The Differences of Multiple Intelligence Representation in English and Chinese Textbooks: The Case of EFL & CFL Textbooks in Thailand

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Abstract—So far, there have been many research achievements about foreign language textbooks which apply multiple intelligence theory, but not the contrast study of different types of foreign language textbooks. This research studies locally-designed English and Chinese textbooks in primary schools in Thailand and analyses the distribution of multiple intelligence shown in activity parts of textbooks. From contrast, we find that among textbooks used by pupils, the ones which are most spatial intelligent in activity show similarity, meanwhile, different languages types such as Chinese and English lead to discrepancy of other intelligences. This paper is made to explain the factors and then provide a reference to future multiple intelligence design of textbooks which use English and Chinese as the second language.

Index Terms—textbook, multiple intelligences, practice activities, comparative analysis

I. INTRODUCTION

In 1983, ‘Multiple Intelligence Theory’ was proposed by Howard Gardner, a psychology professor in Harvard University. This theory demolished the idea of unitarily of traditional intelligence and pointed out that human intelligence was consist of multiple intelligences. For example:

Verbal/Linguistic Intelligence means core operating ability to use language accurately. When we are communicating by listening, speaking, reading and writing, we are meant to make full use of important components of this intelligence. (Bellanca etc., 2004, p.73) The major learning activities of language intelligence include telling jokes and stories, writing letters and poetry, reading, writing, using language for specific purposes. recalling information and learning new languages. (Oliveira, 2009)

Logical/ Mathematical Intelligence is ability to use numbers, identify image, read and understand abstract symbols as well as understand complicated relation of mathematical reasoning and the process of scientific inquiry. In addition, it also involves deductive, inductive reasoning, logical thinking and the processes of problem-solving (Gardner, 1993, p.20)

Visual/Spatial Intelligence which means abilities to have an accurate insight into the world, create individual visual experience and give visual inspection to color, pattern, shape and structure, such as drawing and pattern design.

Bodily/ Kinesthetic Intelligence is to use body to express emotions, play games or create new products. (Gardner, 1993, p.19) Physique intelligence is an ability to make us control and understand body movement, operate objects and build a harmonious relationship between body and mind. In teaching situation, methods to arouse physique intelligence can help students to experience their body movements, including performance, echomotism, handcrafting activities which are good to better development of physique intelligence.

Musical Intelligence means the sharp awareness when one is in a certain environment and abilities to use a series of music elements, such as pitch, rhythm and intonation. (Bellanca etc., 2004, p.93) In children’s foreign language teaching, poetic rhymes are essential. The cultivation of music intelligence is mainly by music creation, rhythm exercise, pitch training, background music activities, singing and ballad.

Intrapersonal Intelligence Intra is relatively independent and to understand one’s own feeling and motivation, so students need enough time to make thinking, self-reflection and self-assessment. Class teaching with self-introspection method shows the most basic information: student must be responsible for their study, learn to think independently, learn by themselves and reflect on themselves about their study and experience.

Interpersonal Intelligence, which is different from emphasizing on introversion, freedom and introspection, stresses on extroversion characters when communicating with others, that is to say the abilities to understand and interact with others. Nowadays, learning class which shares with the society is especially important, so the cultivation of abilities to interact with other, such as cooperation training, learning cooperation, communication, group work, team competition and conflict disposal, all need interpersonal intelligence.
Naturalist intelligence, is the eighth intelligence by Howard Gardner in 1995 after his other seven intelligences. It means abilities to identify animal and plant species in surrounding environment and classify natural creatures. Children are junior natural observers, so the addition of this intelligence cultivation into children’s foreign language teaching can meet the requirement of children’s psychological cognition development. (Esta Masoomeh & Nafisi Mahdieh, 2014)

According to Gardner (1983), intelligences are various; each human intelligence should be stimulated. In children’s foreign language teaching, individual difference should be given full consideration; children’s different intelligences should be used to arouse their interests to learn foreign language, while textbook design should also meet the need of various children intelligences.

II. LITERATURE REVIEW

Based on multiple intelligence theory, many researchers have studied the multiple intelligences shown in class teaching activities. But since textbooks are mainly used in language teaching, Textbooks have been analyzed in order to know how they responded to MI theory. Palmberg (2002) reports a study conducted at Abo Akademi University in Finland by a group of student teachers, participants in an EFL methodology course. The student teachers they wanted to find out the proportional distribution of exercises that catered for each of the nine intelligence types in that particular coursebooks. The analysis revealed the 97% of the 300 exercises of the textbook were categorized as verbal/linguistic, 76% intrapersonal, 25% interpersonal, 8% logical/mathematical, 5% bodily/kinesthetic, 5% spatial/visual, 3% naturalistic, 2% musical, and 0% existentialist.

