

The Laughing PC

Using Jokes in Software to Improve
Children's Reading Comprehension

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Research teams:

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Joke City version 1: John Bradwell, Mary Ulicsak, NY

& thanks to all the children and teachers who took part in the research.

Overview

- Background: factors in reading comprehension
- Poor comprehension: its impact
- Language play, language awareness and discussion
- Program 1: Joke City --intervention
Evidence for effectiveness
- Program 2: Bahlas -- assessment
Evidence
- Program 3: WordCat: coordinating sound and meaning
Using two mice and Scoss to encourage
true collaborative working with peers
- Questions and comments

Factors in poor reading comprehension

- Poor working memory: simultaneous storage and processing e.g. mental arithmetic
- Poor inferential skill

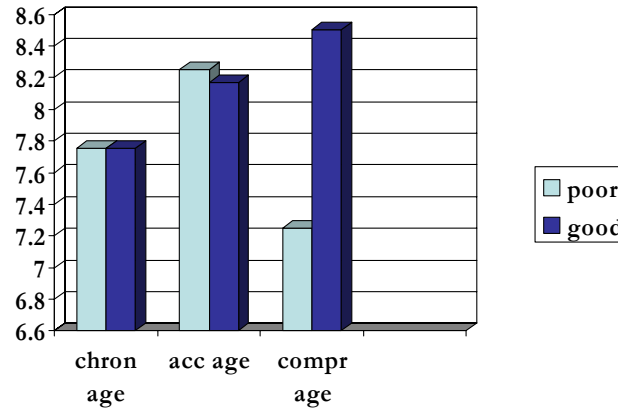
John took 5 books. How many books?

John pedalled over the bridge. How did John travel?

- Poor ‘language awareness’: distinguishing form and meaning, knowing how you know
- (poor decoding)

Poor reading comprehension

- 15% of 580 7-9yr olds had comprehension ages 6-24mo below their reading age

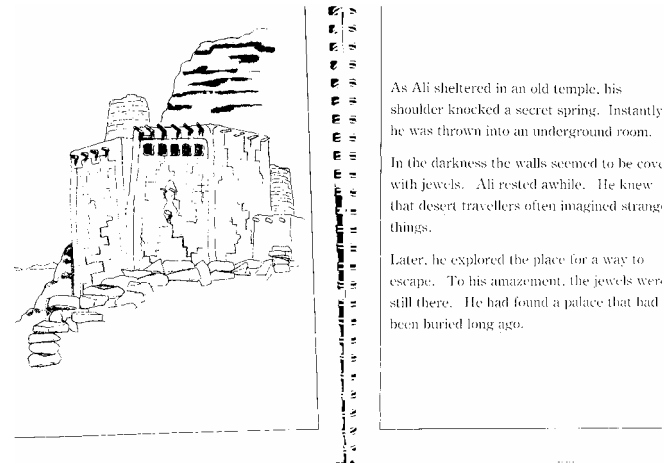


Neale Analysis of Reading Ability

Read each story aloud, answer questions at the end

Accuracy Age: reading errors

Comprehension Age: questions



Importance of comprehension assessment and intervention

- Comprehension covers many different skills
- Comprehension sometimes under-resourced and under-assessed
- Assessment often individual, so lengthy
- Comprehension generally not formally assessed independent of decoding problems
- Comprehension in SATs increasingly tests retrieval of literal information (Hilton, 2001)
- Comprehension problems often hard to spot in everyday conversation
- Comprehension needs to be learned (developed), not just taught

Joke City

- Teachers use jokes and riddles to develop literacy skills
- Joke workshops for years 3-6 (popular with boys, performance aspects)
- Articulating meanings for yourself and negotiating meaning with a peer: not taught but developed
- Language ambiguity highlights focus on meaning and relation of meaning to surface form

Language play, awareness, discussion

Homonyms, intonation patterns,
syntactic ambiguity

- Why do cows have bells?

Because their *horns* don't work.

- Why don't leopards escape from the zoo?

