

REFRAMING STUDENT SUCCESS IN COLLEGE:

Advancing Know-What and Know-How

By Jillian Kinzie and George Kuh

In Short

- The phrase “student success” broadly refers to students reaping the promised benefits of the postsecondary experience and a combination of institutional and student actions to realize the desired outcomes.
- There is no shortage of empirical studies and conceptual examinations related to student success. Yet, institutions do not faithfully and effectively implement the kinds of promising policies and practices that seem to work elsewhere and in ways that are appropriate for their campus context and students.
- The student success agenda must be guided by a conceptual structure emphasizing how student success will be achieved. Drawing from the improvement science literature, we suggest using “driver diagrams” to build and test theories for improvement and to clarify what is needed to achieve the student success goal.
- A re-envisioned framework for student success incorporates greater attention to institutional responsibility for student success, promotes equity-minded practice and educational quality, and focuses more squarely on the critical elements regarding how increased student success will be achieved.

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To realize improved student success outcomes, a re-envisioned student success framework is needed, one that is grounded in evidence-based policies and practices that explicitly recognize diverse institutional missions, educational purposes, and organizational arrangements.

In this article, an abridged version of a much longer analysis (www.cpr.indiana.edu), we briefly review what is a vast, rich literature bearing on the topic. We then describe a set of propositions and an approach to building a solution framework representing a comprehensive effort to foster greater levels of student success.

“STUDENT SUCCESS”

“Student success.” In popular parlance, the phrase broadly refers to students reaping the promised benefits of the postsecondary experience. The phrase also can encompass a combination of institutional and student actions and outcomes. For example:

- Student success sometimes represents what institutions can or should do to assist students in attaining their postsecondary aspirations.
- Student success can indicate individual or group *achievement* levels.
- State and federal policymakers typically use the term to mean access to affordable postsecondary education, metrics of degree completion in a reasonable time frame, and post-college employment and earnings.
- For institutional leaders, faculty and staff, student success connotes, among other things, first-to-second-year persistence, degree completion, acquisition of content knowledge, proficiencies such as analytical reasoning and quantitative literacy, and engagement in educationally effective activities.
- Student success also is increasingly tied to equity-minded policies and practices that ameliorate postsecondary achievement gaps.

Indeed, increasing the number of students who attain their postsecondary educational goals—however measured—is a priority for nearly all colleges and universities, accreditors, and higher education associations as well as most states, higher education associations, and regional and local community leaders.

But despite numerous declarations of the personal and societal benefits of making student success a priority and the variety of initiatives implemented to support this during the past decade, completion rates and related proxy measures are still unacceptably low. Equally challenging is that students themselves often encounter obstacles to educational attainment that cannot be anticipated or positively addressed by institutions.

Again, to realize improved student success outcomes, a re-envisioned student success framework is needed, one that is grounded in evidence-based policies and practices that explicitly recognize diverse institutional missions, educational purposes, and organizational arrangements.

We define student success as, **“increasing the numbers of students from different backgrounds proportionate to their age cohort consistent with national goals for postsecondary attainment who participate in high-quality educational programs and practices culminating in high-quality credentials (e.g., certifications, certificates, degrees) and proficiencies that enable them to be economically self-sufficient and civically responsible post college.”**

This definition includes standard persistence and graduation rates, however measured, and also emphasizes what students know and can do as evidenced by desired learning and personal development outcomes in line with equity-minded goals, policies, and practices at the institutional, state, and federal levels.

WHAT MATTERS TO STUDENT SUCCESS: LESSONS FROM THE LITERATURE

There is no shortage of empirical studies and conceptual examinations related to student success. Figure 1 lists a sampling of the major contributions. This literature represents various student and institutional elements; includes research on college impact, student effort and engagement; and even the importance of the first college year for student success. In addition to these well-known and frequently cited works informing policy and practice at various levels, there is a wealth of analysis and recommendations summarized in a readily available but little known set of seven papers commissioned by the National Postsecondary Education Cooperative a decade ago (<http://nces.ed.gov/npec/papers.asp>).