Botelho’s (2003) studied at the College of Arts and Sciences of Ohio University, USA, which aimed to analyze current EFL/ESL textbooks in order to know if they respond to MI theory and how their activities help enhance Brazilian EFL learners’ intelligences. She found that 75% of activities mainly cater for the verbal/linguistic, spatial/visual, interpersonal intelligences and intrapersonal, The logical/mathematical, bodily/kinesthetic, musical/rhythmic, naturalist, and existential intelligences were observed in less than 40% of all the activities in the books. In the similar vein, Carolina Leonardi de Oliveira (2009) analyzed the two English textbooks utilized in Porto Algerecituy, Brazil; and came to conclusion that verbal/linguistic, spatial/visual, interpersonal intelligences and intrapersonal these four type of intelligences were appeared mostly in the textbooks. Yasemin Kirkgoz (2010) studied the locally-published ELT textbooks in Turkey and found that naturalistic intelligence was the least type and no activities were found that catered for existential intelligence in any of textbooks.

Several studies have been investigating in Iran textbook, for example, Razmjoo, S. A., & Jozaghi, Z. (2010) analyzed in each book of the series and shows that there exists a pattern of some of the intelligences-addressing through different levels. Along the same line, Yoones Taase (2012) analyzed the locally-designed EFL textbooks in high schools in Iran and found that verbal/linguistic and visual/spatial were the most predominant intelligences followed by logical/mathematical, Interpersonal and intrapersonal in much lower ratio. Bodily/kinesthetic, musical and naturalistic intelligences were not found in any percent. Similarly, Estaji, Masoomeh. & Nafisi, Mahdieh (2014) did similar investigation in which they investigated the Iranian young learners’ textbooks and the materials for four level.

Some study object has turned to analysis English for Specific Purposes (ESP) textbooks, for example, Soroor Ashtarian (2014) studied on the representation of Multiple Intelligences in ESP Textbooks with the case of nursing for careers. The results indicated that textbook was rich in addressing verbal intelligence. Recently, Al-Omaril, Bataineh, Smadi (2015) analyzed the Jordanian four levels of the textbooks. They found that the verbal/linguistic, intrapersonal and spatial/visual intelligences were the most predominant intelligences and the incorporation of multiple intelligences is fairly unbalanced among the four levels of the textbook.

Reviewing the findings of related literature reveal that most of all have already been analyzed in ESL & ESP textbooks. However, as the comparison of textbooks for different foreign languages the Chinese scholars Zhang Li and Zhou Xiaoqing (2012) who compared English and Chinese textbooks for children and found that there were different intelligence distributions in Chinese and English textbooks. But they only analyzed the design of interpersonal intelligence activities in textbooks and pointed out that comparing with developed children’s English textbooks Chinese textbooks need more attentions and more various exercises. The paper only discussed in detail in interpersonal intelligence, but not the reasons of difference.

From above achievements, there are many research achievements about English language textbooks with multiple intelligence theory, but not the comparison of textbooks for different foreign languages, not even the analysis of different intelligences in textbooks for different foreign languages. Furthermore, no researched have been done in South East Asia Country English textbook. Therefore, this study aims to investigate what are the most and least dominant intelligences in foreigner language textbook in Thailand. Meanwhile, we try to find reasons to provide a reference to future multiple intelligence design of textbooks which use English and Chinese as the second language.

III. PURPOSE OF THE STUDY

In Thailand, as a foreign language, English has a long history and a mature learning scale; while Chinese, as a rising foreign language, has developed rapidly in recent years. This paper has studied two series of the most representative foreign language textbooks, Project Play &Learn as English textbook and Experiencing Chinese as Chinese textbook.
Both are regional foreign language textbooks issued and given key promotion by Basic Committee of Ministry of Education in Thailand. Project Play &Learn written by The Office of the Basic Education Commission of Thailand. The compiling concepts of Project Play &Learn blend three theories: Project-Based Approach theory, Brain-Based Learning theory and Multiple Intelligence theory. This book was published between 2006 and 2010 by major publishers for ESL/EFL teaching and learning.

