

# *Learning Experience and Possibilities: A Study on Two Primary 4 Chinese Language Lessons in Hong Kong*

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*In this paper, we explore how learning experience can best be described and relate to the teaching enactment so as to inform teaching practices in specific contexts. Two lessons dealing with the same topic in Primary 4 in Hong Kong schools were videotaped and a post-lesson diagnostic worksheet was given to the students. The aim of the study was to identify differences between the two lessons in what was made possible for learning on the topic, and to relate those differences to students' perception and outcomes in learning. The data collected were analysed from the theoretical assumption that "variation" in the "object of learning" is essential to creating learning opportunities in the classroom. The results showed a critical difference in the way the teachers handled the object of learning. This was in turn found to have*

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*contributed to the opening of different “patterns of variation and invariance” in and thus, different possibilities for learning the object of learning. This difference was also reflected in the students’ report of their perception and outcomes in learning.*

*Key words: learning experience, teaching and learning, variation theory*

## **Introduction**

Conventionally, Chinese language learning in the primary section was textbook-based and typified by recitation and repetitive practice of discrete skills (such as reading and writing). Since the introduction of a series of curriculum reforms in the 1990s, students have been expected to acquire the language in the four skill dimensions of reading, listening, speaking and writing through series of “student-centred” activities, such as group work and contextualized, task-based activities (Curriculum Development Council, 1995). More recently, the emphasis has further shifted to deepening students’ learning experience of the process and strategies of thinking skills involved in their learning of the four language skills and some generic skills (such as analytical and generalizing skills) along with retrieving and selecting information skills (Curriculum Development Council, 2004, pp. 3–12). The consideration of the content becomes secondary or subsidiary.

The emphasis on enriching students’ learning experience in improving the quality of teaching and learning is consistent with the current classroom research, specifically in relation to the role of teachers and their teaching per se. It is replete with evidence that when compared with other factors like teaching styles and classroom organisation, the quality of student learning is more directly related with what teachers know about specific content of a subject and how they make it available for students to experience in learning (Cohen & Hill, 2000; Hiebert, Gillimore, & Stigler, 2002; Lieberman & Miller, 2001; Nuthall, 2004). Nuthall (2004) further suggests that what students would have

experienced in actual learning processes and how this can best be described in order to be of use to teachers in guiding their practice in specific contexts are central issues and have yet to be explored.

However, the research studies conducted alongside the Hong Kong curriculum reforms largely concentrate on evaluating the reforms' effectiveness on changing school culture and pedagogy (e.g., Adamson, Kwan, & Chan, 2000), examining the underlying philosophy of the reforms and different approaches to education (e.g., Chan, 2001), and investigating how different elements advocated in the reform can be put in actual practice (e.g., Ki, Tse, Shum, & Lam, 2003; Ng & Pang, 1998; Tse et al., 2004). There is, however, a lack of research into how learning experience can be created and enables the students to learn in the actual learning processes.

Therefore, this paper aims to describe how learning could possibly take place in the classroom and best be described in relation to the teaching and to the student learning outcomes. Below we first elaborate the theoretical framework. Then, we detail the methods used for investigation, present the findings of the study and discuss their implications for pedagogy.

## **The Theoretical Framework**

In this study, we adopted the theoretical framework of variation developed and advanced by Marton and his colleagues (Bowden & Marton, 1998; Marton & Booth, 1997; Marton & Morris, 2002; Marton et al., 2004) to examine classroom learning. Below we summarise the principles underpinning the theoretical framework and the related studies.

### **a. The object of learning**

Learning in the classroom, according to this framework, is contingent to how the “object of learning”, hence that which is learnt is handled and made possible for students to learn in the classroom. The argument for the significant role of the object of learning in classroom learning is built on the idea that learning always has an object — we

always learn “something”. Therefore, how that “something” is made possible for the learners to experience in the classroom, is considered to be of decisive importance to what are possible for students to learn and what they actually learn.

Minding the object of learning, however, does not imply that other aspects such as the forms and approaches to teaching are not important. What we want to point out is, as Marton and Morris argue, among proximal factors, how the objects of learning are dealt with is “the most potent source for accounting for differences in learning achievement between classrooms” (2002, p. 133).

Then, what does it take for students to learn a particular object of learning in the classroom?

b. Learning as a function of discernment

According to the theoretical framework of variation, helping the learners to learn something means to enable them to be aware of, notice, or discern certain critical aspects of what is learnt in a particular way. From this position, what the learner discerns simultaneously and how the discerned aspects are related are critical for *what* he or she can possibly learn.

