An Empirical Study on the Application of Sociocognitive Theory and Pedagogical Strategies on Reading

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Abstract: *Language learning is a socially situated activity involving target learners orchestrating all the mediation tools available to construct a collaborative model between the learner and the environment. Sociocognitive theory in second language acquisition prioritizes the social nature of language and language learning while dwells rationally on the psychological and cognitive essence (Atkinson, 2002; 2010)[2][3]. Reading assumes one of the main ways for learners to mediate a mental and structural system constructed by analyzing linguistic symbols from the environment to establish a socially cognitive alignment with the specific context. Therefore, reading instructions which were reckoned traditionally have shouldered an utterly different role, and from the perspective of sociocognitive theory and relevant pedagogical strategies, the focus of the study was to verify the potential effects of sociocognitive-oriented teaching instructions on university students' reading comprehension in an EFL context. Empirical evidence will be demonstrated on how learners' performance on the reading section of the College English Test- 4 could be born upon by the cast of instructions received, and how pedagogical strategy use could benefit learners. A total number of 67 male and female EFL students from a university in Yunnan province China were the targeted participants of the study. A GEPT language proficiency test, a reading comprehension test from the CET-4 and a reading strategy questionnaire (adopted from Phakiti, 2006)[26] were administrated to collect data. The data was then analyzed through correlational and descriptive analysis revealing sociocognitive techniques giving rise to satisfactory reading comprehension and strategy employment.*

Keywords: *sociocognitive theory; strategy use; reading comprehension; scaffolding; modeling; guidance; handover*

1. Introduction

Sociocognitive theory in second language acquisition emphasizes that mind, body and specific environment function interactively to build a unified ecological network(Atkinson, 2011)[4]. Language learning is a socially constructed activity in which learners dynamically adjust their behaviors or mental status to the contexts. The extensible and situational nature of cognition justify the fact that learning is contextual,and it can not be separated from social environment(Yang & Xie, 2015)[37]. Although both social and cognitive theory of language learning aim at how effective and open intercommunication could be formed, the instructional tools and pedagogical means they advocate vary notably.Interaction with others has been regarded as the main foundation of second language development from social perspectives, which also stretch the context-independent mode of the cognitive theory to individual learners' engagement in contexts of all sorts(Toth & Davin, 2016)[32]. Thus language is stated to be the compilation of social practices which are "in-flux, contested, and ever-changing" (Duff & Talmy, 2011, p. 96)[11]. Learning is initiated when learners aligning themselves with the targeted social and cultural groups endeavor to mediate their own purposeful actions corresponding with others' voices (Duff & Talmy, 2011)[11]. Traditional approaches have treated reading comprehension as representing or translating information into equivalent representations or some mental languages, however, linguistic symbols involved in reading are value-laden tools to aid readers in editing and decoding the information to make sense of the context which is constructed in reading while triggering previously related experiences, that is, the meanings expressed by words or sentences in reading are customized to realistic or conceptual contexts(Gee, 1999a)[13]. Reading is a social act in that it calls for readers engaging either unconsciously or intentionally in culturally characterized ways of using the text (Israel & Duffy, 2009)[18], and perspectives today on language also ties comprehension or meaning in language closely to readers' situated experience of action in the world, for example, the

work in cognitive psychology states that "comprehension is grounded in perceptual simulations that prepare agents for situated action" (Barsalou, 1999, p. 77)[6], in this sense, the meaning of a word in reading bears similar role as an object in the world, and to understand the meaning of the word requires examining one's explicit experience of text at a given time and space. The situated nature of reading renders reading instructions to cover much more than the internal relations within texts. "Reading instructions must be rooted in the connections of texts to engagement in and simulations of actions, activities, and interactions - to real and imagined material and social world"(Gee, 2001, p. 138)[14]

Operative pedagogy from the perspective of sociocognitive theory also provides a newly constructed framework for language instructors to view language and language learning as a cognitive and social activity. A sociocognitive pedagogy emphasizes the importance of expert others as resources of meaningful language structures in the context, a three-step pedagogical structure towards classroom instruction involving an ongoing flow of modeling, guidance and handover has been proposed to assist learners to reach to independent performance of certain tasks after receiving expert support in mediating social tools, which includes but by no means limited to texts, teacher instructions, peer assistance, individual experience, value, physical settings, metal status(Toth & Davin, 2016)[32]. Instructional models targeting strategy instruction have grown considerably, situated in various settings of language learning, these models or frameworks are socially constructed tending to integrate pedagogical strategies in the cycle of before-during-after reading. Pedagogical strategies or frameworks, such as TSI(Pressley et al., 1992)[28], PALS(Liang & Dole, 2006)[23], etc, have been constructed to improve reading comprehension and to create an interactive classroom setting.