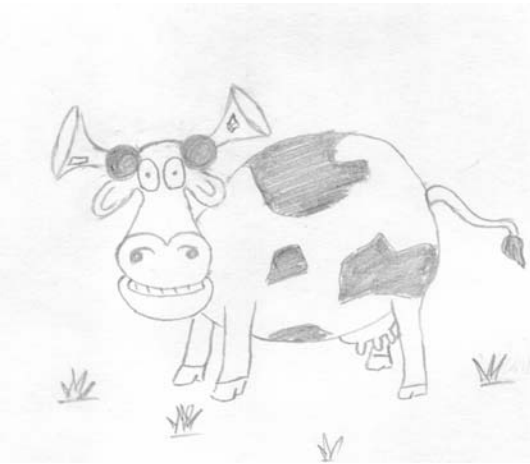
Because they are always *spotted*.

- Did you hear about the *paper shop*?

It blew away.

- Does this restaurant *serve fish*?

Yes, what do you want, Mr Fish?

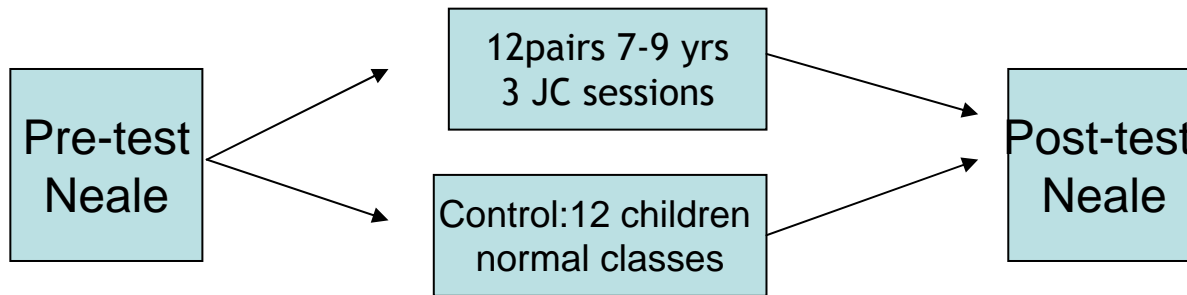


Joke City

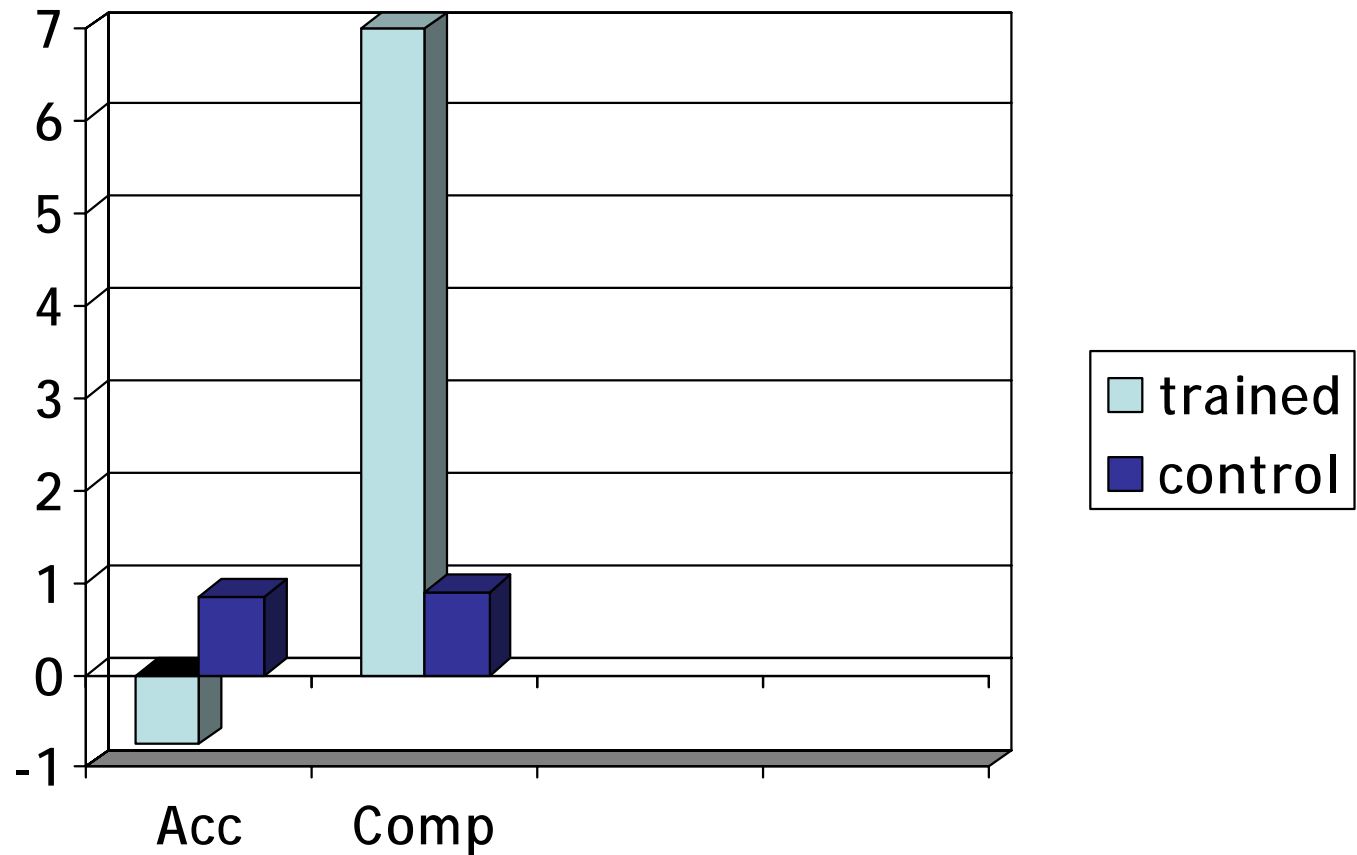
- Pairs of children (7-9 yrs) engage with Joke City
- Series of jokes (6 jokes x 6 levels)
- One child reads, the other has the mouse
- Read the joke, click on the word with two meanings
- Does this restaurant serve fish?
- Yes, what do you want to eat, Mr Fish?
- Clues and explanations provided
- video

