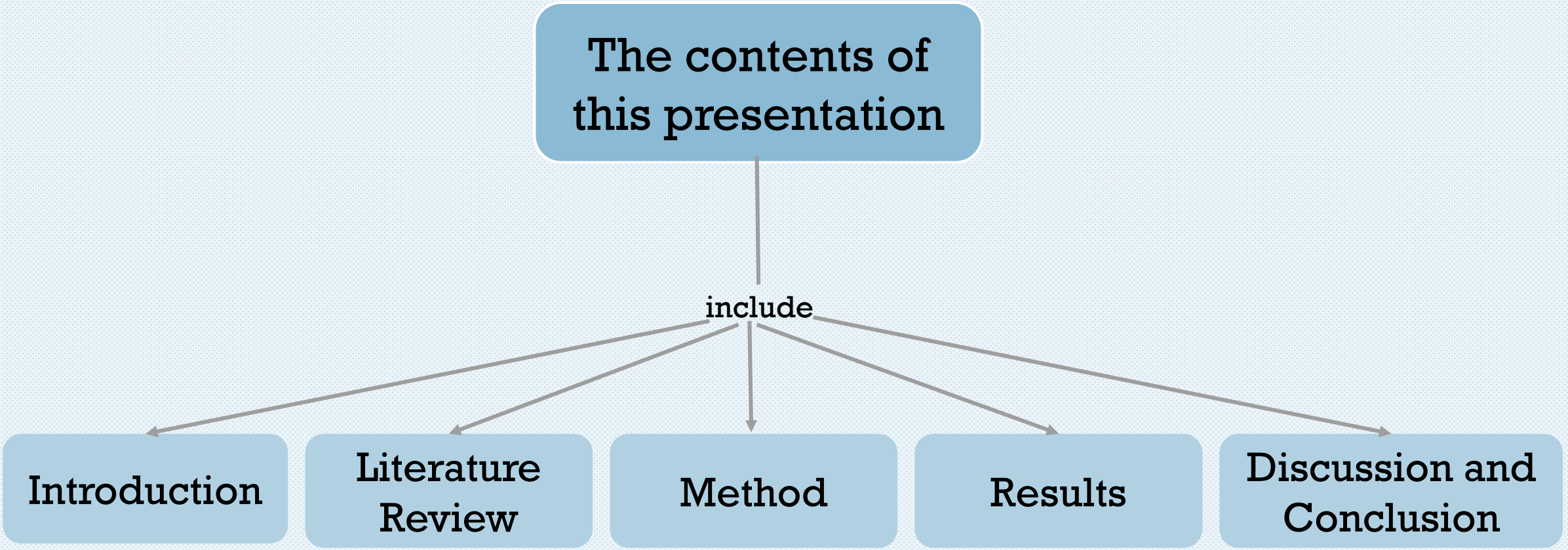
CONCEPT MAPPING AS A PRE-WRITING STRATEGY ON EFL HIGH SCHOOL STUDENTS' ENGLISH WRITING

Qianqian Chen, Dan Wang, Lingyu Yang, Guoqing Zhao

cqqbnu@mail.bnu.edu.cn

Beijing Normal University

北京師範大學
BEIJING NORMAL UNIVERSITY



北京師範大學
BEIJING NORMAL UNIVERSITY

Introduction

English writing is important and difficult.

- English has become a global language.
- Learning English is increasingly popular around the world.
- English writing is important for students' success.
- However, it is a complicated process.

Perfect English Grammar 新东方 XDF.CN 哈沃美国小学 HELLO WORLD AMERICAN ACADEMY 沪江英语 学习中心 WEBi 韦博英语 WEBi ENGLISH

北京師範大學 BEIJING NORMAL UNIVERSITY

Introduction

Current situation of high school students' English writing in China

- Organize ideas
- small vocabulary and poor mastery of grammar
- lack writing strategies