Growing concerns about equity gaps in college completion and the recent addition of theory and research about racially and ethnically diverse student populations have enriched and helped to correct certain aspects of the foundational student success literature. This theoretical and empirical work sought to address concerns about culturally

FIGURE 1. ILLUSTRATIVE MAJOR CONTRIBUTIONS TO THE STUDENT SUCCESS LITERATURE

Astin (1984, 1993). In the first of these two classic publications, the author sets forth a theory of involvement based on his Input-Environment-Outcomes (I-E-O) college impact model. The 1993 volume draws on several decades of research from the UCLA-based Cooperative Institutional Research Program (CIRP) and follow-up studies to explain how various student and institutional characteristics affect desired outcomes of college.

Braxton (2000). The contributors to this edited volume examine different facets of the theoretical and conceptual underpinnings of the factors and conditions related to student attrition and persistence.

Education Commission for the States (1995). Written by Peter Ewell, this monograph summarizes dozens of studies about the institutional conditions that are related to student persistence, educational attainment, satisfaction, and other desired outcomes.

Kuh, Schuh, Whitt & Associates (1991). This book reports the findings from a multiple year study of 14 four-year colleges and universities that offer students unusually rich out-of-class experiences.

Kuh, Kinzie, Schuh, Whitt & Associates (2005/2010). Updated in 2010, the book summarizes the factors and

conditions common to 20 four-year colleges and universities that have higher-than-predicted graduation rates and higher-than-predicted scores on the National Survey of Student Engagement (NSSE).

Mayhew, Rockenbach, Bowman, Seifert, Wolniak (2016). This volume updates the two previous books produced by Pascarella and Terenzini (1991, 2005) noted below.

Pascarella & Terenzini (1991, 2005). These two massive syntheses of the college impact literature provide the most comprehensive analyses of the effects of postsecondary education on student learning and personal development.

Tinto (1975, 1993). The 1975 article sets forth a theory of college student departure that dominated the student retention literature for decades; the 1993 book both modified and extended the theoretical framework for understanding why students leave college before completing their educational objectives.

Upcraft, Gardner, & Barefoot (2005). This edited volume describes promising policies, programs, and practices that challenge and support first-year students.

biased theories and included a critique of Tinto's early work emphasizing academic and social integration as predictors. Particularly instructive are the contributions of Shaun Harper (2012), Sylvia Hurtado (2012), Samuel Museus (2013), Laura Rendon (2011), Terrell Strayhorn (2015), and Vasti Torres (2009).

In its 2015 report, *Committing to Equity and Inclusive Excellence: A Campus Guide for Self-Study and Planning*, the Association of American Colleges and Universities outlined a dozen campus practices to help campus educators advance equity in student success. These included assessing the climate for underserved students to change language and actions, monitoring data to ensure equitable participation among underserved students, and making underserved student achievement visible and valued.

Other recent studies demonstrate the effectiveness of a range of initiatives to improve success rates among historically under-represented students. For example, success rates increase through systematic implementation of guided pathways, high-impact practices (e.g., service-learning, undergraduate research, and capstones) and accelerated study programs (Center for Community College Student Engagement, 2013; Finley & McNair, 2013; Johnstone, 2015; Kuh, O'Donnell, & Reed, 2013). The emphasis on supporting diverse students (Quaye & Harper, 2015) and increasing "equity-minded" practice that will lead to improved success rates among underserved students have provided new approaches to ensuring equity (Bensimon, Dowd, & Witham 2016; Witham, Malcom-Piqueux, Dowd, & Bensimon, 2015).

Student success research in the two-year sector has exploded over the past two decades, benefiting from many years of Community College Research Council studies. This includes the Bailey, Jaggars and Jenkins (2015) book, *Redesigning America's Community Colleges: A Clearer Path to Student Success*, which outlines a framework for student success. In addition, a special issue of *New Directions for Community Colleges* titled, *The College Completion Agenda: Practical Approaches for Reaching the Big Goal* (Phillips & Borowitz, 2014) succinctly summarizes the research supporting the promising policies and practices being implemented to increase the proportion of Americans with high quality college degrees and credentials.

National initiatives like *Achieving the Dream* (www.achievingthedream.org), with an active network of more than 200 community colleges, has also raised awareness of the need to close achievement gaps and accelerate success rates among diverse student populations. It seeks to achieve this by implementing comprehensive, evidence-based institutional improvement in, for example, developmental education, student and faculty engagement, student-centered supports, and state policy reform.

