting process the following questions should be addressed

R1. How do digital writing tools influence children's handwriting experience and quality?

R2. What kind of feedback may be beneficial to writers and how it can be integrated into the handwriting technology?

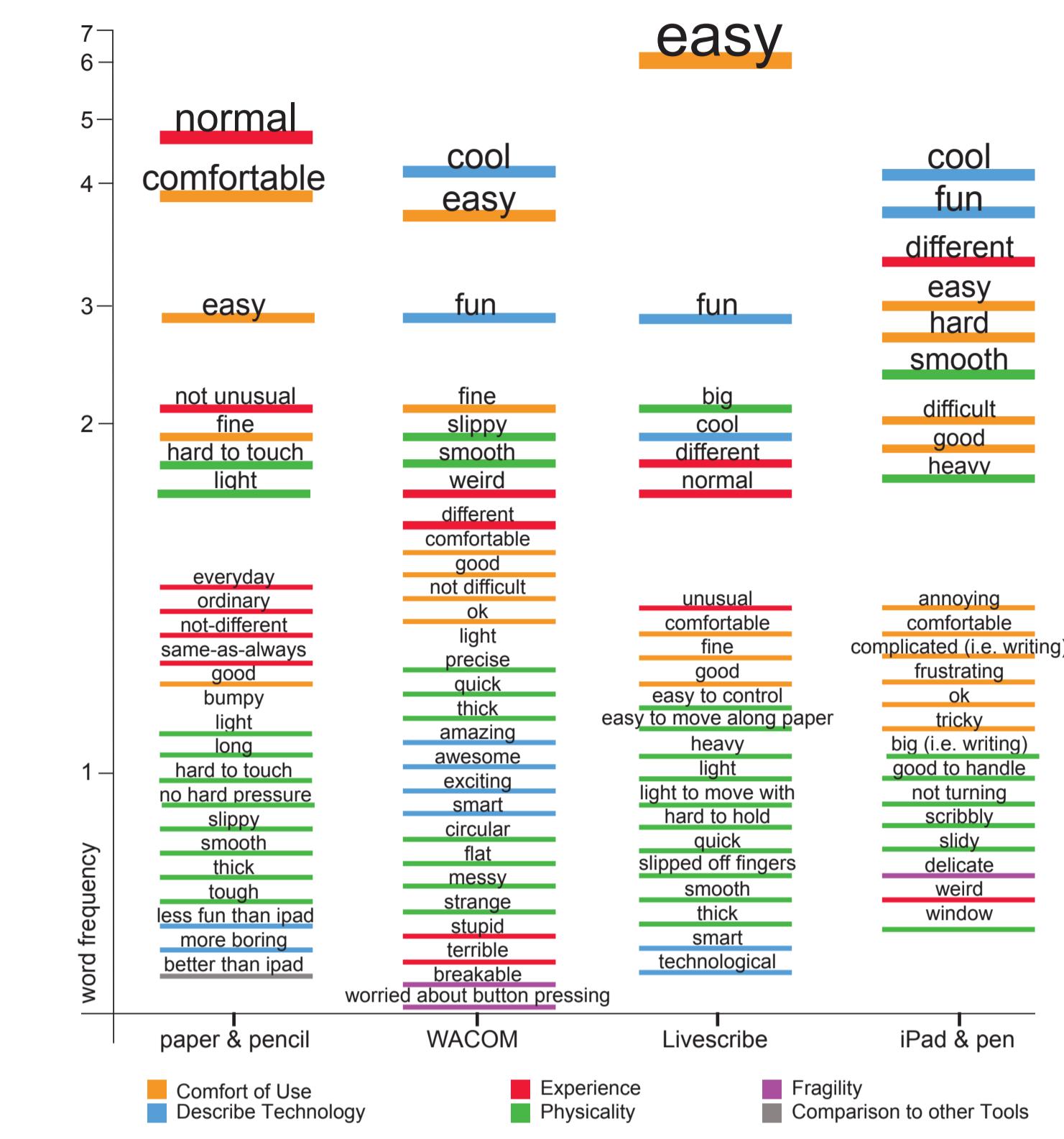


Children completed short writing exercises using each of the different writing technologies pictured above