Therefore, in line with the nature of reading in the sociocognitive theory and relevant pedagogical strategies, the purpose of the study is to investigate how reading comprehension or students' performance in College English Test can be influenced by employing socially constructed teaching techniques under the guidance of sociocognitive theory, and to see whether there exists statistically purposeful relationship between learner language proficiency and strategy use in an EFL context.

2. Background

The sociocognitive view of reading indicates that meaningful participation in certain social context assume the major responsibility for learners to develop literacy learning, and Vygotsky (1978)[33] suggests that reading and writing are complicated cognitive processes which can be facilitated through purposeful social interactions in culturally defined contexts and through transactions with texts. The traditional impression of reading as a straightforward transfer of information from the linguistic symbol in the text to readers' mind has experienced changes. Reading is stated to be a social practices requiring readers to use text in a culturally distinct way when they align themselves with particular social and cultural groups (Scribner & Cole, 1981)[29], and texts are viewed as orchestration of signs which are historically formed via social interactions in culturally meaningful actions (Vygotsky, 1987)[34]. What's more, the communicative purposes reading targets at and the specific conditions, both mental and physical, in which reading is situated impinge upon the act of reading and meaning making (Greenleaf et al., 2001; Scribner & Cole, 1981)[16][29].

In this regard, reading instruction must be carried out with consideration of various perspectives on realistic and imagined world given the fact that "Our ways with words (oral or written) are of the same nature as our ways with ways of understanding and acting on the material and social world." (Gee, 2001, p. 140)[14]. The accumulative knowledge provided for language learning instruction is not chosen randomly by instructors, but is carefully designed to be well-located in learners' Zone of Proximal Development, which refers to the distance ranging from what a learner can do independently to what he/she can accomplish in collaboration with other context-participants (Vygotsky, 1978)[33]. By constructing the concept of ZPD, Vygotsky (1978)[33] emphasizes that language instructions should be dynamically adapted to targeted learners' language proficiency and assist learners to integrate the socially engineered knowledge into their inner language repertoire. Language instructions appropriate to targeted learners' ZPD are named mediated learning which requires the engagement of more capable others who can provide necessary assistance for learners acquiring the target language skills (Wertsch, 1991)[35]. Lenski and Nierstheimer (2002)[22] provides an example illustrating the importance of social interactions in scaffolding learning within the child's ZPD and shows how a responsive adult in the situation would modify his/her own actions to provide assistance tailored to the interlocutor.

Atkinson (2010)[4] has summarized views of language learning and cognitive processes in the field into three basic principles which have laid a theoretical foundation for sociocognitive theory in second

language acquisition, the three principles are: 1) the Inseparability Principle; 2) the Learning-is-adaptive Principle; 3) the Alignment Principle, and those principles are suggested to be relied upon when language instructors make their pedagogical decisions. Effective pedagogy regards language and language learning as social and cognitive events (Toth & Davin, 2016)[32], and teachers who make endeavors to observe targeted learners' learning processes and to adjust instructions accordingly shall not overlook the social and cognitive perspectives in language learning. Generally, those perspectives coincide with the instructional ordering where a teacher models the use of language skills or strategies, then guides learners to practice the skills or strategies in a meaningful context, and finally hands over the control of the practices to learners for their independent performance (Toth & Davin, 2016)[32]. In view of the implication of the sociocognitive pedagogy, Toth and Davin (2016)[32] examines the justification of implementing the three-step instruction of modeling, guidance, and handover. Teachers must select concepts of instructions carefully to accommodate targeted learners' ZPD in the modeling section before providing graduated and haphazard dialogic mediation in the guidance section on the premise that assistance from the teacher or more capable peers is only available when it is necessary and is supposed to be implied and self-effacing prompts which then gradually turns to be more direct as needed by the learner (Aljaafreh & Lantolf, 1994)[1], and ultimately the learner will be able to assume agency in language use independently and to use the target language structure in communicative tasks based on internalized and accumulative experiences and conceptual knowledge (Toth & Davin, 2016)[32]. This present study examines the performance of the controlled and experimental groups at the end of the course which lasts for ten weeks or nearly 27 hours' classroom teaching in total (eighty minutes per week), and the experimental group will receive instructions following the three-step sequence of modeling, guidance, and handover.

