

**Investigating the cognitive validity of EAP
reading-into-writing test tasks
A pilot study**

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Presentation outline

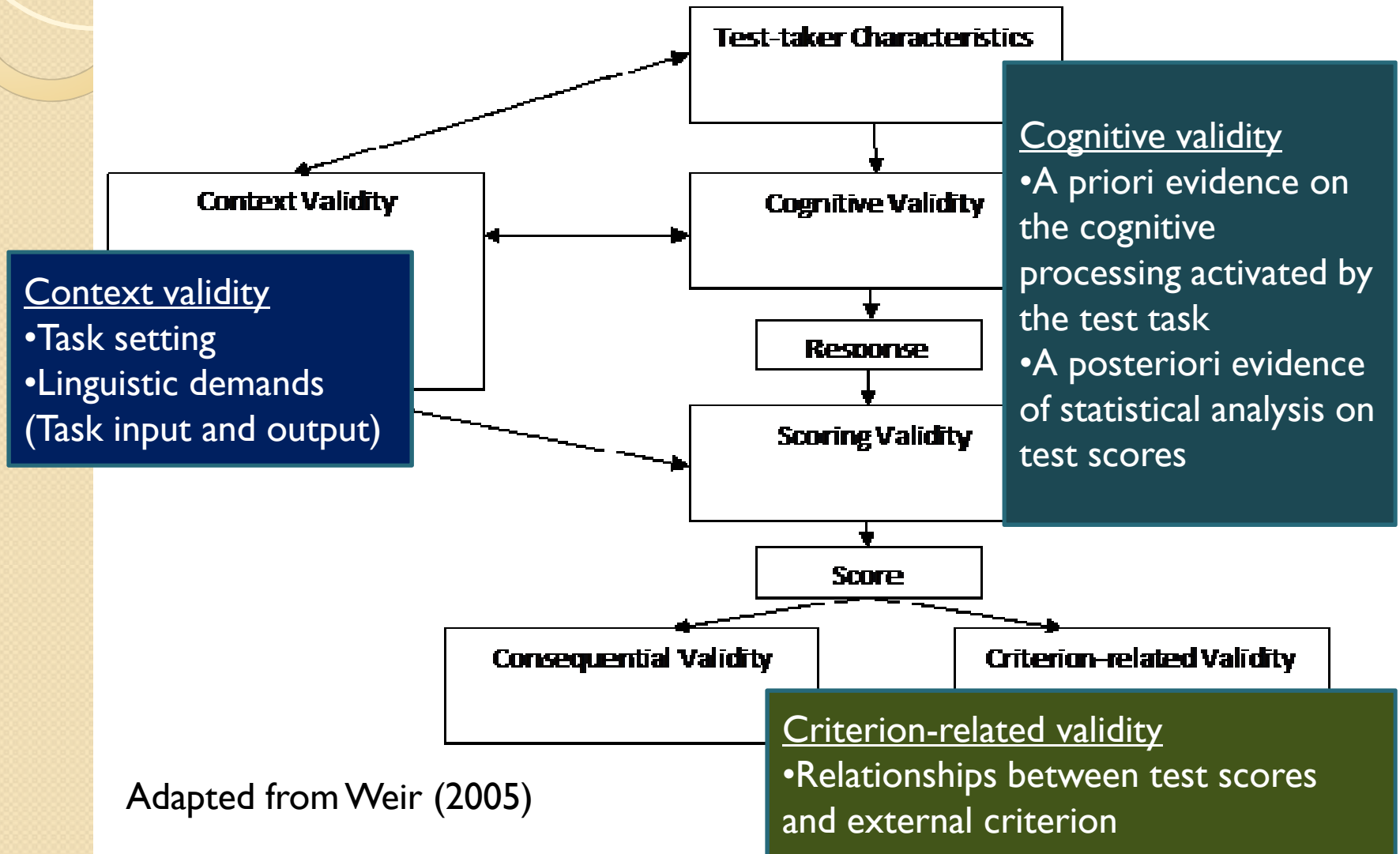
1. Background
2. Literature review
3. Research questions
4. Research methods
5. Preliminary findings
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Background

1. Impromptu argumentative writing tasks have been used extensively in large-scale EAP writing tests and University placement tests.
2. Criticisms: (i) topic effect (ii) lack of authenticity
3. The use of reading-into-writing tasks may well address these issues. However, large-scale EAP tests hold diverse attitude towards integrated writing tasks.

