



Examining perceived control level and instability as predictors of first-year college students' academic achievement [☆]

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ABSTRACT

The aim of the present study was to examine the intraindividual level and instability of perceived academic control (PC) among first-year college students, and their predictive effects on academic achievement. Two studies were conducted measuring situational (state) PC on different schedules: Study 1 ($N = 242$) five times over a 6-month period and Study 2 ($N = 80$) daily over a 2-week period. Consistent across both studies were confirmatory factor analyses and structural equation models demonstrating significant PC instability, as well as negative correlations between intraindividual PC levels (average across measurements) and instability (standard deviation across measurements). Also, in both studies PC level positively predicted subsequent academic achievement, although no significant PC instability first-order effects were found. Both studies revealed a PC level by instability interaction, as students with high-unstable PC typically received poorer grades than high-stable PC students. Study findings highlight the importance of considering both PC level and instability, and identify a previously unknown group of first-year college students at-risk of under-achieving academically – students with high-unstable perceived control.

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1. Introduction

Perceived control (PC) is defined as an individual's believed capacity to predict and influence events in their environment (Perry, 1991), and has a theoretical background stemming from locus of control (Rotter, 1966), attribution theory (Weiner, 1985, 1995, 2006), and learned helplessness (Abramson, Garber, & Seligman, 1980). Within the academic domain, students' perceived control level (i.e., high or low) has been linked to several adaptive outcomes in the academic achievement domain (see Perry, Hall, and Ruthig (2005) for a review). Specifically, greater perceived academic control has been found to predict higher levels of effort (Perry, Hladkyj, Pekrun, & Pelletier, 2001), critical thinking (Stupnisky, Renaud, Daniels, Haynes, & Perry, 2008), and effective study strategy use (Cassidy & Eachus, 2000). Perceived control has also been tied to students' emotions, correlating positively with feelings of joy, hope, and pride, and negatively with emotions such as anger, anxiety,

hopelessness, and boredom (Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010; Pekrun et al., 2004). Finally, students' perceptions of control have been found to positively predict academic achievement (Findley & Cooper, 1983; Kalechstein & Nowicki, 1997; Perry, Hladkyj, Pekrun, Clifton, & Chipperfield, 2005; Wise, Roos, Plake, & Nebelsick-Gullet, 1994). Overall, it has been demonstrated that students' level of perceived control is a consistent predictor of academic success.

However, beyond its level, instability in perceived control over time may also have important consequences for students. For example, some students may possess a level of PC that does not significantly fluctuate over time despite academic successes or failures, whereas other students' perceptions of control may be more erratic. These PC fluctuations may have important achievement consequences, and an analysis of PC level by instability combinations may serve to identify previously unknown groups of students who are in positions to excel, or conversely, are more susceptible to failure. Understanding both the level and instability of perceived control may be particularly important among first-year college students who are transitioning into a novel and demanding achievement setting (Perry, 2003), and are more likely to question their perceptions of control due to unanticipated failure experiences (Feldman, 2005; Shaiens & Gluszynski, 2007). Therefore, the purpose of the present research was to assess the predictive effects of PC level and instability on the academic achievement of first-year college students.

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1.1. Rationale for exploring perceived control level and instability among first-year college students

The impetus for investigating the level and instability of perceived academic control among first-year college students derives from four critical issues: (1) the high attrition rate of freshman students, (2) the nature of the first-year college experience, (3) potential PC level by instability interaction effects on academic achievement, and (4) the identification of meaningful instability in similar psychosocial constructs.

First, in the U.S. roughly 50% of high school graduates enroll in college, but of those entering 4-year institutions 27% leave after the freshman year (Barefoot, 2004; Habley, Valiga, McClanahan, & Burkum, 2010). These high attrition rates exist despite stringent academic admissions criteria enforced by postsecondary institutions. This paradoxical effect suggests the need to consider additional indicators to predict college student retention beyond those traditionally used for college admission (e.g., high school grades, SAT/ACT scores) and established psychosocial predictors such as level of perceived control (for reviews see Pascarella & Terenzini, 2005; Perry, Hall, et al., 2005).