3. Methodology

3.1. Participants

67 EFL students participate in the study, they are all sophomores from a university in the southwestern part of Chinese mainland. It should be noted that all the participants were not majored in English which was set as a compulsory course for undergraduates in the university. After the administration of the language proficiency test (from GEPT), those whose scores were above/below the medium are taken as high/low group relatively. Two authentic university classes including both high and low proficiency learners are used, in which one of the two classes is utilized as the control group and the other experimental group.

3.2. Instruments

Three instruments were employed to collect data for the present study: a) a GEPT (General English Proficiency Test); b) a questionnaire of reading strategy and c) a reading comprehension test adopted from the College English Test (available at https://cet.neea.edu.cn/html1/folder/16113/1588-1.htm)[38].

3.2.1. Language proficiency test

To determine the level of English language proficiency of the targeted EFL students, a version of GEPT Elementary Level Reading Test was administered to all participants. The GEPT is a criterion-referenced language proficiency test developed by the LTTC (Language Testing & Training Center) in Taiwan to function as a reliable English testing system for EFL students, the GEPT has earned its place in the international academic community with numerous studies and researches (e.g. Shih, 2010, Kunnan & Carr, 2017)[30][19]. Validation of many aspects has been done in studies, Fan et al. (2021)[12] has focused on the alignment of GEPT with the *Common European Framework of Reference*. The GEPT Intermediate Level Reading Test consists of 30 items in total which are further divided into three parts, and all parts are multiple choice questions.

3.2.2. Reading Comprehension Test

A test of reading adopted from a sample test of College English Test Band 4 revised in 2016 was used at the beginning of the course as a pre-test to determine targeted participants' reading ability, and the same test was administered to learners after the ten-weeks' teaching session to analyze the effect of traditional instruction and sococognitive-based model of teaching on students' reading achievements respectively. The reading test includes three parts: a passage of Banked Cloze (200-250 words); a passage of List of Matching(900-1000); a passage of Careful Reading. There were 25 questions for all

three passages. In the first part, ten words were deleted from the text, and students were required to fill in the blanks from the given fifteen options on the basis of understanding the text. Students' ability to understand and use vocabulary in the context of the text is assessed by filling in the blanks with selected words. The second part was composed of a passage of 900-1000 words followed by ten sentences in which each sentence contains information from one paragraph in the passage, students' ability of extracting information from the text using scanning and skimming skills was tested by identifying the paragraph which matches the information compromised in each given sentence. Students' reading comprehension abilities at various levels, including recognizing main ideas and details, analyzing the passage comprehensively, inferring words meaning based on the context, were assessed in the third part of the test which was in the form of multiple-choice questions. Five questions were listed after the passage, and students were demanded to choose the most appropriate answer out of four options for each questions based on their understanding of the passage. The College English Test system is widely used in Chinese mainland to carry out a scientifically reliable measurement on college and university students' ability to use English comprehensively. The system is set up closely tied to the trend of the development of higher education in Chinese mainland and it promotes the reform of college English teaching. Researches related to various aspects of the College English Test have obtained fruitful achievements (e.g. Shi & Liu, 2006)[36].

3.2.3. Reading strategy questionnaire

A reading strategy questionnaire was used to collect data for analyzing students' use of reading comprehension strategies, the questionnaire adopted from Phakiti (2006)[26] contained 30 items describing awareness of strategy use in pre-, while-, and post-reading phases. Targeted learners' cognitive and metacognitive variation of reading strategies was tested in the questionnaire in which factors like planning and comprehending strategies, reading habits, retrieving old knowledge. This questionnaire was also used in studies investigating EFL learners' reading comprehension performance in sociocultural context (e.g. Ghafar Samar & Dehqan, 2012[15]). The questionnaire used a Likert-scale and each entry is marked from point 1 to point 5 (1=never, 2=seldom, 3=sometimes, 4=usually, 5=always) to represent learners' frequency of strategy use or awareness. The original questionnaire which was in English was translated into Simplified Chinese for participants of non-English majors to understand each item in the questionnaire accurately.

