CODING THE TRANSFORMATION OF CHINESE PEDAGOGICAL PRACTICES IN SINGAPORE PRIMARY SCHOOLS: A STUDY OF EXPERIMENT *

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ABSTRACT
In Singapore, the education system has been successively tried and tested by language-in-education planning initiatives and pedagogical innovations over the past half an century. In order to change the current “unproductive” classroom practice, the Ministry of Education (MOE) has developed and experimented a modular approach in Grade 1 and Grade 2 of 25 primary schools since mid-2005. To find out whether the teaching principles of the curriculum are implemented in the classroom, we have designed a research project and used a classroom coding approach to explore whether the teaching principles and pedagogical emphasis of the new approach are achieved at the level of implementation. While this paper reports the major findings and their implications for future curriculum development in Singapore, it is our hope that our conclusions also shed some light on some other education systems as a whole.

KEYWORD:
Singapore, Chinese language (CL), experimental class, control class, student centred, module

1. INTRODUCTION – THE PROJECT CONTEXT

In the current CL pedagogic practice enacted in Singapore primary schools, students are taught to “recognise, understand, write, and use” Chinese characters simultaneously, so called Sihui (four capabilities) rather than to develop real life communicative skills relevant to the local context. Although this approach is celebrated by some local Chinese literacy scholars (e.g., Cheah, 2003; Chew, 1998), it poses greater challenge to children who have just started their early Chinese literacy learning, especially to those children who have little exposure to oral Chinese at home. To write characters is always the most

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difficult task for students, because to write a character, one has to memorise different and very often complicated strokes and to follow certain order of the strokes concerned. Moreover, students have to learn to write a certain number of individual characters before they can write sentences or stories in characters. This conventional classroom practice of character learning is very often manifested in mechanical repetition of individual characters or words in the classroom which ignore or neglect the development of students’ communicative competence development, thus frustrating and demoralising beginning Chinese students (see Liu, 2005). They may be interested in learning the language initially, but when the teacher requires them to memorise and write characters mechanically, their interests and motivation would be quenched.

In order to change the current “unproductive” classroom practice, to accommodate student learning differences (the point we will return) and to create pedagogical practice where Chinese learning would be fun and interesting, the Chinese Language Curriculum and Pedagogy Review Committee (CLCPRC, 2004) recommends that a new “Module Approach” to Chinese curriculum and pedagogy should be developed and implemented. Based on the CLCPRC recommendations, the Curriculum Planning and Development Division (CPDD), MOE has developed and experimented a modular approach in Primary 1 and Primary 2 of 25 primary schools. This approach consists of Core, Bridging, Enrichment and School-based components from Primary 1 to accommodate the different linguistic backgrounds between children who predominantly speak English at home (ESF) and those who predominantly speak Chinese at home (CSF). In this modular approach, students who start off with “little exposure” to CL take the Bridging module (on top of the Core module), and students who have had “more exposure” at home will take the Enrichment module (on top of the Core module) from Primary 1. In addition, schools are allowed certain curriculum time to develop and experiment their own school-based module in accordance with their perceptions of the students’ need, allowing flexibility for adjustment deemed necessary by individual schools. Generally, this experiment places less emphasis on memorising large number of Chinese characters, and instead focuses more on listening, speaking and reading skills than the conventional Sihui practice. More specifically, greater emphasis is placed on Character Recognition (CR) and less emphasis on character writing in the lower primary years to facilitate early reading. For the bridging module, emphasis is laid on developing students’ oral communicative competence while for the enrichment module, more emphasis is given to content knowledge and cultural aspect of the subject.
Aiming at finding out whether the teaching principles of the curriculum are implemented in the classroom, we have designed a research project and used a classroom coding approach to examine whether there are similarities and differences among the different modules, and between the experimental and control classes in terms of pedagogical practices. In this final report, we first discuss the current pedagogical discourse recurrent in the local public media and education field, highlighting the main differences between the student-centred and teacher-centred approaches in terms of pedagogical principles, we also introduce a theoretical perspective of social constructivism we have taken in this comparative study. Second, we discuss our research methodology where we discuss the major parameters of the coding system, and define the main categories for capturing specific features in classroom observation. Third, we report the results of this study in terms of how Chinese classes of the experimental and control groups are socially organised, what and how pedagogical activities are carried out, what knowledge or skills are emphasised, how they are classified, and so on. Finally, based on the findings, we discuss the patterns and trends of CL pedagogical practices between the two groups and among different modules and provide some implications for further improvement and implementation of this modular approach in Singapore.

However, it is important to emphasise that we do not intend to evaluate the experimental CL pedagogical practice, but rather to describe the salient features of Chinese teaching and examine whether the curricular priorities and pedagogical principles noted earlier have been implemented in the CL classroom. Specifically, our research questions are:

- What are the similarities and differences in the pedagogical practices received by the experimental and control groups and among the different experimental modules?
- Are the experimental pedagogical practices more experiential or student learning oriented than the control practices in terms of classroom organisation, classroom talk, student engagement, instructional and modality focus, teaching strategies and students’ products?

