CONCERNS OF SECONDARY SCHOOL TEACHERS ABOUT REFORMING CHINESE LANGUAGE INSTRUCTION WITH THE USE OF A COMPREHENSION PROCESS MODEL OF READING IN HONG KONG

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Abstract

Students' progress in reading comprehension is a crucial goal in language education, and teaching comprehension processes to students is considered to be one of the most effective approaches to improving students' reading ability. To facilitate teachers' use of the Comprehension Process Model (CPM), it is necessary to identify teachers' stages of concerns about using the model, which has not been investigated systematically in language teaching. This study investigated Hong Kong (HK) Chinese-language teachers' concerns about using the CPM in their teaching of reading in secondary schools. The Stages of Concern Questionnaire (SoCQ) was administered and 347 completed questionnaires were suitable for analysis. The study has found that teachers demonstrated a profile with multiple peaks, which shows highest concerns at the collaboration and informational stages in the Stages of Concern (SoC) model. The result implies that teachers realize that they need to learn more about the CPM and to enhance collaboration with their colleagues to implement it effectively. Teachers' concerns varied according to demographic factors including training on the CPM, years of using the CPM, years of teaching experience, and richness of experience in using the CPM. Implications for developing more effective professional development interventions for Chinese-language teachers are also discussed.

Keywords: Comprehension Process Model (CPM), Chinese language teaching, secondary school, teachers' concern, SoC profile

Zhu, X., Liao, X. & Deng, M. (2016). Concerns of secondary school teachers about reforming Chinese language instruction with the use of a Comprehension Process Model of Reading in Hong Kong. L1-Educational Studies in Language and Literature, 16, p. 1-17. http://dx.doi.org/10.17239/L1ESLL-2016.16.01.06

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1. INTRODUCTION

Comprehension is widely acknowledged to be the essence of reading for primary and secondary school students. Accordingly, making progress in reading comprehension is a vital goal of language education that teachers strive to have their students achieve (Gambrell, Morrow, & Pressley, 2007). However, certain practices for the teaching of reading have been criticized for failing to enhance students' comprehension skills effectively since it simply relied on distributing a vast amount of exercises to students, or on asking them to look for answers to a list of questions that are easy to find in the text they are reading (Pressley & Wharton-McDonald, 1998; National Reading Panel, 2000; Kragler, Walker, & Martin, 2005). In this kind of practice, students were asked to employ some lower-order thinking (e.g., retelling ideas and paraphrasing words or sentences in the texts) in the classroom and had no opportunities to develop their critical thinking skills, which were often considered as the key elements of higher-order thinking (Alfassi, 2004).

The Organisation for Economic Co-operation and Development (OECD, 2009) argued that students ought to be equipped with higher-order thinking skills to deal with the challenges faced in real-life situations. For this reason, many studies have shown that it is necessary to teach reading comprehension processes that involve higher-order thinking (Block, 2004; Irwin, 2007; Barnes, 2014). Moreover, the literature shows that proficient readers construct meaning from text by consciously using various skills including higher-order thinking during the comprehension process rather than only retrieving explicit or factual information (Pearson & Cervetti, 2015). Thus, optimizing students' reading processes and enabling their higher-level understanding of the text should be highlighted (Block & Pressley, 2002; Pearson & Duke, 2002). However, teachers lacked the necessary knowledge about comprehension processes and were not able to teach reading effectively (Harvey & Goudvis, 2013). Therefore, the related conceptual models of reading process for teachers to understand and teach the process to students are needed in language education (Lau, 2001).

Reading comprehension is generally believed to be a complex process of constructing a coherent representation of text which includes bottom-up construction and top-down integration of text information (Kintsch, 1988, 1998). Several models have been proposed to make this process more understandable (Grabe & Stoller, 2002). For instance, Gunning (1996) suggests a four-component comprehension process: comprehending, organizing, elaborating, and monitoring. Irwin (2007) proposes five stages: understanding sentences, connecting sentences, understanding the whole text, elaborating, and engaging in metacognition. For evaluating students' reading performance, some international reading assessment programmes have set up indicators of reading ability in terms of cognitive processes. For instance, four types of comprehension processes are assessed in the Progress in International Reading Literacy Study (PIRLS), namely focusing on and retrieving explicitly stated information; making straightforward inferences; interpreting and integrating ideas and information; and examining and evaluating content, language, and textual elements (Mullis, Kennedy, Martin, Trong, & Sainsbury, 2009). Three aspects are assessed in the Programme for International Student Assessment (PISA): accessing and retrieving information; integrating and interpreting the text; and reflecting on and evaluating the content, form, and features of the text (OECD, 2009). These models emphasise the cognitive nature of comprehension and reveal the progression of cognitive complexity from lower to higher levels of understanding. So they may help teachers better understand the comprehension processes and set clearer objectives for teaching reading comprehension, with

variations depending on the different cultural and educational contexts (Onofrey & Theurer, 2007).