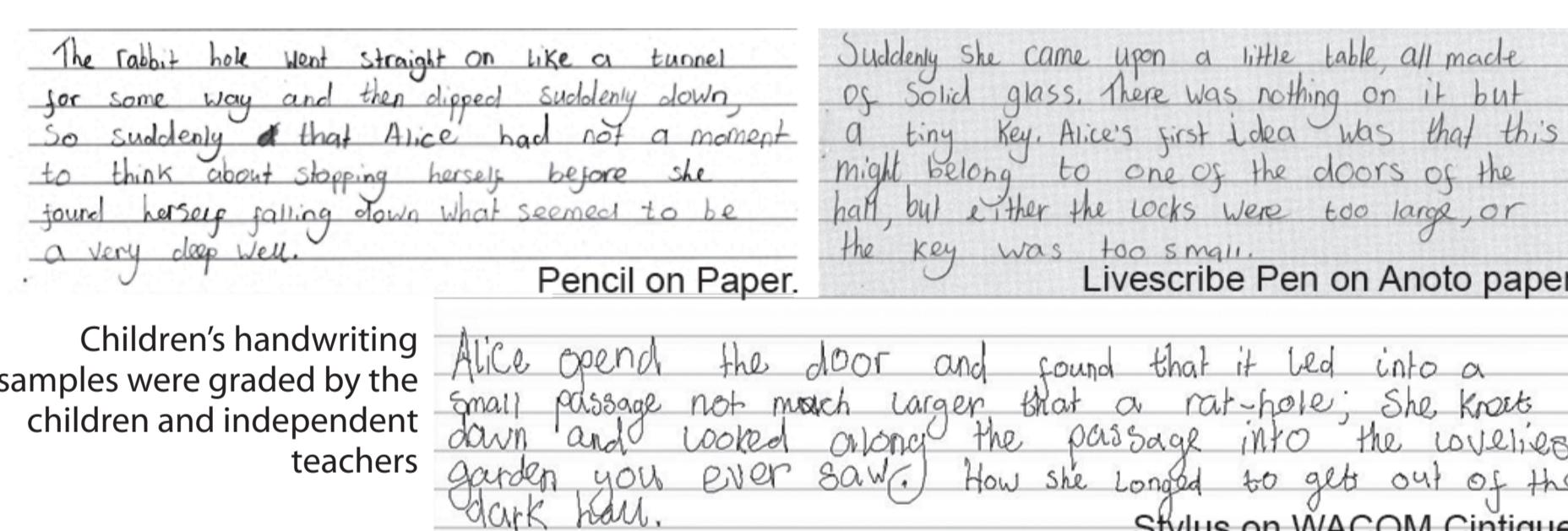
Children and Digital Pen Technology

To establish how digital writing tools affect children's handwriting we recently ran a study at a local school. The children aged 9 or 10, completed short handwriting exercises using the devices above.

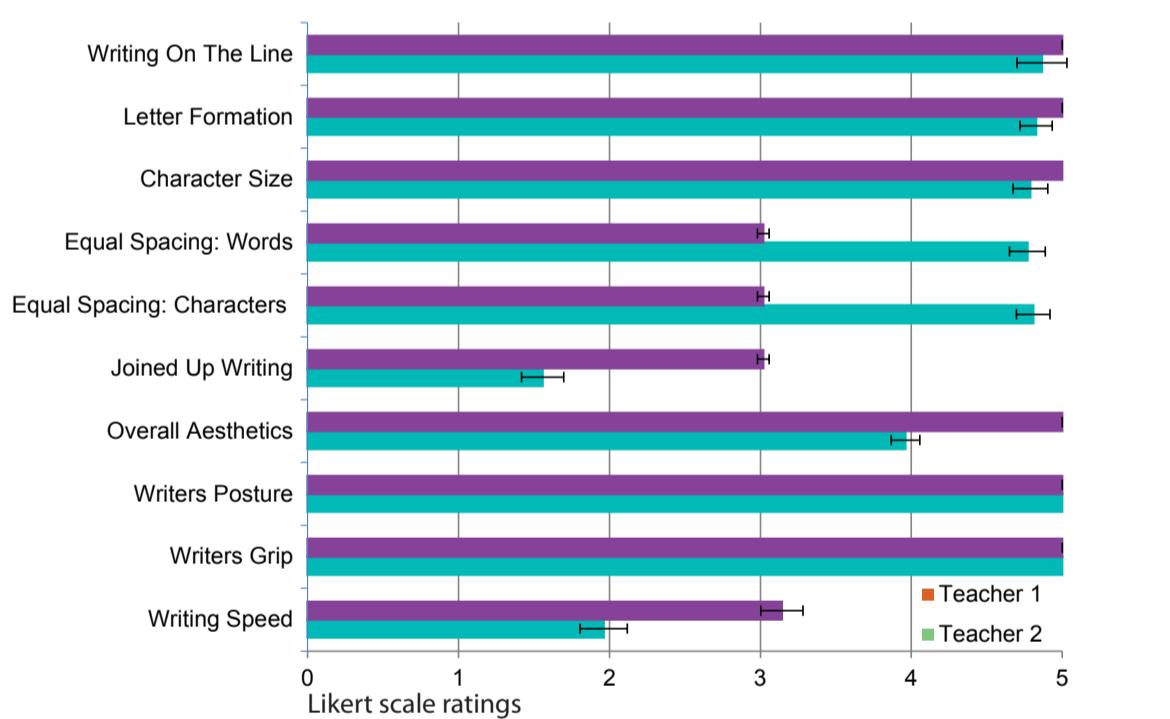
The results show how children characterised their writing experience with each device (right), how the different writing devices influenced children's handwriting quality and which writing tools children preferred (both left). Additionally, teachers rated the importance of different influential factors.



Children's provided 3 words to characterise their experience with each writing device. These were then grouped into categories (above)



Children's handwriting samples were graded by the children and independent teachers



Teachers rated different features of handwriting in terms of importance (above)

Future Work: When, Why, What & How?

Future research will look more closely at how the handwriting process can incorporate digital technology to provide guidance, feedback and encouragement to writers.

Careful consideration and testing will be given to features such as when to give feedback, why give feedback, what to give as feedback and how to deliver this feedback.