In a recent study, Chik and Lo (2004) applied the theoretical framework to examine the teaching of new words in a Chinese text to two different classes consisting of students with similar academic ability. They demonstrated that what aspects of the objects of learning (i.e., some new words in the text), were focused upon and how they were related in the lesson was important to what the students could possibly discern. In one of the lessons, the teacher focused on various aspects of the text, namely the characters, words, sentences, paragraphs and text theme. Throughout the lesson, she kept students’ attention to the part-whole relationships between these aspects: characters, which are made up of components and radicals, are the component parts of words; words are the component parts of sentences; and sentences are the component parts of paragraphs, which in turn, contribute to the main theme of the whole text. Her counterpart, however, organised the teaching of new words under the three attributes of words (i.e., form, pronunciation, and meaning) and dealt with each one at a time. As a result, the post-lesson

individual interviews with students revealed a different understanding between the two classes in what they learnt about the new words in the lesson. Their understanding also corresponded to what their teacher tried to focus their attention *simultaneously* during the lesson.

As such, although in this study, the same elements (namely the form, pronunciation and meaning of the new words in the text) were presented in the teaching of both classes, they carried structurally different positions and functions reflecting the differences in meaning that the lesson had for the students. But why is it so?

c. Discernment as a function of experienced variation

Bowden and Marton (1998) argue that discernment presupposes an experienced variation in the teaching content. Usually, we may not be able to discern that there is a bird standing on a tree. It is not until it flies away that we notice it by capturing the change in its movement. In this way, helping learners to learn by discernment implies to accomplish a pattern of variation and invariance by keeping a certain aspect in the teaching content varied while the others invariant, thus bringing about the discernment needed. Aspect(s) being kept varied in this lesson while being kept invariant in the other lesson, and vice versa may therefore contribute to different meanings that can be discerned in the two lessons.

A series of studies have reported that what pattern of variation and invariance was constituted is critical for accounting the differences in students' learning on the same topic. For instance, Lo and Ko (2002) studied two Primary 1 English Language lessons in Hong Kong. The object of learning for the two lessons was the same as to teach how to tell ones' daily activities. While one of the teachers kept using the pronoun "I" as the subject throughout the lesson, the other varied the pronoun between "I", "he", "she" and "it". By this variation in pronoun, the form of verb in third person singular was contrasted against the verb form in first person singular. Lo and Ko found that the latter class of students, having experienced the variation in pronoun performed better than their counterparts with regard to the use of proper verb form in relation to subject-verb agreement. Similar findings were also noted in Chik and Lo's study mentioned above.

A similar idea has been proposed by Gu (1991) who described the inherence of patterns of variation and invariance in the way mathematics was handled in the classroom.

d. Aim of this study

In this study, we aim to apply the same theoretical framework as did in the above mentioned studies to describe how teaching can be related to student learning by focusing on what and how to write in a particular genre can be dealt with in the lesson. Our hypothesis is that the possibility to experience variation in aspects of which is to be learnt plays an important role in shaping student learning: when a certain aspect in the teaching content varies while others remain invariant, it would increase the likelihood that students could discern that aspect.

The investigation in Chinese language in this study is distinct from most of the research studies in this research specialisation, which have been mainly carried out in Mathematics and Science, focusing on particular concepts (Marton & Booth, 1997). We hope that the findings of this study could lend support to what have been done in the research specialisation so far, while contributing to our knowledge of how learning experience can best be described and related to the teaching. In particular, this study describes the teaching and learning of writing in a particular genre in senior primary grades and aims to contribute to the more recent literature in language subjects which chiefly dealt with the subject matters at word level in junior primary grades (e.g., Chik & Lo, 2004; Lo & Ko, 2002).

## **Methods**

### **Selection of Participants**

This study was part of a two-year research project<sup>1</sup> which aimed at identifying good practices in Chinese and English language teaching per se in Hong Kong primary schools. The Chinese language teachers involved in the two-year research project were elucidated the idea of this study that paralleled the two-year research project to follow up the students' experiences and outcomes in learning. Subsequently, two

experienced teachers who had more than 10 years of teaching experience and chose to teach on the same topic of how to write a book report were identified for this study. They taught the lesson to two Primary 4 classes (4A and 4B), which according to the schools, consisted of students whose performance in Chinese language fell in the low to medium band at the yearly public attainment test.

