Thinking Skills and Creativity 20 (2016) 63–73

Contents lists available at ScienceDirect

Thinking Skills and Creativity

journal homepage: http://www.elsevier.com/locate/tsc

The role of thinking styles in career decision-making self-efficacy among university students

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ARTICLE INFO

Article history:
Received 4 July 2015
Received in revised form 26 February 2016
Accepted 6 March 2016
Available online 10 March 2016

Keywords:
Thinking styles
Career decision-making self-efficacy

ABSTRACT

Intellectual style refers to people's preferred ways of processing information and dealing with tasks. A major controversial issue in the field of styles is whether or not styles are value-laden. Anchored in Sternberg (1997) theory of thinking styles (one model of intellectual styles), this study addressed this issue by examining the role of thinking styles in career decision-making self-efficacy. Nine hundred and twenty-six university students responded to a questionnaire consisting of the Thinking Style Inventory-Revised II, the Career Decision-making Self-efficacy Scale-Short Form, and a demographic sheet. Results indicated that creativity-generating (Type I) thinking styles played a positive role in students' career decision-making self-efficacy. Furthermore, no significant relationship was found between norm-conforming (Type II) thinking styles and career decision-making self-efficacy. The findings contribute to the discussion of the issue over style value and have implications for facilitating students' career maturity in higher education.

1. Introduction

Intellectual styles, defined as people's preferred ways of processing information and undertaking tasks, is a super-ordinate term encompassing such constructs as learning styles, cognitive styles, and thinking styles (Zhang & Sternberg, 2005). Intellectual styles (referred as "styles" thereafter for brevity) are not merely facets of intelligence or personality. First, personality and intelligence cannot fully explain the variance of styles (Grigorenko, 2009). Second, styles have incremental validity in explaining human performance and outcomes beyond personality and intelligence (Grigorenko & Sternberg, 1997; Zhang, 2001a, 2006b; Roodenburg, Roodenburg, & Rayner, 2012). It means that, intellectual styles have been considered as unique contributors to human performance in addition to intelligence and personality (Zhang, 2006a). Third, there are also differences between the nature of styles, intelligence, and personality. Intellectual styles, albeit relatively stable, are more malleable than intelligence and personality (Fan, 2014; Grigorenko, 2009). The uniqueness of intellectual styles in individual psychology has attracted increasingly more researchers to study styles with various aspects of individual development and performance. However, in the field of intellectual styles, there are still some controversial issues that impede the achievement of consensus and the advancement of the field (Peterson, Rayner, & Armstrong, 2009). One of the major controversial issues is whether or not styles are value-laden (Zhang & Sternberg, 2005). In other words, are some styles more adaptive than others? The value of styles can be reflected through the line of research that examined the relationships between styles and individual developmental outcomes. If some specific styles have been very often found to play more positive roles in individual developmental outcomes, styles can be regarded as value-laden. If styles have been found to play a diverse

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http://dx.doi.org/10.1016/j.tsc.2016.03.001
1871-1871/

role in different contexts, they can be considered as value-differentiated. However, the range of developmental outcomes examined in this line of research is very narrow, especially restricted to academic outcomes, while studies examining the role of styles in individuals' non-academic development are still far from enough (Gebbia & Honigsfeld, 2012). This impedes a comprehensive understanding of the value of intellectual styles in student development. Therefore, the present study aimed at contributing to the discussion of the value of styles by examining the role of styles in one of students' non-academic outcomes (i.e., career decision-making self-efficacy).

Among various non-academic outcomes, career decision-making self-efficacy (CDSE) was selected because career development is a major theme in university students' life besides academic performance. In China, the importance is dominantly placed on academic achievement before students graduate from high schools. The undergraduate stage is the crucial stage for students to begin planning their career. During this period, undergraduate students commonly confront the need to prepare for their future working lives. Identifying the antecedents of career success is meaningful to provide relevant advice in nurturing students in their career preparation. According to the social cognitive career theory, career self-efficacy, defined as one's beliefs concerning his/her ability to successfully perform in career domain, is regarded as an essential variable that effectively predict career performance (Betz, 2007). This statement has been well supported by numerous empirical studies (Choi et al., 2012). Therefore, an examination of the relationships between thinking styles and career decision-making self-efficacy among university students can not only contribute to the discussion of the issue over style value but also provide implications for students' career development.

