



## An investigation of the construct validity of the personality trait of self-directed learning

John W. Lounsbury<sup>a,b,\*</sup>, Jacob J. Levy<sup>a</sup>, Soo-Hee Park<sup>c</sup>, Lucy W. Gibson<sup>b</sup>, Ryan Smith<sup>a</sup>

<sup>a</sup> The University of Tennessee, Knoxville, Tennessee 37996-0900, United States

<sup>b</sup> Resource Associates Incorporated, Knoxville, TN 37920, United States

<sup>c</sup> State of Tennessee, Evaluation and Assessment, Andrew Johnson Tower-6th Floor, Nashville, TN 37243-0375, United States

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### ABSTRACT

Based on samples of 398 middle school students, 568 high school students, and 1159 college students, self-directed learning was found to be related to cumulative grade-point-average at all levels as well as to Big Five personality traits (Openness, Conscientiousness, Emotional Stability, and Extraversion), narrow personality traits (Optimism, Career-Decidedness, Work Drive, and Self-Actualization), vocational interests (Realistic, Investigative, Artistic, and Conventional, as well as Science, Medicine, and Mathematics), cognitive aptitudes, and life as well as college satisfaction. Based on an additional sample of 4125 college students, a confirmatory factor analysis was used to verify a single factor structure for our 10-item measure of self-directed learning. Results were discussed in terms of personality characteristics of self-directed learners, the trans-situational validity of self-directed learning in academic settings, multiple forms of evidence of the construct validity of self-directed learning, and implications for future research and practice.

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The purpose of this study was to investigate the construct validity of self-directed learning measured as a personality trait. At the outset we must define what we mean by construct validity. Although there is no one simple definition, we follow Messick (1989), in acknowledging that “construct validity embraces almost all forms of validity evidence” (*ibid.*, p. 17). Construct validity represents a pattern of results consistent with the specification of the construct (Fiske, 2002), is based on the integration of evidence bearing on a construct (Messick, 1989), and is equivalent to the process of theory development (Whitely, 1983). Although many types of evidence can inform construct validity, our particular interest was in the empirical relationships between self-directed learning and other logically related constructs and criteria. Our approach is correlational, which is fully consistent with Messick’s contention that “[a] wide variety of correlational analyses are relevant to construct validation” (p. 20). We must also specify the type of self-directed learning we are concerned with and its educational context. Following a distinction made by Brockett and Hiemstra (1991, Chapter Two) regarding self-directed learning as instructional method versus personality characteristic, our emphasis is on the latter; our approach focuses on self-directed learning as a personality trait that is relatively enduring over time and across situations for individuals. Also, we conceptualize self-direction as an attribute that can be represented on a continuum ranging from low to high and, in line with Hiemstra (1991), as something “that exists to some degree in every person and learning situation.”

Drawing on Brockett (1983, p.16), we define self-directed learning as a disposition to engage in learning activities where the individual takes personal responsibility for developing and carrying out learning endeavors in an autonomous manner without being prompted or guided by other people (such as a teacher, parent, or peer). Thus, the measure used in the present study differs from other conceptualizations of self-directed learning in that it has been defined, developed, and validated as a personality trait, rather than an instructional method or readiness for learning scale. Also, our scale is applicable for youth and adult learners in academic as well as other settings, such as organizational training, professional development, and lifelong learning. It is also a relatively brief scale (10 items) that can be used by other researchers who want to measure self-directed learning in a relatively efficient manner.<sup>1</sup>

Self-directed learning is a topic that has received extensive attention by theorists, researchers, and practitioners (e.g., Costa & Kalick, 2003; Long, 1999; Rothwell & Sensenig, 1999). As summarized by Hiemstra (1991), “research, scholarship, and interest in self-directed learning have literally exploded around the world in recent years. Few topics, if any, have received more attention by adult educators than self-directed learning.” (p. 1). While there has been a fair amount of empirical investigation of self-directed learning, the research that bears on self-directed learning as a personality trait has

\* Corresponding author. Tel.: +1 865 974 3423.

E-mail address: [jlounsbury@aol.com](mailto:jlounsbury@aol.com) (J.W. Lounsbury).

<sup>1</sup> Researchers who wish to use this scale may do so without charge as long as it is not used for profit-making purposes and they cite this article. Please contact the senior author for further information.

been somewhat piecemeal and fragmented. To illustrate, self-directed learning readiness (which includes initiative in learning, acceptance of responsibility for one's own learning, and seeing one's self as an effective independent learner) has been found to be positively related to creative achievements (Torrance & Mourad, 1978); self-concept and years of education (Sabbaghian, 1980); student participation in learning projects (Hassan, 1982); internal locus of control (Skaggs, 1981; Gardner & Helmes, 1999); life satisfaction of elderly individuals (Gardner & Helmes, 1999) and older adults (Curry, 1983); lower levels of dogmatism (Long & Agyekum, 1983); end of year grades of nursing students (Crook, 1985) occupational categories (Durr, Guglielmino, & Guglielmino, 1996); affective organizational commitment (Cho & Kwon, 2005); and intrinsic learning motivation (Reynolds, 1986). Also, a few studies have examined the validity of Oddi's (1984, 1985, 1986) Continuing Learning Inventory (CLI)—which includes proactive drive to learn without obvious external reinforcement and commitment to learning for its own sake—with non-definitive results. For example, Oddi (1985) found that the CLI was not related to adult intelligence or locus of control but did correlate with Adjective Checklist measures of Flexibility and Open-Mindedness.