### **Research Procedures and Instruments**

Two 35-minute lessons given by the two teachers were observed and video-taped by the principal author of this paper. Before the lesson, the teaching plan and materials were collected from the teachers. Based on these information, the authors designed a diagnostic worksheet aiming primarily to reveal students' perception of learning and what they learnt (or not learnt) in relation to the teaching; rather than to compare the effectiveness of the two lessons (see Appendix for a sample worksheet). The content and questions included in the diagnostic worksheet were then scrutinised in a research meeting by 4–5 team members involving experienced Chinese language educators.

### **Data Analysis**

The data collection and methods of analysis followed the traditional research methods employed in the research specialization. The data were collected by video-recorded classroom observation and a diagnostic worksheet completed by each student immediately after the lesson. In analysis, the authors initially worked on the data independently and later on join in discussions and compromised for a final categorisation of the students' answers in the diagnostic worksheet, based on which descriptions of the learning outcomes for each class was made. Next, the differences in the responses of the two classes in the worksheet were juxtaposed and compared to the observed differences noted in the teaching, where the video recordings of the lessons were transcribed verbatim and analysed in terms of the theoretical notions to portray the different possibilities for learning in the two lessons. In doing so, we were not trying to look for or establish a one-to-one

correspondence between teaching and learning, but to study how the differences in learning outcomes can reflect the differences in the teaching enactment in qualitative terms.

This study essentially belongs to a qualitative methodology and like many other qualitative studies, it is not to generalise the results to wider populations or situations, as some of the researchers have argued for (e.g., Cohen & Manion, 1994). Rather, it adopts the view of other researchers, such as Yin (1993) and Becker (1990), and aims to form theoretical propositions and conclude from these propositions how differences in classroom teaching can be related to differences in learning, in the hope to shed light on the long-standing issue of how we can improve the quality of teaching and learning in schools.

## Results

### a. The two Chinese Language lessons

Most of the class time in both lessons (about 53% of Lesson 4A and almost 100% of Lesson 4B) was devoted to whole-class discussion or teaching, where the students were actively engaged in responding to the teacher's questions or requests to perform certain tasks in relation to either the object of learning (i.e., the writing of a book report) or the object for teaching (i.e., the book report included in the textbook in Class 4B and an article used in Class 4A). In Lesson 4A, there was also a brief period of group work for students to practise the writing of two of the items that should be included in a book report (i.e., the summary of the content and the post-reading impression).

### b. The patterns of variation and invariance enacted in the content of the two lessons

#### *Function of a book report: To present a book to others*

How to present a book to others was discussed in both lessons. In Class 4A, the teacher contrasted the way to present stories previously read to others in pictorial form with that in the form of a written book report, while the function of a book report (to present stories to others)



was kept invariant. Therefore, in this case, a variation between verbal (written) and iconic representations of a book report was created. A similar pattern of variation and invariance contrasting different verbal (spoken and written) representations to report a book was observed in Class 4B, while the aim of presenting a book to others was kept invariant.

### *Advantages of writing a book report*

The advantages of writing a book report were only dealt with in Class 4A. The teacher first elicited from students different suggestions (such as being able to express one's post-reading impression of the story; to learn the moral and new words that appeared in the story; and to understand the content of the story more easily) and listed them down on the whiteboard. In this way, the teacher directed the students' attention to seeing *various advantages of writing a book report* (what varied and kept in focus) as reasons or motivation for them *to write book reports* (what was unvaried). In Class 4B, there was no such discussion about the advantages or purposes of writing a book report.

### *The format of a book report*

In both lessons, the format of a book report was discussed, but handled differently, resulting in different patterns of variation and invariance. In Class 4B, the discussion about how to write a book report began with the teacher's a contrast between the variable format of a book report and the relatively invariable formats of other forms of writing, such as narration, was made explicit. Next, the teacher introduced an activity in which students were to remove from the blackboard the unnecessary components from the list of eight until four necessary ones remained. The eight components included: the "Price of a book", the "Post-reading impression", the "Date of reading", the "Summary of the content", the "Title of the book", the "Style of writing", the "Call number" and the "Author". What is and is not needed in a book report were thus contrasted through having students discuss and choose between necessary and unnecessary components among the eight possible components of a book report. The teacher of Class 4B

also commented on some of those components that were removed from the list of possible components to be included in a book report. After the preferred components were chosen, the teacher elicited the proper order of the components from the students: first, “Title of the book”; second, “Author”; third, “Summary of the content”; and the last, “Post-reading impression”.

