Chapter 24
Multicultural e–Education:
Student Learning Style, Culture and Performance

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ABSTRACT

Academic performance of international university students was predicted using an interdisciplinary model, built by integrating theories from educational psychology and cultural anthropology. Approximately 2,500 online undergraduate business degree students from 21 countries were sampled from an Australian university. An a priori learning style instrument was used to assess their study strategies, which was integrated to a global culture taxonomy using ethnic demographic data. Multi-method statistical techniques for multivariate data were triangulated (confirmatory ordinal factor analysis, multiple regression and structural equation modeling) to analyze empirical evidence. The instrument was validated (eigenvalues>1; cumulative factor variance captured >60%; GF, LR, factor loadings acceptable; p<0.01, RMSEA<0.1). A statistically significant interdisciplinary model was created showing culture and learning style predicts grades (n=715, normal theory WLS X²=20; df=9; r2=0.57, p=0.018; RMSEA=0.041, NFI=0.99, GFI=0.99, AGFI=0.97).

INTRODUCTION

Students across 21 ethnic backgrounds are empirically studied to investigate the research question: Can an integrated model of a priori global culture and learning styles predict online multicultural university student academic performance? The aim is to explore the ethnic interdependence with study styles of multicultural students, in terms of the actual impact on final grade. The proposed benefits of this study are: To create an interdisciplinary learning model (using multi-method statistical techniques), to inform students and their professors about the relationships between culture, learning style and academic performance, as well as to advance educational psychology. As conceptually drawn in Figure 1, an interdisciplinary design links global culture from anthropology/industrial psychology

Figure 1. Multicultural learning style & performance hypothesized interdisciplinary model
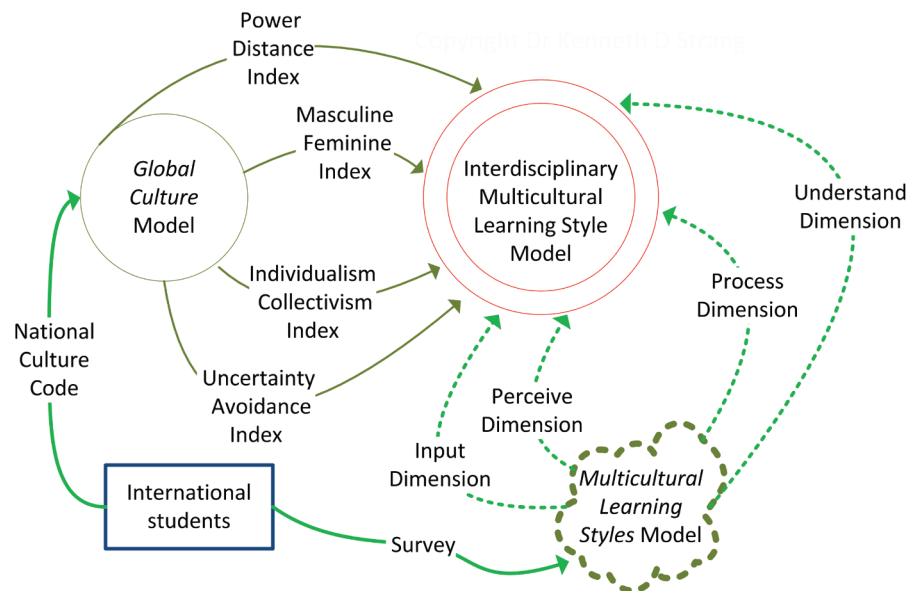
to learning style theory grounded in educational psychology.

BACKGROUND AND RATIONALE

There are very few empirical studies that integrate a priori culture and learning style models; none could be found in the literature that test dependent performance outcomes. There have been four relevant studies that tackle parts of this research question, namely DeVita (2001) that used both culture and learning style, but ethnic background was arbitrarily set to two categories of national or international, and performance was not assessed. Contemporary studies have explored adult learning and culture (Toledo, 2007; Abril, 2006; VanOord, 2005) but nothing was measured, concluding only ethnic culture was a latent yet unproven factor.

From a multicultural perspective, behavior and learning differ across cultures (Hofstede, 2007; Kolb & Kolb, 2005; Strunk & Chang, 1999). Factors beyond teaching method, student intelligence and study strategy, affect learning (UNESCO, 2005; Schunk, 2004; Mayer, 2003). Several recent empirical multicultural learning style studies found instruction methods and learning styles predicted a significant difference in student success (Strang, 2008a; Smith, Sadler-Smith, Robertson & Wakefield, 2007; Manikutty, Anuradha, Katrin and Hansen, 2007; Litzinger, Lee, Wise & Felder, 2007), but they did not specifically isolate and measure the cultural factors. A global meta-analysis of learning styles complained there was "no extensive research in the UK on learning styles and social class, or on learning styles and ethnicity" (Coffield et al., 2004, p. 84). Some writers rhetorically ask if there is a right learning style for multicultural students (2008, Valiente; Carroll, 2005)? Other researchers argue learning styles are not measurable or predictive (Mitchell, 1994; Curry, 1990).

A major catalyst for this study was that meta-analysis reviews have complained learning style and/or culture models lack statistical proof (Coffield, Moseley, Hall & Ecclestone, 2004; Reynolds, 1997). Meta analysis reviews indicate

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