3.3. Procedure

At the beginning of the survey, the GEPT Elementary Level Reading Test was given to all the participants to collect data of their language proficiency, and they were divided into two groups of high and low based on their performance in the GEPT. Learners who achieved scores lower than the medium were identified as low and others whose scores were higher than the medium were taken as high. Therefore, 32 learners were marked as high proficiency while 35 learners were divided into the low level of proficiency, it should be noted that the control group and experimental contains learners of both low and high language proficiency.

A reading comprehension test was also administrated to all participants in both control and experimental group as a pretest which was followed immediately by a strategy questionnaire for learners to recognize their language learning strategy through self-report. Though self-reporting might not be precise if learners does not answer the items on the questionnaire honestly, and sometimes learners may be not aware of the strategies that they are using, it remains the most effective way to discover learner's mental process in employing strategies. The only way to find out the particular strategies that learners are utilizing in nearly all learning context is to ask them (Chamot, 2004)[9]. The same amount of time will be allocated to all participants who are required to finish the pre-test and questionnaire at the exact same place to establish an almost same setting for participants for the sake of minimizing possible influencing factors. Learners were also told to answer the questionnaire truthfully and authentically and they would remain anonymous during the study so that there was no inner negative pressure of unsatisfactory achievement.

In the ten-weeks' study, the control and the experimental group were expected to participate in English reading classes which lasted 80 minutes per week for ten weeks. They were all taught by the same teacher using the same material. In the reading class, students in the control group received traditional reading instructions where the teacher dominated the class and gave orders or instructions to students, and students were recipients of controlled content when they were required to work out related comprehension questions based on their own understanding of given tasks. No group or pair work was permitted for students in the control group and the teacher would provide whole-class

explanations or illustrations on certain topics or questions but no individually specific assistance.

For the experimental group, teaching techniques and strategy instructions from the sociocognitive perspective were implemented. Supportive scaffolding and the three-step instruction of modeling, guidance, and handover are the main class instruction tacks employed. It is noteworthy that general reading strategies or skills specific to CET-4 readings received principal attention in class instructions while devoting less class efforts to language features such as grammars unless there were specific demands from certain groups.

In the present study, to provide adequate and tailored scaffolding in reading classes, students in the experimental group were organized into 9 groups with 3 students in each group (one group with 4 students) based on their language proficiency so that the teacher instructions were contextualized to meet the appropriate language level and need of certain groups. In the study, students from the intermediate proficiency group asked for more assistance from teacher or peers about word clarification or sentence translation while high proficiency groups focused much more on text organization or metalinguistic aspects. Grouping also encouraged pair and group work, which increased group members' opportunity of collaborative learning.

Another core pedagogical model used for strategy instructions is the three-step sequence of modeling, guidance and handover. Based on Paul D. Toth and Kristin J. Davin (2016)[32], the three-step teaching model of modeling, guidance and handover reflects the social and cognitive perspectives of teaching and learning, and they state that "highly effective pedagogy requires viewing language and language learning as both cognitive and social phenomena"(p.149)[32], and the social and cognitive nature of language also recommends the instructional sequences in which teachers facilitate reading strategies internalization by modeling and guiding which extend dialogic mediation calibrated to learners' ZPD. In the process of authentic language use, providing the fact that the focus of our attention influences changes in information processing and automatization, the sequencing instruction of modeling, guidance, and handover by which instructors assist learners in imperative elements of the targeted language features "is among the strongest pedagogical means for facilitating L2 development(Toth & Davin, 2016. p.157)[32]".

PACE is one of the teaching proposals that reveals the pedagogical practices of modeling, guidance and handover (Toth & Davin, 2016)[32], it is an acronym standing for a four-phase grammar instruction approach, which is Presentation, Attention, Co-construction and extension (Adair–Hauck & Donato, 2016)[5]. Students were assisted to derive strategies from reading practices demonstrated by the teacher in verbal or physical forms. For example, the teacher could say "after reading this sentence, I justifiably infer that the author is going to talk about the following points", then students realized the strategy used was Predicting. After modeling strategy uses, the teacher explicitly explains every strategies, and taught students about the introduced concepts (Duffy, 2002)[10]. Aspects about what the strategies are, why they bear great importance and how they work were primarily illustrated for students, so that students are more inclined to use those strategies in meaningful reading tasks. PACE was originally used in grammar instruction where students are guided to deduce the structure of a certain grammar rule from its contextually meaningful representation and then to exert the rule in meaning-focused output tasks. The present study organized every classroom instructions under the framework of PACE while necessary modifications to fit reading strategy instructions had been made beforehand.