Because the teaching of comprehension processes is relatively new to teachers (Lau, 2001; Harvey & Goudvis, 2013), it can be considered an innovation (Hall & Hord, 1984). A study on teachers' concerns about innovative teaching is necessary, because the views of teachers on innovative teaching largely govern whether, and how the innovation will be put into practice (Boardman & Woodruff, 2004). Teachers' concerns have been acknowledged as a key factor in the implementation of any educational innovation and in the introduction of any professional development programme (Fullan, 1991). It is generally believed that with the increase of teaching experiences and trainings, teachers' concerns develop from an initial stage focusing on the self (e.g. personal confidence in the innovation) to higher stages such as a consideration of impact (Adams, 1982; Carr, 1985; Fuller, 1969). However, Bellah and Dyer (2006) found that teachers with less teaching experience exhibited higher-stage concerns than those with more experience because they could adapt to teaching innovations more quickly. Furthermore, Huberman (1988) reported that experienced teachers may be more conservative about educational reform because they are more capable of solving problems themselves. In addition, there may be a gender difference, as female teachers show more concern about impact of the innovations (Pigge & Marso, 1997). Educational background has also been reported to influence teachers' concerns about educational innovation: the more qualified teachers are, the more likely they are to accept innovative ideas (Carr, 1985).

The research into teachers' concerns on using reading comprehension processes is scarce, and only a few conclusions have been reached. Deshler and Schumaker (1993) identified that teachers' concerns are the additional workload demands of teaching strategies related to cognitive processes of reading, alignment with the current curriculum, and modification of existing teaching approaches. Boardman and Woodruff (2004) suggested that when teaching reading strategies, teachers' major concerns are the procedural details, the impact on students' academic performance, time allocation, and work pressure put on teachers. However, these findings focus only on the separate concerns' situation; they do not identify the developmental stages of these teachers' concerns as a whole, nor do they identify the factors which may influence the teachers' concerns (Lau & Chan, 2003). As Cheung (2002) pointed out, only "a systematic assessment of individual concerns can lead to a better picture of the needs and problems" (p. 314). For these reasons, we believe that further investigation of teachers' stages of concerns is in need to improve teaching of reading comprehension of Chinese language in the Chinese cultural context.

Similar to other western countries or regions, the teaching of reading in HK has long been criticized due to its lack of effectiveness. The teaching of the Chinese language is dominated by an emphasis on competitive and high-stakes assessments (Lau & Chan, 2007). In order to guarantee assessment success, teachers spend a huge amount of class time explaining vocabulary, rhetorical strategies, and main ideas of model essays, rather than facilitating students' engagement in the comprehension processes. Then, in order to pass the assessments, students have to recite sample essays and memorize relevant language knowledge (Wong, 2000; Tse, 2009). A common criticism has been that the teaching relies too heavily on model essays and neglects training in cognitive abilities such as analyzing, synthesizing, and evaluating in Chinese language learning (Ho, 1999; Cho, 1999; Tse et al., 1995). Another common criticism is that the major teaching strategies are constrained by students' passive acceptance. In most cases, teachers dominated the class-

room and seldom initiated discussion and interaction with learners (Lai, 1995; Lau & Chan, 2007).

Educational reform in HK since 2002 has placed greater emphasis on process-oriented and ability-based teaching (Curriculum Development Council, 2001; Zhu, 2005a). It is recommended that teachers put priority on helping students engage in the learning process and develop higher-order thinking while students read texts and master reading strategies. However, such a shift of focus has been shown in recent studies to be a challenge to many Chinese teachers, who lack a clear picture of what the comprehension processes involve and how they can guide students to better comprehend the text they read (Poon, 2004; Lau, 2001; Zhu, 2010).

To meet the needs of teacher professional development in the aforementioned shift of teaching pedagogy, Zhu (2005b) has developed a Comprehension Process Model (CPM), comprising of the following cognitive types:

a) Retrieving: retrieving explicitly stated information;
b) Explaining: paraphrasing specific words and sentences;
c) Summarizing: summarizing the main idea of the text and sorting out the interrelationship of the content;
d) Elaborating: inferring implicit meanings;
e) Evaluating: appreciating and criticizing content, language form, and textual elements;
f) Creating: generating new solutions to problems in the text, suggesting new ways of writing, and applying the information provided in the text to solve real-life problems.

