

A case study of collaborative action research: lexical chunk theory and its implication on reading performance

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Abstract - This case study is conducted on the basis of collaborative action research by applying lexical chunk theory into reading. Having tutoring a college student of engineering background for two years, two teachers reflected on teaching methods and resorted to intervention of purposefully nurturing the student's awareness of lexical chunks so that he could decode chunks automatically and swiftly in the process of reading. Considering the potential benefits, a mixed method design of qualitative study and quantitative study was deployed. Through this case, teachers learn to apply collaborative action research into practice by pondering their teaching, teaching approaches and performance in the hope of enhancing their teaching career.

Index Terms: lexical chunk theory, reading fluency, collaborative action research, teaching reflection, teacher development

1. Introduction

The past twenty years witnessed a shift in teachers' development and education, moving from the traditional concept of learning the art of teaching from their predecessors into a reflective mode of combining teaching practice with teachers' reflection on their own teaching performance (Meng, 2011). By resorting to observation and reflection, teachers find issues in their teaching and proceed to tackle them by application of theories and findings of the current research. Evidence that teacher's academic research in the classroom contributes greatly to improvement in teaching has been found in academic research abroad (Darling Hammond, McLaughlin 1995, Lieberman 1995, Li 2003). Researchers in China wrote quite a few papers in the past ten years, addressing the issue of reflective teaching by means of action research (Wang Qiang 2003, Ren Qin Mei 2006, Xiu Xu Dong 2008, Cheng Wen Hua 2010). It is not surprising that they all touch upon how to locate issues in teaching, come up with solutions, execute plans, analyze the effects, and make modification accordingly. In this way, teachers benefit considerably from this approach, given both their capacity to do academic research and career development to be enhanced.

2. LITERATURE REVIEW

A. Action research

Dated back to the 1940s, Kurt Lewin put forward action research in his paper. The 1990s saw a resurgence of deploying action research in English learning and teaching. The definition of action research is varied, usually referring to such a definition that it is an organized teaching reflection with the aim to improve teaching performance (Edge 2001, Wallace 2004, Burns 2010a). Teachers usually initiate the research in order to address the real issues in their teaching. This self-

initiated research includes the steps as follows: planning, locating issues, collecting and analyzing the data systematically, coming up with a solution, and evaluating the effectiveness of the proposed solution or probing into the factors contributing to the issue. Action research is typical of advocating teachers' reflective thinking and sharing their thoughts or ideas with their colleagues, which may have a positive impact on their teaching and the schools which they serve (Miller, 2003). A Taiwanese scholar Prof. Lee Zhu Shou holds that action research is one of modern research methods featuring team work, which lays emphasis on the team members' taking action to look for issues and come up with solution to problems, followed by testing their solutions in teaching practice. It is action that matters.

B. Lexical chunk theory

Lexical chunks, or prefabricated chunks are defined by two standards. One is to adopt the way that Wray (2002) defined them as ones that can be retreated and decoded as a whole unit; The other is measured by frequency (Wang Yan, Huang Hai Xiao 2011). Word clusters are frequently used with fixed forms and meaning, usually bigger than a single word and retaining the function of a phrase or grammatical structure. Lexical chunks are memorized as a whole unit and processed as one unit, thus alleviating the burden imposed on working memory when the information is processed. With the use of lexical chunks, reading fluency and accuracy can thus be enhanced.

This study is done in compliance with the definition made by Altemberg (1988), who classifies lexical chunks into three types: complete subordinate clauses, fractions of subordinate clauses and incomplete phrases. Subordinate clauses take up the majority portion of lexical chunks, which most teachers fail to take into account in their teaching. Lexical chunks are ready-made language units. The use of them contributes considerably to language production and comprehension (Wray 2002). How to cultivate and reinforce Chinese learners' awareness of lexical chunks remains little addressed, especially in the field of reading fluency and efficacy, neither can we find related academic study in this area in the overseas counterparts (Grabe 2009).

C. Working memory, reading fluency and reading effectiveness

From the perspective of neuropsychology, reading process is divided into three stages when the information is processed, sensory memory, working memory and long-term memory respectively. When characters in reading passages are

converted into linguistic codes and enter the sensory memory, in which attention is aroused. These codes are temporarily stored in the working memory. As is known to all, working memory is limited in its capacity, taking in no more 7±2 units of information. Working memory is actively involved in taking in and storing new information while it is engaged in other cognitive activities, therefore, the load on working memory is daunting, especially when reading comprehension is ongoing, for working memory is busy with deducing meaning in the context or drawing inference, complete with storage of new information and comparison between the new information with the existing one in the memory.