2. A SOCIOCULTURAL PERSPECTIVE: CL PEDAGOGICAL DISCOURSE
As briefly mentioned above, in response to perceived challenges in CL learning and use, the government has taken a series of cautious actions. For example, the Ministry of Education introduced greater flexibility and choice for students who study Chinese in January 2004 (Ministry of Education, 2004). In November 2004, CLCPRC further issued important recommendations to recognise the changed sociolinguistic reality of Chinese students in Singapore, i.e. the differences among students in terms of linguistic ability, home background and motivation, and to reform Chinese curriculum and pedagogy according to the need of different groups of students.

The pedagogical parallel of these changes to accommodate different groups of students with different sociolinguistic backgrounds is signalled in official discourse which shows a shift from emphasising traditional teacher-centred to student learning oriented pedagogy, from emphasising knowledge transmission to knowledge construction, and from a focus on Chinese character recognition and writing to Chinese character recognition, reading and oracy (Ministry of Education, 2006). This shift is variously discussed by the local academics and education policy makers as holistic or integrated approaches to CL pedagogy (e.g., Ministry of Education, 2006). The shift is informed by what is generally termed the sociocultural theory. The sociocultural theory is a synthesised theory which emphasises employment of experiential and interactive methods in a classroom where students are seen as the main agents of their learning, and the teacher as a facilitator (e.g., Jones and Jones, 1995; CLCPRC, 2004; Ministry of Education, 2006). The sociocultural theory underlies a formal departure from the traditional view which lends itself to the notion of teaching as a kind of what Cambourne (1988) labelled as “scientific cognitive engineering” for which language teacher’s role is to pound the words and sentence patterns into learners’ head until they become habitual and automatic with these right words and sentences through rote memorisation.

Student learning oriented pedagogy, its relevant teaching principles, as well as the associated policy priorities have been discussed extensively in the literature and a variety of recommendations have been produced (e.g., Liu, et, al. for a review; Ministry of Education, 2006). A detailed discussion of the sociocultural theory or student learning oriented pedagogy is beyond the scope of this report, but for the purpose of this report, we summarise the main differences between student learning oriented and traditional approaches to language teaching and learning.

Drawn upon Vygotsky’s socio-cultural theory, the social constructivism assumes that knowledge is actively and socially constructed by the human beings, not passively
received; and cognition is an adaptive process that organises learners’ experiential world. In other words, learners grow mentally and cognitively by fitting new information together with what they already know. Therefore, the best way to learn is when learners are scaffolded to construct their hypothesis based on their prior experience and try their hypothesis out in the real world in order to prove what they have constructed in the learning process. In this learning process, appropriate activities and collaborative interaction are perceived to be of paramount importance in the classroom. Without attempting to provide a comprehensive review of the discussions and controversies, in what follows we summarise some teaching principles for language education derived from the recent discussions based on the social constructivism (or so-called student-centred/integrated approach) and compare them with those of the traditional CL education through the following table.

Table 1 Major Principles of Student-oriented Approach and Traditional Approach

<table>
<thead>
<tr>
<th>Areas of Comparison</th>
<th>Student-centred/integrated approaches</th>
<th>Traditional Chinese language approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Linguistic and cultural knowledge construction and language use for exchange of meanings; Learner: builder; capable, flexible and creative</td>
<td>Accumulation of linguistic and cultural knowledge, and skills; Learner: knowledge receivers</td>
</tr>
<tr>
<td>Teaching content</td>
<td>Linguistic and cultural specific knowledge to meet the needs of students and match students proficiency level</td>
<td>Following textbook-based exemplary texts, prescribed models to imitate</td>
</tr>
<tr>
<td>Nature of teaching</td>
<td>Interaction, scaffolding, facilitating</td>
<td>Transmitting knowledge and skills</td>
</tr>
<tr>
<td>Role of teacher</td>
<td>Guider, organiser, facilitator</td>
<td>Transmitter and source of authoritative knowledge, bank of knowledge to draw upon</td>
</tr>
<tr>
<td>Expected outcome</td>
<td>Developing understanding and ability; knowing how to learn</td>
<td>How much testable knowledge; examination scores</td>
</tr>
<tr>
<td>Teaching methods</td>
<td>Various methods, emphasising on interesting activities and interactions</td>
<td>Teacher monologue/IRF with demonstrations and skills</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Language for communicative purposes</td>
<td>Cultural values, morality and linguistic knowledge</td>
</tr>
<tr>
<td>Literacy’s function</td>
<td>Literacy as overall development of the four language skills</td>
<td>Literacy as reading and writing (CR and writing)</td>
</tr>
</tbody>
</table>

The constructivism assumes that learning is a process of concept development and knowledge construction (e.g., Lantolf & Appel, 1994). This assumption emphasises on the human capacity to understand and create knowledge. This emphasis puts students at the
centre of the learning process. Students are not passive knowledge receiver but active and capable builders who construct their own knowledge and understanding of the world.