The first two cognitive types are lower-level processes related to lower-order thinking, whereas the remaining four are higher-level processes indicating higher-order thinking. As mentioned before, the CPM addresses the comprehension processes in Chinese-language reading in alignment with international frameworks for reading comprehension. The CPM takes into account, however, that Chinese characters are ideographs. Thus, accurate recognition and comprehension of characters are essential aspects in the comprehension of Chinese (Hoosain, 1995; Shu & Anderson, 1997). This is why "explaining" (type b) is included in the CPM. "Creating" (type f) is included in the CPM in order to respond to the HK reform agenda of the Chinese language curriculum, which calls for encouraging students to explore and create in their learning (HKCDC & HKEAA, 2007).

The CPM, also entitled the "Six Types of Reading Comprehension Processes" by the HK educators of Chinese language, has been welcomed as an innovative approach to teaching and assessment that enhances students' ability to comprehend texts (Zhu, 2015). Lau (2009) comments that the CPM has facilitated a paradigm shift in reading education in HK and has contributed to the excellence of HK students' performance in PISA tests. The CPM's effectiveness is further confirmed by feedback from a survey of 1,498 secondary school teachers who attended a professional development programme on the CPM (conducted by the first author of this paper and his team) that was commissioned by the Education Bureau within the Government of the HK Special Administration Region. The CPM's validity is demonstrated by the reading test results of 3,311 Grade 6 secondary students in a reading teaching project (Zhu, 2005a).

In studies of teachers' concerns about teaching innovation, the Concerns-Based Adoption Model (CBAM) has been widely accepted as one of the most robust and empirically

grounded theoretical frameworks, allowing researchers to examine the extent and manner of teachers' changes in concerns and behaviors as they implement innovations (Anderson, 1997; Hall & Hord, 2006). The CBAM consists of three key diagnostic tools; (1) Stages of Concern (SoC), (2) Level of Use, and (3) Innovation Configurations. Each tool employs specific instruments and procedures for detailed analysis and can be used separately or in combination. Among these tools, the SoC is a change model that has been extensively used in planning the staff development required to accompany any educational innovation (Hall & Hord, 2006). According to Hall, George, and Rutherford (1977), an individual's concerns directly affect performance in a manner that concern levels correspond to levels of innovative performance. However, the development of higher-stage concerns does not necessarily accompany a reduction in lower-stage concerns (George et al., 2006).

This study focuses its examination on teachers' concerns about implementing the CPM in teaching Chinese language by using the SoC as an investigative instrument. The specific research questions are: (1) What concerns do secondary school teachers have in applying CPM in teaching Chinese language in HK and what is the profile of their SoC? (2) How are the teachers' concerns influenced by a few key factors?

2. METHODS

2.1 Instruments

The SoC Questionnaire (SoCQ), one of the instruments within the CBAM (Hall, George & Rutherford, 1977) was used as a quick and convenient measure of the seven stages of concern about an innovation in education. The SoCQ consists of three parts. The first part collects demographic data including "gender", "academic degree(s)", "years of teaching experience", and so on. The second part captures background data about teachers' involvement in educational innovation, including four questions: "How long have you attempted this innovation?" (years of using the CPM); "To what extent do you think you are experienced in the innovation?" (richness of experience in using the CPM); "Have you received relevant training about the specific innovation?" (training on the CPM); and "Are you in the first or second year of other innovations?" (involvement in other innovations). The third part contains 35 items which in this study were rephrased to directly refer to the CPM. Responses are captured using an 8-point Likert-type scale ranging from 0 (irrelevant) to 7 (very true of me now). Respondents are asked to score each item on the basis of their level of concerns at the time of survey. The higher the score, the more concerned the teacher. Additionally, there is an optional open question to allow teachers to write comments about using the CPM.

All items are organized into a model of teachers' concerns comprising seven developmental stages, each of which contains five items. This model spans the transition from initial awareness of an innovation (Stage 0) to exploring how to refocus and improve the CPM (Stage 6). The seven stages are as follows (George et al., 2006): Stage 0, awareness concerns, representing basic awareness of the CPM; Stage 1, informational concerns, focusing on learning more details about the CPM; Stage 2, personal concerns, focusing on the individual's role, the demands of the CPM, and the individual's adequacy in meeting those demands; Stage 3, management concerns, focusing on efficiency, organization, management, time, and the best use of resources; Stage 4, consequence concerns, focusing on the impact on students; Stage 5, collaboration concerns, focusing on coordination and cooperation with others in the use of the CPM; and Stage 6, refocusing concerns, fo-

cusing on the exploration of more effective alternatives. Concerns in Stages 4, 5, and 6 are usually referred to as impact concerns (higher level), whereas those in Stages 0, 1, and 2 are referred to as self-concerns (lower level) (Hall, George & Rutherford, 1977).

