

# CONSIDERATIONS FOR USING ICT WITH STUDENTS WITH SPECIAL NEEDS

Clark Burt  
[www.clarkburt.com](http://www.clarkburt.com)  
twitter @ClarkBurt

Supervisors:  
Prof. Lorraine Graham & Dr. Thoung Hoang of  
The University of Melbourne  
Dr. John Munro of ACU

## RESEARCH DESIGN

### Each trial:

**6 weeks, 4 new words  
each week taught either  
using traditional or  
games-based methods  
twice a week for 30  
minutes each session**

### 2017

Initial teacher interview and training and pre-testing of students' general vocabulary

Six-week Pilot trial where students are:

1. pre-tested for the 24 new words
2. taught four new words each week
3. post-tested for the 24 words

The six-week intervention program can then be repeated with 24 new words

At the end of 2017, student group interviews, teacher follow-up interviews, and post-testing of general vocabulary

## TRADITIONAL INSTRUCTION

- Students with an ID have know fewer words and thus reading is challenging for them, they read less
- Traditional vocabulary instruction uses definitions, synonyms, and memorization (Nagy, 1988).
- Teachers often rely on traditional instruction methods such as having students look up definitions in a dictionary, copy definitions from a board, and memorizing definitions.

## EPISODIC MEMORY

- Semantic memory is comprehension, general ideas and knowledge in an abstract way while Episodic memory is sensation, events, and episodes (Tulving, 1983, p. 35).
- Typically developing children aged 7 through 11 are in the Concrete Operational Stage
- Recent technological advancements and research in Games-Based Learning could be better than traditional vocabulary instruction

## GAMES-BASED LEARNING

- Games, be them digital or non-digital, are used as a resource similar to books, worksheets, or concrete manipulatives in games-based learning.
- Games are rule based, responsive, challenging, cumulative, and emotionally inviting
- Games-based learning can also incorporate characteristics of games like competition, scoring, teams and collaboration, and rewards.

## DUAL CODING THEORY

- Games allow for an alternate, multisensory, and repetitive way to teach a topic.
- Use of video and multimedia supported by Dual Coding Theory (Paivio)

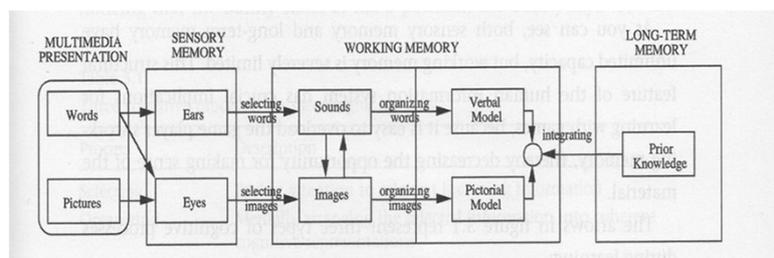


Figure: A cognitive theory of multimedia learning (Mayer, 2014 p. 51).

HOWEVER...

- ICT may not be the solution ☹️
- Students with special needs may not be capable of working without a teacher leading
- Teacher-as-a-facilitator role not appropriate for severe disabilities

EPISODIC & CONCRETE LEARNING, TEACHER-LED

- Despite students today being confident and capable with ICT, they may not be able to understand how to use it as a learning tool
- Teachers *do* need to provide tangible and manipulative activities, even in vocabulary learning, but cannot just leave it to students to learn it incidentally

## REFERENCES

- Jitendra, A. K., Edwards, L. L., Sacks, G., & Jacobson, L. A. (2004). What research says about vocabulary instruction for students with learning disabilities. *Exceptional Children*, 70(3), 299-322.
- Kuder, S. J. (2017). Vocabulary Instruction for Secondary Students With Reading Disabilities: An Updated Research Review. *Learning Disability Quarterly*, 1, pp. 1 – 10.
- Mayer, R. E. (2014). *Computer games for learning: An evidence-based approach*. MIT Press.
- Nagy, W. E. (1988). *Teaching vocabulary to improve reading comprehension*. Urbana, IL: National Council of Teachers of English.
- Tulving, E. (1983). *Elements of Episodic Memory*. Oxford, England: Oxford University Press.

clarkburt@gmail.com      www.clarkburt.com

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**Studies in Exceptional Learning and Gifted Learning**

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✍️ Clark

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