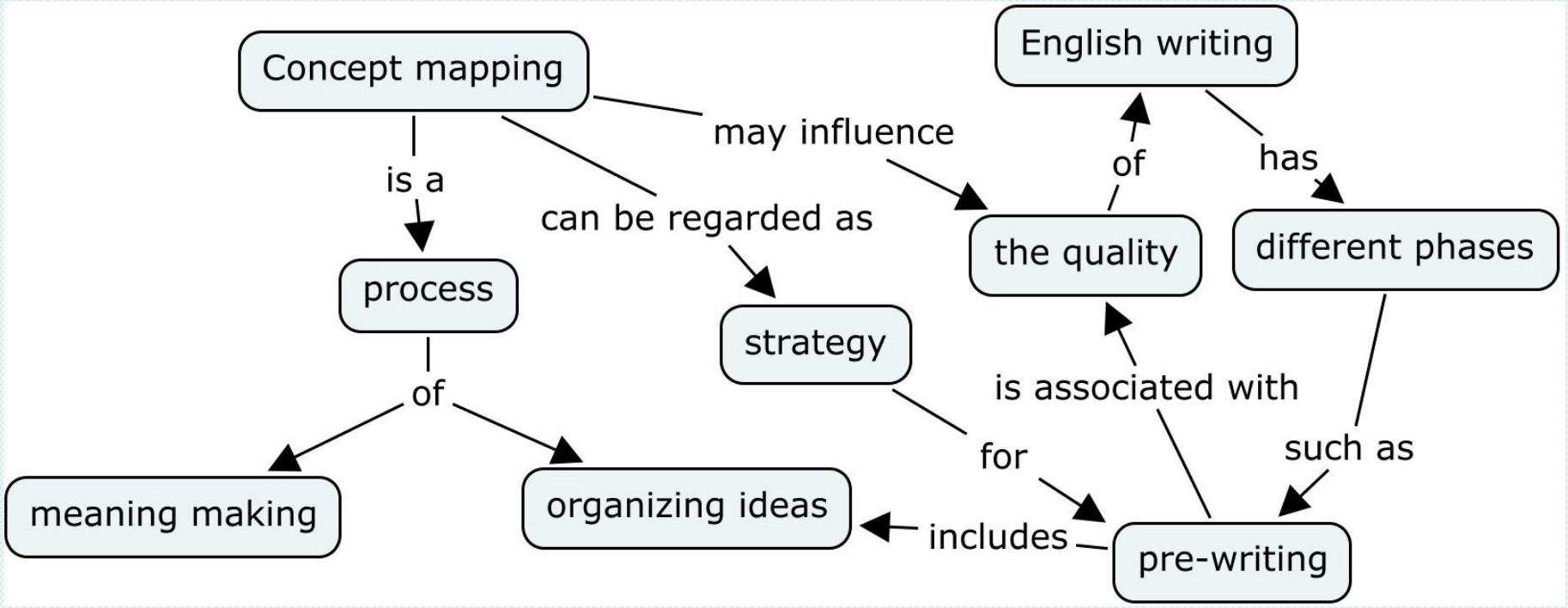
- Overlook the importance of English writing
- No writing strategies teaching

- learning strategies are the mental activities that people use when they study to help themselves acquire, organize, or remember incoming knowledge more efficiently.(Park,2014)

北京師範大學 BEIJING NORMAL UNIVERSITY

Introduction

Concept mapping can be regarded as the pre-writing strategy.