To aid Chinese language teachers' understanding in this study, the SoCQ was translated into Chinese and adapted for use in the context of the CPM. Cronbach's alpha for the instrument is .84, indicating a satisfactory inter-reliability. The Cronbach's alpha has been widely used to measure internal consistency of a set of items for an instrument (Allen & Yen, 2002).

2.2 Sample

The SoCQ was administered by post in 2013, between September and December. According to the statistics from the HK Education Bureau, there were 528 secondary schools falling into four types: government schools operated by the government directly (5.87%); aided schools financially supported by the government (68.75%); direct subsidy scheme schools, which accept subsidies from the government (11.93%); and private schools (13.44%). Using stratified sampling, we selected 50 schools (approximately 10%) for this study. Ten copies of the questionnaire were sent to the Chinese-language teaching coordinator of each of 50 randomly selected secondary schools in HK. The coordinators were asked to distribute the questionnaires randomly to individual teachers to complete, then to collect and return them to the research team. A total of 363 questionnaires were returned, of which 347 contained fewer than 5% missing values and so were suitable for further analysis.

Table 1. Demographic information of respondents (N=347)

Characteristic	N	%
Gender		
Male	66	19
Female	281	81
Degree		
Certificate or Associate degree	13	3.7
BA	181	52.2
MA	147	42.4
PhD or above	6	1.7
Years of teaching		
year<=5	142	40.9
6<=year<=10	73	21.0
11<=year<=15	43	12.4
16<=year<=20	41	11.8
year>20	48	13.8
Years of Using the CPM		
never	55	15.9
1 years	40	11.5
2years	48	13.6
3 years	52	15.0
4 years	33	9.5
5 years and above	119	34.3
Richness of experience in using the CPM		
Never	35	10.1
Little	135	38.9
Some	167	48.1
Rich	10	2.9
Training received		
Yes	172	49.6
No	175	50.4
Involvement in other innovations		
Yes	76	78.1
No	271	21.9

As shown in Table 1, the sample contained a higher percentage of female (81%) than male respondents (19%), which is consistent with employment patterns in HK schools. With regards to education background, the majority of teachers had a bachelor's degree (52.2%) or master's degree (42.4%) related to Chinese-language education. A plurality (40.9%) had less than 10 years of teaching experience, and 13.8% had more than 20 years.

2.3 Data Analysis

The data were entered into the Statistical Package for Social Sciences (SPSS) for Windows 20. First, missing values were dealt with using an expectation-maximization algorithm, which is an iterative method to find maximum likelihood of parameters in statistical models (Pigott, 2001). Descriptive statistics such as means, standard deviations, and percentages for the demographic information of the respondents and their concerns were then calculated. In order to explore the relationship between demographic factors and teachers' concerns, a correlation analysis was conducted to quantify the linear association between variables. Meanwhile, a partial correlation analysis was conducted to examine the

relationships among different stages of concerns after controlling the effect of one or two demographic variables (Cohen, Cohen, West & Aiken, 2002). In addition, a one-way analysis of variance (ANOVA), which is often used to compare the means from two different groups of data (Davison & Sharma, 1994), was performed at the $p < .05$ level to test mean differences in the concerns across different stages as a function of key demographic variables. Following the ANOVA, a least significant difference (LSD) *post hoc* test was further performed by comparing the mean of one group with the mean of another in order to determine the difference existed between two of the specific groups (Williams & Abdi, 2010).

3. RESULTS

3.1 Factors Affecting Teachers' Concerns

A correlation analysis between the seven demographic factors captured by the SoCQ and the seven stages of concerns was conducted. It was found that gender and academic degree correlated significantly with only one stage of teachers' concern respectively ($p < .05$). The factor "involvement in other innovations", correlated significantly with two stages, namely collaboration and refocusing ($p < .05$). The other four factors of "years of teaching," "years of using the CPM," "richness of experience in using CPM," and "training on the CPM" correlated significantly with more than two stages. It can thus be inferred generally that these four factors seem to have more impact on teachers' concerns.

3.1.1 SoCQ General Profile

The intensity of teachers' concerns is well represented by the mean values of their scores on the different stages. This representation indicates their progression through various attitude towards the innovative strategy (that is, the CPM as based on the CBAM: Hord, 1987).

