The Ecology of College Readiness

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Executive Summary

Despite broad agreement that postsecondary education is increasingly necessary for individual and national well-being, there is a pronounced and widening socioeconomic gap in college access and success in the United States. The leading cause for this gap is a lack of college readiness: the multidimensional set of skills, traits, habits, and knowledge that students need to enter and succeed in college. Despite extensive research, policy, and practice efforts to improve college readiness, the problem has proven intractable because of the complexity of the interacting personal, organizational, and societal factors in play.

The human ecology theory of Urie Bronfenbrenner (1917–2005) addresses calls for an integrative framework that accounts for and offers new ways of looking at the complexity of college readiness. An ecological framework encompasses the interacting forces of ideology and culture, social and organizational structure, time, and individual agency. Furthermore, this framework provides an analytical tool to identify gaps in the existing literature and points to opportunities for research, policy, and practice.

Bronfenbrenner’s ecology theory encompasses the many environments affecting students’ college readiness. The ecology of the individual student determines whether that student leaves high school with the necessary constellation of aspirations, dispositions, and academic and practical knowledge. The key element of academic preparation, like all other readiness traits, is an outcome of developmentally instigative characteristics by which individuals
The Case for a Comprehensive Model of College Readiness

Nearly all entering ninth graders in the United States expect to attend college (Aud and others, 2010). When they leave high school, however, only 55 percent of students with diplomas enroll in a postsecondary institution. Although U.S. college enrollment rates are rising, gaps in college enrollment by family income are pronounced and remain stubbornly resistant to change (Bailey and Dynarski, 2011). And college enrollment is just the first step toward a postsecondary certificate or degree. The real goal is college success in the form of a postsecondary credential. Currently only 55.5 percent of students who enter four-year institutions graduate within six years, and only 29.2 percent of two-year college students graduate within three years (Knapp, Kelly-Reid, and Ginder, 2010). As with college enrollment numbers, U.S. rates of higher education persistence are a major problem, particularly for low-income students (Bowen, Chingos, and McPherson, 2009). There is widespread consensus that the leading cause of the low college entrance and success rates among “economically and educationally challenged students” (Walpole, 2007) is a lack of college readiness.

“College readiness” refers to a student’s capacity to enroll at a postsecondary institution, take credit-bearing classes beginning in the first year, earn passing grades in courses, and persist to his or her educational goals. The American public, policymakers, educators, and employers are increasingly aware that a high school diploma does not signify that students are prepared to succeed in college. A large-sample analysis from ACT, for instance, concluded that only one in four high school graduates nationally is adequately prepared for college-level course work in core subjects (ACT, 2011).
The Human Ecology Framework

Unequal access to a college degree is a classic systems problem involving reciprocal interactions among individuals and their multiple, nested environments. Urie Bronfenbrenner’s influential human ecology model meets the challenge of accounting for the complex picture of college access and success. Refined and extended over the past thirty years (Bronfenbrenner, 1974, 1979, 1986, 1993, 2001, 2005; Bronfenbrenner and Ceci, 1994; Bronfenbrenner and Morris, 2006; Moen, Elder, and Lüscher, 1995), the ecological process-person-context-time (PPCT) theory has generated an enormous volume of research and played a leading role in the paradigm shift to contextual, developmental systems models in psychology (Lerner, 2006). (Toward the end of his life, Bronfenbrenner changed the theory’s title to “bioecological” to reflect the ways in which developmental processes encourage or inhibit an individual’s inherited potential.) Figure 1 illustrates the major components of the ecological theory.

Principles of Development in Ecological Systems

Human ecology theory begins from the assumption that individuals and environments are inseparably intertwined. Development refers to change in individuals toward progressively more complex and adequate functioning in their environments. Student development, in this definition, consists of increasingly sophisticated and effective college readiness attributes, knowledge, and behaviors (Padilla, 2009b). Such changes occur through what
Individual: The Attributes of College Readiness

According to ecological theory, individuals develop their college readiness through reciprocal interactions with their environments. Biological, cognitive, emotional, and behavioral characteristics shape individuals' interactions with their surrounding environments and can indirectly instigate the development of college readiness. Although they do not determine a student's future, developmentally instigative characteristics serve as "sources of variation in the person's susceptibility to the developmental effects of environmental conditions and of enduring patterns of interaction in the person and his or her immediate environment (i.e., proximal processes)" (Bronfenbrenner, 1995, p. 633). In other words, individuals vary in their characteristic ways of selecting, experiencing, and instigating responses from their environments. It is these differences, rather than static group-level demographic traits, "that are most powerful in affecting the course and outcome of subsequent development" (Bronfenbrenner, 2005, p. 94). Developmentally instigative characteristics influence individuals' subsequent experiences and are partly formed by experience. In this sense, individuals are simultaneously products and producers of their environments. High academic aspirations, for example, may result from family and school experiences while also driving student decisions and behaviors that affect subsequent experiences.

