The Utility of Infographics to Support EFLs in Academic Writing

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Introduction

- Students experience cognitive and affective constrains when writing.[1] Writing in a second language imposes special cognitive challenges for students studying English as a foreign language (EFL).
- Writing pedagogy that incorporates **infographics as an authentic method of planning and presenting ideas**[3] may hold potential for reducing the cognitive loads.
- This experiment is designed to test the efficacy of integrating infographics into the writing course and assignments on the development of EFLs' academic writing.

Research Questions

1. Did the use of infographics affect academic writing of EFL students?
2. Did the use of infographics influence EFL students' efficacy in their academic writing?

Method

Samples:

- Participants were 116 college sophomores from 3 College English classes taught by the same instructor (1 control; 2 treatment) at a Chinese university. This course is one of the basic subjects required for Chinese college students. The final sample was **111** students (**39 control**; **72 treatment**).

Intervention:

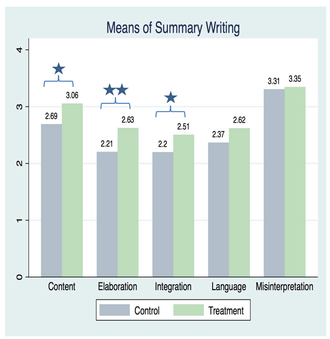
- **Treatment:** Participants created infographics as homework to prepare for the writing assignment.
- **Control:** Participants wrote outlines as homework to prepare for the writing assignment.

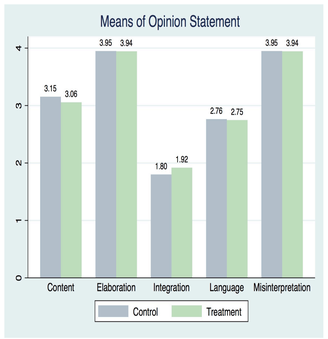
Process:

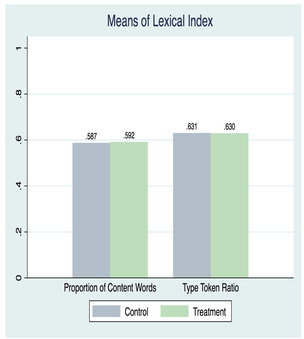
Essay Measures:

- We used a 4-point rubric[2] to evaluate the quality of the essays' content, integration of information, use of elaboration, presence of misinterpretations and language use. Inter-rater agreement was 84%, with 60% of the essays double-scored.
- Lexical quality was operationalized as proportion of content words and type-token ration using VocabProfiler.

Key Findings

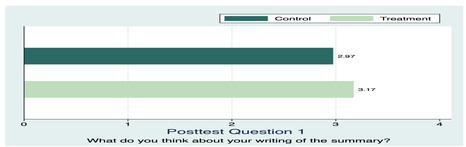


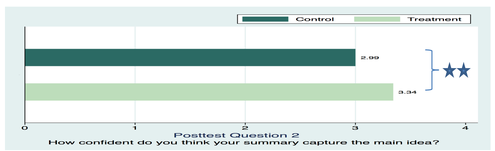


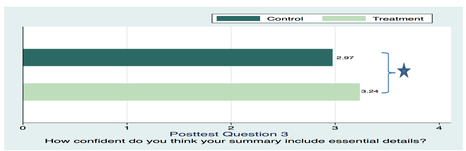


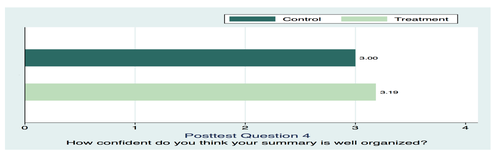
Note. ★ p<0.05 ★★ p<0.01 ★★★ p<0.001

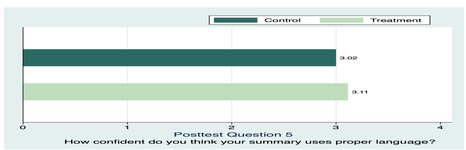
Pretest and Posttest Results

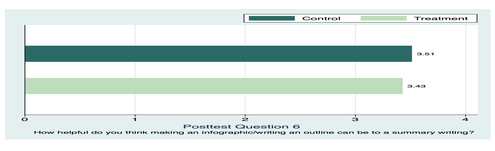












Measurement: Likert Scale
1 – Extremely Poor / Not confident at all / Not helpful at all
5 – Extremely Good / Extremely Confident / Extremely helpful

Note. ★ p<0.1 ★★ p<0.05 ★★★ p<0.01

Table 1. Regression Models Predicting Quality of Summary Writing between Infographic Group and Outline Group

	Model 1	Model 2	Model 3
Making Infographics VS. Writing Outlines before Writing	1.38**	1.61***	1.21*
	(0.47)	(0.46)	(0.48)
Scores of Pretest Writing Assignment (Baseline Writing Performance)		0.62**	0.57**
		(0.18)	(0.19)
Time Spent in Preparation before Writing (min.)			0.03*
			(0.01)
Constant	12.77***	5.68**	5.85**
	(0.38)	(2.13)	(2.12)
R-squared	0.073	0.162	0.203
Observations	111	111	109

Note. The regression is reported with beta(β) weights
Standard errors in parentheses. *p<0.05 ** p<0.01 *** p<0.001

Conclusions

- Creating infographics has a **positive effect** on the quality of EFL students' summary writing, particularly in engagement in **identifying the focus** of the target paper (content), **organizing ideas** (integration) and **presenting information** (elaboration).
- Students who prepared using infographics showed comparable performance to those who prepared with outlines in the accuracy of the information included in their summaries (misinterpretation), their use of English vocabulary (lexical indexes) and the quality of the indirect writing task (opinion statement).
- Students who prepared with infographics had **greater confidence** in **grasping the main ideas** and **delivering essential information** when writing an academic summary than those who wrote outlines.

Implications for Theory & Practice

- Integration of infographics as a planning tool may have the potential to alleviate cognitive load that EFL students encounter when summarizing an academic article.
- The multi-modal elements of infographics[4] may help students with the ideation process of organizing and expressing information.
- Creating infographics before summary writing may neither prevent misinterpretation nor benefit writing opinions based on the academic article.
- Incorporating infographics into writing courses or instructions is useful to EFL students both in their summary writing and confidence building.
- Writing instructors can't expect the utility of infographics on summary writing of academic articles to enhance EFL students' language competence or information comprehension.
- Instructors need to make the writing tasks integrated with infographics be aligned with the writing goal.

References

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3. Krauss, J. (2012). Infographics: More than words can say. Learning and Leading with Technology, 39, 10-14.
4. Maamuujav U, Krishnan J, Collins P. The utility of infographics in L2 writing classes: A practical strategy to scaffold writing development. TESOL J. 2019;e484. https://doi.org/10.1002/tesj.484
5. Yajuan Cao is a lecturer of English learning and a writing instructor. She is also one of the two raters/coders of this project. She and the experiment participants are all from Ningbo Institute of Technology, Zhejiang University, China.