Similarly, *Complete College America* (CCA) is working with institutions in about three dozen states and U.S. territories (www.completecollege.org) to systematically implement tested "game changers" that promise to close achievement and skills gaps. These include performance funding,

The resources cited here and literally hundreds of others illustrate that much is known about the factors and conditions that affect student success. But what seems to stymie efforts to increase the numbers of students who finish what they start is that institutions for various reasons do not faithfully and effectively implement the kinds of promising policies and practices that seem to work elsewhere.

co-requisite remediation, enrollment in 15 credits per term, structured schedules, and guided degree pathways.

Other student success efforts are focused on promoting access for diverse student populations, including the work of National College Access Network (NCAN), which promotes national and state policies that support postsecondary completion for historically underrepresented students and to advocate for the design of culturally relevant models for student success.

More for-profit vendors seem to appear every month offering products and services for students and institutions, often infused with technology-enhanced interventions such as predictive analytics to leverage institutional resources targeted to students with certain at-risk characteristics. One such product is Hobson's empirically validated PAR framework (www.parframework.org/about-par/overview/), which aggregates individual institutional records into a single data resource. It then applies exploratory, inferential, and descriptive techniques to identify patterns of risk to inform tailored interventions; it also measures the impact of such interventions. Some entities such as InsideTrack use data like this to provide individual student coaching with promising results.

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they start is that institutions for various reasons do not faithfully and effectively implement the kinds of promising policies and practices that seem to work elsewhere. Also, they may do so in ways that are inappropriate for their campus context and students. Many institutions sponsor a litany of best practice solutions, including reformed gateway courses, supplemental instruction, intrusive advising, and curricular-embedded high-impact practices. However, all too frequently the efforts are unconnected and lack focus and coherence, leading to initiative fatigue and a related phenomenon labeled by Anthony Bryk and colleagues (2015) as “solutionitis,” the act of doing something, anything, to and for students.

Another challenge to mobilizing coherent, concerted, integrated efforts is that different stakeholder groups have different and sometimes competing assumptions and priorities. The examination of assumptions exposes theories about how to achieve student success goals. Occasionally stakeholder perceptions converge, such as with the Student Achievement Measure (SAM) sponsored by six higher education associations; SAM accounts for degree completion of students who enroll in multiple institutions, thereby improving on the current federal tracking model (see www.studentachievementmeasure.org/).

Regional accreditors also underscore the importance of student success in quality assurance and institutional effectiveness. Most define student success as progress toward degree, specifically looking at subpopulations, support services, transfer success, and ultimately degree completion. The WASC Senior College and University Commission presents a more expansive definition of student success, noting that student success includes both strong persistence and degree completion rates, and high-quality learning. The Commission also suggests that students must be prepared for success in their personal, civic, and professional lives, and embody the values and behaviors that make their institution distinctive.

In contrast, some higher education policy organizations operate on assumptions that differ from governmental entities. For example, the National Center for Public Policy and Higher Education emphasizes the need for K–16 partnerships to promote student success. Similarly, the Education Trust champions the importance of high academic

achievement by all students, at all educational levels, particularly for students of color and low-income students, and the use of data to demonstrate effectiveness and to expose inequities in student outcomes.

As can be seen from this summary, each stakeholder group has its own set of assumptions about how to define and what affects student success. At the same time, most major stakeholder groups more or less share at least nine propositions about student success. The first five propositions below resonate with all stakeholder groups; the last four are somewhat less agreed upon, reflecting more recent conjectures about what matters to student success.

