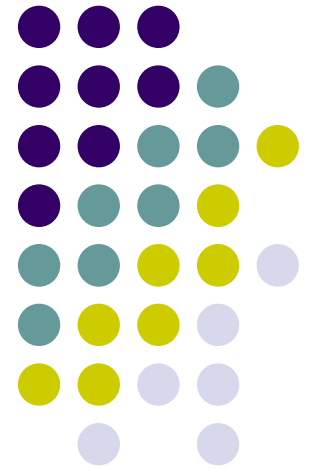


# Ethical (and other) considerations in the use of token economies to modify student behaviour



---

**Shiralee Poed, PhD**

The University of Melbourne

 @shiralee\_poed



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION

Shaping minds, shaping the world



# Co-authors

- Laureate Professor John Hattie



- Research Assistant Renata Aliani



# Session Aims



- Report the ethical considerations of which teachers should be mindful when using a token economy to modify behaviour

# Defining token economies

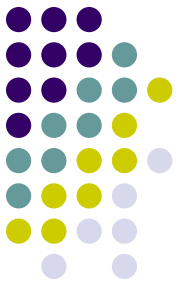


- A contingency management system that allows participants to earn tokens for presenting specific, positive behaviours that are later exchanged for predetermined backup reinforcement.
- The essential requirement is that the tokens are systematically linked to a menu of meaningful reinforcement options.

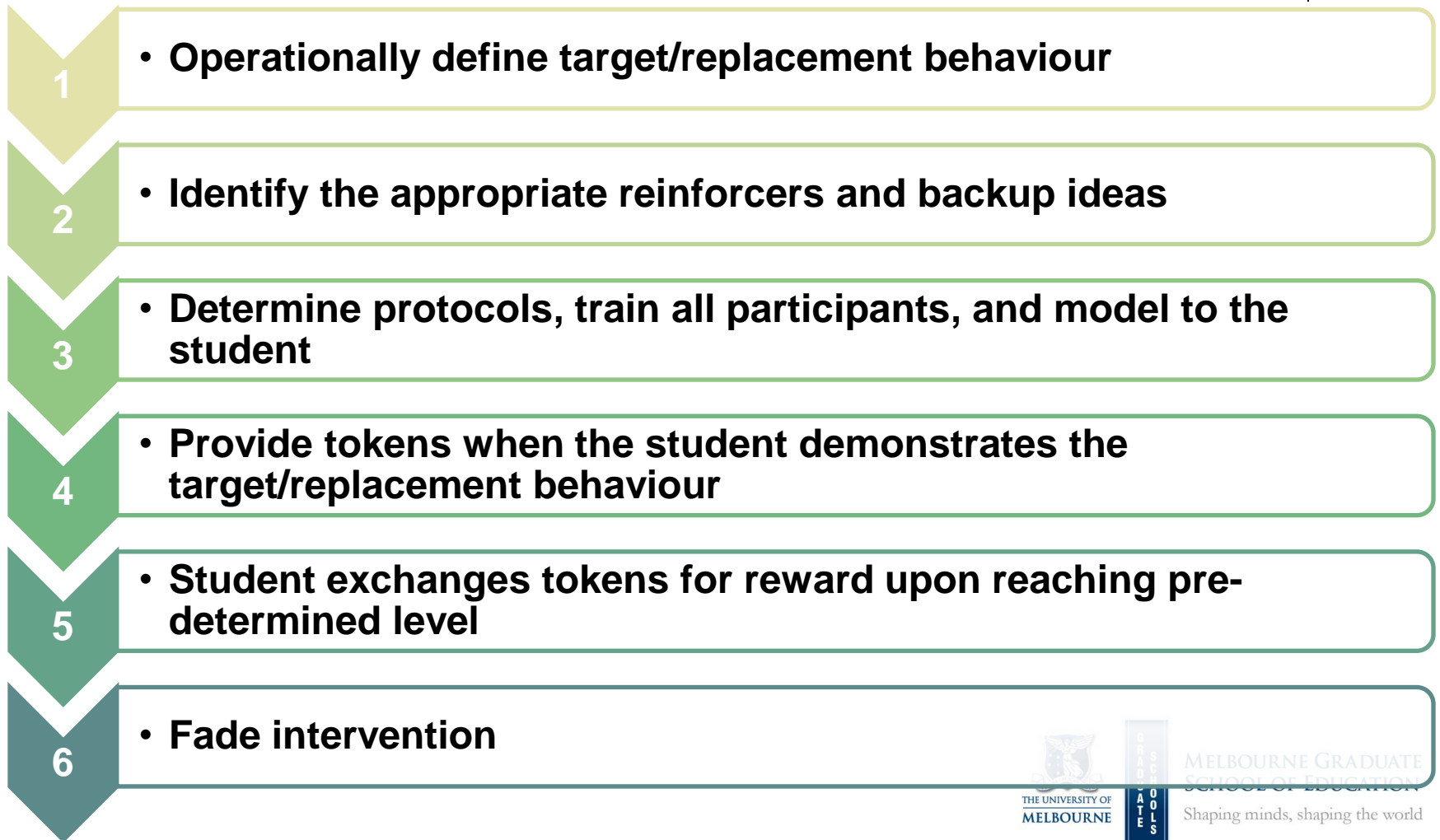
(Maggin, Chafouleas, Goddard & Johnson, 2011, p. 2)