Table 2. Means, standard deviations of teachers' SoC (n=347)

	Minimum	Maximum	Mean	Std. Deviation
Stage 0 Awareness	.00	6.00	2.96	1.07
Stage 1 Informational	2.80	6.80	5.02	.79
Stage 2 Personal	.00	7.00	4.58	1.15
Stage 3 Management	.40	6.40	3.96	1.10
Stage 4 Consequence	1.60	6.60	4.91	.79
Stage 5 Collaboration	1.80	7.00	5.05	.94
Stage 6 Refocusing	.60	6.40	4.60	.79

Table 2 describes the profile of the 347 teachers' stages of concerns in using the CPM in their Chinese-language classes. It can be seen that their biggest concern was Stage 5 (collaboration: $M = 5.05$) with Stage 1 (informational: $M = 5.02$) and Stage 4 (consequence: $M = 4.91$) close behind. Stage 0 (awareness: $M = 2.96$) was at the bottom of the profile. This implies that teachers were more concerned with enhancing the effectiveness of using the CPM by collaborating and sharing information among their colleagues. The less degree of

concern for Stage 0 (awareness) indicates that these teachers had learnt about the CPM and had generally felt confident about being able to use it in practical situations.

A partial correlation analysis of the seven stages was then conducted after controlling "years of using the CPM", "richness of experience", and "training in the CPM". As presented in Table 3, significant correlations were found between the concerns on the higher-level stages (Stages 4-6) and the lower-level stages (Stages 0-2) (e.g. correlation between awareness and consequence is r = -.30, p < .001). This indicates that teachers may have high concerns on the lower-level stages while at the same time having high concerns on the higher-level stages. We should thus pay attention not only to teachers' higher-stage concerns but also to their lower-stage concerns.

Table 3. Correlation Matrix among Seven Stages of the SoC

	Awareness	Informational	Personal	Management	Conse-quence	Collaboration	Refocusing
Awareness	1						
Informational	-.02	1					
Personal	.10	.60***	1				
Management	.40***	.33***	*.49****	1			
Consequence	-.30***	*.47****	.34***	.02	1		
Collaboration	-.25***	.56***	.44***	.07	.60***	1	
Refocusing	-.04	.35***	.31***	.13*	*.54****	*.46****	1

*Note: df=342, * p <.05. ** p <.01. *** p<.001.*

Moreover, the correlations between the informational stage and both the personal and collaboration stages were .60 and .56, respectively. As both were over .50, each can be considered a large effect (Cohen, 1988). This implies that the more is the knowledge teachers gain about the CPM, the more confident they are when implementing it. They also become more willing to collaborate with colleagues after acquiring more knowledge and understandings of CPM. Similarly, large effects were also found in the correlations between the consequence stage with both the collaboration and refocusing stages. These large effects indicate that teachers' concern about consequence seems to contribute to the development of the collaboration and refocusing stages.

3.1.2 Comparison between Teachers Trained and Untrained in the CPM

The SoC profile between teachers with and without "training in the CPM" is summarized in Table 4. It can be seen that teachers without any training were most concerned about information (M = 5.18), while those who had received relevant training were focused on the consequences of its use (M = 5.10) and collaboration (M = 5.09). However, both groups showed least concern about awareness and management.

Table 4. Comparison of SoC between teachers receiving and not receiving trainings

Variable		Awareness	Information	Personal	Management	Consequence	Collaboration	Refousing
Yes	M	2.81	4.86	4.46	3.83	5.10	5.09	4.70
	SD	1.02	.75	1.17	1.11	.68	.97	.72
No	M	3.12	5.18	4.70	4.08	4.72	5.00	4.50
	SD	1.10	.79	1.12	1.03	85	.88	.85
	t	-2.71	-3.80	-1.91	-2.13	4.66	.81	2.35
	Sig	.007	.000	.057	.034	.000	.421	.020

Note: M=Mean; SD= Standard Deviation.

A *t* test analysis for the whole sample using "training received/ no training received" as an independent variable showed that teachers who had never received any training showed significantly more concerns for the awareness stage (t = -2.71, p <.01), the information stage (t = -3.80, p < .001) and the management stage (t = -2.13, p <.05) than those with some training. On the other hand, those teachers who had received training were significantly more concerned about the consequence stage (t = 4.66, p < .001), and the refocusing stage (t = 2.35, p < .05) (see Table 4.). All these results suggest that professional training on the CPM is helpful in encouraging teachers to progress to the higher-level stages.

3.1.3 Comparison Based on Years of Using the CPM

The ANOVA findings reported in Table 5 show that there was a significant difference between teachers based on years of experience of using the CPM across most of the stages, except collaboration (F = .965, p > .05) and refocusing (F = 2.24, p > .05). For these two stages, it should be noted that their mean values for different groups of teachers were comparatively high, indicating that all teachers paid close attention to collaboration and refocusing issues.

