Games supporting special needs

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If you have two minutes, please fill out my anonymous teaching vocabulary survey at:
www.selage.org

- This session will present research findings on the use of Games and ICT to teach vocabulary to students with an intellectual disability.
- Students with additional needs including those having autism, ADHD, down syndrome, and cognitive delays need extra consideration in lesson planning.
- In this session Clark argues that use of digital technologies and games can provide tangible experiences individually tailored to a child's specific needs

This session

- Common Terms
- Developmental Disabilities
- My Vocabulary Research
- The Institute of Play
- Curriculum Levels A-D and ABLES
- Adapting the curriculum across levels/bands
- Future of teaching: Robots!

Common Terms

- Disability
  - reduced cognitive capacity, which has a global impact on learning and daily functioning
  - the difficulty continues to exist, despite appropriate instruction and intervention
- Difficulty
  - Specific Learning Difficulty (SLD) - significant difficulty in one academic area while coping well, or even excelling, in other areas
  - e.g. dyslexia

https://dsf.net.au/what-are-learning-disabilities/
http://www.education.act.gov.au/__data/assets/pdf_file/0020/714332/Learning-Difficulties-Factsheet-1.pdf

Common Terms

- Accommodation
  - Called 'adjustments' in the Australian Curriculum
  - Intended to reduce the effects of a disability
- Differentiation
  - An overall approach to planning, teaching, and managing that takes into account individual student needs.
  - Do this for all students – teaching in a way that everyone in your class can learn and show their learning

Hyde, M. B. (2014). Understanding diversity, inclusion and engagement. *Diversity, Inclusion and Engagement*

Common Terms

- Literacy

  The ability to read, write, speak, and **interact** with others and derive meaning in the **culture**

  Hyde, M. B. (2014). Understanding diversity, inclusion and engagement. *Diversity, Inclusion and Engagement*

- Numeracy

  The **quantitative data** (money, distance, mapping & directions) we encounter on a **daily** basis

  (Crowe, 2010)

Kahoot!

- https://play.kahoot.it/#/?quizId=7dc275d0-fc0a-4fd4-842c-5393676c338f&token=26bdd2e3-85c6-4a02-b8ed-351e2e03473a&user=secondaryburt

Kahoot.it

ADHD

- Two basic areas:
  - Inattention
  - Hyperactivity/ Impulsivity
- Clear evidence that symptoms interfere with/ reduce quality of social and/or school interaction/achievement
- Positive Traits:
  - Creativity and intuition
  - Energy
  - Big picture people
  - Fast thinking
  - Problem solvers

(Every Day With ADHD, 2015) & (Shire, 2017)

But, is it ADHD?

- Trauma can look like
  - Disruptive
  - Inattentive
  - Impulsive
  - Poor social interaction
  - Low academic scores
- However…
  - Treatment is very different for students diagnosed with trauma
  - Usually difficulty forming attachments with others, including the teacher

Down syndrome

Down Syndrome is a genetic disorder caused when abnormal cell division results in extra genetic material from chromosome 21. This means people with Down Syndrome have 47 chromosomes instead of 46. Extra chromosomes have an effect on how the brain and body develops.

The rate of Australian babies born with Down Syndrome is approximately 1:1,100. (This is lower than the worldwide rate of around 1 in 700 because of high termination rates in Australia)

Physical Development of children with Down Syndrome is often slower than those without.

(Downs Syndrome Australia, 2017), (National Institutes of Health, 2017)

Autism Spectrum Disorder

Symptoms:

- difficulties in social development
- possible communication delays/inability
- repetitive behaviour
- sensory abnormalities
  - (E.g. enhanced auditory and/or visual sensors)
- deficits in motor coordination
- unusual eating behaviours
- and in extreme cases they can be violent or have violent outbursts when uncomfortable

(American Psychiatric Association, 2013)

Intellectual disabilities

Significant impairment cognitively (**slow learner** who is academically and socially below same-aged peers) with an *IQ of 70 or under*