1. Student success is a process that begins long before students first enroll in postsecondary education.
2. Completion is an important component of student success, but equally important is engaging in educational experiences associated with acquiring proficiencies that equip students for life and work.
3. The proverbial village is needed to help a student succeed. One’s family, home community, K–12 teachers, as well as everyone on the college campus influence success in college, particularly in classroom experiences and challenging but supportive relations with faculty, staff, and peers.
4. Certain kinds of educational practices—when done well—seem to be related to desired outcomes including high expectations, a challenging coherent first-year experience, prompt feedback, experiences with and respect for diversity, active and applied learning, and student-faculty interaction, among others.
5. An institution’s total learning environment—its context and culture—matter to how student success is defined, addressed, and achieved.
6. The notion that when students succeed it is due to institutional policies and practices but when students do not persist it is because of something the student did or did not do lacks empirical support and must be questioned.
7. The precursors to differences in student success rates by race-ethnicity, gender, first-generation, and Pell grant status, among others, must be better understood and the proximal causes addressed.
8. Key factors in fostering equitable outcomes are the extent to which a policy, program, or practice is based on empirical evidence and is implemented well.
9. To increase the numbers of students who succeed in postsecondary education contemporary realities of students must be addressed including mental health, food and housing insecurities, financial stresses, sexual violence, racist incidents, and other circumstances issues that threaten persistence, completion, and attainment of desired learning and personal development outcomes.

Most of these propositions are familiar as we discussed in the book *Student Success in College* (Kuh, et al., 2010); even so, they represent factors and conditions that have not been adequately addressed at most institutions.

“An institution’s total learning environment—its context and culture—matter to how student success is defined, addressed, and achieved.”

THE PROMISE OF DRIVER DIAGRAMS

Institutional efforts to increase the numbers of students who reap the promised benefits of postsecondary education are widespread. But the implementation of well-documented, promising policies and practices is at best uneven across institutions and types of students. This happens because institutions, individually or together, take a smorgasbord approach of creating a group of discrete, disconnected programs, or crafting solutions before developing a clear sense of the contextualized problem. What is needed is a framework that recognizes and systematically maps the range of approaches about *what to do* and illustrates *how this must occur*.

To develop and sustain useful student success frameworks, stakeholder groups, governing boards, and institutional leaders must invest in systemic and intentional implementation of proven approaches to improve student success. The student success agenda also must be guided by a conceptual structure emphasizing *how* student success will be achieved. Drawing from the improvement science literature, we suggest using “driver diagrams,” such as those described by Bennett and Provost (2016) and Langley and colleagues (1996), to build and test theories for improvement and to clarify what is needed to achieve student success goals.

Driver diagrams are a visual representation of a proposed solution path to address a particular problem or challenge or set of circumstances needing attention (Figure 2). The driver diagram is a type of structured logic chart with three or more levels including (a) the description of a goal or desired outcome, (b) specification of the major causal explanations (drivers) hypothesized to reach or realize the goal, and (c) the specific activities or interventions (secondary drivers) that could create the conditions to realize the desired outcomes.

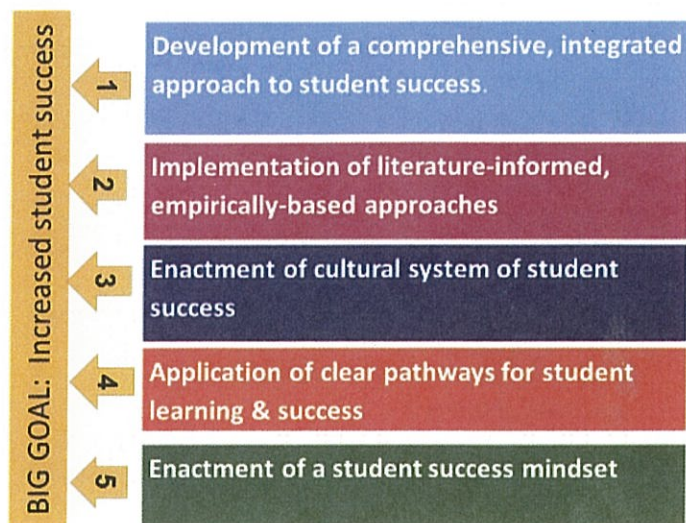
In this way, a driver diagram explicates a “theory of change” by highlighting the factors that need to be addressed to achieve a specific goal and showing how the factors are connected. Driver diagrams are especially suited to complex goals like “reducing teenage pregnancy” where it is important to explore many factors and undertake multiple reinforcing actions. Driver diagrams also act as a communication tool for explaining a change strategy and provide the basis for a measurement framework.

We developed the driver diagram in Figure 2 to depict the five primary drivers and range of actions required to reach the big “increase student success” goal.

