Analysis of the Relationship between English Learning Efficiency and Cognitive Direct Bilingual Method from a Perspective of Knowledge Economy on the Trend of Globalization: An Experimental Study of Taiwanese Higher Education

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ABSTRACT

The research started with a literature review of the relevant sociolinguistic studies concerning the theory of cognitive direct method to provide fundamental bilingual theories for analyzing the study result from the viewpoint of globalization era. By implementation of quantitative of statistic assessment, further analysis of English learning techniques and efficiency were conducted.

The case institution launched a 6-month action plan named “The cognitive method – An applicable strategy to optimize a university school intensive English program” and recruited teachers and assistants within the institution as the teaching practitioners. All participant college students, starting at the same basic levels, were assigned to the cognitive direct method learning groups. The teaching curriculum was made up of 2 major English sections including both knowledge input in the form of vocabulary memorization and knowledge application, which was composed of listening and speaking practice.

The teaching approach materials were fitted with the concept of direct method of cognitive theory from the concept of globalization on this current trend of knowledge economy. The students’ learning performances were analyzed by a statistical implementation that included descriptive statistics and a statistic T-test. Through the cross-analysis of quantitative method results, conclusions are presented and suggestions are made to provide insight into this issue.

Keywords: Era of Globalization, Cognitive Theory, Direct Method, Quantitative Study

INTRODUCTION

As the era of globalization comes to maturity, knowledge is becoming the primary source of economic and academic values; knowledge revolution is based upon the foundation of information knowledge and knowledge management. Under the circumstances, education is becoming multidimensionality (Block D. & Cameron D. 2002). Students learning through the traditional methods will not acquire competitive abilities, so they need to be educated well and their motivation needs to be gauged. With the enormous selection of learning technologies available, teachers should enlighten and assist students to develop competency by enhancing their English capabilities. English teachers must integrate different English instructional methods and search for new appropriate approaches to instruct students (Coatsworth, J. H. 2004).

LITERATURE REVIEW

Literature review starting with relevant sociolinguistic studies concerning the theory of knowledge economy, cognitive learning concepts and cognitive direct method to provide fundamental bilingual theories for analysis.

English language in the era of globalization

According to Moore, “Globalization is not a policy, but a process, which has been going on since man climbed down from trees, emerged from caves and began to organize his life, by harvesting as well as hunting, exchanging
goods and ideas. It is the acceleration of international integration, spurred by a number of factors, and is now largely
technology – driven” (Koscielecki, M. 2002).

If globalization is truly a process spurred by exchange of ideas, the advances in technology and communication
imply ever-increasing globalization at unprecedented levels (Kruidenier, J. 2002). Scholte asserts that “globalization
refers to processes whereby many social relations become relatively delinked from territorial geography, so that human
lives are increasingly played out in the world as a single place” (Moore, M. 2003).

In addition, as the era of globalization leads the trend of knowledge economy and knowledge economy has
changed many things in the ever-smaller world. It also changes the conditions under which language learning takes
place. Knowledge economy has brought more intimate contact between people from different parts of the world, and
an international language of English is needed for good communication (Palfreyman, D. 2006).

Since English has become more and more popular in this era of knowledge economy of globalization, it is now
adopted as the most widely used language in the world community. The increasing contact among people in the
globalization era has forced ESL (English as a second language) teachers to re-formulate their teaching objectives.

As the process of globalization continues, the greater need for global communication and inter-personal contacts
begins to change English teaching (Dörnyei, Z. 1997). In order to meet the increasing demand of high-caliber English
speaking staff members form multi-national corporations and government agencies dealing with foreign affairs, more
and more English teachers have begun to adjust their course plans, laying stress on language, culture and
communication, and other teaching strategies (Heller, M. 2005).

Cognitive bilingual learning theory

Cognitive theories of learning suggest that learning is based upon mental processes. Jean Piaget formulated the
cognitive theory by proposing that a student's thought development is not a smooth process, but involves certain times
when the thoughts “take off” and move into completely new areas (Huang, C. 2004). Vygotsky’s theory asserts major
themes that social interaction plays a fundamental role in the process of cognitive development. Vygotsky’s
“scaffolding” is a term used to describe a method of teaching that involves providing resources and support to students
as they learn new concepts (Larsen-Freeman, Diane. 2008). As the students develop skills in those areas, the supports
are gradually removed so the student can accomplish a task with no assistance.