So far, it has been shown that in Class 4B, the patterns of variation and invariance observed throughout the discussion about how to write a book report served mainly to pointing out a specific format consisting of some necessary components in a particular order. What should be the case (what format they should use or what components they should include) was contrasted with what could be the case (an alternative format) to indicate that there were alternative formats but one of them was preferable to the others.

In comparison, neither a variation concerning what components were appropriate for a book report, nor the order of the components occurred in the other class (4A). It is because in this class, a student had already listed out four components in order by responding to the teacher’s question about the format of a book report. With the teacher’s remark that the student’s answers had already covered all that were needed, the components of a book report and their order were thus taken for granted. Rather, different ways of handling two specific components of a book report — the summary of the book and the post-reading impression were presented. The teacher told the students that these two components could either be mixed in a single section or handled in separate sections. Thus, a pattern of variation and invariance contrasting two possible ways of dealing with the two components was brought up.

Later on, the teacher introduced a group activity in which students first read an article individually and then worked in groups to write down the “Summary of the content” and the “Post-reading impression” about the article. The students’ writings were then attached to the whiteboard. The contribution of various groups to the “Summary of the content” and the “Post-reading impression”, and their ways of writing the two sections were discussed. In this way, the students in Class 4A were exposed to a pattern of variation and invariance in the student groups’ writings. By comparing their own writings, the students were

able to distinguish what it takes to write the summary of the content and the post-reading impression. Another pattern of variation and invariance in the ways of handling one or both of the two components was also achieved first by the teacher contrasting two possible ways of dealing with them (either writing them together in a section or in separate sections), and then by the differences observed in the ways various groups wrote the summary of the article.

After the group activity, the teacher found that most of the writings were about the summary of the content, but not their post-reading impressions. So, she invited many students to share what they had learnt from the article. Consequently, the focus of discussion, which had previously been the learning of how to write a book report, shifted to what the students learnt from the article. Students' different suggestions that they had learnt from the article (what varied) were generalised as their post-reading impressions (invariant terminology). Thus, unlike Class 4B, where the patterns of variation and invariance were used to indicate a specific format that was preferable for writing a book report, those in Class 4A showed the distinction between the writings of the summary of the content and the post-reading impression and opened up alternative ways of handling them.

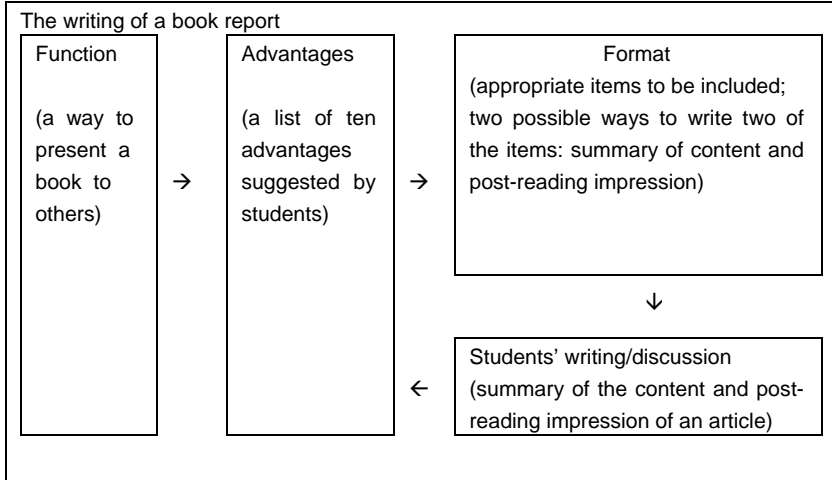
In Lesson 4B, some new words appearing in the book report in the textbook were also dealt with after the teaching of the format of the book report. However, the practice of these words was handled beyond the context of the book report.

- c. The possibilities for learning afforded by the patterns of variation and invariance enacted in the two lessons

As described in the last section, the two lessons were common in some of the aspects that they dealt with the writing of a book report while differing in some other aspects. The way in which various aspects were brought out and structured in the two lessons was, however, different. This has then resulted in different possibilities for student discernment. Lesson 4A was situated in a context in which students were to write a book report for an article. It was organised in a way that "the writing of a book report" became the super-ordinate, with its

different aspects (its advantages, function and format) being subordinate (see Figure 1).

