

Talking like a designer: How can recall in Design & Technology be scaffolded?

Our school context and my rationale

Oracy is important in our school. We want our children to build future skills, confidence and an ability to question things through better talk.

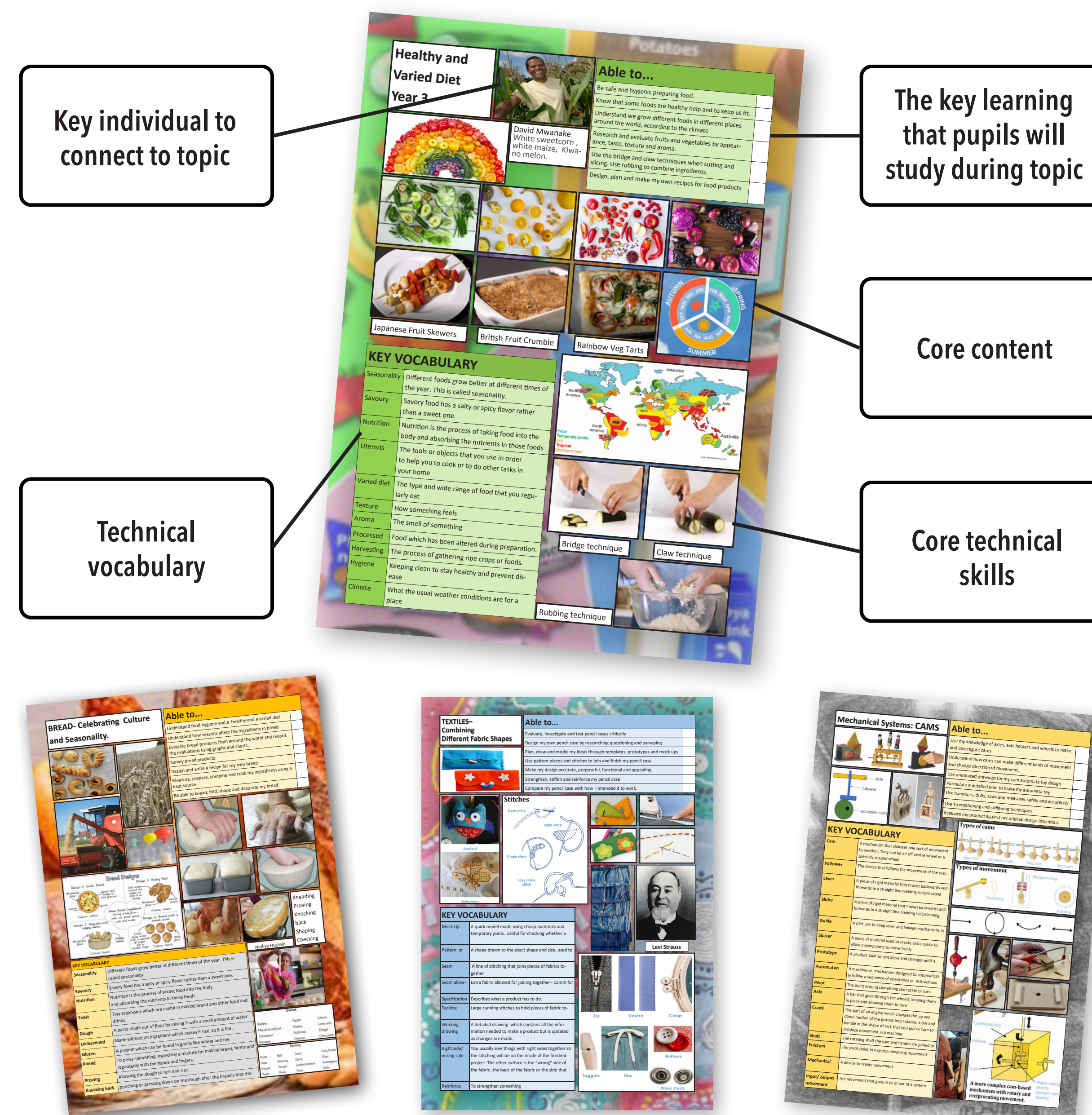
In Design and Technology, we want our pupils (and by default, our staff) to have:

- a deep understanding of key concepts,
- a schema of the learning across the Key Stage.

Prior to this project, I found evidence that our pupils struggle to recall their learning in Design and Technology. Our pupils lack fluency in explaining the key concepts, processes and skills they have covered.

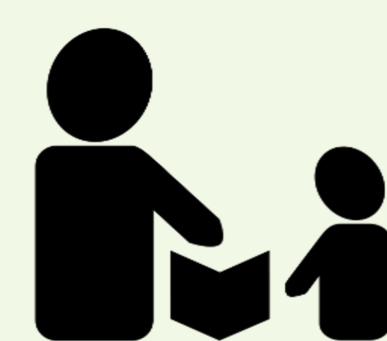
To improve this, I believe they need scaffolds to refer to and a fluent recall and understanding of vocabulary from their topics.

Although our scheme sets out topics for us to cover, it does not precisely state learning through the topics and therefore links to previous learning and progression across the key stage are weak.