北京師範大學
BEIJING NORMAL UNIVERSITY

Introduction

Research questions

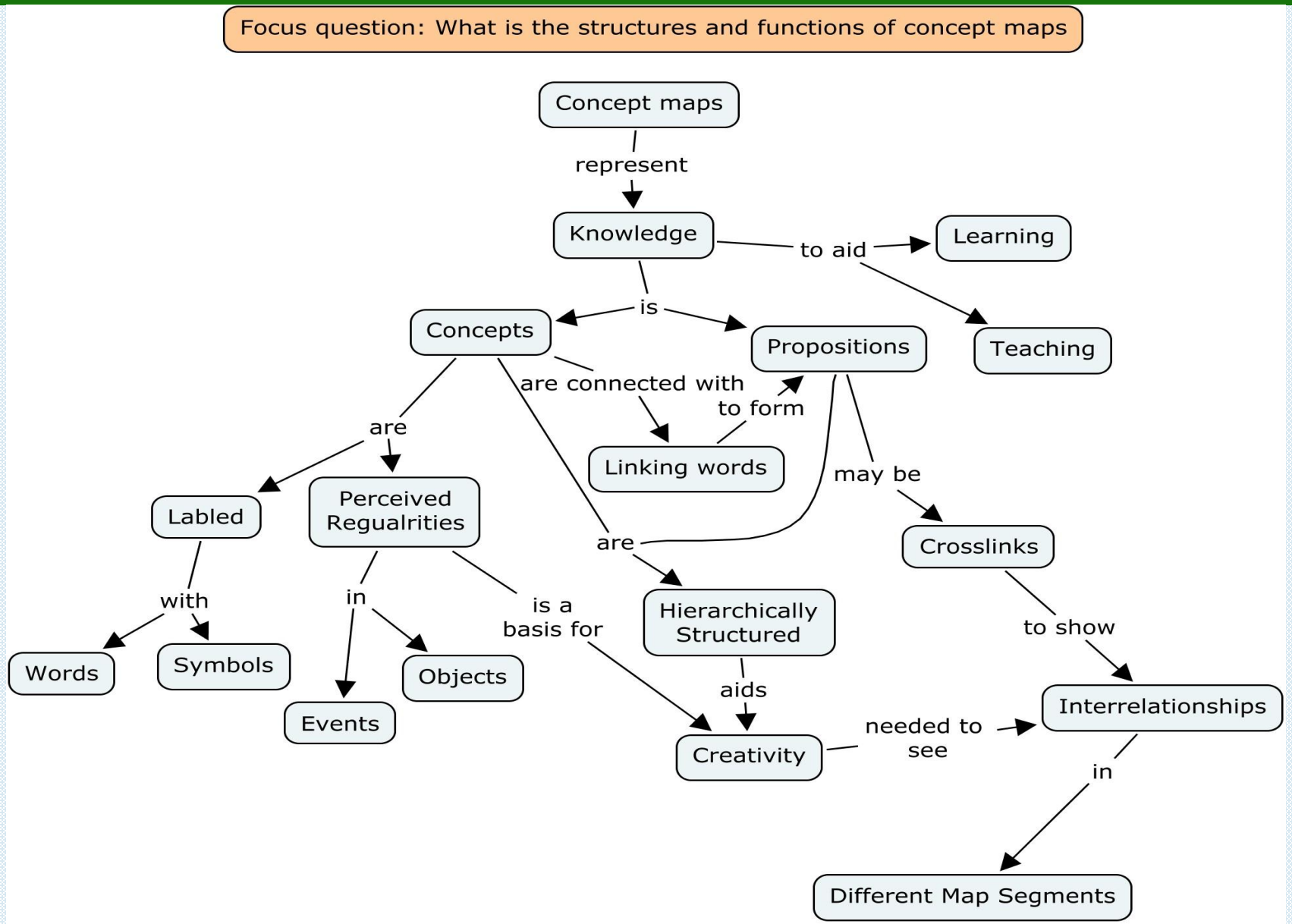
1. Does concept mapping as pre-writing strategy improve high school students' writing in English?
2. Are the effects of concept mapping the same on students of different prior knowledge? (low-level, middle-level, high-level)
3. Does concept mapping as pre-writing strategy improve high school students' motivation and learning strategies?

Literature Review

Concept mapping

- Describe explicit changes in children's conceptual understanding. (Novak & Cañas, 2006)
- Be based on Ausubel's assimilation theory.
- Numerous researches regarding concept mapping as learning strategies or evaluation tools have been implemented in educational settings. And most of them are in science fields.

Literature Review



Source:

Novak, Joseph Donald. (1998). Learning, creating, and using knowledge: concept maps as facilitative tools in schools and corporations. *Concept Mapping, 56*(4), 392-392.