There is a need to validate the reading-into-writing task type.

The socio-cognitive validation framework for writing tests



Adapted from Weir (2005)

Models of writing

Shaw and Weir (2007) + Field (2004)

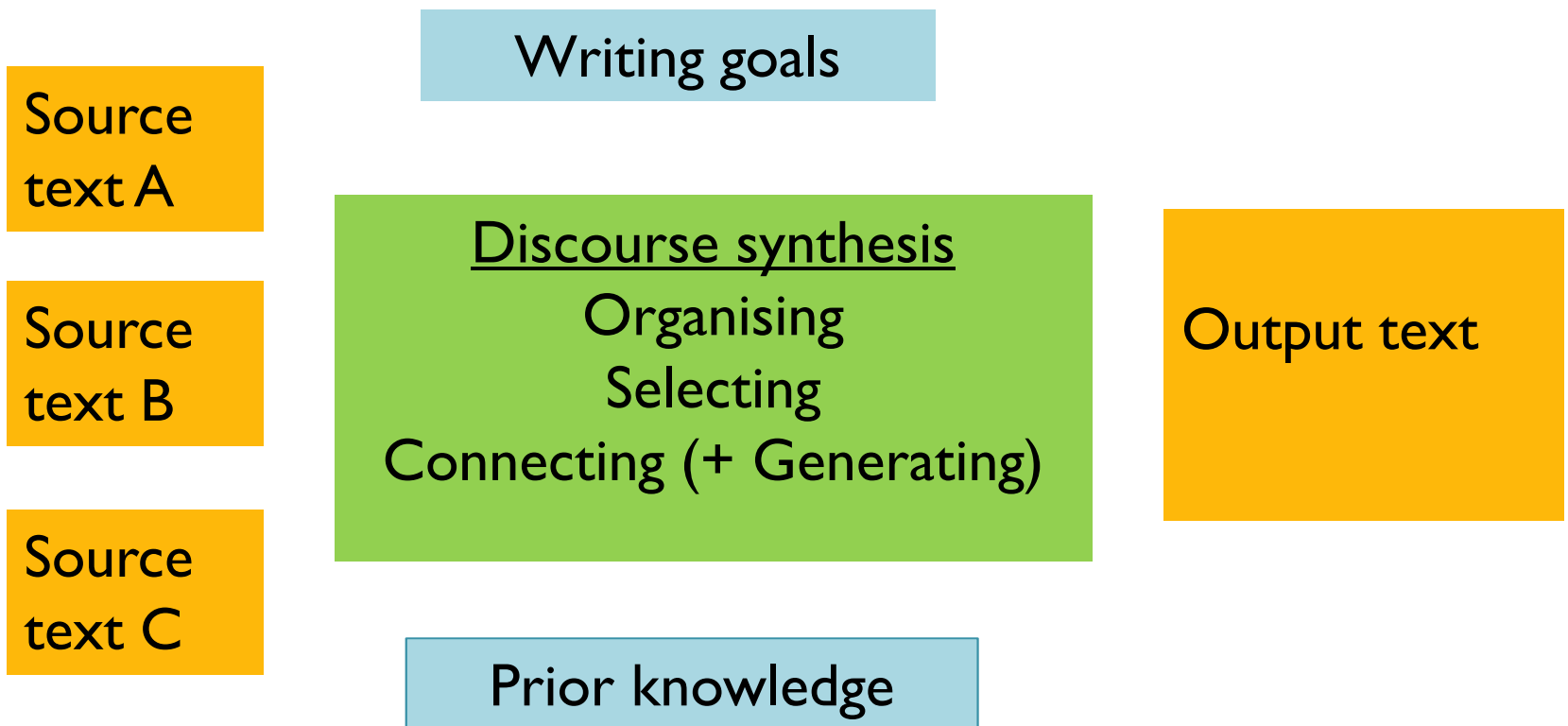
- Macro-planning
- **Organisation**
- Micro-planning
- Translation
- Monitoring
- Revising

Where do the ideas come from?

- From memory?
- From source texts?