While Chinese Experience written by cooperation between The Office of the Basic Education Commission of Thailand and The Office of Chinese Language Council International – Hanban and China Higher Education Press of China with was published in 2011 year. This textbooks by major publishers for CSL/CFL teaching and learning which experience-oriented Chinese teaching characters, focuses on listening and speaking and becomes one of the earliest Chinese textbooks entering into the mainstream national education system in Thailand.

Hence, in this present study, two nationally published ELT & CLT textbooks used in Thailand primary schools. Both compiling concepts are experience-oriented learning and have many activity exercises, so they have comparability and research value. This paper studies following questions

1. What’s the distribution of multiple intelligences in EFL and CFL Textbooks?
2. Does the presentation of multiple intelligences reflect language difference?
3. Does the presentation of multiple intelligences in textbooks reflect the compiling concepts of textbooks?

IV. METHODS

(i) Materials

This research compares regional English textbooks with Chinese textbooks in Thailand primary schools. Project Play &Learn have 6 books, one book each grade and eight passages each book, so 48 in all. Chinese Experience has 12 books, one book each term and eight passages each book, so 96 in all. Although they have different lesson number, both are for 1-6 grades in primary school. This paper has made statistics about all exercise activities. Exercise activities in this paper include traditional language point exercise, experience-oriented and activity-oriented exercises.

(ii) Instrumentation

The research method is mainly the multiple intelligence item list. Based on the framework of Gardner’s (1999) Multiple Intelligence theory, when designing multiple intelligence list and English activity exercise, this research mainly uses the theories and research achievements of Berman, 1998; Christison, 1996 & 1998; Lazea, 1993 (quoted in Botelho, 2003) for reference. Meanwhile, recently, both Kirkgoz (2010) and Arikan Soydan, Isler (2014) have studied textbooks for primary school and provided detailed titles in their researches.

V. DATA COLLECTION PROCEDURES

For the related studies in the area of ELT/ ESP(Palmberg,2002; Botelho’s,2003; Carolina Leonardi de Oliviera,2009; Razmjoo, S. A., & Jozaghi, Z., 2010; Yassemin Kirkgoz,2010; Yoones Taase, 2012; Razmjoo and Farmer, 2012; Al-Omari1, Bataineh, Smadi, 2015) meaning that verbal intelligence has the highest frequency of occurrence. A reasonable justification for this finding is the fact that a language textbook should focus on the linguistic intelligence type to a great extent. Hence, as both series of textbooks are for foreign language cultivation, they have content of linguistic intelligence cultivation. Therefore, we will emphasize on exercises developing linguistic intelligence and other intelligences. As Gardner says, few kinds of intelligences play independent role; in integral learning experience, all intelligences interact with each other. Do the textbooks in this paper. In a certain activity, there are multiple intelligences at the same time instead of an independent intelligence. Therefore, this paper made statistics by distribution of each intelligence, and our method is as follows:

e.g. 1 p.7, 12th textbook, Chinese Experience

Listen to the record and read. Then three students each group, you should point at the pictures (with your fingers) and make conversations with the given sentences.

In this activity, ‘three students each group’ needs their abilities of cooperation and communication and thus it can cultivate children’s interpersonal intelligence; use fingers to ‘point at the pictures’ can attract more attention by body movements; make conversations according to pictures make children’s spatial and linguistic intelligences exercised. Being analyzed in detail, this activity shows four intelligences; therefore we will record linguistic intelligence, spatial intelligence, body intelligence and interpersonal intelligence each for one time, as follows:

<table>
<thead>
<tr>
<th>Linguistic Intelligence</th>
<th>Logical Intelligence</th>
<th>Spatial Intelligence</th>
<th>Body Intelligence</th>
<th>Musical Intelligence</th>
<th>Interpersonal Intelligence</th>
<th>Intrapersonal Intelligence</th>
<th>Natural Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 1 displays the record of one activity caters for linguistic intelligence, spatial intelligence, body intelligence and interpersonal intelligence.
Not include the verbal/Linguistic Intelligence, as for all other seven intelligences, Project Play & Learn is 1291 times while Chinese Experience 867 times. The formula of intelligence distribution rate will be used to measure below:

\[
\text{Distribution of Logical intelligence} = \frac{\text{F} \times 100}{\text{Total number of seven intelligences without repetition}}
\]

= per cent accuracy

The rates of other intelligence will be used the same formula.