**Figure 1 The Structure of Lesson 4A**



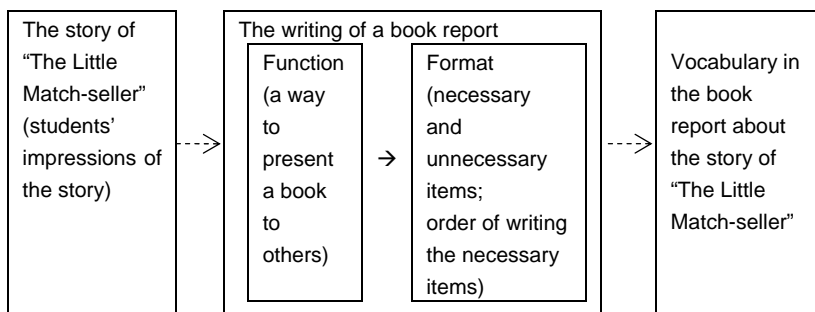
As such, the focus of Lesson 4A was initially kept on the *functional* aspects that related to the learners' needs in the situation (Germain, 1982), that is, to learn from writing a book report, which is advantageous in many respects, and to present a book to others. It then shifted to the teaching and learning of the concerned linguistic content that students were to pay attention to when writing a book report (i.e., the format of a book report, in particular the writing of two of the components). Thus, the patterns of variation and invariance enacted and possibly experienced by the students in those functional aspects served to provide students with reasons why they should write a book report. This in turn fostered the students' discernment of the whole of the lesson, which was about "the writing of a book report" from the learning task, that is, having to write a book report for an article.

During the second half of Lesson 4A, the patterns of variation and invariance, which concerned the writing of a book report, were mainly enacted within one format and in terms of how the content of each component (specifically the summary of the content and the post-

reading impression) could be handled. Associated with these patterns of variation and invariance in format were the variation in the students' thoughts and impressions concerning the article, as well as things that they could learn from the article. Therefore, the variation in the format of a book report might contribute to the students' discernment of certain linguistic features in writing a book report on the one hand. On the other hand, their being associated with the variation in the students' own impressions about the article might also facilitate the students' learning from the article itself, which pertains to the meaning or referential aspect of writing a book report.

In comparison, Lesson 4B focused on a text which included a book report for a story entitled "The Little Match-Seller" by A. C. Andersen and was organised into three main parts, each focusing on a different object of learning, namely the story of "The Little Match-Seller", the writing of a book report and the teaching of some new words that appeared in the text (see Figure 2). In this lesson, the writing of a book report was kept super-ordinate to its different aspects, such as its function and format, as in the other lesson.

**Figure 2 The Structure of Lesson 4B**



However, no clear connection was made between the three objects of learning during Lesson 4B. Rather, the teaching of the objects of learning appeared in sequence. As a result, the patterns of variation and invariance being enacted and experienced by the students were used to

bring out one of the objects of learning at a time. This in turn might contribute to the discernment of one or all of the objects of learning that were brought into focus. In other words, the students of Class 4B might possibly learn to discern that the lesson was about the story, the writing of a book report and/or the meanings of certain new words.

Furthermore, the patterns of variation and invariance enacted in the writing of a book report in Lesson 4B had a different direction from the other lesson, while both having the same focus on the linguistic aspect. Unlike the patterns of variation and invariance in Lesson 4A which showed alternative formats for writing a book report, those in Lesson 4B implied a designated format by a gradual circumscription of variation. At first, eight possible components were presented. These were finally reduced to four. With the teacher's comments, there was also the possibility of writing a book report with or without the publisher's name. Thus, what the students in Class 4B could possibly learn about writing a book report concerned the components of a book report and a variation of format regarding the number of components included (e.g., the publisher's name could be included or left out).

It has been shown in this section how the differences between the two lessons in the way various aspects were highlighted and structured could afford different possibilities for learning, or discernment, to take place in the two lessons. Then, what did the students actually learnt? How did they perceive their learning in the lesson?

#### d. Students' learning outcomes

After each lesson, the students were asked to complete a diagnostic worksheet that was related to the contents of the lessons. 36 were collected from class 4A and 33 from class 4B. The diagnostic worksheet contained two parts of questions. The first part consisted of two general questions tapping the students' perception of what was taught/learnt in the lesson. The second part contained a specific question assessing how well the students could make use of what they were taught in both lessons.