Translated into language learning is the view that language learning is a constructive activity that students have to carry out. In this constructive activity, students constantly form hypothesis of what they encounter as new from their prior knowledge, and try the hypothesis out, thus constructing their communicative competence. In this way, students learn language as a medium of communication rather than as only curriculum subject with sets of isolated topics, facts or skills (e.g., Lantolf & Appel, 1994). Thus language is viewed as a verb (doing languages) rather than a noun (knowledge or skills). In doing languages, what is learned/taught should: 1) be largely able to be understood by students, what Krashen and Terrell (1983) called “comprehensible input”; 2) be closely tied to objects and enterprises in students’ experiential world that they may simultaneously and subsequently use to express their meaning intentions (e.g., Schachter, 1989; Stern, 1990); and 3) be adjusted to take into account students previous cognitive, social, cultural and linguistic experiences (e.g., Schachter, 1989; Stern, 1992). As these points imply, students bring a variety of backgrounds and lived experiences to CL learning. These lead them to use different social attitudes as well as cognitive approaches to construct their new knowledge in the dynamic learning process. These differences should be recognised and facilitated by the teacher who should be a guide (A Guide on the Side) rather than a mere knowledge deliverer (A Sage on the Stage) to students. The teaching content should meet the needs of students and match the capacities of students. In order to do so, a variety of student-centred teaching strategies (e.g., group work, project work, task-based interactions which emphasise students’ autonomy and initiation) should be used to accommodate different needs and approaches of students (e.g., Lantolf & Appel, 1994; Stern, 1990). Therefore the development of students’ ability/capacity to construct knowledge of how to learn and how to use the language is the expected teaching outcome.

The CL syllabus and textbooks still play important roles in determining the teaching content, but teachers and students should contribute to the teaching content. In other words, teaching and learning are not confined to the syllabus and textbooks but relate to the real world and match students’ ability levels. Teachers and students are involved in active interactions. The relationships among the teachers, students and the content knowledge cannot be expressed as one-way but rather as two-way and multi-way interactions.
Contrary to teaching principles of the constructivism, traditional view of CL education assumes that learning is a process of acquiring or accumulating linguistic and cultural knowledge and skills (e.g., Ang, 1998; Cortazzi and Jin, 1996; Paine, 1992; Wu, Li and Anderson, 1999). Students are treated as passive learners of ready made knowledge and skills. A good student is supposed to be diligent, persevering and well-behaved, obedient to authority (e.g., parents & teachers). They are expected to learn from teachers by internalisation of the knowledge the teacher has accumulated. Students are not expected to present their own ideas at least until they have mastered sufficient body of knowledge to be able to make informed judgements (e.g., Cortazzi, 1998; Paine, 1992).

In CL education, teaching and learning are often seen as involving memorisation of words (and/or characters), reading exemplary texts and repetition of discrete incremental linguistic skills and practice of isolated tasks until mastery of the whole has been achieved (e.g., Ang, 1998; Cortazzi, 1998). This requires students’ attention for detail and continued exercise of individual difference. In simple terms, learning is best achieved by mimicking the teachers and text, not in group work or discussion between students. It is displayed by the repetition or regurgitation of learned models, especially in written or oral recitation. Neither teachers nor students engage in making decisions about the content. Teaching proceeds in the direction from content (predetermined by syllabus and textbooks) to teachers, then from teachers to students and finally to expected outcomes.

CL education in Singapore, as a result of its long tradition of Chinese medium schools and its emphasis on inculcating traditional cultural values among other factors, has always been under the influence of Chinese traditional education cultures/models (e.g., Ang, 1998). The Chinese classrooms have been often portrayed as teacher-centred with passive students. Such classroom pedagogic environments have been seen as detrimental to CL learning and as demoralising students learning interest and motivation, leading to arguments for curriculum reforms (e.g., Cheah, 2003). Since early 1990s, the government has continually reviewed CL curriculum and set up explicit guidelines which emphasise a student-centred approach informed by the constructivism. The emphasis can be seen as an attempt to tackle the problems of the traditional oriented approach and to improve the learning environment with a focus on student autonomy and initiatives in the learning process.

Therefore, of importance for our purpose in this report is the sociocultural theoretical perspective applied in the CL curriculum. We have taken this perspective in the analysis of the data. However, in line with the theoretical framework of CRPP Core Research
Program (Luke, et al., 2005), we view traditional teacher-centred and student learning oriented pedagogies as a continuum rather than a dichotomy, meaning in this report we will discuss the differences between the experimental and control classes in terms of general orientation rather than a clear cut between them. More importantly, we analyse the data with a view that programmes of language instruction should not be skewed in either direction of the continuum (e.g., Stern, 1992).

In what follows, we briefly discuss the research methodology where we define the major categories of the CRPP Chinese coding instrument, and describe the participants and analytical procedure of the research.

3. METHODOLOGY

We use the following model to illustrate our research design and highlights our following reporting foci.

*Figure  Research Design*

- **Sampling of schools (16 of schools)**
- **Design of SCPCS (Adaptation of SPCS)**
- **Data Collection (Classroom Coding with SCPCS, field notes taking, audio/video taping)**
- **Data Processing (Consolidate and compare coding results via statistical methods)**
- **Data Analysis and Reporting (Reporting of comparison in the following sequence)**
  - Comparison between Experimental and Control Classes
  - Comparison across 3 Modules of Experimental Classes
  - Comparison between School-based Module and Control Classes
The focus of our research design is a description of what happens in the experimental and control classrooms. The classes are coded “in real time” using the Singapore Chinese Pedagogy Coding Scheme (SCPCS) developed from the Singapore Pedagogy Coding Scheme (the SPCS). The coded data are analysed statistically to identify similarities and differences in the pedagogical practices received by the experimental and control groups and among the different modules. At the same time, these lessons are also audio-taped (some also videotaped for professional training purpose) for possible future transcription, which can be subjected to fine-grained descriptive, interactive and discourse analyses.