Does JC help comprehension?

- Design



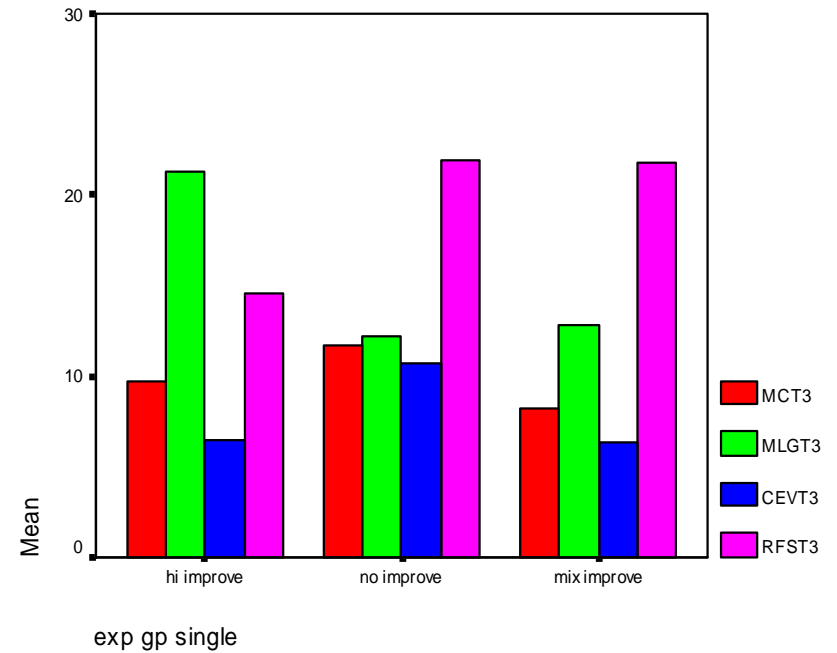
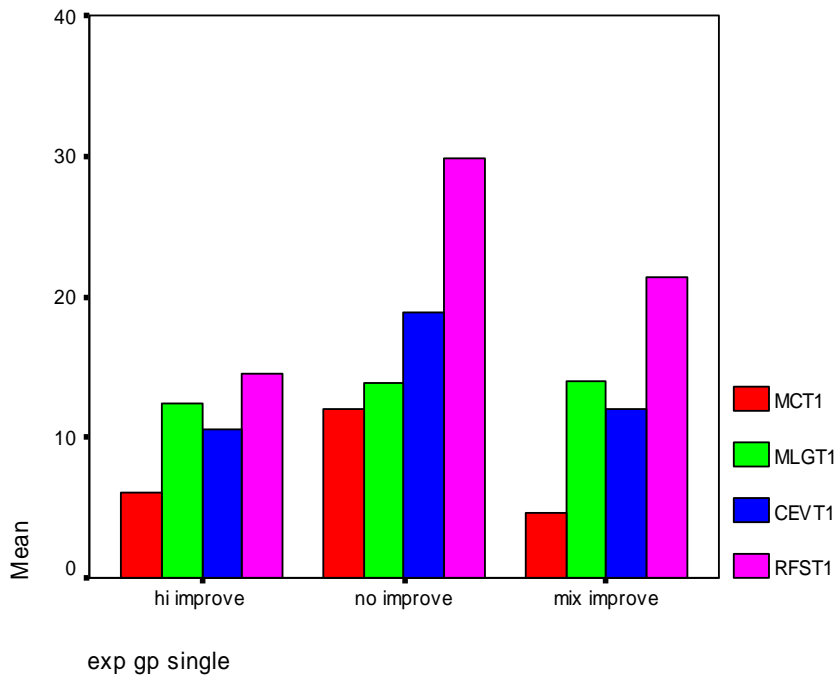
Joke City improves children's reading comprehension: pre- to post-changes in accuracy and comprehension scores (months) after 3 sessions of JC in pairs