Model of discourse synthesis

Spivey (1991)



Levels of writing

Scardamalia & Bereiter (1987)

Knowledge
telling



Knowledge
transforming

1. Text generating approach
2. Retrieve ideas from memory and then write them down (linear)
3. Very little planning, monitoring and revising

1. Problem-solving approach
2. Writers have high awareness of content (what to write, to whom to write to) and rhetoric (how to write) problems
3. Resolve the problems through recursive planning, monitoring and revising



Research Question

1. What are the similarities and differences between the **cognitive processes** elicited (a) from the real-life academic writing tasks in the Business School in one UK university, and (b) from the EAP reading-into-writing test tasks?

Research Method:

Cognitive processes

	Real-life writing tasks in the Business School	EAP reading-into-writing test tasks
Immediate analysis	Online activity log to be filled at points throughout the process (n=15)	<u>Eye-tracking and key-stroke logging</u> while completing the test tasks (n=15)
Retrospective analysis	Interview (n=15)	Stimulated recall (n=15)
	Questionnaire to be completed after completing the writing tasks (n=200)	<u>Questionnaire</u> to be completed after completing the test task (n=200)



Fig 1:A sample of gazeplot which shows eye movements during a reading-into-writing test (Tobii Technology, 2010)

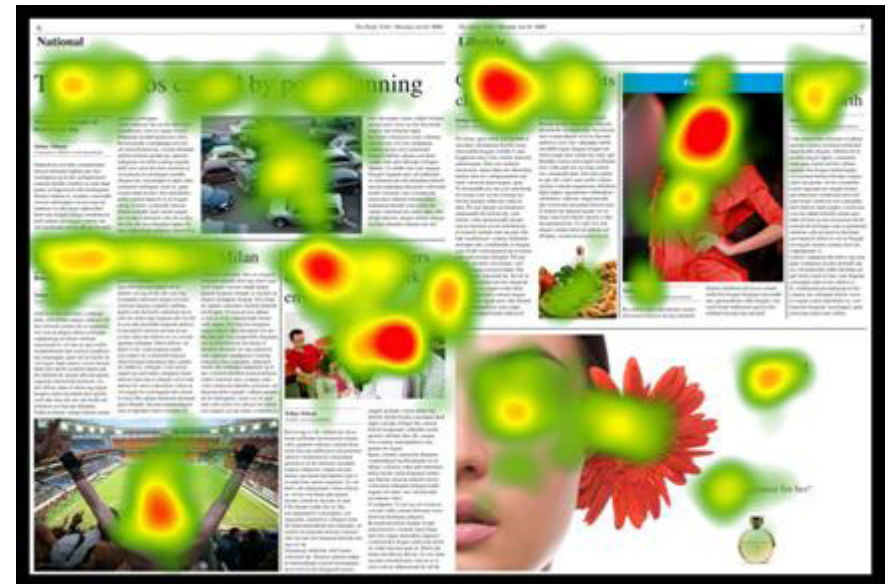


Fig 2:A sample of heatmap which shows test takers' fixation patterns (Tobii Technology, 2010)

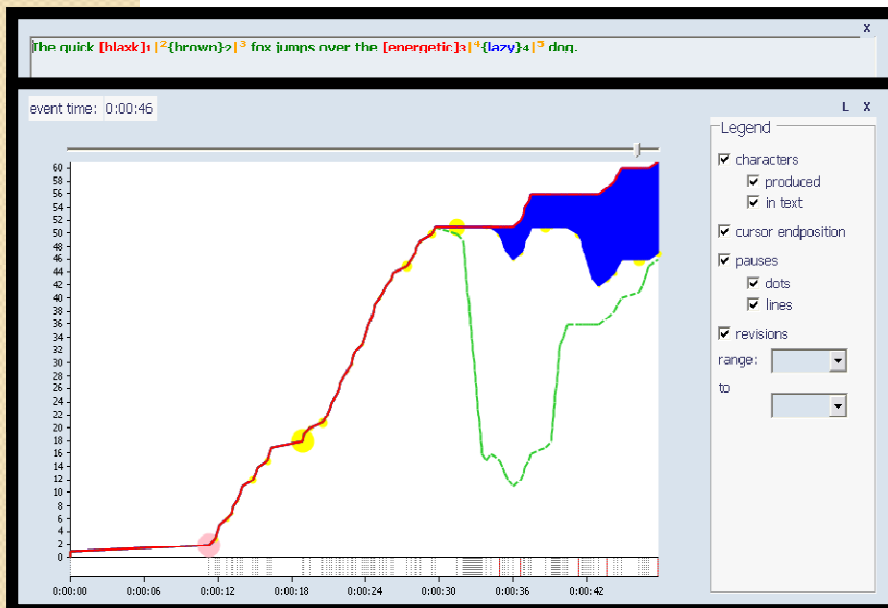


Fig 3:A sample of graphic representation of writing processes (Inputlog, 2006)