*Students' perception of what was taught/learnt in the lesson*

Two questions were raised to collect information of what the students considered the lesson was about:

1. What was the most important thing taught in the lesson?
2. What else have you learnt?

As shown from Table 1, a high proportion of both classes indicated that the most important thing taught in the lesson was “book report” when responding to Question 1. In Class 4B, about two thirds of these students (19/30 students) specifically pointed out that they were taught about some linguistic aspects of book report (e.g., its format and components). However, only 3 of the 30 students in Class 4A specified their answers in this way. Instead, 16/30 4A students reproduced answers referring to the meaning or referential aspects of book report (e.g., students' own impressions or summaries of the text) when being asked what they chiefly learnt. A similar pattern of responses is also noted in Question 2. When answering what *else* they had learnt in the lesson, most of the 4A students (26/36) mentioned about “book report”, and 17 of them referred to the referential aspect, i.e., their own impressions of the text. A majority of students in Class 4B (21/33), while also considered “book report” as something else they learnt, 7 of them specified their answers by referring to the linguistic aspects and another 7 to some language aspects.

*The learning outcomes in the specific question*

The specific question in the second part of the worksheet required students to select the most appropriate items among the given ones for the four components that make up a book report (i.e., author, name of the book, summary of contents and post-reading impression). Among the given items, there were distracters for “summary of contents” and “post-reading impression” which were irrelevant to the writing of either component (see Table 2). Therefore, to answer this question, students would have to be able to distinguish between possible items for those two components, apart from knowing what is and what is not belonging to the content of each of the other four components.

**Table 1 Categories of the Students' Responses to the General Questions in the Diagnostic Worksheet**

1. <i>What is the most important thing taught in the lesson?</i> (A student gave more than one response to this question) Student(s) put down their answers in relation to:	4A (N=36)	4B (N=33)
1a. In relation to "book report"	<b>30</b>	<b>30</b>
♦ Referential aspects (e.g., the students' own impressions/ summaries of the text)	16	–
♦ Linguistic aspects (e.g., its format, its components, etc.)	3	19
♦ Language aspects (e.g., "writing book report", "vocabulary used in writing a book report")		
♦ General remark (i.e., "book report")	6	4
1b. Vocabulary, unrelated to "book report"	<b>1</b>	<b>2</b>
1c. Object of teaching (the chapter in the textbook, i.e., Chapter 15)	–	<b>1</b>
1d. Learning from the activities (e.g., reading, advantage of reading, morals like "I learnt to take study seriously")	<b>5</b>	–
2. <i>What else have you learnt in the lesson?</i> Student(s) put down their answers in relation to:	4A (N=36)	4B (N=33)
2a. In relation to "book report"	<b>26</b>	<b>21</b>
♦ Referential aspects (e.g., the students' own impressions, summaries of the text)	17	5
♦ Linguistic aspects (e.g., its formats, its components, etc.)	7	7
♦ Language aspects (e.g., "writing book report", "vocabulary used in writing a book report")	4	7
♦ General remark (i.e., "book report")	–	1
2b. Vocabulary, unrelated to the writing of a book report	–	<b>8</b>
2c. Object of teaching (in 4A: a story / in 4B: a text)	–	<b>2</b>
2d. Learning from the activities (e.g., in 4A: co-operation, essay writing, writing ability, etc; in 4B: uses of matches)	<b>6</b>	<b>1</b>
* Did not respond	<b>2</b>	<b>2</b>



**Table 2 The Students' Performance on the Second Part of the Diagnostic Worksheet**

<i>Question 3: Which of the following items (1–6) is most appropriate for</i> <i>Author: (1) Title of the book: (4) Summary of contents: (3) Post-reading impression: (5)</i> [Please write down the number in the ( ) above. Also, one number for each ( ) only.]		
1.	<i>Chan Man Ching</i>	
2.	<i>Describe why Chan Man Ching would like to write about the story of Anderson</i> <b>(distracter)</b>	
3.	<i>Describe how hardworking and brave Anderson was. At last, he became a great inventor.</i>	
4.	<i>Anderson: the great inventor</i>	
5.	<i>Describe how oneself was moved by the story of Anderson and determined to study hard.</i>	
6.	<i>Describe why oneself would read about the story of Anderson</i> <b>(distracter)</b>	
		Class Class 4A 4B (N=36) (N=33)
a.	All correct	<b>[15]</b> <b>[10]</b>
b.	With at least one incorrect answer(s)	<b>[19]</b> <b>[22]</b>
	( Number of students who committed mistakes in each of the four components were calculated as follows:	
	♦ Author	1 8
	♦ Title of the book	4 9
	♦ Summary of contents	13 3
	♦ Post-reading impression	17 20
c.	Incomplete answers using the text read in class	<b>[1]</b> –
d.	Missing	– <b>[1]</b>