Table 5. ANOVA of SoC based on "years of using the CPM"

	Never		1 year		2 years		3 years		4 years		5 years or above			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F	Sig
Awareness	3.44	1.18	2.93	.97	2.93	.96	2.86	1.22	2.95	.79	2.81	1.05	2.88*	.015
Informational	5.37	.72	5.25	.67	5.11	.76	5.02	.79	4.98	.69	4.76	.82	6.01***	.000
Personal	4.79	.89	4.90	1.17	4.51	1.28	4.89	.92	4.33	1.16	4.33	1.23	3.34**	.006
Management	4.22	1.01	4.07	1.01	4.12	1.11	4.02	1.11	3.93	1.03	3.71	1.13	2.25*	.049
Consequence	4.11	.77	4.58	.62	4.90	.50	5.01	.61	4.91	.84	5.36	.66	29.18***	.000
Collaboration	4.87	1.03	5.29	.69	5.07	1.03	5.10	.92	5.00	.91	5.04	.95	.97	.439
Refocusing	4.37	.95	4.70	.70	4.67	.72	4.69	.72	4.35	.95	4.68	.72	2.24	.05

*Note: M=Mean; SD= Standard Deviation; * p <.05. ** p <.01. *** p<.001.*

Post hoc analysis indicated that teachers who had never used the CPM were significantly more focused on the awareness stage than those who had used it to some extent (p < .05). *Post hoc* analysis also demonstrated significantly more concerns at the informational stage

for this group as compared to those teachers who had used the CPM for at least three years ($p < .05$).

At the consequence stage, teachers who had not used the CPM before reported significantly less concern than those who had previously used it ($p < .01$). Among those teachers who had used the CPM to some extent, concern increased significantly in the second year of use ($p < .05$), and then stayed stable from the second to the fourth year, before increasing significantly to a peak in the fifth year ($p < .001$). This implies that the second and fifth years are two key milestones in the development of concern. This is probably because teachers have adapted to the innovation after the first year, and become fully skilled in its use by the fifth year.

3.1.4 Comparison Based on Teaching Experience

For the purposes of comparison with the seven stages of the SoC model, we divided the teachers in this sample into five groups according to their "years of teaching experience". As can be seen from Table 6, teachers at all levels of experience demonstrated the most concern at the informational, consequence, and collaboration stages, and the least concern at the awareness stage. Again, this confirms that all the teachers had paid at least some initial attention to the CPM and demonstrated some degree of concern regardless of the length of their experience.

Table 6. ANOVA of SoC for teachers of different "years of teaching experience"

	<=5years		6-10 years		11-15 years		16-20 years		>=21 years			
	M	SD	M	SD	M	SD	M	SD	M	SD	F	Sig
Awareness	3.04	1.09	3.02	.96	3.04	1.02	2.88	1.15	2.64	1.14	1.44	.222
Informational	5.17	.73	5.06	.80	4.80	.86	4.80	.86	4.91	.76	3.31	.011
Personal	4.64	1.10	4.67	1.19	4.51	1.22	4.36	1.21	4.47	1.15	.70	.59
Management	4.10	1.04	3.99	1.02	3.82	1.24	3.73	1.07	3.81	1.21	1.45	.218
Consequence	4.69	.76	5.06	.72	5.04	.69	4.82	.94	5.33	.73	7.91	.000
Collaboration	5.06	.87	5.12	.96	5.10	1	4.94	.95	4.96	1.08	.38	.821
Refocusing	4.51	.83	4.75	.64	4.69	.79	4.60	.90	4.60	.79	1.24	.295

*Note: M=Mean; SD= Standard Deviation; * p <.05. ** p <.01. *** p<.001.*

However, the teachers with less than five years of experience were most concerned about information (*M = 5.17, SD = .73*), while those with more than 21 years of experience were most focused on consequence (*M = 5.33, SD = .73*). This suggests a tendency to become more focused on higher-level stages as one gains teaching experience.

The ANOVA results showed significant differences between the groups of teachers at different experience levels at the informational stage ($F = 3.31$, $p < .05$) and the consequence stage ($F = 7.91$, $p < .001$) (see Table 6.). For these two stages, *post hoc* analysis showed that teachers with fewer than five years of experience demonstrated significantly higher concern than those with at least 11 years ($p < .05$). After 11 years, there were no significant differences. At the consequence stage, teachers with six to 10 years of experience reported significantly higher concern than their counterparts with fewer than five years ($p < .05$), an effect which remained stable as years of experience increased further ($p > .05$). These results imply that teachers' concern about consequence had increased quick-

ly at the beginning of their teaching career, whereas their concern about information had declined more slowly.