This chapter focuses on the developmentally instigative characteristics that constitute college readiness—study skills, self-efficacy, aspirations, and academic preparedness—and explores how they synergistically influence individuals' readiness (Cabrera and La Nasa, 2000; Perna, 2005; Rueda, 2005).
Microsystem: The Direct Experience of Students

In the ecological model, there is only one way in which college readiness is directly shaped: through the individual's interactions within his or her immediate settings, or microsystems. According to Bronfenbrenner (1993), the microsystem is the "pattern of activities, roles, and interpersonal relations experienced by the developing persons" (p. 15). Microsystem settings contain features that "invite, permit, or inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment" (Bronfenbrenner, 1993, p. 15). A rich microsystem has the potential to develop different dimensions of students' college readiness and engage them in tasks of greater complexity. The experiences of students in their immediate settings can deepen or diminish their academic preparation, academic habits, motivation, self-efficacy, aspirations, and college knowledge or cause these to stagnate.

The college preparation literature has centered on the people, settings, and programs situated around the student: peers, family, teachers, counselors, schools, and preparation programs. These settings serve as microsystems that can provide varying opportunities to develop college readiness (Kimura-Walsh, Yamamura, Griffin, and Allen, 2009; Padilla, 2009b; Perna, 2006). In addition to interactions with people, direct connections with social media and extracurricular activities are microsystems that can influence the development of motivation, self-efficacy, college knowledge, and academic preparation. Importantly, the influence of particular individuals and relationships varies across students and critical periods. For example, school counselors might play a minimal role in young high school students' lives in comparison

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Mesosystem: A Network of Overlapping Relationships

The development of college readiness occurs in the immediate settings of a student's life, but each individual microsystem is only a part of that student's total experience. Higher education aspirations and college readiness are affected by the intersecting orbits in which students are simultaneously involved. The mesosystem is the totality of students' direct experiences, roles, and settings—the combined set of microsystem interactions. Intervention in any single setting must take into account the interactions across them. For low-income and first-generation students, mixed messages and different actors across roles and settings often add up to a fragmented, incongruent mesosystem. This lack of alignment is in vivid contrast to the experience of middle-class students for whom expectations, knowledge, and experience consistently point to higher education (Arnold and others, 2009). The research on college readiness touches on mesosystem factors primarily in the areas of cultural and social capital, family involvement in schools and programs, and simultaneous student enrollment in high school and college.

Cultural Capital and the Mesosystem

Cultural approaches to college preparation and access map onto the intersecting set of immediate environments and roles that make up the mesosystem. Cultural capital explanations of educational stratification point to the ways in which informal knowledge, personal tastes, attitudes and values, and styles of self-presentation are shaped within systems of power relations in the greater
Exosystem: The Site of Systemic and Structural Changes

The earlier chapters describing the micro- and mesosystems explore how immediate environments and their connections affect the lives of individual students. Also explored are the interaction of these systems with each other and the various effects on individual students as they make their way toward college. An ecological model of college readiness proposes that all aspects of students' lives, the factors in their surrounding environment, and the systems in place to support these elements must be considered to understand fully what is needed for college readiness. Moving to the next level in this model, the exosystem serves as a lens to view the effect of the larger environment on students' access to college.

In Bronfenbrenner's theory, the exosystem refers to influences on the individual that are not part of the student's immediate setting, including organizations and structures in which the student is not physically present but indirectly influence his or her immediate environments. Exosystem factors include government, foundations, and other policymaking settings, as well as organizational structures, norms, laws, regulations, and educational or labor force credentialing systems (Bronfenbrenner, 1979). In the world of college readiness for students, these emanate from different sources and can influence the individual student at different points in time or simultaneously exert multiple influences on a student's experience. Intervention program design and curriculum reform, for example, can occur at the school or district level, or both, of a student's community. Accountability efforts and policies affecting financial aid and tuition funding occur at the state and the federal levels, as well as at higher education institutions. All of these factors can influence the

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