VI. RESULTS

We have made statistics of the distributions of seven intelligences in two series of textbooks; please see details in the following table:

Table 2 displays the distribution of Multiple Intelligence Types in the Project Play & Learn and Chinese Experience. As Table 2 shows, Project Play & Learn, the most frequently represented intelligence types are Spatial intelligence (29.78%), Interpersonal intelligence (20.42%), Body intelligence (20.03%), Intrapersonal intelligence (15.31%), Logical intelligence (8.76%). And the less commonly addressed intelligence are Music intelligence (4.11%), Natural intelligence (1.39%). While Chinese Experience 38.41% of which caters predominantly for Spatial intelligence. Logical intelligence (27.15), Interpersonal intelligence (14.88%), Body intelligence (10.38%). The less commonly addressed intelligence types in this book are Intrapersontal intelligence (4.96%), Music intelligence (1.96%), Natural intelligence (1.96%). The percentages of intelligence types are illustrated in figure1:

![Figure 1. Percentage of intelligence types in two books](image)

Researching the above two series of textbooks, we have found similarities and differences, details are as follows:

A. The Similarities of Multiple Intelligence Distribution

1. Both English and Chinese textbooks have the visual/spatial intelligence most; Project Play & Learn (29.78%) while Chinese Experience (38.41%) which are close to 1/3. We can see that the visual/spatial intelligence in Children’s textbooks is very developed. In general, there are colorful designs, patterns and pictures in textbooks to arouse students’ spatial intelligence which meets the requirement of children’s psychological development. As the result of Zhang Li and Zhou Xiaobing (2012) who researched four Chinese textbooks for overseas children have found that
the visual/spatial intelligence ranked first in multiple intelligences, accounting for 35.80%. It shows that 1/3 of exercise activities in Chinese textbooks are for visual/spatial intelligence development. Botelho (2003) revealed that it seems more visual/spatial intelligence input is offered to young and beginner learners.

2. As for the Music intelligence and Natural intelligence, Both English and Chinese textbooks were less representative. As for music intelligence, Project Play & Learn (4.41%) while Chinese Experience (1.96%); natural intelligence, Project Play & Learn (1.39%) while Chinese Experience (1.96%). As children have a natural curiosity with the surrounding world and poem is essential in children’s development. Although linguistic textbooks should focus on linguistic competence cultivation, as children’s foreign language textbooks, they should also ensure the cultivation of music and natural intelligences when they meet the requirement of children’s cognitive development psychology.

B. The Differences of Multiple Intelligence Distribution

From comparison, we can see their differences. Chinese textbook Chinese Experience focus more on logical and spatial intelligences while English textbook Project Play & Learn focus more on interpersonal, body and intrapersonal intelligences. The reasons might be as follows:

1. As for interpersonal intelligence, Project Play & Learn ranked second with (20.42%) while Chinese Experience ranked third with (14.88%). As Chinese researcher Zhang Li and Zhou Xiaobing (2012) pointed out that interpersonal intelligence activities are mainly in forms of discussion and communication, game, action, dialog, performance and survey which are not various enough. After research, we found that Project Play & Learn covers all these forms while Experiencing Chinese did not include survey activity. Maybe focusing on interpersonal intelligence, Chinese Experience is still has some way to go on that percent and types when compared with English textbooks.

2. In Bodily/ Kinesthetic Intelligence, Project Play & Learn ranked third (20.03%) which is far over the fourth (10.38), Chinese Experience. The reason is that the teaching idea of Project Play & Learn is based on project learning and one or two works need to be finished in the form of body intelligence when learning every passage. At the same time, there are a lot of games which need body coordination in textbooks. Therefore, textbooks show more body intelligences.

3. In intrapersonal intelligence, Project Play & Learn accounts for 15.31% which is far above the Chinese Experience, 4.96%. Project Play & Learn has three types of intrapersonal intelligence: 1, Knowing yourself, such as talking about your family and hobbies; 2, Assessment, make an assessment on you works and give suggestions; 3, Reflection, as for grammar, students should reflect on the knowledge they have already known and understand the connection of these sentences themselves. For example: Look and think. Then listen and repeat. In another practice such as: Think back. Point and say the words that have the same vowel sound as ‘ee’ in ‘feel’. Chinese textbooks have the single intrapersonal intelligence cultivation, for example: Have you been to the summer camp? What activities do you want to take part in? These questions are very simple just knowing myself. By comparing, we found that English textbooks can give more cultivation of student’s thinking-independently ability and focus more on intrapersonal intelligence than Chinese textbooks.