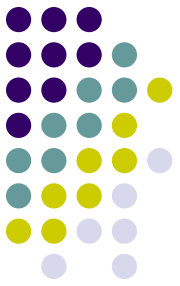


MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world



# Phases of implementation





# mini token economy



theautismhelper.com

Image retrieved from  
<http://theautismhelper.com/fading-token-economies/>



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION

Shaping minds, shaping the world

# Previous systematic reviews

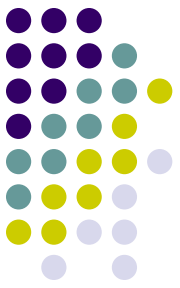


- Token economy for schizophrenia
  - May have effects on negative symptoms
  - Unclear if results are reproducible, clinically meaningful and maintained beyond treatment
  - Worthy of careful evaluation in well designed, conducted and reported randomised trials.

(McMonagle & Sultana, 2000)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world



# Previous systematic reviews

- The effects of motivating interventions on rehabilitation outcomes in children and youth with acquired brain injuries: A systematic review
- Token economies can significantly enhance memory and response inhibition performance in children with ABI.

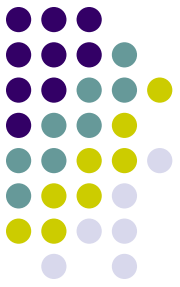
(Tatla, Sauve, Jarus, Virji-Babul, & Holsti, 2014)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world



# Previous systematic reviews



- A systematic evaluation of token economies as a classroom management tool for students with challenging behaviour
  - Extant research does not provide sufficient evidence to be deemed best-practice based on the WWC criteria.
  - Some quantitative evidence to suggest that well-executed programs can be effective.

(Maggin, Chafouleas, Goddard, & Johnson, 2011)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world

# Research question



Can the use of a token economy successfully entice a student with a disability to demonstrate an expected behaviour or a replacement behaviour?

# Search Strategy



## Step 1

- To date, using the search phrase “token economies”, the following databases were searched:
  - ⇒ PsycINFO
  - ⇒ ERIC
  - ⇒ ProQuest Education Journals
  - ⇒ A+ Education
  - ⇒ CINAHL
  - ⇒ Academic Search Complete

# Interim Findings – Initial Literature Searches



|                          | Found      | Duplication | Unique     |
|--------------------------|------------|-------------|------------|
| PsycInfo                 | 190        | 0           | 190        |
| ProQuest                 | 233        | 5           | 228        |
| A+ Education             | 2          | 0           | 2          |
| CINAHL                   | 6          | 3           | 3          |
| Academic Search Complete | 18         | 12          | 6          |
| ERIC (EBSCO)             | 45         | 20          | 25         |
| ERIC (ProQuest)          | 44         | 44          | 0          |
| Data Mining              | 1          | 0           | 1          |
|                          | <b>539</b> | <b>84</b>   | <b>455</b> |

