

# **Improving Children's Understanding of Formalisms through Interacting with Multimedia**

**Abstract.**













## **Theoretical framework – Cognitive Interactivity**



## **Operationalising cognitive offloading in relation to the learning process**



Figure 2.

**Designing the software prototype: Implementing our ideas about computational offloading**

## **Module 1: PondWorld Simulation**

## **Module 2 IntroWeb**

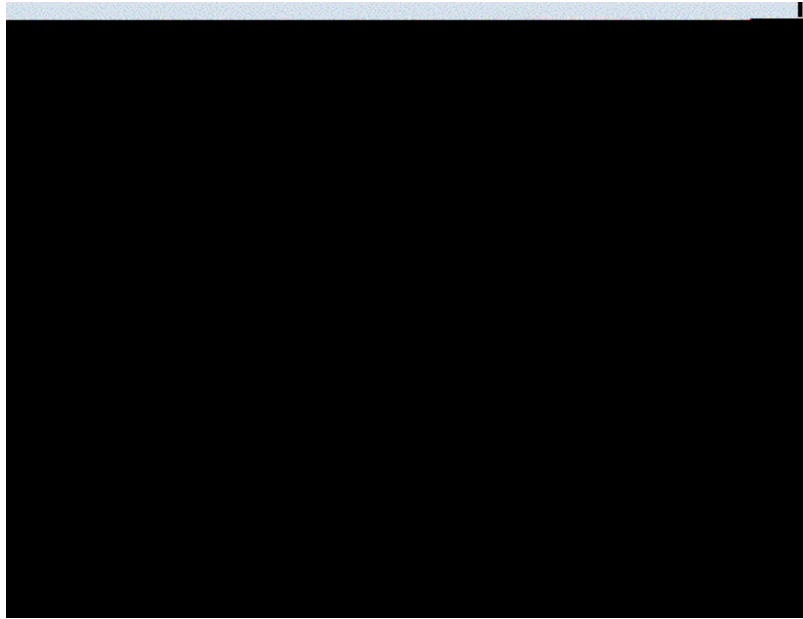


## Module 3: LinkWeb



Figure 6.





**Figure 7**



<b>Module</b>	<b>Computational offloading</b>	<b>Form of MM interactivity</b>	<b>Problem Solving Activity</b>	<b>Learning Process</b>

**Pre- and post-tests to assess learning**





## **Quantitative analysis of pre- and post-test**


## **Qualitative analysis of learning and reasoning processes**

### **Interacting with PondWorld: the 'aha' learning experience**



**LinkWeb**





**Children who did not perform well in both pre and post tests**

## **Discussion**



## **Summary**

## **Acknowledgements**

## References



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