Likely difficulties…

- adaptive behaviour
- understanding new information
- with communication and social skills
- sequential processing of information
- comprehending abstract concepts

(American Psychiatric Association, 2013)

My Research

- Games can be used as a context to teach skills (e.g. vocabulary, storytelling, spatial awareness, etc)
- Context is important for understanding new concepts – we learn new ideas by connecting them to what we already know (e.g. Piaget's Assimilation vs Accommodation)
- "Learn by doing", "Active Learning", "Experiential Learning"

Importance of explicitly teaching Vocabulary

- Students with an ID have know fewer words and thus reading is challenging for them, they read less
- Traditional vocabulary teaching methods may not be effective for ID students, let alone close the gap.
- Teachers need to explicitly teach new vocabulary to ID students as they will less likely learn incidentally.
- Two distinct skills to teach: word knowledge (direct instruction) and the ability to decode word parts (indirect instruction) (Langenberg, 2000)

What words to teach?

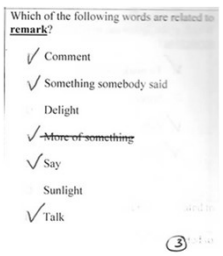
- Two methods:
  - Word Lists: Fry's 1,000 Words list (Fry, 1980) or New General Service List (Browne, Culligan & Phillips, 2013)
  - Choose words (2nd tier words) from a text you plan to teach with (Beck, McKowen & Kucan, 2003)

PILOT STUDY – ASHWOOD SCHOOL

Assessment vocabulary knowledge

'Knowing a word' Levels:	Beck (2012) Levels:
0 Points – No or minimal understanding or guessing	Unknown
1 Point – Basic understanding of common uses of the word	Acquainted
2 Points – Common associations – likely understood in contexts	
3 Points – Developed understanding of nuances of the word	Established
4 Points – Deep Understanding – likely to apply in multiple contexts	

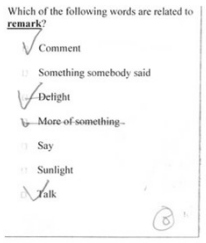
'Knowing a word' Levels:	Beck et al.(2012) Levels:
3 Points – Developed understanding of nuances of the word	Established


Which of the following words are related to **remark**?

✓ Comment
✓ Something somebody said
Delight
✓ ~~More of something~~
✓ Say
Sunlight
✓ Talk

3

'Knowing a word' Levels:	Beck (2012) Levels:
0 Points – No or minimal understanding or guessing	Unknown



Results

- Both Non-ICT and ICT groups had a 20% increase in knowledge of 24 target words
- Biggest increases came in weeks 4 & 3:



Week 4 words: wander, swollen, radiant, remark
Week 3 words: eagerly, furiously, dreadfully, thread

Discussion

- ICT is just as successful as Paper-Based (no significant difference), despite my impression during the teaching
- Lower ability students likely to struggle with "independent learning" method of ICT-based tasks
- REGARDLESS any explicit teaching of vocabulary is beneficial

The 'Towards Foundation Level Victorian Curriculum' is integrated directly into the curriculum and is referred to as 'Levels A to D'.

Levels A to D focuses on progressing students from a pre-intentional to intentional engagement in learning.

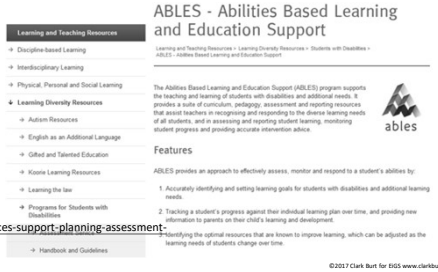
'Levels A to D' are not associated with any set age or year level that links chronological age to cognitive progress.