Chomsky’s bilingual theory, which was strongly influenced by Vygotsky, asserted that the mechanism of
language acquisition stems from innate processes. Chomsky then further proposed if we stressed the importance of language learni

Based upon these beliefs, generative grammar is the factor which help differentiate his views from the
structuralism theory; he believes that generative grammar must “render explicit the implicit knowledge of the speaker”
(Scholte, J. A. 2001). Mechanism of language acquisition also links structural linguistics to empiricist thought: “These
principles of structuralism and empiricism determine the type of grammars that are available in principles. Therefore,
the term ‘acquisition’ can take place only when people comprehend messages, the view of language that the Natural
Approach presents consists of ‘lexical items’, ‘structures’ and ‘messages’” (Chern, C. 2003). The “acquired system” or
“acquisition” is the product of a subconscious process very similar to the process children undergo when they acquire
their first language. It requires meaningful interaction in the target language – natural communication – in which
speakers are concentrated not in the form of their utterances, but in the communicative act (Crystal, D. 2000).

Cognitive bilingual learning approach – Cognitive Direct Method

In order to help students learn well, teachers must integrate different English teaching methods and search for
appropriate new ones. English teachers should think about how to work on the efficiency of their pedagogical methods,
and to achieve this goal, they should understand how students think and need (Glisan, E.W. 1995). Cognitive researchers advocate that different people have different aptitudes and not all learning cases can be applied by classical and operant conditioning. Learning would be inefficient if students completely relied on behavioral methods. Teaching and learning can be made more efficient by observation, realizing, cognitive, entertaining, and so forth, which may accommodate with the concept of knowledge management (Aacken, S. V. 1999).

The Direct Method (DM), founded by cognitive theory, is also known as First Language Learning and Natural Approach Method. The direct method theory, fitted with the perspectives of Krashen and Chomsky, etc., vehemently oppose teaching with rote memorization of formal vocabularies and grammars (Crystal, D. 2000). It advocates that bilingual language learning is more than the learning of rules and the acquisition of imperfect translation skills. The method has some basic rules including the prohibition of using the native language in classes. With no recourse to the students’ native language, the meaning of the target language will be conveyed directly through the use of demonstration and the implementation of visual teaching materials (Bax, S. 2000).

Instead of being drilled by the teacher, DM believes that the natural way humans learn any target language must be an imitation of first language learning. With first language speakers, the printed word must be kept away from second language learners; knowing language means being able to speak it (Selinger, M. 2008). The direct method advocates that bilingual language learning is more than the learning of rules and the acquisition of imperfect translation skills. This method has some basic rules, including the prohibition of using the native language in classes. Grammar should be acquired inductively by inducing the rules of how the language behaves from the actual language itself (Chern, C. 2003).

The scholars of cognitive direct method always believe that “never tell the children anything they can find out for themselves”. Direct method asserts that the natural way humans learn any target language must be an imitation of first language learning (McKay, S. L. 2002). The learning of grammar/translating skills should be avoided because they hinder the natural acquisition of a good oral proficiency. As this is the natural way humans learn any language, second language learning must be an imitation of first language learning; students never rely on another language to learn a first language. A first language learner does not use printed word until he or she has good grasp of speech. The written word/writing should be delayed until after the printed word has been introduced as well as the learning of grammar/translating skills should be avoided (Palfreyman, D. 2006).

**STUDY METHOD**

The research started with a literature review of the relevant sociolinguistic studies concerning cognitive direct method approach for the aim of providing a basis for assessing the study result. The researcher conducted a 6-month-long term intensive experimental project (IEP) from September, 2011 to January, 2012 in a university in northern Taiwan. A total number of 36 college students (N=36) recruited to attend this English program and the researcher made a detailed analysis of variables which contribute to the performance of the students in learning English. None of the participants were blind as to the nature of this experiment; meanwhile, they were not told what types of result were expected in order to make this study program fair and objective.

**Teaching materials and teacher’s background**

The instrument pedagogies were matched to the teacher’s 18-year teaching backgrounds. Also, teacher was responsible for the teaching curricula. The teaching curricula, designed by the researcher and the teaching assistants, were made up of two major English sections consisting of vocabulary and listening/speaking items. The teaching and test materials and schedules most fitted into the current trend in the globalization era would be (1) management learning: vocabulary memorization, and (2) management application: listening/speaking expression; as listed on the Table 1.
Table 1: Teaching and test materials and schedules