These primary drivers are synthesized from our review of student success empirical research, theory, and practice. Although driver diagrams are intended to be flexible and modifiable, the primary drivers represent the high-level elements that are generally required strategies for accomplishing the overall goal. The five primary drivers are:

1. **Development of a comprehensive, integrated approach to student success.** An integrated approach requires the identification of and the elimination of scattershot, isolated, duplicative, or boutique programs for student success and bringing together stakeholders

FIGURE 2. DRIVERS OF STUDENT SUCCESS



- and efforts to ensure collaboration and wide coverage, and, where necessary, special programs for underserved students.
2. **Implementation of literature-informed, empirically based approaches** to student enrollment, transition, persistence, student learning and success, and the assessment of outcomes to ensure quality and effectiveness.
3. **Enactment of cultural system of student success** between postsecondary institutions and P-16 partners, and among all units, departments, and stakeholders (trustees, governing board, state legislatures) across the institution.
4. **Application of clear pathways for student learning and success** that guide students to completion, monitored with real time data systems that identify when a student is off track.
5. **Enactment of a student success mindset** that employs an asset-based narrative for students and institutional belief in talent development.

The next levels of drivers in a diagram identify the range of underpinning factors, or secondary drivers, that explicate the more concrete, operational actions where change can occur. Secondary drivers include a variety of actions that should be empirically based or tested practices. However, they must link directly to primary drivers and frequently more than one. A handful of secondary drivers, featured as bullets in Figure 3, are examples (more secondary drivers are included in the full paper). Ideally, organizations adopting the driver diagram approach would modify or create secondary drivers to reflect important contextual features.

In sum, the student success driver diagram offers a structured representation for achieving the goal of increasing student success. It depicts how to achieve the overall goal, shows how the factors are connected, and provides a communication tool for explaining the overall change strategy. Most important, the driver diagram offers a logical, flexible

FIGURE 3. EXAMPLES OF PRIMARY DRIVERS AND THEIR CORRESPONDING SECONDARY DRIVERS

Primary Driver 1: Development of comprehensive, integrated systems for student success

- Data-informed evaluations of the quality of student experience and programs and services intended to foster student success
- Use of evidence of student learning to inform the sustainability and improvement of student success efforts
- Operational integration of curricular and co-curricular experiences
- More interconnected policies and programs, fewer isolated initiatives
- Cooperative, respectful working relationships between faculty, staff, and student affairs professionals
- Policies and practices that acknowledge and address students' current realities (financial stress, food insecurity, sexual assault, racism) in a holistic manner

Primary Driver 2. Implementation of empirically based approaches

- Greater reliance on and reliable implementation of empirically based approaches to student success
- Systematic early college exposure and support networks with P-16 partners
- Effective orientation and transition experiences
- Reformed gateway courses and developmental education
- Greater use of engaging pedagogies

Primary Driver 3. Enactment of cultural systems of student success

- Strategic relationships with P-12 systems, community partners, and families that facilitate a culture of expectation and academic preparation
- More collaboration between 2-year and 4-year institutions
- Greater attention to transitions between high school and college and between 2-year and 4-year institutions

- Promotion of asset-based narratives about students
- More and better communication with prospective students about enrollment and what is required to achieve educational goals
- Recognition and reward for cultural navigators—faculty and staff that guide, mentor, and support students

Primary Driver 4. Application of clear pathways with monitoring systems

- Maps to guide student transition to college and through majors are explicit and available
- Require students to make “big choices” about whole programs of study while other “small choices” are laid out and clear
- Greater specification of step-by-step roadmaps and use of intrusive guidance to support college completion
- Greater use of student information, such as past performance and interest inventories, to inform student choice of major, co-curricular involvements, and other beneficial experiential learning
- More comprehensive data and information systems accessible throughout the institution

Primary Driver 5. Enactment of a student success mindset

- Encouragement of the belief that all students can succeed
- Greater attention to a grit, growth mindset orientation to promote student success
- Faculty and staff development to foster student success mindset
- Greater emphasis on the benefits of involvement in co-curricular activities and documentation of value and learning gains
- Make under-served students achievement visible and valued

framework illustrating the structural components for student success, emphasizing *how* student success will be achieved. Practically, implementation of a strategy for taking action to improve student success would begin once the driver diagram was complete.