As the SCPCS requires objective judgement and consistency of all the coders involved in the project, all coders have gone through several rounds of coding sessions together to reach a consensus on the various parameters under the SCPCS. To ensure the reliability of the data collected, pair coding was recommended as a means to substantiate the results generated through SCPCS.

In this project, pair coding was done for a total of 14 lessons out of the 344 lessons observed. During pair coding, two coders sat in the same classroom to observe the class. Each coder codes in his/her own coding sheet individually, then compare their recorded data when the class was over. The two sets of data were tabulated and a score was obtained by awarding a point for every matching answer within the pair. According to the standardised computation, the pair coding results yielded an average score of 66.1%, indicating that for every pair of coding results; the coders’ interpretation of a given situation would tally for 66.1% of the items in the SCPCS. This provides adequate evidence to verify the inter reliability of our coding results.

3.1. Participants and the Scope

The scale of this research is unprecedented for classroom documentation given that it involves lessons being coded in 16 schools over a period of nearly two years, across all the modules of the experimental and control groups at Primary 1, 2 and 3 levels (P3 is not reported in this paper due to the space limitation), and aggregated from more than a whole week of observation of instructional units in sampled schools. The observation of CL classrooms started in early 2006 and completed by late 2007. During this period of time, four CL researchers visited the 16 sampled schools and coded 57 units of experimental and 10 units of the control classes in three levels CL classrooms. Each of the experimental and control classes of Primary 1 and 2 comprises of averagely about 30 students. The 57 units contain a total of 290 lessons. On average there were about 5 – 6 lessons in each unit
observed. The lessons in turn contain 5710 phases (including P3 classes). The following table illustrate an overview of participants and scope of our coding fieldwork for P1 and P2 classes (for the meaning of unit, lesson and phase, see forthcoming discussion).

**Table 2 Details of Participating Primary 1 + 2 Classes**

<table>
<thead>
<tr>
<th>Coding Information (by level and module)</th>
<th>Primary 1 + 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
</tr>
<tr>
<td>Total No. of Units Coded</td>
<td></td>
</tr>
<tr>
<td>Experimental: 18 + 23</td>
<td></td>
</tr>
<tr>
<td>Total No. of Lessons Coded</td>
<td>66+98</td>
</tr>
<tr>
<td>Average Lesson Time (minutes)</td>
<td>64.1+52.7</td>
</tr>
<tr>
<td>Average Class Size</td>
<td>28.5+27.9</td>
</tr>
<tr>
<td>Average No. of Phases Per Lesson</td>
<td>6.4+5.6</td>
</tr>
<tr>
<td>Total Lesson Time (hours)</td>
<td>70.5+86.1</td>
</tr>
</tbody>
</table>

### 3.2. The Coding Scheme

The SCPCS was developed from the SPCS, and the general framework of the SPCS is kept intact, but some categories of the SPCS were opted out (e.g., “knowledge depth”, “knowledge critique” which are general designated for non-language subject areas). Instead, some specific categories (e.g., knowledge focus: vocabulary, grammar, discourse, content; modality focus; teaching strategies etc.) were developed and integrated to capture specific aspects of instruction that are important in CL pedagogical practices (see Liu & Zhao, forthcoming). The SPCS was preceded by a comprehensive review of educational theories, international classroom research and related instruments. Drawing on these sources, the major parameters of the SPCS, the rationale for its development and its validity of use were described and defined on theoretical and empirical grounds (Luke and Ridzuan, 2006). Of importance to our research purpose, there are two distinguishing markers of the SPCS derived from Bernstein’s work (1996), i.e. knowledge classification and framing.

Based on Bernstein’s theorising demonstrated in SPCS, our SCPCS takes the position that teachers and students *classify* knowledge, meaning that they select structure and shape knowledge in classroom interaction; and that this classroom interaction in turn *frames* knowledge, that is, social interaction, the organisation of social space and discourse shape the sources and power relations around knowledge. On a broad continuum defined by the SPCS, strong knowledge classification marks out and helps maintain the boundaries of traditional disciplines or fields of knowledge; while weak classification indexes the integrated knowledge affiliated with experiential education. Strong framing marks out teacher and textbook instruction and fewer opportunities for students to construct knowledge in social interaction. On the other hand, weak framing tends to be
more student learning oriented, more reciprocal in establishing the sources and bases of knowledge and allowing more opportunities for students’ active interaction or social construction of knowledge.

Therefore, the SCPCS consists of two interrelated parts. Firstly, Framing, it describes the social organisation of the classroom, student engagement, classroom talks, teaching strategies, teacher and student technologies/tools and so on; that is, how the social interaction of teacher/student discourse (e.g., social organisation of the classroom, different talks, teaching technology and teaching strategies) create a mediating environment for working with ideas, knowledge and texts. Secondly, Knowledge Classification, it examines what and how knowledge and skills are represented and structured (e.g., knowledge focus or “contents”, modality focus, students’ products), that is how teachers, students and curricular materials present knowledge (Luke and Ridzuan, 2006). In view of length constraint, it is not possible in this report to describe all the categories of the SCPCS for analysis. In the present report, we refer only to data, we believe, related to the salient features of the experimental and conventional practices. These categories are summarised below.