http://victoriancurriculum.vcaa.vic.edu.au/overview/diversity-of-learners

Level A	Level B	Level C	Level D
Pre-intentional (Reaction) Students need high levels of **coactive support** and focused attention from the teacher. Students demonstrate **some awareness** and recognition of familiar people and **routine activities.**	**Cause and effect activities** Students become more reliant on **verbal prompts** and gestures to facilitate their learning. They respond to familiar people and events and begin to use **'yes/no' responses**.	**First signs of independence** Students respond more consistently to prompts and **simple clear directions**. They start to use and link some familiar words and images to construct a **meaningful communication**.	**Cooperate in a group** They **express their feelings, needs**, and choices in increasingly appropriate ways. They indicate the beginning of understanding **social rules and expectations** and are beginning to **reflect** on their own behaviour.
Choice making usually from a field of two	Choice making from a field of three	Choice making from four	Considering outcomes of different choices
Intrinsic motivation	Matching real objects	Participate with others	Resilient in 'losing' in group activities
Gaze, touch hit, pat, smile	Matching, scan, manipulate	Use, identify, sequence	Collect, sort, represent

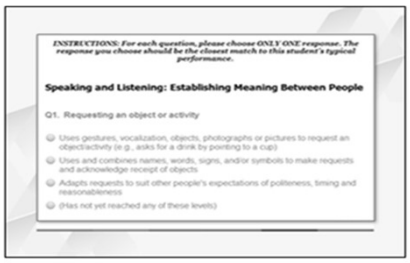
https://www.eduweb.vic.gov.au/edulibrary/public/stuman/wellbeing/ABLES/ABLES_Introductory_Guide.pdf and http://victoriancurriculum.vcaa.vic.edu.au/overview/diversity-of-learners

The Abilities Based Learning and Education Support (ABLES) program is a package of assessment tools, curricula, teaching strategies and resources that can help schools to better understand and meet the learning needs of all students, including students with a disability.

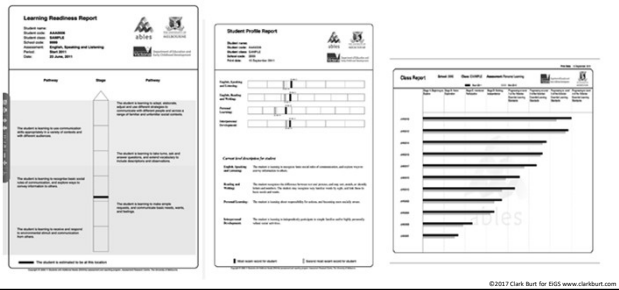


http://acd.org.au/resources-support-planning-assessment-adjustments-curriculum/

Assessment



Reporting

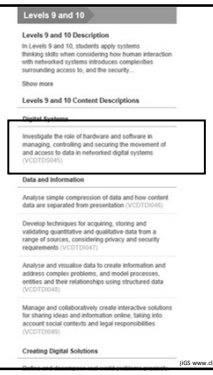


Relating the Victorian Curriculum to ABLES

You are legally obligated to teach students topics from their **year** level.

But how you teach can be based on their **developmental** level.

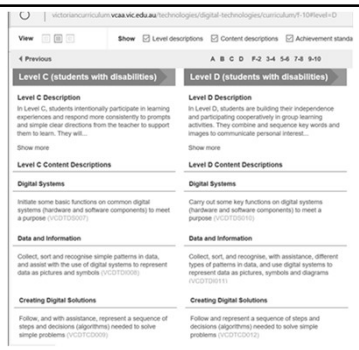
Thus, use content from their age level but modify it to use tasks from their academic level



Modifying the Curriculum Example:

Year 9 Students working at ABLES level D

Digital Systems
Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems (VCDTDS045)



Year 9 Digital Systems
Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems (VCDTDS045)

[redacted]

My lesson: Discuss "Why we have passwords", "What is a strong password?" and "Passphrases"
Then students create their own passphrase: (e.g. `I8pizza@home`)

MODIFYING THE CURRICULUM:

If you cannot use any of the content descriptors, then just use the A-D curriculum

Data and Information

Collect, sort, and recognise, with assistance, different types of patterns in data, and use digital systems to represent data as pictures, symbols and diagrams (VCDTDI011)

The future…

Thank you & References

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