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## **Group Work and the Learning of Critical Thinking in Liberal Studies in Hong Kong Secondary Schools**

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### **Background**

By the late 20<sup>th</sup> century, the approach to organising 'group work' between students as a classroom strategy had become increasingly popular in Western schools, especially in the area of elementary science education (Harlen & Qualter, 2004). Recently, the major findings of research into group work have been reviewed by several well established researchers including Christie, Tolmie, Thurston, Howe and Topping (2009) and Galton, Hargreaves and Pell (2009). These studies, which were based on the investigation of year-long interventions, indicated that group working does facilitate students' acquisition of theoretical understanding.

Similarly, the theme of promoting 'critical thinking' has attracted the attention of many researchers since the 1980s (Moseley et al., 2004). Its emphasis on 'the sense of reasoned justification of arguments' (Kuhn, 1991) is a promising pedagogy for enhancing students' decision-making ability. Although there is relatively weak evidence showing that critical thinking skills are transferable across particular subjects, comprehensive studies of teaching thinking in different learning areas demonstrate an improvement in students' argumentative ability (McGuinness, 1990).

Looking specifically at HK, on the one hand, the education system has long been characterised as exceedingly examination oriented (Biggs, 1996). Secondary school students perceive their classroom to be extremely competitive, teacher controlled and even as encouraging rote-learning (Yuen & Watkins, 1994). They are accustomed to studying in a relatively independent atmosphere rather than a cooperative environment. On the other hand, the traditional Chinese teaching model of 'teacher-centeredness' completely dominates the area of school tuition (Cheung, 2001). Teachers prefer to deliver structured lessons in preparation for examinations rather than organise a greater variety of learning activities. In practice, these classroom organisations which generally reflect the Confucian values of respect for authorities contrast sharply with Western beliefs in terms of promoting group work and critical thinking.

However, the situation has changed slightly in the past few years. When the reconstruction of secondary education in HK took place in 2009, an inter-disciplinary subject, 'Liberal Studies' was reintroduced as a mandatory study. It aims to equip students with a high degree of problem-solving proficiency by offering them ample opportunities to learn 'peer collaboration' and 'discretionary judgement'. Inevitably, the enormous demand for cultivating students with these two skills has started to force teachers to conduct further sessions involving group work. It is not surprising that it has resulted in a dramatic pedagogical shift from the traditional Chinese paradigm to the modern Western strategy of cooperative learning.

### **Research Questions**

1. What are the effects of group work when learning critical thinking in Liberal Studies, by providing an 'infusion' teaching programme adapted from Kuhn's (1991) model?

Sub-Question:

(1-1) 'What is the effectiveness of group work for students' academic achievement?'

(1-2) 'What is the effectiveness of group work for students' attitudes to study?'

2. 'What are the effects of group work strategy for students aged 15-17 in Liberal Studies in HK secondary schools?'

Sub-Question:

(2-1) 'What is the effectiveness of 'dialogic interactions and guidance' in cultivating students' critical thinking 'skills'?''

(2-2) 'What is the effectiveness of 'dialogic interactions and guidance' in cultivating students' critical thinking 'dispositions'?''

3. 'What is the influence of the Chinese traditional culture and the limitations on the incorporation of group work into HK secondary schools?'

Sub-Question:

(3-1) 'Which cultural factors affect the incorporation of group work?'

(3-2) 'What are the limitations in schools regarding the incorporation of group work strategy?'

## **Methods**

Stage 1: Effectiveness in Students Academic Aspects

Research Domain: Critical Thinking 'Skills' (Quantitative)

Method: 'Controlled' Experiment

Stage 2: Effectiveness in Students' Attitudinal Aspects

Research Domain: Critical Thinking 'Dispositions' (Quantitative and Qualitative)

Method: Questionnaire-based Survey

Stage 3: Stage 3: Influence of Chinese Culture on Group Work

Research Domain: Group Work Strategy (Qualitative)

Method: In-Depth Interviewing

The duality of a mixed methods approach is the paramount reason for me to choose it. In my research, I adopt quantitative, mixed and qualitative methods in the three different stages sequentially. By using the data from the California Critical Thinking Disposition Inventory (CCTDI) as a basis for the construction of the survey, I have an opportunity to combine the methods' breadth and depth. In addition, my choice of interpretivism provides an underpinning rationale for using the mixed methods approach. This is because the quantitative results of the students' attitudinal aspect obtained during the second stage will be 'interpreted' and validated by the in-depth interview data in the third stage.

## **Frame**

Following other scholars, who considered the weaknesses of Toulmin's (1958) model, which, notably, does not explicitly include the component of alternative opinions (or 'theory'), Kuhn (1991) proposed a set of attributes which allow greater flexibility in responding to problems, and focused on the use of argumentative discourse in context-rich situations.

As a consequence of her proposal, Kuhn expanded Toulmin's (1958) model to incorporate the omitted elements. Building upon her model, Kuhn regards critical thinking as involving the abilities to: a) differentiate opinions (or, as she calls them, 'theory') from evidence; b) support opinions with non-spurious evidence; c) propose opinions alternative to one's own and to know what evidence would support these; d) provide evidence that simultaneously supports one's own opinions while rebutting the alternatives; and (e) take an epistemological stance which involves weighing the pros and cons of what is known.

### **Research findings**

1. A pioneering study in the area of pedagogical research related to the shift from the traditional Chinese paradigm to the modern Western strategy in group work.
2. An investigation which intends to adopt the mixed methods approach to analyse the effectiveness of group work in learning critical thinking in Liberal Studies in HK.