Reading materials and corresponding comprehension questions were carefully selected and modified to adjust to students' language proficiency. For students in the intermediate groups, reading tasks were adapted by changing low frequency words into highly known ones, rewriting complicated questions, or by providing explanations. In this way, learners with low language proficiency could receive meaning-focused input by exposing themselves to texts which are at the appropriate levels for them, Hu & nation (2000)[17] and Nation (2013)[25] have suggested that leaning in reading can occur when learners have already familiarized with 98 per cent of running words in the text. The overall goal of the study was to examine the effectiveness of reading strategy instructions, therefore, other potentially baffling factors like vocabulary were purposely revised in advance to attenuate disruptive elements. For students in high proficiency groups, tasks which were original in CET-4 were assigned.

Reading strategies from sociocognitive perspectives assume decisive roles in this study, all strategies utilized in class instructions were chosen from other researchers' works under prudent deliberateness, and some of them were carried out modification to meet students' particular needs and characteristics of CET-4 passages. Flexible strategy use facilitates text decoding and meaning construction, according to Pressley (1995)[27], proficient readers and writers skillfully employ a multitude of strategies to every writing and reading activities. And they integrate strategies of various

kinds into authentic language uses subconsciously or intentionally, this process inevitably requires instructions, practices and reflections.

Based on the perspectives of sociocognitive theory, following strategy frameworks were included in class instructions: Peer Assisted Learning Strategies (PALS), Questioning the Author (QtA), and Collaborative Strategic Reading (CSR). these multi-strategy models provide comprehension strategies in a natural sequencing when the teacher demonstrates specific illustrations followed by regulated practices and finally moving to independent uses(Liang & Dole, 2006)[23], which is compatible with the three-step teaching models of modeling, guidance and handover in this study. Questioning the Author (QtA) is the strategy framework encouraging students' critical thinking in group collaborations when making sense of the text (Beck, McKeown, Worthy, Sandora, & Kucan, 1996)[7]. In implementing this strategy, students practice hypothesizing ideas or structures of the passage as erring, or they directly question the author, and then come up with corresponding questions regarding points that are essential to the passage, and those questions will be shared within their groups in which questions will meet retort or clarification from other members, during this process, students collaboratively construct text meanings, and discover new information from changing opinions with peers.

Another strategy used in the PACE teaching techniques is predicting, this is a strategy that inspires learners to set goals for their reading, which can be either goals for the article as a whole or partial goals for paragraphs, and learners will be motivated to read the article to fulfill the preset goals and to verify their predictions. Block and Israel (2005)[8] has stated that expert readers make predictions and devise ideas by resorting to their prior experiences and knowledge. In modeling this strategy, the teacher explains what the strategy is and how it works to raise students' meta-cognition, and using information from the text such as titles, tables, pictures, key words and etc.

Another strategy to which students react enthusiastically in this study is making connections. Learning happens when learners connect ideas with their prior knowledge or their personal experiences. Learners make sense of the text in a tangible way through activating their background knowledge, integrating their beliefs or values into the text, and linking elements of the specific context with text comprehension. According to Küçükoğlu (2013)[20], learners apply the strategy from multi-dimensional points including text-to-text, text-to-self, and text-to-world, and this strategy can be efficiently realized with drawing, chart making, setting down notes, and communication tools such as graphic organizers. In modeling, the teacher in the study begun with asking students questions to direct their attention to the connections between the text and their background knowledge, and the connections within the text. It is also practicable to compare elements ,contents, or characters of the story with real-world equivalents(Teele, 2004)[31], genre-based and lateral-thinking stimulating questions or statements were mainly used in this study to facilitate meaning making from connections, such as "Have you ever read articles targeting similar topics with this one?" "There is a recent news reporting the same event with our text, have you checked the news on your phone?" "what do you think of this topic, and what would you do if you faced the same issue?" "How is the key sentence of this paragraph relative with the title?" , among other many questions designed based on the specific texts and the actual contexts.