# Search Strategy



## Step 2

- Each article was scanned to determine whether they met the following inclusion criteria:
  - ⇒ Participants attended school, grades Prep-12, and the intervention was delivered in the school
  - ⇒ Participants had a diagnosed disability
  - ⇒ Intervention included the use of a token economy to change the participants' behaviour

# Search Strategy



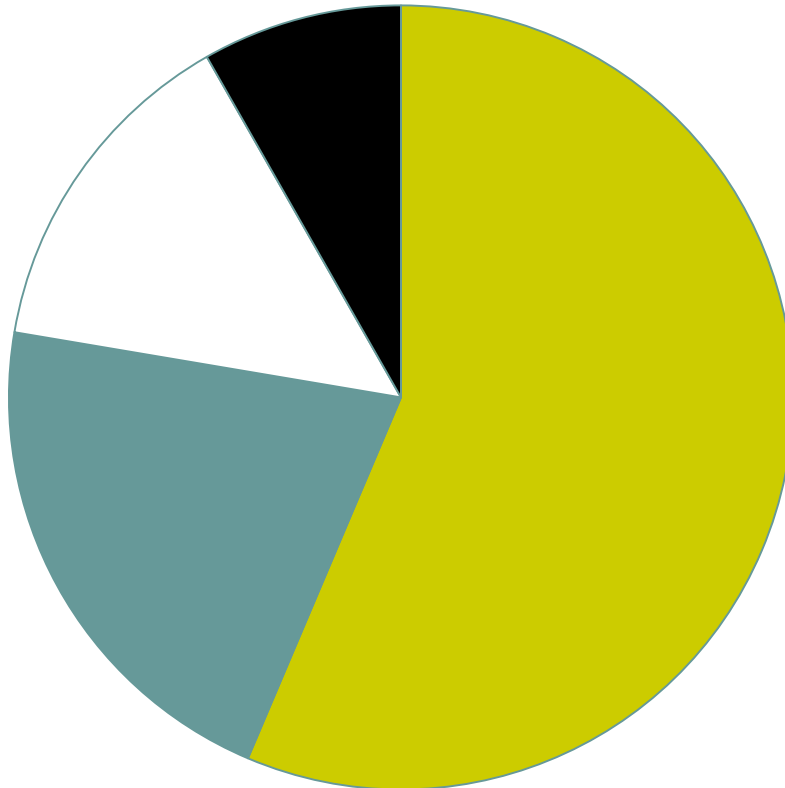
- Articles were excluded if they contained any of the following:
  - Group contingencies
  - Response costs
  - Multiple interventions where the results from the use of a token economy could not be separated from other interventions e.g. Token economy used as part of a Check In Check Out intervention

# Interim Findings – Inclusion / Exclusion Criteria



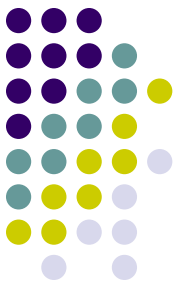
|                              | Include   | Exclude    |
|------------------------------|-----------|------------|
| PsycInfo (190)               | 16        | 174        |
| ProQuest (228)               | 57        | 171        |
| A+ Education (2)             | 2         | 0          |
| CINAHL (3)                   | 0         | 3          |
| Academic Search Complete (6) | 1         | 5          |
| ERIC (EBSCO) (25)            | 3         | 22         |
| Data Mining (1)              | 0         | 1          |
| <b>455</b>                   | <b>79</b> | <b>376</b> |

# Interim Findings – Reasons for exclusion



- Theoretical Paper
- Non-School Setting
- Not SWD
- Other





# Ethical considerations

- Imposing/coercing contingencies on vulnerable children
  - Potential of taking advantage of vulnerable children
  - Inappropriate administration by teachers or parents
  - Involvement of the child, where possible, and all other parties in a collaborative intervention can offset this concern

(Boerke & Reitman, 2011; Goldiamond, 2002)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world