From Table 2, about 15 out of 36 students in class 4A and 10 out of 33 students in Class 4B could choose the most appropriate items as the components of a book report. That means, while the 4A students performed slightly better than their counterparts in Class 4B, a big proportion of both classes demonstrated a vague understanding of what should be written in a book report. In particular, among the mistakes committed by the 19 students of Class 4A, 13 were about “summary of contents” and 17 about “post-reading impression”. By contrast, in Class 4B, the biggest number of mistakes (20/22) was made regarding “post-reading impression” by mixing them up with the two distracters, and

only 3 of the 22 students also had problems with “summary of contents”; 8 and 9 also committed mistakes in “author” and “title of the book” respectively.

e. Relating the teaching and learning of book report

In both lessons, the students’ experience of what they had actually learnt in the lesson, as revealed from the diagnostic worksheet was apparently corresponding to the possibilities for learning as defined by the enacted patterns of variation and invariance constituted in the teaching content. In Class 4B, corresponding to what the majority of students focused on the learning about book report, the lesson also had a very strong focus on the format of a book report, particularly what items the report should contain. The patterns of variation and invariance that were constituted had the effect of putting forward *the specific format* the book report was supposed to have. This was mainly accomplished in an activity in which the teacher presented a list of eight possible items of a book report and asked the students to select among these possible items the unnecessary ones and to take them away.

There was, however, no such variation in possible items in Class 4A. Rather, the students of Class 4A were provided with a bigger flexibility in the structure (e.g., “summary of contents” and “post-reading impression” being written in one or separate paragraphs) and the content of “post-reading impression” (e.g., thoughts and feelings about the story, one’s own achievement and learning from writing a book report). The resulting patterns of variation and invariance in the content can therefore be said of building upon the students’ experience, which has led to the students’ perception that they had chiefly learnt to share their own impressions of the story on the one hand. On the other hand, the variation in structuring the “summary of contents” and “post-reading impression” of a book report, while other items like “author of the book” and “name of the book” were kept invariant, may help to explain why many students in this class confused these two components in responding to the specific question, despite that a group activity had been dedicated to students’ practising the writing of the two components.

In the beginning of Lesson 4B, after playing the first half of the story “A Little Match-seller”, the teacher also asked for the students’

impressions about the story which form a variation of empathy in how they felt sorry for the little match seller in the coldness. However, such a variation in the students' impression about the story that they had heard of was taken as a reason or motivation for writing a book report, which was then introduced as a more convenient and efficient way to share the story with others. The "post-reading impression" was somewhat introduced later in the lesson as one of the necessary items, which comes after "summary of contents" and concerns things like "...After reading this book, what impression do you have? What kind of insight you have got?" This may then be related to the fact that a big proportion of students in this class mixed up the appropriate item for "post-reading impression" with the distracters, which are reasons for reading or writing the book report.

## **Discussion**

In this paper, we have reported a study on two Primary 4 Chinese language lessons which were about the teaching and learning of the same topic, namely, how to write a book report. The lessons were analysed in terms of what patterns of variation and invariance were enacted in various aspects of the object of learning during the lesson and how they contributed to certain possibilities for learning that object. The findings suggested that different possibilities for learning the topic were observed when different patterns of variation and invariance were created in the teaching content, focusing students' attention on different aspects (the linguistics, referential and functional aspects) about writing a book report (the object of learning). Such a difference was also reflected in the ways the students of the two classes differed in perceiving and applying what they had learnt in the lesson.

Amidst the new trends in developing and researching different skills and processes in Chinese language learning, as inspired by the ongoing curriculum reform, the findings of this study serve to highlight the fundamental importance of the content and how it can be made possible for students to learn about the language. Acquiring language skills and processes is undoubtedly significant for students to be able to master the language and to further learning by the use of it. Yet, due consideration

to more subtle question of what specific aspects/features of the language (e.g., particular genres or rhetoric) we want students to learn when we are to develop in them particular processes and skills (e.g., reading and writing strategies, creative thinking, etc.) is necessary if students are to truly master the language which concern far more than the acquisition language skills.

