



Affective vs. Non-Cognitive Assessment: A Proposed Nomenclature for Developmental Educators

By Forrest C. Lane & Anna M. Blick

Cognitive assessment is an important component of placement into developmental education but traditional standardized tests provide only a limited view of student's potential in college. There is, however, a growing body of literature that supports a need for tools to assess students' affective characteristics, such as one's level of motivation or attitude towards learning (Saxon & Morante, 2014; Saxon, Levine-Brown, & Boylan, 2008). Traditional standardized tests provide only a limited view of a student's potential in college (Sedlacek, 2004). Assessments beyond traditional standardized tests are described in the developmental education literature (e.g., Levine-Brown, Bonham, Saxon, & Boylan, 2008; Saxon, et al., 2008), but that literature does not always provide a clear definition of the term "affective characteristic" or explain why this term is sometimes used interchangeably with the term "non-cognitive" (e.g., Hill, 2004; Saxon & Morante, 2014).

This lack of clarity can create confusion for developmental educators when determining what characteristics beyond the cognitive to assess. The reason for using multiple terms to describe student characteristics may be that "not all research on non-cognitive factors in college success is grounded in an overarching theory" (Sommerfeld, 2011, p. 19). Many studies explore a single characteristic without establishing a theoretical framework; as a result, researchers may end up placing that characteristic under a generic non-cognitive umbrella without considering important variations in the types of non-cognitive traits or the implications of those variations for theory and practice. We suggest there is a difference between affective characteristics and non-cognitive factors and that these differences are important if we are to engage in holistic student development. The purpose of this paper is to help differentiate affective characteristics from non-cognitive factors for readers. We further propose such factors should be reframed as "non-academic factors," as suggested by Sommerfeld (2011). We present tools for assessing non-academic outcomes and conclude by offering a heuristic student profile as a resource to help researchers and practitioners consider various non-academic outcomes in a situational context.

Differentiating *Affect* from *Non-cognitive Attitudes and Affective Characteristics*

Affective characteristics are sometimes described in the developmental education literature as a student's level of motivation, attitude, autonomy, or anxiety (Saxon et al., 2008; Levine-Brown et al., 2008), but the term affect has a specific meaning in other fields. In psychology, affect can be situated within the Tripartite model of attitude theory (Breckler, 1984) and is one of three components of this theory (i.e., affect, behavior, cognition). Specifically, *affect* is an emotional response to a stimulus within the Tripartite model. For example, a student might experience a sense of nervousness or anxiety before taking an exam in college. Affect can also be a physical manifestation of emotion. A person's affect if he or she is experiencing happiness might be a smile. It is also possible for a person to exhibit no affect—

no bodily expression of an inner emotional state. Because affect is part of a larger theory of attitudes, it is suggested that the term affective characteristic be used when referring to an individual's emotion or mood (e.g., test anxiety), rather than motivation or attitude generally.

Non-cognitive Factors

Non-cognitive factors can be framed within the context of assessments such as the Noncognitive Questionnaire (Sedlecek & Brooks, 1976). In his book, *Beyond the Big Test: Noncognitive Assessment in Higher Education*, Sedlacek (2004) defined non-cognitive as "variables relating to adjustment, motivation, and perceptions, rather than the traditional verbal and quantitative areas typically measured by standardized tests" (Sedlacek, 2004, p. 36). This definition includes affect. For example, positive adjustment could be characterized by having less anxiety or a greater sense of enjoyment (i.e., emotion or mood). This definition, however, is more than an individual's emotional response and includes many other attitudes and behaviors (e.g., realistic self-appraisal, leadership experience, community involvement). The point argued is that affect (i.e., emotions like fear, anxiety, hopelessness) may be a non-cognitive factor but it would not be appropriate to assume that all non-cognitive factors are necessarily affective. The term non-cognitive represents a broader set of attitudes beyond emotion or mood.

Implications for Developmental Research

Articulating the difference between *affect* and *non-cognitive* may seem inconsequential, but it is important to define both terms so as not to exclude other potentially relevant factors. For example, there is considerable literature about the effects of anxiety on test performance but less is written about the effects of students' levels of hopefulness, sense of optimism, or resilience. Arguably, these positive affects are also relevant, and a growing body of literature supports the importance of hopeful thinking for academic success (Davidson, Feldman, & Margalit, 2012). The concern is that other affective characteristics from the literature can be overlooked when terms are not well understood. Developmental educators should be careful not to ignore the breadth of affective characteristics that could be relevant to developmental education.