# Ethical considerations

- Possible (accidental) sabotage
  - Staff member may unwittingly offer a reward undermining the token economy
  - Family member may offer reward at home
  - Staff member may accidentally acknowledge a behaviour that the team is trying to replace
  - CRT may accidentally undermine the system
  - Sabotage arising from staff boredom with TE system so failing to implement with fidelity

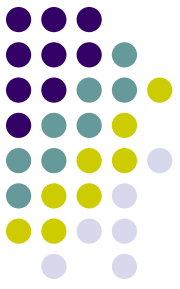
(Turnbull, 1988)

# Ethical considerations



- Response cost
  - Taking away tokens when undesirable behaviour is displayed
  - They do not teach the desired behaviour, simply punish the undesired behaviour.

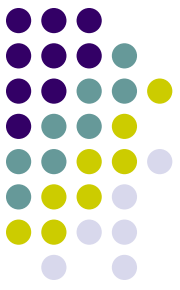
(Turnbull, 1988)



# Other considerations

- Importance of ensuring the target behaviours are clearly defined
  - Be nice
  - Be where you are supposed to be

(Moore, Tingstrom, Doggett, & Carlyon, 2001)



# Other considerations

- Choice of token
  - Type, colour, shape, size
  - Swallowing hazard
  - Tearing tokens
  - Portability, especially for those with physical impairments
  - Spread of disease
  - Issues with food rewards (Prader-Willi, healthy food requirements, allergies)

(Boerke & Reitman, 2011; Turnbull, 1988)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world

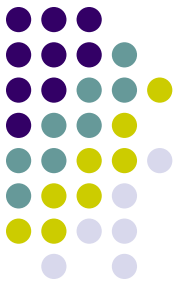
# Other considerations



- Choice of reinforcer
- Ways to identify appropriate reinforcers
  - Single Stimulus Preference Procedure (Pace, Ivancic, Edwards, Iwata, & Page, 1985)
  - Motivation Assessment Scale (Durand & Crimmins, 1992)
  - Behavioural observations

# Other considerations

- Length of time between earning and redeeming tokens

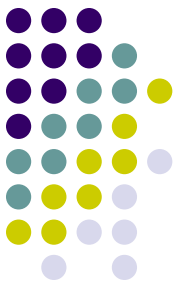


(Moore, Tingstrom, Doggett, & Carlyon, 2001)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION

Shaping minds, shaping the world



# Other considerations

- Simplicity of system
  - Teacher needs to be able to administer the system without disrupting flow of learning, and record data to inform decision-making re success and fading
  - Training of staff
  - Criteria for earning tokens (remove staff attitudes of worthiness, physical state, personality, or desire for power/control)
  - Cost of tokens and rewards

(Boerke & Reitman, 2011; Turnbull, 1988)



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world



# Other considerations



- Satiation
  - Need for schedule of reinforcements and exchange rate
  - Continuous to intermittent reinforcement
  - Increase the predetermined level needed to earn the backup reinforcer (reward)

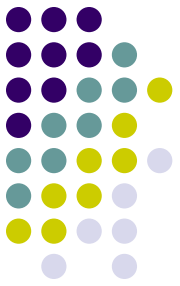
(Boerke & Reitman, 2011; Turnbull, 1988)



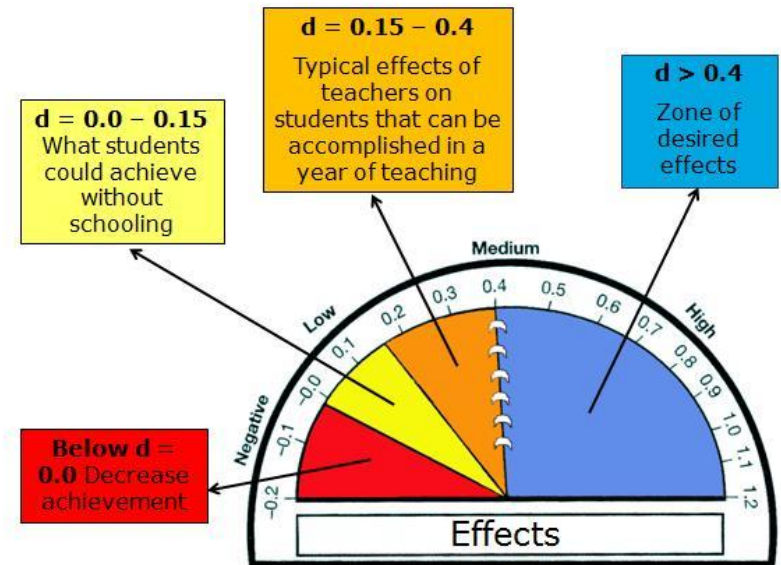
MELBOURNE GRADUATE  
SCHOOL OF EDUCATION  
Shaping minds, shaping the world