北京師範大學 BEIJING NORMAL UNIVERSITY

Literature Review

Concept mapping as a pre-writing strategy in EFL context

1. Ojima (2006) investigated whether and how learner-constructed concept maps as the pre-writing planning strategy could benefit the writing performance of three Japanese ESL learners through case study. Results showed concept mapping may help ESL learners improve their composing but in ways unique to individual experience, motivation and task conditions.
2. There were also many quasi-experimental researches showed that concept mapping as a pre-writing strategy was more effective than other strategies such as listing and reading related articles (Farshi & Tavakoli, 2014; Mahnam & Nejadansari, 2012; Khalid, 2015).
3. Writing is a process involved not only a series of cognitive activities but also some metacognitive activities. Some researchers have showed their interests in these aspects.(Reza Talebinezhad & Mousapour Negari ,2009; Nobahar, Tabrizi, & Shaghaghi ,2013b)

Method

1.Participants

Experimental (25)

Control (28)

2.Procedure

The experiment lasted for three weeks, and there were three lessons every week for both of the two groups.

1.Pre-test

2.Concept mapping introduction and practice

→

Basic writing skills

→

1.Writing assignments

2.Post-test

Method

3.Materials and Instruments

- Writing assignments

Practical English writing, for instance letters and emails.

- Writing rubric

1. Adopted from English writing rubric of National Matriculation English Test(NMET).
2. The rubric consists of six categories: Prescribed Tasks, Key Points, Grammar and Words, Complicated Structures, Connectives, Writing Objectives.
3. The total score of the writing is 25 and there are six levels in the rubric. The score ranges of each level are 0, 1-5, 6-10, 11-15, 16-20 and 21-25 respectively.
4. Pearson Correlation was conducted to demonstrate the inter-rater reliability of pre and post writing scores. The results were 0.979($p<0.001$) and 0.998($p<0.01$) respectively, which showed that the given scores by two teachers were highly correlated.

北京師範大學
BEIJING NORMAL UNIVERSITY

Method

3.Materials and Instruments

- Motivated Strategies for Learning Questionnaire

Adopted a translated version of the "Motivated Strategies for Learning Questionnaire (MSLQ)" developed by Duncan & McKeachie (2005).

Scale	Subscale
Motivation (Cronbach's alpha=0.826)	Intrinsic goal orientation
	Task value
	Control of learning beliefs
	Self-efficacy
Learning strategies (Cronbach's alpha=0.905)	Rehearsal
	Elaboration
	Organization
	Metacognitive self-regulation

Results

1.The influence of concept mapping on students' English writing total scores.

Table1: *Mean performance of the two groups on the pre-test and post-test*

Test	Condition	N	Mean	S.D.	t-value	p-value
Pre-test	Control	28	16.92	2.31	0.042	0.967
	Experimental	25	16.94	1.86		
Post-test	Control	28	18.50	1.03	6.06	0.000***
	Experimental	25	20.48	1.34		

***P<0.001

The results confirmed that there were significant differences in the post-test of the two groups (t=6.060, p<0.001)

北京師範大學 BEIJING NORMAL UNIVERSITY

Results

2. The influence of concept mapping on students' change scores from pre- to post-test.

Table2: *Mean performance of the change scores from pre-test to post-test*

Dimensions		N	Mean	S.D.	t-value	p-value
Prescribed tasks	Experimental	25	0.13	0.45	0.41	0.682
	Control	28	0.06	0.71		
Key points	Experimental	25	0.74	0.39	2.51	0.016
	Control	28	0.39	0.61		
Grammar and words	Experimental	25	1.01	0.45	4.74	0.000***
	Control	28	0.36	0.54		
Complicated structures	Experimental	25	1.24	0.39	6.19	0.000***
	Control	28	0.42	0.57		
Connectives	Experimental	25	0.06	0.28	0.88	0.383
	Control	28	-0.02	0.40		
Writing objectives	Experimental	25	0.34	0.46	-0.30	0.766
	Control	28	0.38	0.49		
Total score	Experimental	25	3.60	1.99	3.02	0.004**
	Control	28	1.59	2.75		

*p<0.05,**p<0.01,***p<0.001

北京師範大學 BEIJING NORMAL UNIVERSITY

Results

3.Interaction of concept mapping and writing levels

A 2(conditions: no-mapping, concept mapping)*3(writing levels: low, middle, high) two-way ANOVA was conducted.