<table>
<thead>
<tr>
<th>Week</th>
<th>Theme</th>
<th>Listening/ Speaking</th>
<th>Language Functions</th>
<th>Vocabulary Memorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pretest of Oxford online placement test</td>
<td>Say hello</td>
<td>Simple present Sentence Patterns and practice</td>
<td>Greetings, jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exchange personal information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&amp;3</td>
<td>Introducing yourself (Nice to meet you &amp; newsletter) (First day at work &amp; webpage)</td>
<td>Talk about work schedule &amp; office routines</td>
<td>Simple present Sentence practice</td>
<td>Office routines</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&amp;5</td>
<td>Everyday life (Habits &amp; routines) (My typical day at work)</td>
<td>Talk about free time activities &amp; ways to relax at work</td>
<td>Adverbs of frequency Conjunctions</td>
<td>Free-time activities, ways to relax at work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&amp;7</td>
<td>Time to relax (My favorite pastime &amp; online forum) (Ways to relax at work &amp; advertisement)</td>
<td>Talk about free time activities &amp; ways to relax at work</td>
<td>Adverbs of frequency Conjunctions</td>
<td>Free-time activities, ways to relax at work</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Review</td>
<td>Application</td>
<td>Application</td>
<td>Application</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Interaction</td>
<td>Simulation</td>
<td></td>
</tr>
<tr>
<td>10&amp;11</td>
<td>Life in action (A busy Friday) (Help wanted e-mail)</td>
<td>Make &amp; receive telephone calls</td>
<td>Present continuous Prepositions</td>
<td>Common campus activities, telephone expressions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13&amp;14</td>
<td>My neighborhood (Book fair guide letter)</td>
<td>Describe locations Learn how to read a map</td>
<td>Prepositions of location</td>
<td>Neighborhood places Departments in a company</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15&amp;16</td>
<td>Rules &amp; directions (Mind your manners and magazine article) (Getting from A to B)</td>
<td>Talk about manners Ask for &amp; give directions</td>
<td>Imperatives</td>
<td>Dating-related words Street directions</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17&amp;18</td>
<td>Review / application</td>
<td>Oral expression</td>
<td>Utilizing words</td>
<td></td>
</tr>
<tr>
<td>19&amp;20</td>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teaching strategy – speaking/vocabulary application

For speaking, teachers used more authentic material and made tasks for students to do. Teachers ask more detailed questions such as “what”, “how”, “why”, “where”, “when”, “who” and so on. “Listing/speaking activities” can be consistently planned to train students. In general, the sentences students use need to be clear, concise, emphatic and correct. The concepts of speaking include (1) having a clearly defined purpose, (2) making a clear point, (3) supporting points that speaker tries to express, (4) using words appropriately.

To develop speaking skills, there has to be a direct connection between concepts and the language to be learned. Students need to develop skills including “the ability to express”, “writing in groups”, “interpreting in a range of contexts” and “writing accuracy”.

Teaching strategy – listening/vocabulary application

For listening, the strategies are special ways of processing information that enhance comprehension, learning or retention of information. This explanation of language learning contrasts strongly with the efficient approaches account of language learning, which describes listening learning as an unconscious, automatic and spontaneous process. For listening skill, authentic and invented, the two basic types of teaching materials were utilized. The instructors designed and used more carefully adapted texts at a basic level and gradually introduced more authentic speech through multimedia assistance appliances as the students developed.

Developing listening skills requires the students’ participation, so teachers need to motivate students in order to truly succeed. Teachers may adopt the strategies and techniques closely associated with the efficient method, which include (1) listening (2) question and answer (3) student self-correction (4) listening/conversation practice (5) dictation.

The data collection instruments used in this study assess vocabulary and listening/speaking capabilities; for each language skill, there would be a pretest and posttest, along with a daily test presented during the training period. A pretest, posttest and daily tests for acquiring students’ proficiency were all assessed. Every test was designed specifically to reflect the instructional materials presented during teaching. The vocabulary and speaking tests contained multiple choice items and face-to-face oral examinations.

Data analysis

For study, the independent variable was designed to be the cognitive direct method and the dependent variable was the students’ learning performances analyzed by the a statistical implementation including (1) descriptive statistics: presenting the means, standard deviations and correlations of the present English performance and (2) statistic T-test: finding “significant” or “no significant” between the two different instructional items of the two periods.
QUANTITATIVE APPROACH RESULT

The quantitative data collection instruments used in this study assesses vocabulary and listening comprehension/speaking expression. For each language skill, there was a pretest, a posttest and one daily tests presented during instruction. Each test was designed specifically to reflect the teaching materials and curricula presented during student learning periods.

The outcomes for the various analyses are presented following each of these descriptive sections and T-test results revealed striking significant difference in English learning performances of both knowledge input: vocabulary memorization and knowledge application: listening comprehension/speaking expression between pretest and posttest periods. Table 2 shows the means, standard derivations and all the variables included in this cognitive direct method. The following statistic data demonstrates the pretest and posttest of participating students’ performances on the two different issues.

Table 2: Analysis of students’ performances by the comparison between two periods.