Newman put forward the concept of reading fluency about 30 years ago. Reading fluency covers three attributes, reading accuracy, reading speed and prosody. However, it is time-consuming to cultivate reading fluency since it is a cumulative and steady progress. Generally speaking, a fluent reader can decode and comprehend a passage fast and efficiently (Ma Hong, 2007). Besides, a good reader can not only decode the meaning of words fast and automatically but also combine related words into lexical chunks automatically so as to ease the burden of working memory. Lots of research and empirical studies in this area by overseas scholars prove reading fluency correlates strongly with reading performance (Grabe 2009; Kuhn & Stahl, 2000, John 1993).

3. COLLABORATIVE ACTION RESEARCH

The process of this action research study consists of six procedures, namely, diagnosing an issue, forwarding a proposal, taking action, modifying teaching approaches, collecting and analyzing the data, and summarizing and sharing the findings. Teachers adopted intervention measures by imposing and reinforcing lexical chunk awareness in a student's reading process. Field notes, classroom observation, test scores, questionnaire and semi-structured interviews were made to obtain adequate data so as to observe, analyze and evaluate the effectiveness of teaching approaches as far as the student's reading achievement is concerned.

A. Identifying a subject

The subject in this study is a junior student in an engineering university. Prior to the study, the researcher, together with her colleague, who acted as her assistant and observer, made a relatively thorough study of the subject's background, such as his family background, his academic achievement in the university, English teaching materials he had used and hours spent on English and etc. Besides, the data about the subject's awareness and use of lexical chunks in reading were collected and kept as the preliminary data.

B. Objectives

The study is to probe the correlation between awareness of lexical chunks and reading fluency. To ensure the reliability of this study, the researcher collaborated with a colleague, each taking on different roles. The researcher was responsible for instructions, in which lexical theories were deployed in

teaching reading whereas the colleague observed the process while keeping logs, doing questionnaire and collecting data.

C. Action research of enhancing lexical chunk awareness in reading

1) *Diagnosing the challenges that the subject was confronted with in reading*: Before this study started, a reading test, followed by a questionnaire, was assigned to collect the initial information about the subject's reading performance. The findings revealed that the subject was aware of lexical chunks to some extent. His reading speed was calculated at 92wpm, reading accuracy at 72.9%. Since the subject just took the CET 4, that score was taken as the initial score for reference. The challenges in reading for this subject were such as a slow reading speed and difficulty in understanding long sentences. Besides, he was relatively poor at drawing inference or deducing meaning in the context.

TABLE I Reading Performance at the initial stage

Reading accuracy	Reading speed	Recognized Lexical chunks	Attitude to reading
72.9%	92wpm	45%	Passive

2) Pinning down teaching approaches and taking action:

After noticing the subject's trouble in reading, teachers decided on explicit teaching approaches. During a semester's tutoring, the researcher demonstrated how lexical chunks were recognized and applied the passage reading, whether they were in the form of phrases, fragments, incomplete clauses or even complete clauses. A variety of supportive assignments featuring comprehensive output were given out to the subject to enhance the awareness of lexical chunks.

3) *Procedures*: The study lasted approximately two years, which was divided into three phases. The first and second phase went on for half a year, with the third phase lasting one year. When one phase came to an end, a semi-structured interview was conducted while the data about the subject's reading accuracy, reading speed and the number and types of lexical chunks he recognized in the passages he had read were collected.

The first stage: A specific teaching plan was decided on, dividing the tutoring into pre-reading, during-reading and post-reading stages. The research took one paragraph from a reading passage for an example, pointing out the lexical chunks explicitly. In the while-reading stage, the researcher resorted to "explicit teaching approaches" by explaining all the lexical chunks in the passage. In the last stage, the researcher underlined the lexical chunks, the subject was required to translate the chunks into Chinese or make sentences by using some of them. Attention to the lexical chunks in the reading passage was stressed with the aim that the subject would be able to transfer the automatic singling out lexical chunks in the reading in his mother tongue into reading in English. The subject was tutored for an hour and a half each week, 18 times

in all. When the first stage was over, the subject took CET6 for the first time.