Summarizing is another strategy used for students to extract or to conclude key information from and across readings. Learners are required to decide and to single out information critical to their tasks, and to organize those critical information in their own words. After being trained, learners who can use this strategy fluently will be able to distinguish topic ideas from supporting details and facts, which also stimulate students' judgement of passage structures. The teacher normally asks learners to go through the whole text to get a general idea, and then models analyzing sentences by posing questions about the structure of paragraphs, and relations between sentences.

Peer Assisted Learning Strategies(PALS; Mathes, Howard, Allen, & Fuchs, 1998)[24] was another main framework in promoting peer learning and student-centered class instructions. PALS enables students to function as both language learners and instructors through peer interactions, students with relative high language proficiency in a group were assigned to model and assist reading to less proficient readers. Klingner, and Vaughn (1998)[19] found in their study that learners in PALS groups demonstrated advancement in language competences such as word identification, and reading rate. In this study, PALS was combined with other strategies, and the teacher would explain explicitly what each members need to do, for example, the teacher told the assigned students to share how he/she uses certain strategies in reading with other less successful members, and instruments like note-taking, paraphrasing that the assigned students had used would be imitated by other members.

4. Results

4.1. Analyzing the growth of reading comprehension in controlled and experimental groups

To explore whether and wherein the reading proficiency of learners in this EFL context can be affected relatively by the two teaching methods (sociocognitive and traditional) in this research, the data compiled from the CET-4 scores of the two targeted groupings prior to and apres the test was decoded through independent-sample t-test. The mean scores and standard deviations of the analyzing model for the two groups has been demonstrated in the table that follows.

Table 1: SDs and mean scores of the control and experimental groups in the reading comprehension

Groups	Pretest		Posttest	
	Mean	*SD*	Mean	*SD*
Control	39.18	15.34	42.26	16.11
Experimental	38.03	13.20	66.42	10.81

A t-test of independent-sample in SPSS 23 has been employed in comparing the reading outcomes of targeted learners in both the groups before the experiment. As is revealed in table 1, inconsequential, though not significant, gaps can be observed in marks for experimental groups (M=39.18, SD=15.34) and control groups (M=38.03, SD=13.20). The unsubstantial difference in reading performances between the two groups which have received no reading instructions can also be verified by the p value which is read to be .249 , higher than .05.

Table 2: T-test of independent-sample of the two groups prior to and apres the test

	t	*df*	*p*
Pretest	0.330	68	0.249
Posttest	-6.381	68	0.028

Another independent-sample t-test will be implemented after the experiment to examine the possible influence the sociocognitive teaching techniques might exert on targeted students' reading comprehension outcome. The distinctiveness existed in the mean scores of the two groups will be compared in the post-test marks to check the extent to which the difference is meaningful or not (Table 2). The p value from the result could reasonably hints that the statistically substantial difference can be deduced between the scores from the two groups in the experiment (p is .028 less than .05). It can be rationally inferred from the outcomes that students in the experimental group which has been instructed from the perspective of sociocognitive approach, specifically the three-step sequence of modeling, guidance, and handover, outperformed those in the controlled group which received traditional mode of teaching. The mean score in students' reading production rose stunningly from 38.03 to 66.42 while that of the students in controlled group can only be read at rising from 39.18 to 42.26 which is insignificant compared with the change in the experimental group. Therefore, it stands to reason that the sociocognitive mode of teaching could facilitate students' development of reading comprehension progressing from the prior to post-test.

4.2. Analyzing the interwoven relations between language proficiency, mediation and reading comprehension

Two-way ANOVAs in the SPSS-23 will be carried out in determining the potential statistical significance that the two proficiency groups could bear based on the mean scores, and whether students' reading capacity would bring out certain effect on their growth of reading comprehension will also be examined. As can be inferred from Table 3, before the instruction, there existed little interactional effect between the reading comprehension and factors of grouping students according to their reading proficiency (F=0.563, p=0.456). By contrast, the outcome from the two-way ANOVA for the post-test justifiably indicates the interactive influence betwixt students' reading proficiency and their reading enhancement (F=8.719, p=0.004), and the influence of teaching intervention on students' reading performance has appeared to be diversely different for students with different reading proficiency.