# Next steps

- Further reviews of literature – dissertations, soft literature
- In depth review of included articles
- Calculation of effect size



## Barometers of Influence

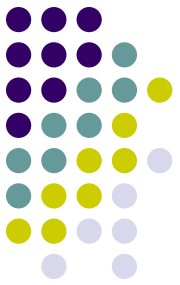


# Any questions?

Shiralee Poed, PhD

[spoed@unimelb.edu.au](mailto:spoed@unimelb.edu.au)

 @shiralee\_poed

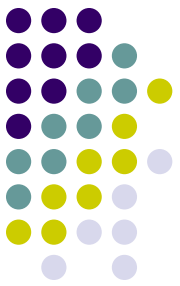


# References



- Boerke, K. W., & Reitman, D. (2011). Token economies. In W. W. Fisher, C. C. Piazza & H. S. Roane (Eds.), *Handbook of applied behavior analysis* (pp. 370-382). New York, NY: Guilford Press.
- Durand, V. M., & Crimmins, D. B. (1992). *The Motivation Assessment Scale (MAS) administration guide*. Monaco and Associates. Retrieved from <http://dspace.nelson.usf.edu:8080/xmlui/handle/10806/6472>

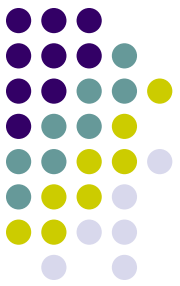
# References



Goldiamond, I. (2002). Toward a constructional approach to social problems: Ethical and constitutional issues raised by applied behavior analysis. *Behavior and Social Issues, 11*(2), 108-197.

Maggin, D. M., Chafouleas, S. M., Goddard, K. M., & Johnson, A. H. (2011). A systematic evaluation of token economies as a classroom management tool for students with challenging behavior. [Literature Review; Systematic Review]. *Journal of School Psychology, 49*(5), 529-554. doi:  
<http://dx.doi.org/10.1016/j.jsp.2011.05.001>

# References



McMonagle , T., & Sultana, A. (2000). Token economy for schizophrenia. *Cochrane Database of Systematic Reviews*, 3. Art. No.: CD001473. DOI: 10.1002/14651858.CD001473.

Moore, J. W., Tingstrom, D. H., Doggett, R. A., & Carlyon, W. D. (2001). Restructuring an existing token economy in a psychiatric facility for children. *Child & Family Behavior Therapy*, 23, 53-59.

# References



Pace G.M, Ivancic M.T, Edwards G.L, Iwata B.A, Page T.J.  
Assessment of stimulus preference and reinforcer value with profoundly retarded individuals. *Journal of Applied Behavior Analysis*. 1985;18:249–255.

Tatla, S. K., Sauve, K., Jarus, T., Virji-Babul, N., & Holsti, L. (2014). The effects of motivating interventions on rehabilitation outcomes in children and youth with acquired brain injuries: A systematic review. [Literature Review; Systematic Review]. *Brain Injury*, 28(8), 1022-1035. doi: <http://dx.doi.org/10.3109/02699052.2014.890747>

# References



Turnbull, J. (1988). Perils (hidden and not so hidden) for the token economy. *The Journal of Head Trauma Rehabilitation*, 3(3), 46-52. doi: <http://dx.doi.org/10.1097/00001199-198809000-00008>



MELBOURNE GRADUATE  
SCHOOL OF EDUCATION

Shaping minds, shaping the world