At the second stage, the subject picked out the lexical chunks in the process of reading via reading aloud. The research complemented the missing chunks or correcting the wrong ones. By combining “comprehensive input” and “comprehensive output”, writing assignment was added to reinforce lexical chunk awareness. Half a year later, the subject took CET 6 for the second time.

As the subject had to prepare for the approaching TOEFL test at the third stage, the researcher modified the teaching approach and went through TOEFL vocabulary in the form of chunks, merging new words with the familiar ones. A large amount of reading was done to transfer the declarative knowledge into procedural knowledge(O'Malley J.M. & A.U. Chamot 1990).The subject accumulated the lexical chunks in reading, with reading amount reaching 120,000 words in all in one year's time.

4) *Data Collection*: The scores from CET 4, CET 6 and TOEFL exams are valid and reliable, given the scale and reputation of these examinations. A similar test was given to the subject right after he took the exam so that reading speed, percentage of lexical chunks at that time could be collected. Besides, teaching logs were kept and class observations were made every week.

TABLE II The subject's reading performance at five major exams

Exams	Time	Scores (reading scores)	Accuracy Speed	Correct recognition of lexical chunks
CET 6	2009.12	520 (185)	72.9% 110WPM	56%
CET 6	2010.6	556 (212)	87.2% 136WPM	73%
TOEFL	2011.1	79 (21)	70% 115WPM	78%
TOEFL	2011.5	84 (26)	86.7% 153WPM	87%

5) *Data Analysis*: Judging by two CET 6 scores, reading accuracy improved considerably, jumping from 76.1% to 87.2% in half a year. Given the improvement in TOEFL exams, reading accuracy is raised by 23.8% in about four months moving from 70% to 86.7%. Besides, the subject reading speed picked up steadily in the two years' period, with the recognition of lexical chunks enhanced concurrently.

6)*Findings*; In retrospect, the subject's reading competence improved, with his command of vocabulary expanded from 4,800 words to over 8,000 words. Reading accuracy was improved steadily. What is worth mentioning, the subject did extremely well in the second TOEFL test, four months from the first one, with the reading score jumping from 21 points to 26 points. The lexical chunks recognized increased stably as the study went on, so did his reading speed.

To prove into his reading competence, his lower level of reading competence benefited from the awareness of lexical

chunks. However, his ability to decode the new words in the context and to make implication progressed relatively slowly, which will be taken as a topic for the next round of collaborative action research.

Three interviews were conducted and taped. After seeking the subject's consent, the records were transferred into written words. Reading and rereading the literature, recurring codes came up:

I could barely recognize the chunks that I was familiar with when coming across a challenging passage. However, those familiar chunks did not help me much to comprehend the passage.
(2010, 7)

After over one year reading practice, I come to understand that reading a passage not word by word, but one chunk after another. I feel my reading speed and accuracy benefit a lot.

(2011. 10)

From the viewpoint of teachers, action research enables them to judge their teaching performance more objectively and scientifically. Teachers' reflection on teaching offers “emic views” while the researchers can contribute their “etic view” The roles that teachers play may vary from circumstances to circumstances, like trainers, evaluators, coaches , organizers, and motivators. In this case, the focus of teaching moved from demonstration of how to recognize lexical chunks and to decode meaning by chunks rather than by words to how to cultivate subject's awareness of deploying lexical chunks in the process of reading. Above all, students' initiative is emphasized while the equal attention is given to teachers' guidance in learning (He Lian Zhen 2011).

7) *Sharing findings with colleagues*: As part of action research, the researchers shared the findings with their colleagues. Nurturing learners' awareness of lexical chunks in reading comprehension contributes to better reading achievement.

4. Conclusions

This study falls into the category of collaborative action research, in which practitioners apply lexical chunk theory into teaching reading comprehension. In return, this study enables teachers have a better understanding of lexical chunk theory and its contribution to reading fluency. As this is an individual case study, its implication is limited, thus awaiting more empirical studies and action research studies.

What is worth mentioning is that many ESL learning theories are used in teaching and learning English in our country, caution and adaption shall be made so as to meet the specific needs of Chinese English learners, given the difference in learning English in China. Therefore, localization of language learning theories is a must (Yang Ming, 2010). Action research provides practitioners with a tool, by which they can find out issues in their teaching and come up with solutions and test them in their teaching practice. It is a virtuous cycle, in which teachers integrate language theories into teaching practice, thus enhancing their understanding of

theories and improving their teaching. In the long run, teachers' career development is ensured.

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