Table 3: Two-way ANOVA of the two groups with two types of language proficiency in reading comprehension scores

Parameters	Source of variation	F	df	p
Pretest	Groups	4.578	1	0.036
	Proficiency	9.038	1	0.004
	Interaction	0.563	1	0.456
Posttest	Groups	52.718	1	0.000
	Proficiency	6.318	1	0.015
	Interaction	8.719	1	0.004

4.3. Reading strategy and teaching intervention

Table 4 has displayed the mean score and standard deviation (SD) of targeted students' reading strategy use from the experimental group and the controlled group before and after the teaching experiment. The fact that students of low proficiency might resort to more strategies than those in the high group can be derived from the total score change (8.03 for low group> 5.44 for high group) . What's more, students of high proficiency level in the experimental group have witnessed obvious rises in their strategy use (1.56) compared with high proficiency students in the controlled group (-2.69). The drop in mean scores for high proficiency students in the control class (from 15.22 to 13.18) might boil down to several potential candidates that remains to be found out.

Table 4: Mean scores/Standard Deviation of uses of reading strategy for students of two proficiency in both groups

Groups	Proficiency	Pretest		Posttest		Change
		Mean	SD	Mean	SD	
Control	Low	78.43	14.70	84.09	13.67	5.66
	High	85.75	15.22	83.06	13.18	-2.69
	Total	81.44	15.16	83.67	13.31	2.23
Experimental	Low	83.08	20.18	95.67	17.36	12.59
	High	86.88	14.65	100.44	15.14	13.56
	Total	85.25	17.00	98.39	16.00	13.14
Total	Low	80.03	15.94	88.06	15.80	8.03
	High	86.31	14.70	91.75	16.52	5.44
	Total	83.03	15.94	89.82	16.13	6.79

Table 5:Two-way ANOVA of the two groups with two types of language proficiency in reading strategy use

Parameters	Source of variation	F	df	p
Pretest	Groups	.524	1	.472
	Proficiency	1.938	1	.169
	Interaction	.195	1	.660
Posttest	Groups	15.563	1	.000
	Proficiency	.261	1	.612
	Interaction	.623	1	.433

To further analyze the potential influence of students' reading proficiency on their strategy employment, two-way ANOVAs were implemented for the prior to and following the experiment (table 5). The data (F=0.195, p=0.660) from the pretest could justifiably hint that hardly can outstanding inter-related effect be spotted between students' reading proficiency and strategy use. It is also worth noting that there also exists no statistically significant interaction between students' language proficiency and their choices of reading strategy in the posttest. The interactive impact regarding the factor of low or high group and of strategy use could be unfolded to be insignificant as well (F=0.623, p=0.433), but it still remains strong enough for us to presume that there stands certain distinctiveness regarding how students from different proficiency groups perform in the test.

5. Conclusion

Reading is socially and historically viewed as a correlative action that occurs under a chain of collective social activities that shape the reader's capacity to making sense of the text rather than a

detached individual act. Reading comprehension is mediated not simply by the words and sentences in a text, but rather the multiple cultural tools: the configuration of symbols in the text, readers' previous experiences or the representation of the same reading genre, and the cultural practices that define the way of reading(Israel & Duffy, 2009)[18]. The findings of this study support the perspective of viewing reading as a socially mediated behavior and of teaching reading via a social and collaborative methodology, which redefines the classroom contexts from the standpoint of sociocultural theory in which students were welcomed to collaborate on genuine literacy tasks, and teachers will assume the role of language facilitators, not just information deliverers. The teaching of reading strategies in this study through the sociocognitive three-step sequence of modeling, guidance and handover has relatively enhanced students' reading comprehension as has been indicated. In the experimental group, members assisted each other in using certain strategies, critical communication or even arguments emerged as students inquire into implementation of strategies, and they normally sought details or demonstration of strategies from peers which also increases learners' proficiency and fluency in using certain strategies after explaining, modeling, or mediating repeatedly.

Supportive scaffolding brought about in the experimental group promotes learning in a socially situated context with responsive adults and more capable peers who are able to provide support to meet students' learning needs, and the interactive learning situation created by supportive scaffolding coincides with sociocignitive theory and is conformable to students' particular needs and level of language proficiency. Sociocognitive teaching methodology encourages group members to build up their understanding of the tasks through responding contingently to each other's comments during the process of commonly constructing language learning context. The response situations rising from students discussing reading in the group setting comply with Vygotsky's (1978)[33] notion that the thinking and experiences of social members are connected via language to yield new ideas and push forward the boundary of their own repertoire.

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