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# Do university students' thinking styles matter in their preferred teaching approaches?

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## Abstract

This study pioneered the research on the role of university students' thinking styles in their preferred teaching approaches. Three hundred and forty-eight (111 male and 237 female) students from a large comprehensive university in Beijing, P.R. China, responded to the Thinking Styles Inventory (Revised) and the Preferred Teaching Approach Inventory. Results indicated that regardless of age, gender, university class level, and academic discipline, students with different thinking styles had significantly different preferences for particular teaching approaches. It was contended that both conceptual change and information transmission are necessary for effective teaching. Theoretically, the study contributed to the styles literature in general and to the literature on the relationships between styles and approaches of teaching and learning in particular. Practical implications of the present findings are discussed in the context of students' teaching evaluations, teachers' teaching, and university administrators' personnel management.

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## 1. Introduction

Styles refer to people's preferred ways of using the abilities that they have (Sternberg, 1997). After decades of theorizing and researching on styles, many theoretical models and frameworks on styles have been postulated. Among these existing works, two theories that are the most promising for improving the effectiveness of teaching and learning are Biggs's theory of learning approaches and Sternberg's theory of mental self-government.

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Biggs (1979) proposed three learning approaches: *surface*, which involves a reproduction of what is taught to meet the minimum requirements; *deep*, which involves a real understanding of what is learned; and *achieving*, which involves using a strategy that will maximize one's grades. Each approach is composed of two elements: motive and strategy. Motive describes why students learn, while strategy describes how students go about their learning.

The Study Process Questionnaire (SPQ, Biggs, 1992) is designed to assess university students' learning approaches. Good reliability and validity data have been obtained with this instrument among the majority of populations tested around the world. However, whereas some studies supported that the SPQ assesses three approaches to learning (e.g., Bolen, Wurm, & Hall, 1994), other studies supported a two-factor (surface and deep) model (e.g., Niles, 1995; Watkins & Dahlin, 1997). The two-factor model is consistent with the model proposed by Marton (1976) who used a phenomenographic method in studying students' learning approaches.

The theory of mental self-government (Sternberg, 1988, 1994, 1997) concerns people's thinking styles, which apply to different types of activities, including teaching and learning. Central to this theory is the notion that people need to govern or manage their everyday activities. People choose styles of managing these activities with which they feel comfortable. The theory describes 13 thinking styles that fall along five dimensions of mental self-government: (a) functions (including the legislative, executive, and judicial styles), (b) forms (including the hierarchical, oligarchic, monarchic, and anarchic styles), (c) levels (including the global and local styles), (d) scopes (including the internal and external styles), and (e) leanings (including the liberal and conservative styles). A brief description of each of the 13 thinking styles can be found in Appendix A (for details, see Sternberg, 1997).

These thinking styles are, in principle, value-free, for the same thinking style can serve one person beautifully in one situation, but may fail the same person miserably in another situation. However, in their repeated studies, Zhang and her colleagues (e.g., Zhang, 2000, 2001a, 2002a, 2002b; Zhang & Huang, 2001; Zhang & Postiglione, 2001; Zhang & Sternberg, 2000) have found that most of the thinking styles in Sternberg's theory can be classified into two groups. The first group, known as Type I thinking styles, is composed of thinking styles that are more creativity-generating and that denote higher levels of cognitive complexity, including such styles as the legislative, judicial, hierarchical, global, and liberal styles. The second group, known as Type II thinking styles, consists of thinking styles that suggest a norm-favoring tendency and that denote lower levels of cognitive complexity, including such styles as the executive, local, monarchic, and conservative styles.

The remaining four thinking styles (i.e., anarchic, oligarchic, internal, and external) belong to neither the Type I group nor the Type II group. However, they may manifest the characteristics of the styles from both groups, depending on the stylistic demand of the specific task. For example, whether one prefers to work alone (internal style) or one prefers to work with others (external style), one can work on tasks that require either Type I thinking styles or Type II thinking styles. Also for instance, one could use the anarchic style in a sophisticated way—such as dealing with different tasks as they arise, but without losing one's sight of the whole picture of the main issue. Under this circumstance, the anarchic style manifests the characteristics of Type I thinking styles. On the contrary, one also could use the anarchic style in a simple-minded way—such as dealing with tasks as they come along without knowing how each task contributes to his/her ultimate goal. Under this circumstance, the anarchic style manifests the characteristics of Type II thinking

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