3.1.5 Comparison Based on Richness of Experience in Using the CPM

The ANOVA results showed that teachers with various levels of experience in using the CPM reported significant differences across all seven stages of the SoC model (see Table 7). For the purposes of this analysis, teachers were divided into four groups in terms of their experience levels: "rich" denotes regular use of the CPM; "some" means using it in most teaching situations; "little" indicates occasional use; and "never" means no use at all.

Table 7. ANOVA of teachers' SoC on "richness of experience in using the CPM"

	Never		Little		Some		Rich			
	M	SD	M	SD	M	SD	M	SD	F	Sig
Awareness	3.47	1.26	2.94	.96	2.89	1.06	2.60	1.57	3.28*	.021
Informational	5.36	.70	5.23	.74	4.81	.77	4.44	.80	12.32***	.000
Personal	4.79	.95	4.72	1.09	4.45	1.16	3.74	1.82	3.58**	.014
Management	4.23	.88	4.20	1	3.76	1.12	2.98	1.46	7.80***	.000
Consequence	4.10	.91	4.78	75	5.14	.64	5.76	.69	26.90***	.000
Collaboration	4.77	1.14	5.06	.87	5.05	.93	5.74	.89	2.89*	.035
Refocusing	4.26	.98	4.57	.83	4.69	.67	4.78	1.04	3.08*	.027

*Note: M=Mean; SD= Standard Deviation; * p <.05. ** p <.01. *** p<.001.*

It can be seen from Table 7 that teachers who had never used the CPM reported the highest concern at the informational stage (M = 5.36, SD = .70), and those with rich experience showed the highest concern for consequence (M = 5.76, SD = .69) and collaboration (M = 5.74, SD = .89). Significant between-group differences were also observed. *Post hoc* analysis showed that teachers with no experience and teachers with little experience had more concerns at the informational stage than those with some experience and those with rich experience (p < .01). This implies that teachers in the former categories need more information (which can be gained from training) in order to understand the CPM better. Teachers with rich experience were more concerned with consequence and collaboration than those with little experience and those with some experience (p < .05).

From these results, it can thus be inferred that as teachers enriched their experience with the CPM, a general tendency emerged for their lower-level stages of concerns to decline and for their higher-level stages of concerns to increase. This suggests that the more experience teachers have in using the CPM, the higher the stages of concern they will reach.

4. DISCUSSION AND CONCLUSION

In this study, we have documented teachers' concerns about applying the CPM in Chinese-language teaching in HK secondary schools through the application of the CBAM. The CBAM proposes that an individual's concern develops from an initial lack of awareness and non-use of an innovation, through Stages 0 to 6 progressively, generating a profile in the form of an ascending wave motion (Hall & Hord, 2006).

The profile of teachers' concerns about implementing the CPM in HK showed that there were two highest stages (i.e. collaboration stage and informational stage) and one lowest stage (i.e. awareness). This resembles a Multiple Peak User Profile (Hall & Hord, 2006). Such a profile echoes the previous finding that teachers' lower-stage concerns do not necessarily decrease while their higher-stage concerns increase (George et al., 2006). It also implies that these teachers were more focused on the coordination and cooperation with colleagues for the implementation of the CPM and were generally positive towards the teaching changes that came about with implementing of the CPM. The teachers have gained basic knowledge in applying the CPM and were also making an effort to institutionalize it as part of their daily teaching. This may be partly because they had attended previous professional development programmes in which they had listened to lectures and completed workshops on application of the CPM, shared their reflections and experience of using it in schools, and worked with colleagues to plan sample lessons (Zhu, 2005a). From these programmes, they saw the value of the CPM in reading education.

In the HK context, the teachers' great concern for collaboration is not surprising, because collaboration in Asian educational systems, such as in China including HK, and in Japan, is more common than in other parts of the world (Darling-Hammond, 2005; Chan & Pang, 2006). Teachers are used to collaborating with their colleagues in designing school-based curriculums, preparing lessons, attending professional development activities, and implementing new teaching approaches. In fact, to HK teachers, the importance of collaboration has been recognized as one important factor in implementing the CPM innovation effectively (Wan, 2013). One teacher taking the questionnaire of this study noted,

> To use the CPM effectively, I don't think we can do it unless we have the support from the school and from colleagues, because everyone is very busy every day, so we actually don't have enough time to develop all the materials alone for the new teaching methods. On the other hand, we would like to ask everyone on the team to contribute, for example, sharing information after the seminar or developing teaching materials together, so we can achieve better understanding and reduce the additional workload. (201304_16)

This comment suggests that teachers tend to rely on the team to solve the challenges when using the CPM. This could be due to the high-stakes assessment environment. Valli & Buese (2007) argued that the increased requirement of high-stakes accountability may push teachers to be more collaborative, because they have to attempt to coordinate students' learning experiences inside and outside classroom. Thus, we can infer that teachers consider collaboration to be an important way of promoting the implementation of the new CPM teaching practice.