Table3: *Summary of condition*writing level two-way ANOVA for writing scores*

Source	SS	df	MS	F-value	p-value
Condition	27.57	1	27.57	22.18	0.000***
Writing level	2.26	2	1.13	0.91	0.41
Condition*writing level	10.02	2	5.01	4.03	0.024*
Error	58.44	47	1.24		
Sum	20146.84	53			

*p<0.05,***p<0.001

北京師範大學 BEIJING NORMAL UNIVERSITY

Results

4.Writing level comparisons

Table4: *ANOVA analysis on different levels of students of both groups on the post-test*

Condition		SS	df	MS	F-value	p-value
Experimental group	Between groups	11.64	2	5.85	4.11	0.03*
	Within groups	31.27	22	1.42		
	Total	42.97	24			
Control group	Between groups	1.75	2	0.88	0.81	0.46
	Within groups	27.17	25	1.08		
	Total	28.92	27			

*p<0.05

Results

5. Mapping treatment comparisons

Table5: *Independent t-tests on different groups of three writing levels on the post-test*

Writing level	Condition	N	Mean	S.D.	t-value	p-value
Low-level	experimental	3	19.18	1.50	0.24	0.82
	control	6	18.94	1.33		
Middle-level	experimental	16	20.34	1.14	5.33	0.000***
	control	19	18.42	0.99		
High-level	experimental	6	21.51	1.21	4.49	0.003**
	control	3	18.11	0.58		

p<0.01,*p<0.001

北京師範大學 BEIJING NORMAL UNIVERSITY

Results

6. The influence of concept mapping on students' motivated strategies application.

Table6: *The independent t-test of pre and post questionnaires of the two groups*

Test	Scale	condition	N	Mean	S.D.	t-value	p-value
Pre-questionnaire	Motivation	Experimental	25	4.98	0.49	0.14	0.89
		Control	28	4.96	0.70		
	Learning strategies	Experimental	25	4.18	0.77	0.35	0.73
		Control	28	4.10	0.94		
Post-questionnaire	Motivation	Experimental	25	5.42	0.56	2.23	0.027*
		Control	28	5.02	0.71		
	Learning strategies	Experimental	25	5.32	0.77	4.73	0.000***
		Control	28	4.35	0.73		

*p<0.05,***p<0.001

Results

Table7: The independent t-tests of the post-questionnaire of the two groups

Scale	Subscale	condition	N	Mean	S.D.	t-value	p-value
Motivation	Intrinsic goal orientation	Experimental	25	5.47	0.86	2.11	0.04*
		Control	28	5.00	0.75		
	Task value	Experimental	25	4.97	0.69	0.06	0.95
		Control	28	4.96	0.83		
	Control of learning beliefs	Experimental	25	5.28	0.75	0.65	0.52
		Control	28	5.13	0.90		
	Self-efficacy	Experimental	25	6.08	0.59	3.56	0.001**
		Control	28	5.39	0.80		
Learning strategies	Rehearsal	Experimental	25	5.37	0.80	2.40	0.02*
		Control	28	4.83	0.83		
	Elaboration	Experimental	25	5.39	0.72	3.68	0.001**
		Control	28	4.61	0.80		
	Organization	Experimental	25	4.82	1.98	2.56	0.013*
		Control	28	3.74	0.99		
	Metacognitive self-regulation	Experimental	25	6.02	0.62	8.03	0.000***
		Control	28	4.45	0.79		

*p<0.05,**p<0.01,***p<0.001

北京師範大學 BEIJING NORMAL UNIVERSITY

Discussion and Conclusion

1.The effects of *concept mapping as pre-writing strategy*

- The students in the experimental group have gained more scores on three dimensions: key points, grammar and words and complicated structure.

- Students can generate and categorize their ideas in a logical and hierarchical way by concept mapping, which allows them to be well prepared for the writing.

- They can easily examine that if all of the key points prescribed have been concluded in the concept maps, which will remind them to cover all the key points in their articles.

- students will pay more attention to the words and grammar while writing if they have prepared well using concept maps in the phase of pre-writing.

Discussion and Conclusion

1.The effects of *concept mapping as pre-writing strategy*

- Concept mapping hardly had effect on low-level students. Fortunately, for middle-level and high-level students, concept-mapping strategy has a significant effect on their English writing performance.

- One possible reason for the results may be that the low-level students had difficulties in employing concept mapping before their writing, which may cause cognitive load for them and make them more confused (Machida & Dalsky, 2014).