Neither the term affective characteristic or non-cognitive factor may adequately represent the complexity of variables which contribute to the academic performance of developmental students. For example, the mathematics self-efficacy scale (MATHS) was suggested as affective measurement in Saxon et al. (2008), but self-efficacy is not affect (i.e., mood or emotion); however, re-labeling it as non-cognitive may also be incorrect. Self-efficacy is a major tenet of motivation theory and behavior, but it also reflects our knowledge, thoughts and beliefs about ourselves (Bandura, 1987), which is a cognitive process. The concern is that the terms affective characteristic and non-cognitive confuse the reality that some outcomes can be both, even if they do not reflect cognition as measured by placement exams.

Lastly, even when the terms affect and non-cognitive are properly used they imply only attitudinal outcomes (i.e., anxiety, self-regulation, self-efficacy) when other non-attitudinal outcomes can be relevant. Substantial effort was made in Sedlacek (2004) to emphasize the importance of diversity in higher education but it would be incorrect to assume this is only an attitude. There are psychological elements of diversity in the sense that individuals experience emotion and behavior with respect to their identity (e.g., race, gender, religion, and sexual-orientation), but identity is also connected to the many different micro, meso, and macro systems that affect our lives. For example, developmental education students must learn to navigate the complexity of family and cultural expectations and well as the implications of various local, state, and federal policies. Developmental educators must consider both the attitudinal characteristics and the systemic influences in students' lives if they are to better guide faculty, advisors, and other professional staff in supporting the needs of every student.

Reframing Affective Characteristics and Non-Cognitive Factors as Non-academic Factors

Given the nuance between the terms, developmental educators may do well to use the term *non-academic factors* instead of affective or non-cognitive characteristics. It was suggested in Sommerfeld (2011) that we move,

away from the broad, undefined category of 'non-cognitive' to nomenclature that allows for greater conceptual clarity. By categorizing important factors of college readiness as 'academic' v. 'non-academic,' a more apparent distinction can be made between that which is based on formal education (i.e., grades, subject matter knowledge, etc.) and those additional factors that affect a student's ability to adapt to and meet the varying demands of a college environment. (p. 21)

Such a nomenclature would allow for a multitude of non-academic subgroups, such as those provided in Table 1. We acknowledge these subgroups are broad, and developmental educators may identify certain non-academic indicators as more relevant for developmental students than others. A more capacious definition, however, may help to better capture the complexity of college student assessment within developmental education.

Table 1
Factors in College Readiness and Success

Factor	Definition	Examples
Academic Factors	Factors explicitly targeted in formal education.	Subject matter knowledge, high school grades, standardized test scores, etc.
Non-Academic Factors		
Dispositions	Internal characteristics that distinguish a person's predominant outlook or characteristic attitude.	Personality Temperament Values Attitudes Learning Styles
Habits of Mind	"Habits of thought and action that help people manage uncertain or challenging situations... [supporting] thoughtful and intelligent action" (Costa and Kallick 2000, p. 4).	Metacognitive skills Creative thinking Study attitudes Outcome expectations Intellectual curiosity Appreciation for diversity Leadership Positive self-concept Student engagement
Executive Functioning Abilities	Foundational skills that allow individuals to effectively navigate daily tasks, including the ability to "orient, plan, program responses, and verify and modify performances" (Denckla 1996, p. 263).	Study habits Reasoning Long-term goal setting Realistic self-appraisal Decision making Self-control Goal commitment
External Resources	External factors that the individual may be able to access to support college readiness/success.	University fit Financial stability Family beliefs about education Institution intervention Support person
College Knowledge	Explicit and implicit knowledge required for college success; essentially knowing how to "do" college.	Knowledge of college requirements, placement test policies, and tuition costs Understanding of the structure of college Ability to recognize the systemic requirements and norms

Note. Table adapted from Sommerfeld (2014) with permission from *Journal of College Admissions*, Copyright ©2011 National Association for College Admission Counseling.