It should also be noted that teachers demonstrate a great concern at the consequence stage. As indicated in the literature, teachers who work in a high-stakes assessment environment such as in HK tend to use testing as a reference point to evaluate educational innovations (Boardman & Woodruff, 2004), and the effects of implementing the CPM on students' performance on international tests have been confirmed by PISA researchers in HK (Lau, 2009). Because teachers are more likely to accept innovative strategies if they see the benefits of using them (Hargreaves, 2001), more teachers in HK now tend to believe that the CPM can help their students improve their performance on reading tests and would therefore like to incorporate the CPM into their teaching practice.

However, the profile of these teachers' concerns also shows that their concerns were also focused on the informational stage, suggesting that they doubted their own abilities to implement the innovation and that they needed more detailed information about the application and efficacy of the CPM. One reason that could account for this result is that teachers prioritize the detailed procedure of teaching (Boardman & Woodruff, 2004). An-

other underlying reason could be that Chinese-language teachers in HK are very used to the dictation approach of teaching. Under such circumstances, it is not surprising that they show reluctance towards innovation unless given enough information to support a comprehensive change. In the written responses from teachers, one teacher commented,

> Students are used to completing written exercises by finding the explicit answers in the text rather than thinking critically into the deeper aspects of the text by mastering the reading process. Now we have the CPM, which is a good instrument for both teachers and students. But now we can't apply it to all classes until we have learnt it very well. Currently we have decided to take one class for trial. Meanwhile, we hope the researchers in the university and officers in the government can give more examples to us, which can help teachers understand this framework better. (201304_70)

This is consistent with previous research findings showing that teachers and students in HK are under strong pressure to perform well in examinations and are therefore more cautious about making a radical shift when beginning innovative programmes (Lau & Chan, 2007).

These results also confirm that teachers' concerns are influenced by training and the richness of individual experiences (Fuller, 1969; Adams, 1982). Teachers who had received professional training and who had more experience with using the CPM reported more concern on the impact than those with less training and less CPM experience. Moreover, this study indicates that teachers who had used the CPM for more than five years demonstrated a significant rise in concern at the consequence stage, which extends our understanding on the development of their personal motivation.

The results do not echo the findings of Pigge and Marso (1997) and Carr (1985) that gender and academic background have had a significant impact on SoC. Rather, this study shows that experienced teachers have more concerns at the impact stages than at the personal stages. This means that having more teaching experience does not equate to resistance to the CPM, a finding which contradicts the findings of Huberman (1988). One possible explanation for this is that reading comprehension is a major focus for all teachers regardless of gender, qualifications, and experiences.

Another conclusion in this study is that the paradigm shifts in comprehension instruction from traditional to CPM-based teaching is a long process. As teachers amass more years of training in using the CPM, their concerns at the lower-level stages seem to decrease and their concerns at the higher-level stages increase. This implies that the profile of concerns varies across different educational cultures, with the findings of this study reflecting the characteristics of teachers' concerns in the HK context (see also Mok, 2005).

To encourage more teachers to engage in the application of the CPM, more sustainable professional development programmes related to the CPM need to be designed and implemented. In order to make such programmes more effective, reliance should not be placed solely on workshops or lectures, because short courses of this type on their own do little to change teachers' beliefs (Brindley & Hood 1990; Fullan, 1991). Instead, such programmes should be school-based, ongoing, and focused on securing practical implementation (Valli & Hawley, 2002). Programmes should also be targeted at enhancing students' learning and performance so as to shift teachers' concerns more effectively towards a concern for consequence.

In conclusion, this study has investigated HK Chinese-language teachers' stages of concern about using the CPM in their classroom practice. A Multiple Peak User Profile with highest concern for the collaboration, informational, and consequence stages of the SoC model was found to demonstrate the general profile of teachers' concerns about the CPM in the HK context. It has found that teachers' concerns vary based on several factors such

as amount of "years of teaching", "years of using CPM", "richness of experience in using CPM", and "training on the CPM". The above four factors deserve greater attention compared to the factors of "gender" and "academic degree(s)".

However, as Mok (2005) points out, teachers' concerns are largely influenced by cultural and educational conditions. Thus, the findings of this study can be referential but cannot be directly applied to other contexts.

ETHICAL APPROVAL

Ethical approval for this project was given by the Hong Kong Polytechnic University [ref number HSEARS20121126002].

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