Second, many freshmen college students may experience highs and lows in PC due to their academic environment causing them to repeatedly question their degree of control over academic outcomes (Perry, 2003; Stupnisky, Haynes, Daniels, & Perry, 2011). For example, students must often shift between challenging academic tasks for which their perceptions of control can differ. Whereas a student may believe that they can influence their performance on multiple choice tests, they may not believe their performance on an essay assignment is as personally controllable. Similarly, some students may perceive a sense of control in one content area within a given course, such as social psychology, yet feel unable to influence their performance in another, such as neurological psychology. This effect is likely to be especially prevalent among first-year college students who are often required to take introductory survey courses that require multiple forms of assessment and cover a wide variety of topics. Finally, achievement outcomes over students' first academic year may cause variations in their perceived control, perhaps decreasing following failure and increasing following success. In support of this, Hall (2008) found college students have a tendency to increase their perceived control following success, and decrease their perceived control following failure in favor of positive reappraisals.¹ Therefore, first-year college students' regular shifts between evaluation methods, content areas, and experiencing varying achievement outcomes are likely to contribute to instability in perceptions of academic control.

Third, important information about the level of perceived control may be revealed by examining how it interacts with perceived control instability to affect outcomes (i.e., a PC level by instability interaction). Perceived control is believed to develop through repeated experiences with action-outcome contingency (Skinner, 1996) and the habitual endorsement of controllable attributions (Weiner, 1985). For example, students with high perceived control typically experience and believe that their behaviors are responsible for their grades and make controllable attributions for their performances (e.g., effort, strategy). Alternatively, students with low perceived control typically believe that their behaviors do not impact their grades and make uncontrollable attributions for their performances

(e.g., task difficulty, luck). Thus, perceived control level has been found to be positively associated with more effort, good strategies, more adaptive emotions, and ultimately better grades (Findley & Cooper, 1983; Kalechstein & Nowicki, 1997; Perry, Hall, et al., 2005; Perry, Hladkyj, et al., 2005; Wise et al., 1994).

Perceived control instability is consequently assumed to develop when students experience less consistent action-outcome contingencies and make irregular controllable attributions for their academic performances. Thus, students with high but unstable perceived control may typically believe their behaviors impact their achievement and make controllable attributions; however, these beliefs may not be as resolute as their stable counterparts leading to instances of decreased effort, questionable learning strategies, varied emotions, and ultimately decreased grades. Alternatively, students with low but unstable perceived control may typically believe their behaviors do not impact their achievement and make uncontrollable attributions. However, these beliefs may not be as solidified as their stable counterparts, thus leading to occasions where effort is high, optimal learning strategies are used, emotions improve, and grades increase. Research to date has yet to explore the potential role of PC instability in moderating the effects of mean PC levels on critical academic outcomes. It is plausible that PC mean level by instability interactions are present and could help to identify students who are academically under-achieving (high-unstable), or have unrecognized potential for academic success (low-unstable).

Although the current research uses the terms control and stability, they are in reference to the individual difference variable perceived control and not outcome dependent attributions. Attributions, according to Weiner (1985), may be categorized along three causal dimensions: controllable–uncontrollable, stable–unstable, and internal–external. Whereas students with high levels of perceived control would generally be expected to endorse controllable attributions (e.g., effort, strategy), high-unstable PC students would be expected to make them less consistently over time. Thus, attribution research examines individual's believed causes of specific events and the controllability and stability of those causes over time; alternatively, the present research explores the individual's habitual perceptions of control (PC level) and the extent that they evidence temporal fluctuations over time (PC instability).

Fourth, temporal instability has been explored in regards to other prominent psychological constructs and found to have important consequences in college student populations. For example, a series of studies by Kernis and colleagues found instability in self-esteem over time, in combination with self-esteem mean levels, uniquely predicts greater anger (Kernis, Grannemann, & Barclay, 1989) and depression (Kernis et al., 1998), but lower academic intrinsic motivation (Waschull & Kernis, 1996). Also, Fleeson (2001) found significant within-person variability in the Big-Five personality traits which are "too large and meaningful to be ignored" (p. 1023). Furthermore, Fryer and Elliot (2007) examined the stability of goals within the 2 × 2 achievement goal framework and discovered that the four goals are equally malleable at the within-person level over time, whereas it was previously thought that some goals change more than others (see also Muis & Edwards, 2009). Taken together, the above rationale suggests that an empirical examination of the prevalence and predictive effects of temporal instability in perceived academic control among first-year college students is warranted, and that such research could contribute to the literature on perceived control and the psychosocial predictors of success in academic achievement settings.

1.2. Assessing intraindividual instability

A goal of the present research studies was to measure instability over time in students' perceptions of academic control at the

¹ Although Study 1 utilized the data from Hall (2008), the two studies had divergent research objectives and results. Specifically, Hall focused on testing students' tendency to switch from perceived (primary) control to another volitional strategy (secondary control) and implemented analyses relating to that objective. Although the Study 1 data were collected several years prior to Study 2 and originally for a different research objective, the data were used because it was suitable to test the current research question and the findings by Hall do not overlap with the current results.

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