4. In visual/Spatial Intelligence, Chinese Experience accounted for (38.41%), ranking first, and was higher than Project Play & Learn (29.78%). The reason is Chinese textbooks focus on words when learning and have a lot of pictures, such as Please answer questions according to following pictures. As for logical intelligence, Chinese textbooks are higher than English textbooks. When learning sentences, most exercises of passages are pictures, put words in order, fill the blank with number and match, for example:

Use the above Chinese characters to make a sentence in the blank circles

This exercise needs children to put sentences in order. What’s more, in almost every lesson, students learn the strokes of Chinese characters. This exercise needs students to observe and make connections to find the Chinese characters having the same strokes. In this way, logical intelligence is developed.

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According to the above strokes, please find out the Chinese characters with the same strokes and then coat them with paint.

Figure 4. Chinese Experience Level 4 P.25

VII. CONCLUSION

According to what have been analyzed above, the reasons why English and Chinese textbooks have the different distributions of multiple intelligences show that English and Chinese are different languages, so the emphasis of linguistic training is different. As Chinese is an isolating language, its syntactic relation is expressed by function words and word order, so it has various types of sentences. The Chinese textbooks which are for pupils haven’t had complex syntactic constituents yet; the major activities and exercises are based on visual cognition and focus on word cognition, put words in order and the connection between Chinese characters and Chinese phonetic transcription. Therefore, Chinese textbooks show more spatial and logical intelligences than English textbooks.

In English textbooks, visual/spatial Intelligence, bodily/kinesthetic intelligence and interpersonal intelligence are comparatively balanced. Meanwhile, English sentences widely use the morphological change of word as grammatical devices; the sentences have strict structure and students have to think independently of the morphological change. Therefore, English textbooks show intrapersonal Intelligence.

Textbooks can truly reflect the teaching concepts of compilers. For example interpersonal intelligence and intrapersonal intelligence, as can be vividly revealed in Table 2, English textbooks are better than Chinese textbooks. Because the exercises of English textbooks are not only linguistic training, but also the ability cultivation of group cooperation spirit and interaction with others, they also focus on children’s personality cultivation and independent thinking chances for them. Meanwhile, Chinese textbooks only have linguistic training most and pay less attention on the cultivation of cooperation spirit and independent thinking than English textbooks. Therefore, we hold that the excellence of English textbooks should be learned as a reference for Chinese and other foreign languages.

APPENDIX. THE MULTIPLE INTELLIGENCE CHECKLIST USED

(intelligence Types and the Corresponding Textbook activities representative in textbooks)
<table>
<thead>
<tr>
<th>Intelligence Types</th>
<th>Sample activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal/Linguistic Intelligence</td>
<td>Listening, Discussions, Debates, Writing</td>
</tr>
<tr>
<td>Logical/Mathematical Intelligence</td>
<td>Read and match, Think back and say the words that start the same, Play more or less, Play how many?, Make &amp; Play, Guess your friends heights, take turns measuring, Play 'Class Survey' game, Play a true/false game.</td>
</tr>
<tr>
<td>Visual/Spatial Intelligence</td>
<td>Draw, Point the picture and say the words, Look the picture and match, Make my color book</td>
</tr>
<tr>
<td>Bodily/Kinesthetic Intelligence</td>
<td>Play Touch something Green/purple, Point and say, Make A Christmas Tree, Play Animal X walk around the table</td>
</tr>
<tr>
<td>Musical Intelligence</td>
<td>Listen, sing and act out, Play around us Run to D when music stops and Say, Sing I have two hands.</td>
</tr>
<tr>
<td>Interpersonal Intelligence</td>
<td>Draw an apple and finger race in teams, Put work on board, Vote for your friends, Play good morning game, Throw a ball to a friend and say…</td>
</tr>
<tr>
<td>Intrapersonal Intelligence</td>
<td>Show you feeling about project, Make 'My Family Photo', Which picture do you like?, Write about yourself on a card, Choose the work you like and tell why.</td>
</tr>
<tr>
<td>Natural Intelligence</td>
<td>Growing Seeds, Talk about parts of plants, Make plant picture, Match the shadows to the animals, Find more animals on the internet, English camp</td>
</tr>
</tbody>
</table>

REFERENCES


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