In similar vein, we may need to rethink about the roles and relationship of the content and the methods used to deliver it. Displacing whole-class teacher- and textbook- centred instruction with the use of teaching forms which involve students' active participation (e.g., group work) has been one of the major foci of the curriculum reforms since the late 1990s. This has led to a significant shift in pedagogy towards a more lively and interactive teaching styles, with more participation of students. However, we believe that teaching styles or forms alone is not sufficient in accounting for what students would have experienced and thus learnt in the classroom. What we want to argue for is that when students are actively engaged or interact, they are actively interacted about *something*, which may or may not lead to their learning of that *something* in the activity, as have been shown in this study and Runesson's (2005) about the teaching and learning of mathematics. Our concern here is what is made possible to learn in the interaction or when the students are actively engaged, therefore we go beyond the interaction per se and account for how the topic is handled in terms of those aspects that are made possible for the learners to discern.

The same is true when we look at the sheer amount of time devoted to the teaching in an attempt to account for the different learning outcomes. As mentioned earlier, the class time devoted to the teaching of book report was different between the two lessons: the whole lesson in Class 4A and only half of the lesson in Class 4B. However, it would be hasty to associate the poorer performance of the latter with its lesser amount of time being used for the teaching, irrespective of the content being delivered. In fact, the majority of students in both classes were found vague in understanding the object of learning, i.e., the format of a book report and it was only by having a closer examination of what mistakes the students committed and how these could be related to what

and how specific contents were being handled that information about what had happened in the teaching/learning cycle could be ascertained.

It is however not our intention to suggest here that there can be a one-to-one correspondence between teaching and learning, by merely focusing on what and how specific contents, or objects of learning are experienced by the students in the classroom. Neither we are in an attempt to argue for a single learning theory in accounting for classroom learning. Rather, we acknowledge the complexities and fluidity of classroom teaching and learning, and the contributions that different learning theories make to unravel different aspects of significant value to improving education. What we are trying to point out is, when a teacher walks into the classroom, he or she must have “something” that he or she intends for students to learn. That “something” therefore provides an immediate ground for teachers and researchers to systematically observe, describe and reflect on what conditions they have likely created for student learning and how these conditions can be related to the learning outcomes. As evident in this study, the theoretical framework of variation, by prioritising what and how specific objects of learning are experienced by the learners, is a powerful tool to enhancing this kind of reflective practice.

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## Appendix

A sample of the diagnostic worksheet

- 一、 你認為這一堂最主要是教甚麼？請把答案寫在下面的方格內。  
（答案可用文字或圖畫表達）

In your opinion, what is mainly taught in this lesson? Please write down your answer in the following box (in words or in pictures).



- 二、 除了上面的答案以外，在這課裏你還學到了甚麼呢？請把答案寫在下面的方格內。（答案可用文字或圖畫表達）

Apart from the answer you have given in Question 1, what else do you think you have learnt in the lesson? Please write down the answer in the following box (in words or in pictures).





三、 以下是寫閱讀報告所須的項目：

Below are the components necessary for writing a book report

作者 Author	:	( )
書名 Title of the book	:	( )
內容概要 Summary of contents	:	( )
讀後感想 Post-reading impression	:	( )

下面哪些是屬於寫閱讀報告所須的項目？請把正確的數目字填寫在上面 ( ) 中。

Which of the following items is most appropriate for the above mentioned components? Please write down the number in the ( ) above.

\* 每個項目只可填一個數目字

One number for each ( ) only

1. 陳文清  
Chan Man Ching
2. 描寫陳文清為甚麼想寫愛迪生的故事。  
Describe why Chan Man Ching would like to write about the story of Anderson. (**distracter**)
3. 描寫愛迪生勤奮好學，不畏艱難，終於成為一個偉大的發明家。  
Describe how hardworking and brave Anderson was. At last, he became a great inventor.
4. 愛迪生：大發明家  
Anderson: the great inventor
5. 描寫自己被愛迪生的事跡感動，決心努力讀書，做個有用的人。  
Describe how oneself was moved by the story of Anderson and determined to study hard.
6. 描寫自己為甚麼會看愛迪生的故事。  
Describe why oneself would read about the story of Anderson. (**distracter**)