How does JC work?

- Analyse all conversations by classifying each statement
- Differences between pairs that improved and pairs that didn't
- Improving pairs changed over sessions: developed the skills through interaction

Types of talk



Session 1

Metacognitive

Metalinguistic

Control

Reading text

Session 3

N utterances of each type for high, no and mixed improvers per session

Joke City version 2

- Prototype version, partial
- (screen shot of front page?)
- Structure: Joke Junior and Joke Junior High (pic of pat's screen?)
- Feedback welcome!

BAHLAS Riddles

- Riddle understanding predicts comprehension
- Can use riddles to assess comprehension
- BAHLAS (Brighton and Hove Literacy Assessment Strategy)
- List of advantages...
- Self-admin, predicts, no reading skill, fun, easy to use, well-tested –over 500 children
- Need feedback on teacher information

Riddles

- 2 parallel sets of 25 joking riddles
- Jokes all rest on ambiguity in meaning
- Child chooses one of two answers, that makes the joke work
- Different types (single word ambiguity, syntactic, pragmatic..)

- Why do leopards never escape from the zoo?
 - Because they're always spotted
 - Because they run too slowly

What happened to the paper shop?

- It closed down
- It blew away

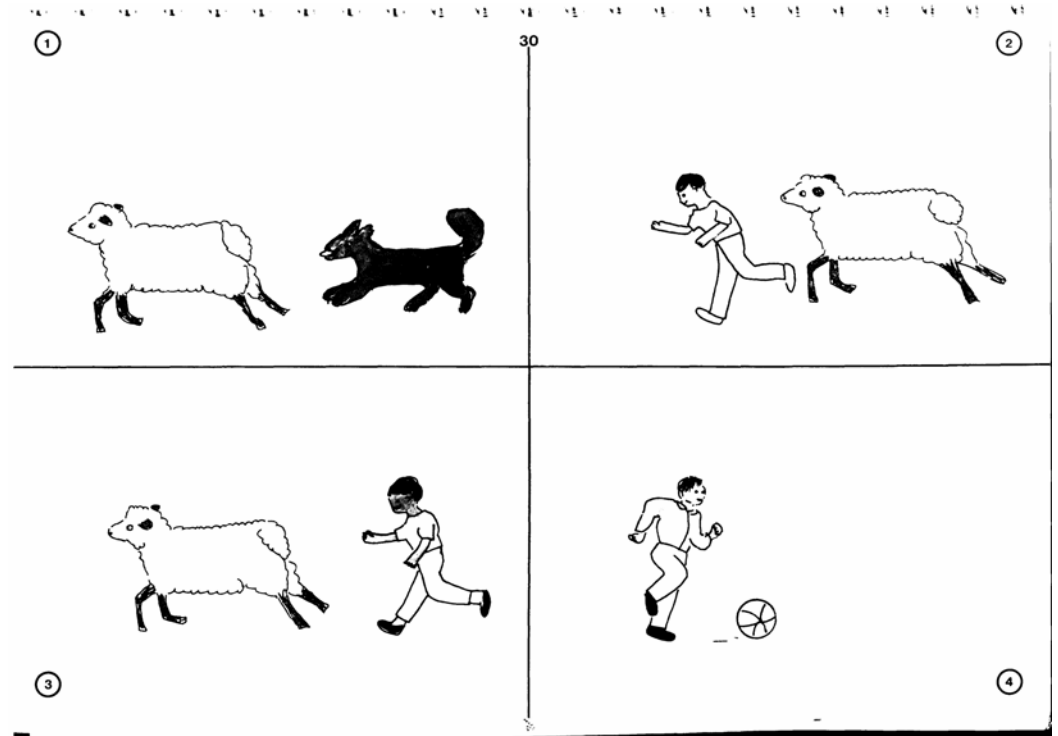
Bahlas

- Predicts comprehension independent of accuracy
- Statistics work, but needs field testing: volunteers welcome, support and analysis provided free
- Also ‘complete: predicts grammatical understanding, as in Test for Reception of Grammar (TROG) slide

TROG (Bishop)

80 sentences

Complete predicts TROG score....



“The boy is chasing the sheep.”

‘Simple’ view of reading

- Reading = decoding & comprehension
- Initial focus on meaning
- shift to focus on form
- Coordinating form with meaning:
‘putting humpty back together’ (Tunmer & Bowey, 1984)

Word Categorisation

- Cartwright: Reading multiple classification task

Example

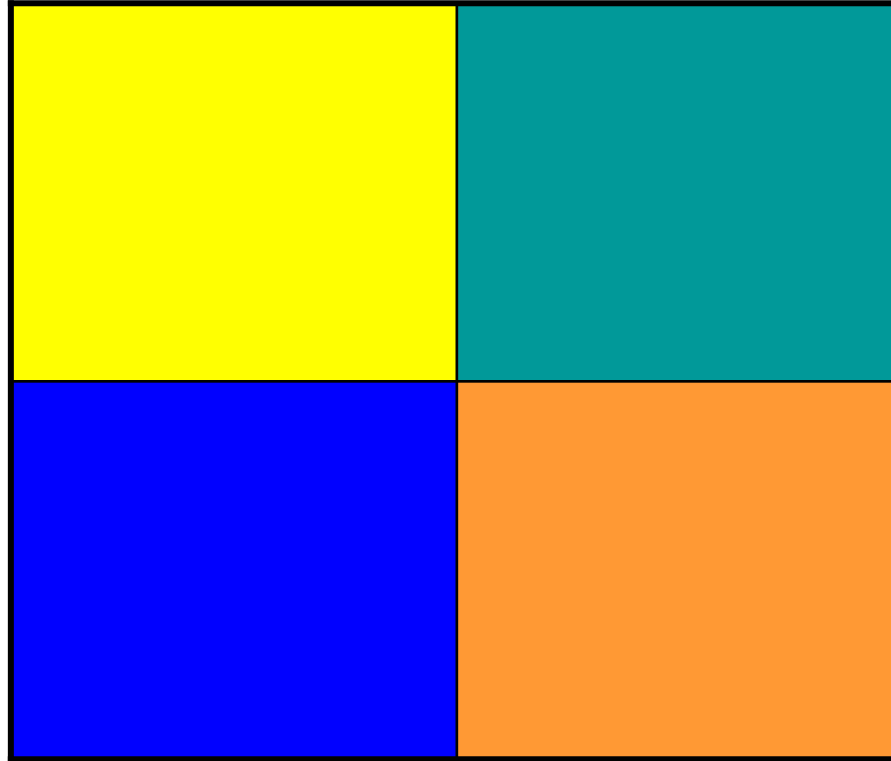
- Predicts comprehension skill independently of ...
- Individual training to do the task improves comprehension in n yr olds
- Could peer discussion of the task help comprehension?