The basic element of classroom coding is the activity phase identified within a lesson. A phase is defined as a particular period of time that is characterised by a particular kind of social classroom organisation where a particular major activity takes place. A lesson is a particular period of time (normally 30-60 minutes) designated by the curriculum in a school day. A teaching unit is defined by the curriculum as a sustained period of time (made up of several lessons) devoted to a specific topic or chunk of knowledge of the curriculum. In other words, units of pedagogic practice are subdivided into lessons. Lessons are in turn further divided into kinds of classroom organisation (framing phases) in which teachers and students engage in particular activities. In terms of phase, framing of social classroom activity, ten broad arrangements, or phases, are possible. Each of these possible phases is coded in minute detail on a separate MS Excel worksheet.

To save space, we use the following table to show the eight major categories and the items of each category we used in this project. For more detailed descriptions, readers are referred to Liu and Zhao (in press).

Table 3 Major Coding Category and Items
**Major Categories** | **Items of the Category**
--- | ---
**Social Classroom Activity** | Whole Class Answer Checking (IRF), Whole Class Elicitation and Discussion, Whole Class Demonstration or Activity, Student Demonstration/Presentation, Group Work, Pair Work, Whole Class Lecture (Monologue), Choral Repetition and/or Oral Reading, Individual Seatwork, Test Taking.
**Instructional Talk** | Organisational Talk, Regulatory Talk, Test-taking Talk, Curriculum Talk and Informal Talk.
**Student Engagement** * | Technical Language Or Analogies, Comparisons, Classifications, Real Life Experience/Intuition, Regurgitation/Repetition.
**Teaching Category** | Whiteboard, OHT/Visualiser, Powerpoint, Textbook, Worksheet, Internet, Multimedia, Flashcards.
**Teacher’s Technology/Tool** | Pronunciation, Vocabulary, Grammar, Text/Discourse and Content/meaning.
**Major Knowledge Focus** ** | Listening, Speaking, Character Recognition, Reading or Writing.
**Student Modality** *** | Short Oral Response, Sustained Oral Product, Written Multiple Choice/Fill-in-The-Blanks, Written Short Answers, Sustained Written Text, Multimodal Text.

* For “student engagement”, the researcher observes and determines the proportion of students physically paying attention to their class work rather than what they mentally do/experience in their mind. This is calculated on a rough count coded in percentages prescribed along a five point scales: 0%, 25%, 50%, 75% and 100%.

** Knowledge focus of instruction is also called “contents” in some research (e.g., Spada & Frohlich, 1995; Stern, 1992). We use the former term rather than the latter because we intend to distinguish “text content” from other “contents”, such as vocabulary, grammar and discourse.

*** When students are listening and speaking or listening and writing and so on at the same time, it is coded in a relevant combination category; For example, the skill focus in IRF phases would be coded as “listening and speaking”. The identification of these features can help determine whether character recognition or character recognition & writing or oral skills (listening and speaking) or writing skills (reading and writing) are emphasised in the classroom.

### 4. RESULTS – DATA ANALYSIS

In this section, we present the quantitative results of the Chinese classroom data coded using the SCPCS and distinguish the similarities and differences of knowledge framing and classification among the experimental modules and between the experimental and control classes. We analyse “knowledge framing” of the coded units in terms of social organisation of classrooms, talks, teachers’ tools and student engagement, followed by knowledge classification in terms of knowledge focus of instruction, modality focus and students’ products distinguished by the SCPCS. As recommended by Luke et al. (2004),
the analysis of the data is the calculation of the percentage of total time attributable to each of the categories of the scheme. We present the synthesised results for the pedagogical practices of the different modules and experimental and control classes in tabular form.

However, having been constrained by the space, only two representative categories in two comparison models are presented here to show how our data analysis was typically done. Specifically, we analyze:

- the comparison of classroom social organisation between the Experimental (Core, Bridging and Enrichment) and Control Classes of Primary 1 and Primary 2;
- the comparison of teachers’ tools across the three modules of Core, Bridging and Enrichment) with the Experimental Classes of Primary 1 and Primary 2 the three modules of experimental classes.

4.1. Comparison between the Experimental and Control Classes: Social Organisation of Classrooms as a Sample

The percentage of time in the experimental and control classes devoted to various categories of classroom social organisation is displayed in Table 4. No whole class elicitation and pair work occurred during our observations in any of the control classes.

Table 4  Social Organisation of Experimental Modules and Control Classes

<table>
<thead>
<tr>
<th>Social Organisation</th>
<th>Experimental Modules</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
<td>Bridging</td>
</tr>
<tr>
<td>Whole Class Lecture (Monologue)</td>
<td>2.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Choral Repetition and/or Oral reading</td>
<td>11.8%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Individual Seatwork/Reading</td>
<td>11.8%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Test-Taking</td>
<td>3.8%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Whole Class Elicitation and Discussion</td>
<td>1.0%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Whole Class Answer Checking (IRF)</td>
<td>46.2%</td>
<td>63.2%</td>
</tr>
<tr>
<td>Whole Class Demonstration or Activity</td>
<td>14.7%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Student Demonstration or Presentations</td>
<td>2.8%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Small Group Work</td>
<td>3.9%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Pair Work</td>
<td>1.7%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The figures in the table suggest that there are some differences between the experimental and control classes in terms of classroom social organisation. Of significance are the differences between the experimental and control classes in terms of student interaction. The most significant difference is that there are more group work (4.1%) and less individual silent seatwork (11.1%) and choral repetition (12.3%) in the experimental
classes than those in the control classes which were 0.9%, 26.9%, 14.8% respectively. To a lesser extent, there are more student demonstrations (2.6%) and pair work (1.7%) in the experimental classes in comparison to 0.4% and 0% in the control classes.