Assessment of Non-academic Factors

There are many examples of non-academic assessments in the developmental education literature, and previous efforts to catalog and summarize instruments present an amalgam of these non-academic assessments under the general terms "affective assessment" (Saxon et al., 2008) or "non-cognitive measure" (Hughes & Scott-Clayton, 2011). These assessments include categories from the eight non-cognitive variables outlined by Sedlacek (2004), as well as domains related to learning strategies, study skills, attitudes (Saxon, et al., 2008), critical thinking, learning preferences, readiness, and additional needs (Levine-Brown, et al., 2008). We suggest the term non-academic would include these existing categories or domains but could also add to breadth of outcomes relevant to the field of developmental education. The term non-academic might also allow for a better integration with existing higher education models such as Astin's (1991) I-E-O model and Tinto's (1993) theory of student departure, all which incorporate student attitudes and values as well the student's environment as integral to student success.

In its most robust format, a fully developed assessment program that incorporated the academic with non-academic indicators would be formative and ongoing. Targeted Intervention for Developmental Education Students (T.I.D.E.S.) (Boylan, 2009) provides such a framework for the developmental education context. In this seminal model, developmental students' cognitive, affective, and personal characteristics are evaluated as part of a foundation for providing highly individualized academic advising and educational interventions. T.I.D.E.S. does not prescribe a specific non-academic assessment instrument; rather, it provides a programmatic model for the meaningful incorporation of non-academic assessment with academic assessment and placement tools. The use of non-academic factors within the T.I.D.E.S. model serves as a method for integrating theory and practice.

Non-academic Characteristics: A Student Profile

Non-academic assessments can be given systematically to groups of students, but these characteristics do not require a formal assessment for us to be aware of their impact on student success. To better demonstrate how non-academic factors could be considered by developmental educators in practice, we offer a heuristic student profile in a situational context.

Jared is a 45-year-old student with a physical disability and is returning to community college to complete a transferrable associate's degree. Jared's last enrollment in higher education was more than two decades prior; when he attended a university as a traditionally-aged student. At the conclusion of his first year at the university, Jared was academically dismissed due to poor grade performance. His attendance was inconsistent, and he felt isolated on campus, especially after encountering numerous physical barriers. In the time between Jared's year at university and the present, Jared enjoyed a fulltime career in the service sector, during which he married and had a child. After exhausting all possible career growth without a college degree, Jared decided to return to school. When Jared took his placement assessments upon applying to community college, he was placed in higher-level developmental education coursework.

The use of non-academic domains identified by Sommerfeld (2011) may be used to identify points of consideration regarding Jared's reentry to higher education. For example, Jared's prior university experience followed by his years of full-time employment may suggest he possesses some knowledge of the learning styles that are better suited to his needs. Experience in the workforce may have also contributed to a positive self-concept, especially considering that he has progressed in his career to the juncture of necessitating more education credentials. Given that Jared's career aspirations are directly linked to his educational attainment, he may bring a mature approach to long-term goal setting that he lacked during his earlier attempt at the university. Although perhaps strongly equipped in the domains of disposition, habits of mind, and executive functioning abilities,

Jared may require more intentional support in the areas of external support and college knowledge. The combination of poor engagement coupled with repeated confrontation of barriers to physical access contributed to Jared's initial attrition from higher education. The identification of appropriate support people and systems, such as the college's disability services office, could be critical to Jared's success.

Both academic and non-academic support could be meaningfully provided to Jared using the T.I.D.E.S. framework (Boylan, 2009). In this model, an advisor would regularly take inventory of available services and develop a profile for Jared, identifying resources relevant to Jared's needs, such as disability support services and childcare options. The next stage would involve a multidimensional assessment of Jared's strengths and weaknesses, including non-academic factors. Jared's placement in the highest level of developmental education coursework should be supplemented by a non-academic assessment, such as a learning styles inventory, to guide coursework placement. Advising should contextualize the placement recommendation and also continue throughout Jared's first year in school. The regularity of this advising provides the opportunity for the last three stages of the T.I.D.E.S. model: providing interventions, monitoring and evaluating, and making revisions to advising plans in response to formative assessment outcomes.

Conclusion

The terms "affective characteristics" and "non-cognitive" factors are not always well understood and can be misleading. We propose developmental educators use the term non-academic outcomes because it encompasses existing categories and domains and allows for identifying a broader set of factors which may impact student success. This may have value for developmental educators. Further, the new terminology allows for potentially more factors to be included in T.I.D.E.S., thus making it more effective.

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