WordCat

- Picture of task (single)
 - Teachers can put in own word lists
e.g. to focus on a particular spelling or sound pattern, or
classification of meanings
 - Clues appear automatically for new lists
- CD clip

Problem: domination by one child

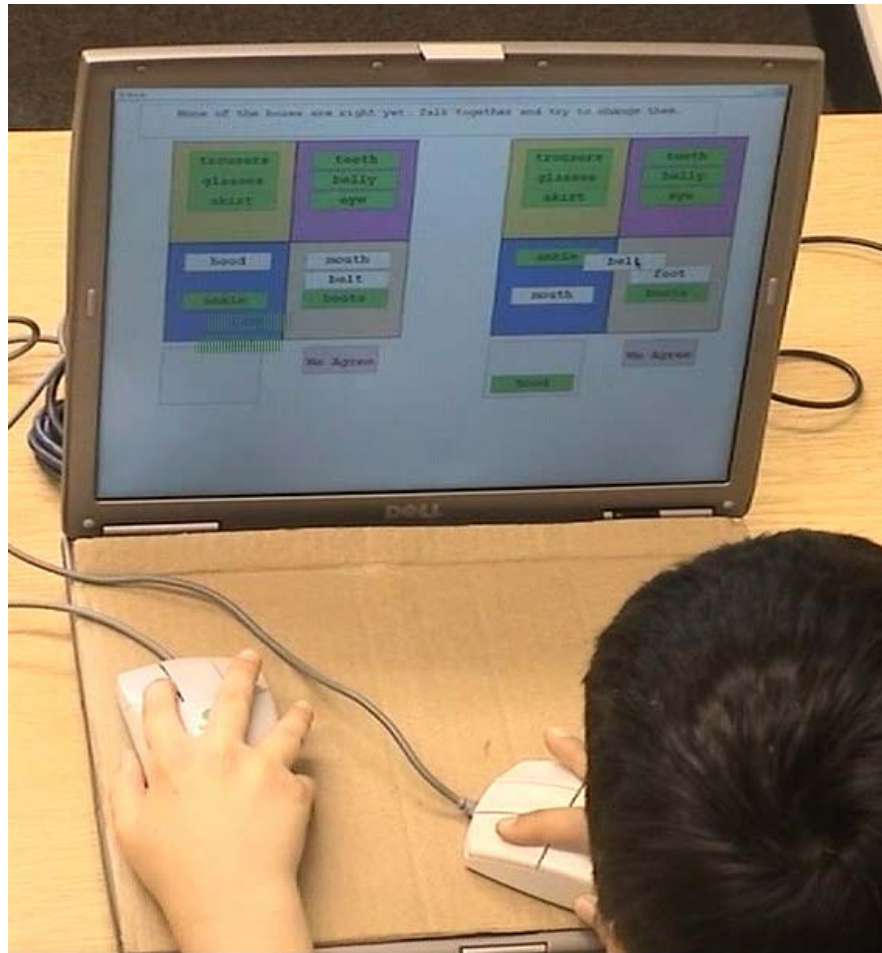
Sort these words into the boxes two ways at the same time. cheek chip tongue chocolate tomato chest
tooth cheese toast toffee toe chin



RMC score = $\frac{\text{accuracy score for sorting}}{\text{speed of sorting}}$

Accuracy score: 3 = sort ✓ explanation ✓
2 = sort x explanation ✓
1 = sort ✓ explanation x
0 = sort x explanation x

WordCat with SCOSS



WordCat with SCOSS

- Diagram
- Each child has their own representation, so acts on it individually but
- The two representations are linked: agreement and disagreement are visible
- At specific points, children need to reach an agreement: through debate, not by hogging the mouse!

Conclusions

- Joke City, Bahlas and WordCat
- Set of linked assessment and intervention tools for literacy skills
 - easy for child to use
 - independent of decoding: text read aloud
 - automatic scoring and comparison
 - password protected
 - quick to do: can be group-administered in IT suite
- Encourage peer discussion
- Needs some teacher oversight
- Need feedback!
- See Nicola for CDs, manuals, articles to take away and chances to take part