Pilot study on cognitive process (test task)

Pilot study on cognitive process (test task)

Participants:

- 97 Chinese 3rd-year undergraduates
- Business School in a UK university
- IELTS writing score: 4.5 -7.5 (mean 5.8)

Test task:

Reading-into-writing (multi-texts, argumentative)

Cognitive process questionnaire:

- 5 sections:
Before reading, While reading, Before writing, While writing, After writing
- 60 closed items on 4-point likert scale

Data analysis:

- (1) The percentage of agreement for each item
- (2) Factor analysis on the underlying factors

Preliminary results: a selection of participant agreement on the processing activities

Before reading and while reading

Understanding task

- Read task prompt (97.8%)
- Read task prompt slowly (68.1%)
- Read task prompt again (57%)

Macro planning

- What to write (88.6%)
- Purpose (70.1%)
- Intended reader (53.2%)

Reading source texts

- Read the whole text slowly & carefully (63.3%)
- Re-read the source text while writing (59.8%)

Before writing and while writing

Selecting

- Search selectively for relevant parts (91.8%)
- Underline important ideas (86.6%)

Connecting

- Link topic knowledge to source texts (81.4%)
- Link ideas in source texts to prior knowledge (71.2%)

Generating

- Relations among ideas (85.5%)
- Connections between source texts (64.5%)
- Own ideas while reading (63.6%)
- Own ideas while writing (56.8%)

Organizing

- Use the same structure as in the source texts (79.4%)
- Prioritise ideas (64.6%)
- Remove ideas (52.6%)

While writing and after writing

Monitoring and Revising (Low-level)

- Quotations (80.4%)
- Appropriateness of vocabulary (78.4%)
- Accuracy of sentence structures (75.3%)
- Range of vocabulary (57.7%)
- Range of sentence structures (54.7%)

Monitoring and Revising (High-level)

- Adequacy of ideas (86.3%)
- Relevance (79.4%)
- Coherence (73.6%)
- Organization (70.1%)
- The use of own words (65%)
- Impact on reader (52.6%)



Preliminary results: Factor analysis

- Purpose: to identify underlying **subsets of the reading-into-writing processes**
- KMO ($=.702$) and Bartlett's Test ($<.001$) passed
- Based on the eigenvalues and scree plot, a solution of **9 factors** explaining **60.27%** of the variance is selected.
- **Principal component analysis** is performed with rotation method of **varimax** with Kaiser normalization.

Underlying factors of the reading-into-writing process

F1: After-writing monitoring and revising (high and low level)

F2: While-writing monitoring and revising (low level) + Adequacy of ideas + Generating while reading (own ideas)

F3: While-writing monitoring and revising (high level) + Quotations

F4: Understanding task + Reading source texts (careful) + Goal setting (purpose) + Organizing (removing ideas) + Generating while reading (own ideas)

F5: Selecting + Connecting (topic → source texts) + Goal setting (content) + Organizing (relations among ideas)

F6: Organizing + Monitoring and revising (using own words) + Understanding task (task prompt)

F7: Generating + Connecting (prior knowledge) + Using same structure as the source text

F8: Intended reader + Understanding instructions and important ideas (-ve)

F9: Understanding task (task prompt) + Connecting (genre + topic)



Discussion

- 1) A large variety of cognitive processes (*macro-planning, selecting, organizing, connecting, generating, monitoring and revising*) are elicited from this particular reading-into-writing task type.
- 2) Some processes do not seem to be as activated as much as the other processes: e.g. *macro-planning regarding the need of readers, removing unnecessary ideas, monitoring and revising regarding impact on readers, the range of vocabulary and sentence structures, and the use of own words*
- 3) The reading-into-writing process consists of nine underlying sub-sets of processes



Questions & Answers