Discussion and Conclusion

2. The influence of concept mapping on the motivation and learning strategies of learners

- Results showed that the application of concept mapping strategy could improve students' motivation especially the intrinsic goal orientation and self-efficacy. The results of this study are in line with the previous researches (Reza Talebinezhad & Mousapour Negari , 2009; Nobahar, Tabrizi, & Shaghaghi, 2013b).
- In addition, students are required to devote themselves to the task of constructing a concept map because the process of concept mapping involves a series of such cognitive activities as retrieving, generating, organizing and linking. In the case, the utilization of concept mapping strategy can improve the students' participation in class (Reza Talebinezhad & Mousapour Negari, 2009).

Discussion and Conclusion

Limitations

- The number of low-level students in this study is small, which may influent the results. Therefore, further investigations need to be conducted in order to explore the effect of concept mapping on low-level students.

References

Chai, C. (2006). Writing plan quality: Relevance to writing scores. *Assessing Writing*, 11(3), 198-223

Cook, H. (1978). *Educational Psychology: A Cognitive View*: Holt, Rinehart and Winston.

Duncan, T. G., & McKeachie, W. J. (2005). The Making of the Motivated Strategies for Learning Questionnaire. Educational Psychologist, 40(2), 117-128

Farshi, N., & Tavakoli, M. (2014). The effects of Concept Mapping Strategy and Aural Vs. Written Prompts on Writing Test Performance Under Different Planning Conditions

Flower, L., & Hayes, J. R. (1981). The Pregnant Pause: An Inquiry into the Nature of Planning. *Research in the Teaching of English*, 15(3), 229-243

Guastello, E. F., Beasley, T. M., & Sinatra, R. C. (2000). Concept Mapping Effects on Science Content Comprehension of Low-Achieving Inner-City Seventh Graders. *Remedial and Special Education*, 21(6), 356-364

Khalid, P. Z. M. (2015*THE EFFECTS OF CONCEPT MAPPING ON MATRICULATION STUDENTS' ESSAY WRITING PERFORMANCE*. Paper presented at the INTCESS15- 2 nd International Conference on Education and Social Sciences.

Liu, P. L. (2011). A study on the use of computerized concept mapping to assist ESL learners' writing. *Computers & Education*, 57(4), 2548-2558

Machida, N., & Dalsky, D. J. (2014). The Effect of Concept Mapping on L2 Writing Performance: Examining Possible Effects of Trait-Level Writing Anxiety. *English Language Teaching*, 7(9), 28-35

Mahnam, L., & Nejadansari, D. (2012). The Effects of Different Pre-Writing Strategies on Iranian EFL Writing Achievement. *International Education Studies*, 5(1)

Negari, G. M. (2011). A Study on Strategy Instruction and EFL Learners' Writing Skill. *International Journal of English Linguistics*, 1(2)

Nobahar, B., Tabrizi, A. R. N., & Shaghaghi, M. (2013a). The Effect of Concept Mapping on Iranian Intermediate EFL Learners' Self-efficacy and Expository Writing Accuracy. *Theory & Practice in Language Studies*, 3(11)

Novak, J. D., & Cañas, A. J. (2006). The origins of the concept mapping tool and the continuing evolution of the tool. *Information Visualization*, 5(3), 175-184

Ojima, M. (2006). Concept mapping as pre-task planning: A case study of three Japanese ESL writers. *System*, 34(4), 566-585

Park, S. (2014). Implications of learning strategy research for designing computer-assisted instruction. Aeds Journal, 27(4), 435-456.

Reza Talebinezhad, M., & Mousapour Negari, G. (2009). The Effect of Explicit Teaching of Concept Mapping in Expository Writing on EFL Students' Selfregulation. *Linguistics Journal*

Sturm, J. M., & Rankin-Erickson, J. L. (2002). Effects of Hand‐Drawn and Computer‐Generated Concept Mapping on the Expository Writing of Middle School Students with Learning Disabilities. *Learning Disabilities Research & Practice*, 17(2), 124-139

Thanks for your listening!

北京師範大學
BEIJING NORMAL UNIVERSITY