Aims

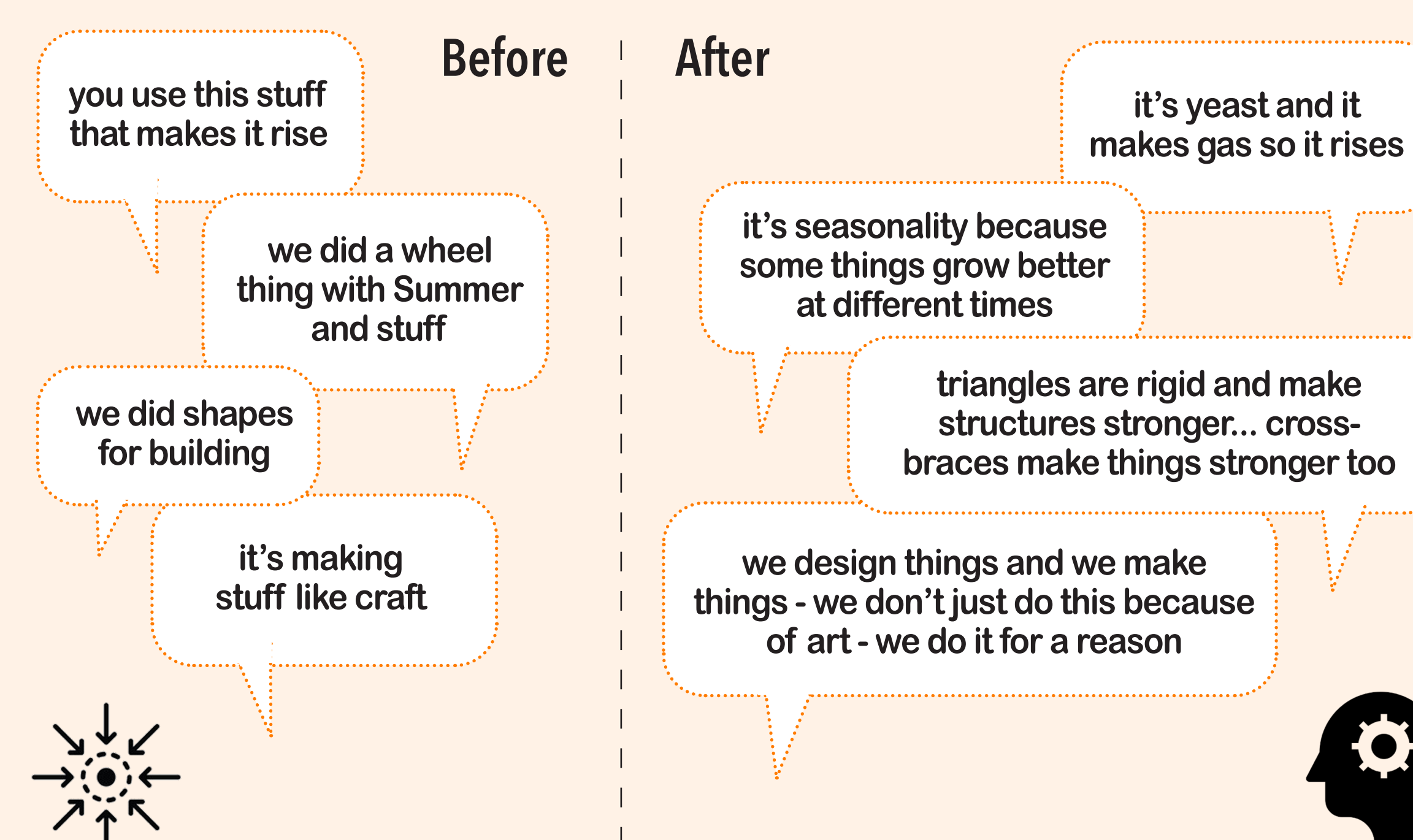
This project aims to help our pupils to articulate, recall, connect and explain previous learning by clearly defining vocabulary and powerful knowledge in Design and Technology through the school.



My actions

- Define key declarative knowledge.
- Provide definitions of vocabulary and cross reference across the curriculum.
- Clarify technical skills.
- Choose key events and individuals to link to topics.

Impact



Outcome

For students to succeed, they must have a foundation of factual knowledge, understand those facts in the context of a conceptual framework and organise knowledge in order to facilitate retrieval and application¹.

To meet the needs of our pupils, I produced knowledge organisers (KO). These set out the important, useful and powerful knowledge on a topic. Powerful knowledge, as defined by Young², is specialised rather than general knowledge.

I had seen the impact of teaching of key vocabulary have on our pupils' confidence and clarity when explaining concepts in science, and how knowledge organisers enable pupils to confidently refer back to previous learning with the use of visual prompts and short explanations.

By using KOs to make the knowledge explicit, I wanted to give pupils a constant point of reference - a 'level playing field' of knowledge which would be available even if they had missed lessons.

For our staff, the KOs would support and direct teaching more concisely, ensuring consistency and cohesion.

For teachers, the construction and regular use of knowledge organisers can also develop subject knowledge. The process of creating knowledge organisers in a specific subject then leads to a consideration of pedagogical content knowledge, the integration of subject expertise and an understanding of how that subject should be taught³. Knowledge organisers have been used to aid regular retrieval practice in our school. This is important, because active retrieval aids later retention⁴. With careful design and use of knowledge organisers, we can construct schemas, complex architectures of knowledge stored in long-term memory, with a view to automating their use⁵.

References

- [1] How People Learn- Brain, Mind, Experience and School- John D. Bransford, Ann L. Brown, and Rodney R. Cocking 2000
- [2] On the Powers of Powerful Knowledge- Michael Young, Johan Muller 2013
- [3] Content Knowledge for Teaching: What Makes it Special?- Ball, Deborah Loewenberg; Thames, Mark Hoover; Phelps, Geoffrey 2008
- [4] Ten Benefits of Testing and Their Applications to Educational Practice- Henry Roediger, Adam L. Putnam, Megan A. Sumeracki
- [5] Cognitive Load Theory: Instructional Implications of the Interaction between Information Structures and Cognitive Architecture- Fred Paas, Alexander Renki, John Sweller