In a more systematic manner, two studies examined self-directed learning readiness in relation to all four Myers-Briggs Type Indicator dimensions, with higher levels of self-directed learning found to be related to Extraversion and Intuition in one study (Leitsch & Van Hove, 1998) and Intuition and Judging in the other study (Johnson, Sample, & Jones, 1988). However, the Myers-Briggs is a four-dimension personality inventory that does not explicitly measure some important personality constructs such as conscientiousness, openness, and emotional stability. To better understand the nomological network for self-directed learning as a personality trait, it can be assessed in terms of its relations with more comprehensive and recognized personality inventories, such as the Big Five (De Raad, 2000) and 16 PF (Cattell, Cattell, & Cattell, 1993). Therefore, one purpose of the present study was to investigate the relationship between self-directed learning and personality constructs measured by comprehensive personality inventories while also attempting to replicate the results of previous studies finding a linkage between self-directed learning and the Myers-Briggs constructs.

Another important aspect of construct validation is criterion-related validity (Messick, 1989). One of the key criteria for student behavior in educational settings is the academic performance of students, which is most often operationalized as cumulative grade-point average (GPA). There is a dearth of published research on the relationship between self-directed learning and academic performance. Hsu and Shiue (2005) found that self-directed learning was related to success in a distance learning course. Also, Okabayashi and Torrance (1984) reported that gifted students who had more fully met teacher expectations of their academic achievement based on their giftedness had higher levels of self-directed learning. However, the relationship between self-directed learning and GPA was not examined in either of these studies. To address this lacuna, the present study investigated the relationship between self-directed learning and cumulative GPA for secondary and higher education students.

While there has been discussion of self-directed learning as a personality trait and there are studies of self-directed learning in adult and student learners (for a review of theoretical and empirical self-directed learning literature, see Brockett & Hiemstra, 1991), there do not appear to be any published studies which have examined whether construct relations for self-directed learning hold up at different levels of the life span. If self-directed learning is a viable personality construct for students, then, a criterion-related validity relationship, such as the self-directed learning-GPA relationship, should be observable from middle school (i.e., age 12, or the sixth grade is the usual lower bound for using self-report personality measures (e.g., McCrae et al., 1988) through high school and college. Accordingly, we examined whether there is a significant relationship between self-

directed learning and GPA for students in middle school, high school, and college.

We also investigated the relationship between self-directed learning and two other types of constructs reviewed by Brockett and Hiemstra (1991): 1) general intelligence, which has not been found to be significantly related to self-directed learning, and 2) life satisfaction, for which Brockett and Hiemstra (*ibid*) summarized several studies indicating a positive relationship with self-directed learning.

Additionally, as part of our strategy of looking at a broad array of constructs in an attempt to enlarge the nomothetic span (Messick, 1989) of self-directing learning, we also examined its relationship to Holland's (1997) vocational interest measures, the ACT, cognitive ability tests, self-actualization, and three "narrow" personality traits that have been found to be related to academic performance of students in college, high school, and middle school (Lounsbury, Sundstrom, Gibson, & Loveland, 2003; Lounsbury, Sundstrom, Loveland, & Gibson, 2003)—Optimism, Tough-Mindedness, and Work Drive. Finally, we examined the relationship between our measure of Self-Directed Learning and Guglielmino's (1977) cognate Self-Directed Learning Readiness Scale (SDLRS).

To recapitulate, the purpose of the present study was to assess the construct validity of self-directed learning as a personality trait and to extend its nomological network in relation to: GPA, normal personal traits (including the Big Five and narrow traits), life satisfaction, intelligence, and vocational interests. More specifically, we investigated the following seven sets of research questions.

- 1) Our self-directed learning scale had a single-factor structure.
- 2) We hypothesized that there would be a positive relationship between self-directed learning and cumulative GPA. Based on the construct specification of self-directed learning—especially the conceptual emphases on assuming responsibility for learning and engaging in self-initiated, self-directed activities to achieve learning—we expected students with higher levels of self-directed learning to learn more in courses and, therefore, to attain higher GPAs.
- 3) Moreover, as we are conceptualizing and measuring self-directed learning as a personality trait, and given that similar relationships have been found between personality constructs and academic performance over different grades for adolescents (Lounsbury, Gibson, Sundstrom, Wilburn, & Loveland, 2003), we expected to find significant correlations between Self-Directed Learning and GPA for different grade levels of middle school, high school, and college.
- 4) How is self-directed learning related to established normal personality constructs? To answer this question, we included three different inventories which have been used in research on students: Cattell's 16 PF (5th edition) inventory (Cattell et al., 1993), Costa and McCrae's (1992) NEO-PIR Big Five inventory, and Lounsbury and Gibson's Adolescent Personal Style Inventory (APSI) (Lounsbury & Gibson, 2006; Lounsbury, Tatum et al., 2003). Utilizing three different inventories permitted us to look for convergence of indicators (Messick, 1989) for common traits, especially the Big Five traits, as well as investigate a broader range of constructs than would be available using just one inventory. We also examined how self-directed learning is related to the personality constructs of Optimism, Tough-Mindedness, Work Drive, and Self-Directed Learning Readiness. Directional hypotheses were not advanced, except in the case of the Myers-Briggs Intuitive scale, where, based on the similar results of Leitsch and Van Hove (1998) and Johnson, Sample, and Jones (1988), we predicted that Self-Directed Learning would be positively related to Intuitive scores and in the case of Openness, which we expected to be positively related to self-directed learning in view of Oddi's (1985) finding of a positive correlation between the CLI and open-

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