In general, conventional teaching methods are more often employed in the control classes. In the control classes, teachers typically went through a particular text (in the textbook) with students by means of whole class answer checking. Teachers’ questions were basically about characters and word formation. During the triadic process, one or two students were typically invited to make short responses (often one word contribution), and teachers gave right or wrong confirmation without elaboration or further explanation. After the whole class answer checking, students were organised into silent seatwork, doing characters copying or doing exercises in their workbook involving short answers. More interactive classroom social organisations, such as small group work, pair work, whole class elicitation and student demonstration, were either minimal or absent from the control classes observed.

In comparison, the social organisations or activities of the experimental classes (all the ten arrangements were observed) are more diversified than the control classes (where four types of social organisations are either absent or minimal, e.g., whole class elicitation, group work, student demonstration and pair work). This suggests that there were more social interactions and learner-oriented activities in the experimental classes. In addition, teacher-student and student-teacher interactions were observed in the phases such as whole class answer checking (IRF) and whole class elicitation, where students in the experimental classes were required to answer more open questions than closed questions and the student answers were more sustained (often more than one sentence, also refer to the section on Students’ Products). In small group work, students in the experimental classes were often engaged in discussions, either on questions given by the teacher or on tasks such as role-play and drama presentation. In contrast, most of the above were absent in the control classes.

These figures suggest that all the arrangements of classroom organisation predetermined by the coding system have been employed in the classroom with different percentages of time, which shows an obvious diversification of classroom activities in the experimental modules. Among these diversified classroom organisations, there are more teacher-student and student-student interactions (the later six categories combined total: core – 70.3%, bridging – 83.1% and enrichment – 65.9%) than teacher dominant and/or non-interactive tasks (core – 29.7%, bridging – 16.9% and enrichment – 34.1%). In other
words, these phases all involved student interactions in one way or another and most of these phases were weakly framed. The strongly framed phases or phases without student interactions for the core, bridging, and enrichment modules were made up of the following: 2.2%, 2.2% and 2.5% of whole class lecture; 11.8%, 11.3% and 15.3% of choral reading; 11.8%, 3.2% and 16% of individual seatwork successively. Only minimal test-taking occurred in the bridging and enrichment modules, but 3.8% of the classroom time was spent on test-taking in the core modules. In addition, a general tendency or pattern has emerged from these figures that the more advanced the classes are (the enrichment and core modules with students who have relatively higher language proficiency), the more interactions or space are created in the classroom (for example, group work, student demonstration and pair work). In comparison, the less advanced classes are (bridging), the more teacher controlled or directed activities that are conducted (for example, IRF).

In summary, the experimental teachers arranged more diversified classroom activities and provided a more interactive environment that allowed students to engage in tasks verbally while the control class teachers more often use the traditional mode of whole class answer checking and assign the students to silent seatwork on character-copying and exercises involving short answers, giving relatively fewer opportunities to oral interactions amongst students. This observation was particularly manifested in the contrast between the higher percentage of individual seatwork/reading in the control classes and the lower percentage or absence of small group work, pair work and whole class discussion. In other words, the Chinese instruction is more student learning oriented in the experimental classes than in the control classes.

4.2. Comparison across the Three Modules of Experimental Classes: Teachers’ Tools as a Sample

Results pertaining to the category of teachers’ tools in the three modules are presented in Table 5. Firstly, it is revealed that the ICT (Information and Communication Technology)-based tools, such as OHT/visualiser, PowerPoint, and multimedia, were frequently used in the three experimental modules. On average, these tools combined accounted for 28.9% in the core module, 28.9% in the bridging module and 18.2% in the enrichment module. Among these modules, the core and bridging modules used ICT technologies most often while the enrichment module scored the lowest. However, audio CDs and internet were not used in the bridging module, and the use of these two tools was not frequent either in
the core and enrichment modules (a total of 1.5% for audio CDs and 0.6% for the Internet).