1.1. Intellectual styles

The threefold model of intellectual styles is an integrative model that was proposed by Zhang and Sternberg (2005) based on a series of style constructs that have robust theoretical foundations and supportive empirical evidence. These style constructs include Biggs' (1978) learning approaches, Witkin's (1962) field-dependence/independence, Kagan, Rosman, Day, Albert, and Philips' (1964) reflective-impulsive styles, Sternberg's (1997) thinking styles, and the other six constructs. Based on a meticulous review of these style theories and relevant empirical evidence, Zhang and Sternberg (2005) found that the style constructs proposed in these style theories can be generally reconceptualized into three types. Type I styles are characterized by cognitive complexity, tolerance of unstructured context, and a preference for autonomy and creativity (e.g., the deep learning approach, field independence, the reflective style, and the liberal style). Type II styles are characterized by cognitive simplicity, a preference for structured context, and obedience to norms and instructions (e.g., the surface learning, field dependence, the impulsive style, and the conservative style). Type III styles manifest the attributes of either Type I styles or Type II styles depending on specific contexts and tasks (e.g., the internal style and the external style).

Among various theoretical models of intellectual styles, Sternberg (1997) thinking styles (also known as the theory of mental self-government) was selected as the theoretical foundation of this study due to the following reasons. First, while styles proposed in most style theories are bipolar, the theory of thinking styles provides a comprehensive repertoire of styles by proposing thirteen thinking styles. Second, unlike some styles theories that are only widely used in academic settings (e.g., Biggs' learning approach) or only in nonacademic settings (e.g., the MBTI), the theory of thinking styles has much wider applications in both academic settings and nonacademic settings. Third, the theory of thinking styles was also the starting point for the establishment of the threefold model of intellectual styles (Zhang & Sternberg, 2005). Therefore, this study was grounded in Sternberg (1997) theory of thinking styles, through which a comprehensive understanding of intellectual styles could be achieved. The description of the thirteen thinking styles is presented in Table 1. The thirteen thinking styles can be further classified into three types corresponding to the three styles types (Type I, Type II, and Type III) postulated in the threefold model of intellectual styles.

1.2. The value of intellectual styles

The issue over the value of intellectual styles has been heatedly debated. Some scholars (e.g., Kwang & Rodrigues, 2002; Messick, 1994; Miller, 1987; Riding, 1997; Sadler-Smith, 2009) have argued that the value of a certain style can be either positive or negative, depending on the specific contexts where the style is used. Other scholars (e.g., Kogan, 1989; Messer, 1976; Zhang, 2012; Zhang & Sternberg, 2009) have claimed that some styles manifest more positive value than others in most situations.

Previous empirical studies that addressed the issue of style value mainly focused on the relationships between styles and students' cognitive developmental outcomes, especially academic achievement. However, the findings are complex. Some studies found that students with Type I intellectual styles (e.g., legislative, judicial, and hierarchical) outperform students with Type II intellectual styles (e.g., executive and conservative). For example, field-independent (Type I) students were found to have better academic performance (e.g., Bagley & Mallick, 1998; Cameron & Dwyer, 2005; Hite, 2004), better problem-solving performance (Williams, 2001), and better programming performance (Johnson & Kane, 1992; Wilson, Mundy-Castle, & Sibanda, 1990) than their field-dependent (Type II) counterparts. Type I thinking styles (e.g., legislative, judicial, and hierarchical) were also found to play more positive roles in academic achievement in contrast with Type II thinking styles (e.g., executive and conservative) in some studies (Fan, Zhang, & Watkins, 2010; Grigorenko & Sternberg, 1997; Zhang, 2004b). Similar results were also found regarding Biggs' (1978) learning approaches and Kagan et al.'s (1964) reflective-impulsive styles (Chamorro-Premuzic & Furnham, 2008; Fisher, 1994; Furnham, Christopher, Garwood, & Martin, 2007; Stahl, Erickson,