<table>
<thead>
<tr>
<th>English Proficiency</th>
<th>Teaching periods</th>
<th>Student</th>
<th>Means (I/J)</th>
<th>S.D</th>
<th>T-value</th>
<th>P-value</th>
<th>Difference (I–J)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I: vocabulary memorization</td>
<td>Pretest</td>
<td>36</td>
<td>62.66</td>
<td>5.65</td>
<td>-6.94</td>
<td>0.000*</td>
<td>-7.90</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>36</td>
<td>57.06</td>
<td>4.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J: listening speaking</td>
<td>Pretest</td>
<td>36</td>
<td>61.76</td>
<td>5.75</td>
<td>-7.00</td>
<td>0.000*</td>
<td>-13.94</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>36</td>
<td>75.70</td>
<td>9.41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Before training, the analysis of students’ pretests scores indicated that there was no statistically significant difference in English proficiency for this student groups. The participants in this study showed equal starting capabilities in the different English performances. In constant, the posttest analysis of variance T-test results show that the P-value of knowledge input of vocabulary memorization was 0.000; less than 0.05; (p-value=0.000) which showed that there were statistically significant differences in improvement between the two pretest and posttest periods. Meanwhile, the posttest analysis of variance T-test results show that the P-value of knowledge application of listening comprehension/speaking expression was 0.000; this figure is less than 0.05 (p-value=0.000) which showed that there were statistically significant differences in improvement between the two pretest and posttest.

The grade difference of vocabulary memorization between the two periods is (I–J) -7.90. The grade difference of listening comprehension/speaking expression between the two periods is (I–J) -13.94. This pretest and posttest statistic data indicate that both students’ vocabulary memorization skills (knowledge input) and listening comprehension/speaking expression (knowledge application) had a statistically significant difference. The quantitative method result also suggested that the participants’ posttest scores on the two learning performances are much superior to the pretest scores.

CONCLUSION

Knowledge learning reflects a concern for managing and developing a well-expressed and logical long-term plan for the intellectual assets of an individual. It is based on the recognition that knowledge held by individuals is a valuable commodity. In order to teach students well and meet these new needs, teachers must integrate different English teaching methods and search for the appropriate approaches for teaching English under the framework of knowledge management in the era of globalization. With the enormous selection of learning technologies available, teachers should enlighten and assist students to develop their competitive abilities.

The main characteristic of traditional learning method is rote memorization. Teachers instruct from a high perch in an authoritative manner and students are occasionally discouraged from questioning anything. In order to stimulate knowledge generation, teachers use a carrot and stick strategy to facilitate and prod students to perform according to teachers’ expectations.

Unlike behavioural bilingual researchers who study the effects of stimuli on reflexive behaviours, cognitive theories suggest that learning is based upon mental processes. Using the cognitive approach, teachers guide students to
knowledge. Teachers believe students are naturally curious; teachers do not need to use punishment or rewards to motivate students because students would spontaneously acquire knowledge. They just allow learning to happen naturally. Teachers function like scaffolding; providing framework for the students’ learning.

Educational diversity is the trend of globalization. To accommodate the diverse change, teachers need a new way of thinking. It includes content integration, knowledge construction, prejudice reduction, equity pedagogy, and empowerment of competitive aptitudes. Thus, the concept of bilingual knowledge learning has evolved towards a vision based more on management and creation rather than one based on learning only. Learning would be extremely inefficient if students had to completely rely on classical and operant conditionings. This perspective makes cognitive direct method fit with the theory of knowledge management in the trend of globalization.

Through literature review and research findings, the result proved that cognitive teaching has merits and it is significant and reliable for teachers and students. The approach motivates students and offer flexible methods, content and functions for teachers to choose from in response to student’s needs or demands. Cognitive teaching would be a great pedagogy with various types of tools to enhance its learning progress. Through a half year of research and experimental study, cognitive teaching group has advanced considerably. This study research has shown that it can improve students’ learning performance as the design of the interface provides clear, consistent, and attractive communication.

Oral communication skills are built up in a carefully traded progression organized around question-and-answer exchanges between teachers and students in the cognitive instruction classes. For teachers adopting this approach, new teaching points are taught through modeling and practice; concrete vocabulary. However, it is taught through demonstration, objects, and pictures; abstract vocabulary is taught by association of ideas. With the various options to choose from when learning language, teachers have all kinds of options when they set up their learning objectives and curricula. Under the instructions of cognitive direct method, teachers need to get the students to practice both activities and interaction. Through the participation among students, they concentrate more on interaction and on becoming more fluent with English.

The result of this study also shows us the applicability of cognitive direct teaching methods to classroom scenario in students’ education. The characteristics of free-form response truly benefit the students. The cognitive method specializes in vocabulary memorization and listening/oral expertise, making it suited to real life conditions. Despite all of this, teachers should help students to learn by thinking, controlling, and effectively using their own mental processes. Cognitive learning helps students adopt new information by taking advantage of knowledge and aptitudes. Under the principles of cognitive theory, knowledge makes sense; learning therefore becomes interesting.

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