Table 5 Teachers’ Tools in Experimental Modules

<table>
<thead>
<tr>
<th>Teachers’ Tools</th>
<th>Experimental Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
</tr>
<tr>
<td>Whiteboard</td>
<td>13.4%</td>
</tr>
<tr>
<td>OHT/Visualiser</td>
<td>9.8%</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>12.1%</td>
</tr>
<tr>
<td>Audio CD</td>
<td>1.2%</td>
</tr>
<tr>
<td>Textbook</td>
<td>18.2%</td>
</tr>
<tr>
<td>Workbook</td>
<td>3.9%</td>
</tr>
<tr>
<td>Worksheet</td>
<td>2.4%</td>
</tr>
<tr>
<td>Internet</td>
<td>0.6%</td>
</tr>
<tr>
<td>Multimedia</td>
<td>7.0%</td>
</tr>
<tr>
<td>Flashcard</td>
<td>13.8%</td>
</tr>
<tr>
<td>Pictures</td>
<td>0.9%</td>
</tr>
<tr>
<td>Objects</td>
<td>1.1%</td>
</tr>
<tr>
<td>Others</td>
<td>1.1%</td>
</tr>
<tr>
<td>Nil</td>
<td>14.5%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The use of more traditional tools (e.g., whiteboard, textbook, workbook) was still prominent in the three modules. Whiteboard and textbook were more frequently used in the core (13.4%, 18.2%) and enrichment modules (14.1%, 22.3%), but less frequently in the bridging (8.6%, 10.3%) module. Similarly, the core and enrichment modules used workbook (3.9% and 2.4% respectively) as the major teachers’ tools more often than the bridging module (0.2%). Worksheets were also rarely used in the bridging module (0.3%), but used relatively more often in the enrichment (7.8%) and core (2.4%) modules. However, the use of flashcards is evidently more frequent in the bridging module (32%) than the core (13.8%) module, while the enrichment (4.2%) module has the least use of flashcards. Flashcards were mostly used for CR and sometimes for word combinations. The bridging and core modules put more emphasis on character and word learning as the instructional focus rather than text and contents, thus employing flashcards more frequently.

These figures show that there is a fairly balanced use of teaching technologies in the three experimental modules with ICT technologies taking up more than one fourth of the teachers’ tools used in the classroom on average. The ICT-based tools, such as OHT/visualiser, PowerPoint, and Multimedia, were most frequently used in the three experimental modules. This suggests that the teachers in these experimental modules have
implemented CPDD’s recommendation of using ICT-based tools in classroom operation, which is one of the aims in the official CL curriculum to develop students’ skills in ICT, as it is regarded as having the potential to impact significantly on language education. Among the three modules in the experimental classes, most of the contents delivered in the core, bridging and enrichment modules by means of these technologies were developed by the CPDD.

Another difference is found between the core, bridging and enrichment modules in the use of whiteboard, textbook, workbook and flashcards. The core and enrichment modules used textbooks more often, but the bridging module employed more flashcards as the major teachers’ tool in their Chinese instruction. These findings are compatible to the different curriculum designs of the different modules. Generally, while the core and bridging module would tend to use more ready-made mediational tools, the enrichment module tends to use more self-designed tools to further improve students’ language abilities, sometimes beyond the requirement of MOE. For example, many teachers in the enrichment module used self-designed worksheets and multimedia materials for students to do reading-comprehension exercises after reading stories in storybooks, which proved to be an effective way to enhance students’ reading abilities, and a good tool in assessing students’ understanding of the stories heard or read in class.

It is worth mentioning here that some games were widely adopted by teachers in the experimental classes using flashcards, such as *Kai Huoche* (Driving the Trains), where students read out the characters shown on the flashcards one by one, but the “Train” will stop if any student fails to read/recognise the character on the flashcard. Another game designed by the teachers using the flashcards is *Zhao Pengyou* (Seeking Friends), which practices word combination; therefore, “Friends” here means that certain characters are closely related and can be combined into appropriate words but not others. It should be noted, however, that flashcards are not a new tool in CL classes, but with the introduction of *Zi Baobao*, which is especially designed to accompany the experimental textbooks and owned by each student, they are now used more innovatively and have more functions.

Generally, our findings show that ICT-based teaching tools are employed at the higher percentages in experimental modules, which suggest that the teaching materials in the experimental classes are technology-oriented. This is in line with the reform targets set by CPDD. These ICT-oriented materials help to create a more interactive and functional environment for CL learning and the ICT-based tools also have a positive effect on making language-learning more stimulating and productive, which is also evidenced in
higher engagement of the students in our findings. Although textbooks were still frequently used in experimental classes, they were very often accompanied with multimedia representations, flashcards Zi Baobao (Baby Characters), which facilitate language learning in class, such as CR, word combination, sentence-making and story narration.

5. CONCLUSION AND IMPLICATIONS

As noted on the outset, this study examined many aspects of the Chinese instruction in the new module approach experiment and the conventional approach (control) classes. However, as time and space are limited, we cannot report all we have observed. Nevertheless, the findings presented above provided us a complex but vivid picture about CL pedagogical practices in Singapore schools. In what follows, we first look at the different emphases and common features between the experimental and control groups in terms of a continuum of student-learning and teacher-centred orientation broadly defined by the SCPCS, then we examine the pedagogical implications that this comparative study can provide for the future educational innovation of CL teaching in Singapore schools.

The main results are summarised as follows:

- For social organization, generally, there are diversified classroom activities organised in the three experimental modules. In comparison with the control classes, the experimental classes provided a more interactive environment that allowed students to engage in tasks verbally. In contrast, the control class more often engaged in the traditional mode of classroom organisation, like whole class answer checking and individual silent seatwork (e.g., character copying and “multiple choice” or “fill-in-the-blanks” exercises), giving fewer opportunities for oral interactions among the students.

- In terms of types of talk, in comparison with the control group, the experimental classes engaged in more curriculum-related talk because teachers valued the quality teaching time more. This suggests that the experimental teachers were more task-focused while the control class teachers talked less and gave more silent seatwork where students were required to do more character copying and multiple choice exercises. Among the three modules classes, the enrichment module encountered less behavioural problems, thus resulting in least regulatory talk.

- The student engagement is generally high in the experimental classes with most students engaged in the classroom activities. The students were more active and willing to answer teachers’ questions than the students in the control classes. It was also observed that
among the three modules of experimental classes, the enrichment students showed higher engagement than students in other experimental modules. The bridging classes showed the least student engagement level. This seems to imply that students’ attention and involvement in language classes may be correlated with their language proficiency.

- Regarding teaching strategies, three general trends of teaching strategies emerged in our data. Firstly, there are statistical differences of instructional emphasis between the experimental and control classes. Secondly, more strategies were consciously employed by teachers for respective purposes. Thirdly, strategies used by the teachers observed among the three modules are different. For instance, sophisticated strategies were most often found in the enrichment classes. Generally, although the proportion of drill through repetition is still considerable, great efforts were made by teacher to diversify the instructional practices in the experimental classes.

- In comparison with the control classes, ICT-based teaching tools are generally employed at a higher percentage in experimental classes, which suggests that the new experimental syllabus is more ICT-oriented than in the previous syllabus enacted in the control classes. In the three experimental modules, there is a fairly balanced use of teaching technologies. This suggests that the teachers in these experimental modules implement CPDD’s recommendation on the use of ICT-based tools in the new CL curricula.

- As for the knowledge focus, the experimental group has shown more attention to textual/discourse structure and contents as compared with the control group. Broadly speaking, the teachers and students in the experimental classes spent more time on language functions or communicative strategies. However, some differences were observed between the core and bridging modules. The core module seemed to engage students more on Character Recognition (CR) whereas the bridging module spent more time on word and grammar instruction.

- In the category of modality focus, even though the experimental and control classes share many common features with general priority given to CR, reading or the combinations of both, there are some differences between the two groups, which shows that the different language skill emphases designed in the experimental curriculum have been achieved to a certain extent, but more complex skill combinations (i.e. reading & writing), by and large, have not received much attention. It was also observed that the development of students’ listening and speaking skills was being emphasised. In the light of the variations in pedagogical emphases in the various experimental modules, we believe that different needs of students from different linguistic backgrounds are accommodated in the new curriculum.

- Regarding students’ products, the experimental modules produce more oral products, among which sustained oral responses take up substantial proportion of their class time.
The differences in the percentages for character copying and written short answers between the experimental and control classes reveal a shift from character writing emphasis in the conventional classrooms to CR emphasis in the experimental classrooms. In the implementation of the new curriculum, students’ oral competencies receive a considerable emphasis and more communication oriented learning environments are created.

In conclusion, apparent differences among the three experimental modules and between the experimental and control classes are identified. Two fairly distinct pedagogical orientations emerge from the coding data in terms of a broadly defined continuum mentioned earlier. However, there are also a few problems that need to be considered for future implementation of the experimental modules.

Firstly, we assume that the bridging classes where the majority of the students are grouped, according to their family linguistic backgrounds, to study Chinese at a relatively lower level may risk widening the gap between this group of students and students in the other two modules. These weaker learners (a significant number are from non-Chinese speaking/foreign background or with learning difficulties) are denied the opportunity to all-time mix and interaction with those potentially helpful proficient peers. Furthermore, there exists a mix of proficiency levels within these bridging classes due to the lack of well-established placement standards and procedures. In addition, these students are not given more curriculum time to catch up with their more advanced counterparts, as advocated in the new curriculum.

Secondly, teachers of the experimental classes provided more opportunities for student interactions and oral communication activities than their counterparts of the control classes, but we observed that they generally spent more time than expected on cracking the basic linguistic code, especially at the Chinese character level, rather than on developing students’ genuine communicative skills. We assume that there are two major reasons for this tendency. One reason might be that teachers still hold a belief that Chinese characters are the gatekeepers for further Chinese literacy development; the other reason is that Chinese Pinyin is still not treated as an effective aiding tool for reading purpose in the new curricula. As a result, teachers find it very difficult to design higher level communicative activities in the classroom. In order to achieve more desirable outcomes, these factors or biases need to be considered carefully by curriculum developers.

Thirdly, the coding results provide an encouraging picture for school-based module. We find that teachers of the school-based classes are more innovative and use more ICT-based teaching approaches to facilitate student learning than those of any other experimental classes or control classes. This suggests that CL teachers, at least some of them, are by no means traditional-minded, but in fact can be very innovative and creative if they are given enough free space for curricular
and pedagogical development. Concurred with Chin (2007) and Cheong (2007), we find it compelling to emphasise the need to ensure conducive conditions, and recommend that more curriculum time to be freed up to give teachers space to decide on how, when and what to teach in order to motivate CL learning.

Finally, some similarities observed among these experimental and control classes (not emphasised in the discussion) also call for special attention, especially similarities in terms of classroom organisation, knowledge focus and student products. Comparatively higher ratings of Initiate-Response-Feedback, vocabulary focus and short oral responses in the both groups suggest that the teachers’ long-standing views or disposition that Chinese learning is a process of constantly practising and repeating characters may act as an obstacle in pedagogical innovations. Therefore, teachers need more professional development in their new endeavour for the innovation and change. All in all, although we welcome the student-learning orientation designed in the modular approach, we do not attempt to conclude that these features alone can achieve the goals and priorities defined in policy documents and debated in public discourse, particularly in a sociolinguistically complex environment like Singapore. In other words, the improvement of students’ CL proficiency calls for unrelenting collective efforts not only from classroom teachers and policy makers, but more importantly, the whole Chinese community at large.

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