CONCLUSION

There is a rich, still growing body of theory and research, and practical strategies for advancing students' postsecondary success. But to realize more student success, the postsecondary enterprise needs more “know how.” Tools for visualizing and testing a theory of improvement are useful for re-envisioning student success. Further refinements and testing of the driver diagram model must be undertaken to move the model into use in the field.

Key next steps include building out driver diagrams for student success initiatives at various levels, including in organizations seeking to increase student success. It is most important to develop these diagrams at the institutional level by mapping and integrating empirically verified policies and practices that are effective and promise to achieve equitable outcomes for all students. The adoption of a broader conceptual framework will help institutions get beyond one-off solutions and move forward to address current issues for student success.

A re-envisioned framework for student success incorporates greater attention to institutional responsibility for student success, promotes equity-minded practice and educational quality, and focuses more squarely on the critical elements regarding *how* increased student success will be

FIGURE 4. EXAMPLES OF INSTITUTIONAL PRACTICES THAT EXEMPLIFY DRIVERS TO INCREASE STUDENT SUCCESS

- The incorporation of evidence-based practices for first-generation and low-income student success has put Guttman Community College at the forefront of innovative models in community college education. Beginning with the communication of high expectations for student performance, this model requires students to complete a precollege transition program, to enroll full time in block schedules, and to participate in learning communities and a first-year City Seminar that are interdisciplinary and experiential. Guttman’s model also connects students for support and guidance to a team of faculty, advisors, a librarian, and peer mentors.
- Cleveland State University implemented a range of interconnected policies to improve student success including multi-term registration allowing students to plan their entire academic year; guaranteed placement of community college degree-holders into their desired degree program; and “last dollar” scholarships for students at risk of dropping out because of funding shortfalls, as well as dedicated funds to support completion by seniors who have depleted their financial aid.
- To create integrated opportunities for enhanced experiential learning in the curriculum and co-curriculum, West Chester University of Pennsylvania provided structured support for faculty-student affairs staff partnerships by pairing interested faculty with four student affairs units, including career development, LGBTQA services, student leadership and involvement, and service-learning and volunteer programs.
- The practice of creating campus food pantries—such as those serving students at Michigan State University, the University of Missouri, Syracuse University, Montclair State University, and many community colleges—acknowledges and holistically addresses students’ current reality.
- The Florida College System implemented eight “meta-majors”—clusters of academic programs with related content—to advise associate degree-seeking students of the gateway courses aligned with their intended academic and career goals, to focus their choice of major, and to guide them in developing their educational pathway.
- A collaboration between the offices of community service and career development at Whitman College provides structured career activities connected to service-learning experiences that help first-year students to gain early exposure to careers, to form deeper connections to the community, and, ultimately, to better communicate their skills and experiences during their job search. An increase in funded internships has also expanded access to career pathways and has made these pathways clearer to students and families.
- Harris-Stowe State University has seen a significant uptick in student retention and academic success outcomes following the implementation of their Student Success Coach model, which promotes an institutional environment conducive to student success through academic coaching, interpersonal connections, skills development, and referrals. It also provides specific academic and career advising and early-alert intervention for students facing academic and personal difficulties.
- Improvements in student learning and in equity of outcomes by race/ethnicity, gender, and transfer-student status across nine campuses of the University of Maryland followed the redesign of 70 gateway courses to increase faculty capacity to employ active learning approaches and to optimize students’ opportunities to learn.
- The El Paso Area College Readiness consortium—between area school districts, El Paso Community College, and the University of Texas at El Paso—is the El Paso community’s strategy to increase student participation in higher education through enhanced precollege preparation. By demystifying the college-going process and by creating a joint admission application, a concurrent enrollment provision, and a host of resources including shared academic advisors, an elementary school adoption project, an early college high school completion option, and expanded dual credit offerings, El Paso has increased access and persistence and has made student success a community responsibility.
- The enactment of a student-success mindset at Augsburg College is demonstrated in the increased use of educational outcomes data across the curriculum and co-curricular programs—aligning general education with the institution’s mission and emphasizing the benefits of co-curricular activities and documentation of learning gains. The same mindset prevails at Augsburg’s Gage Center for Student Success, a one-stop shop where students can access academic advising, tutoring, academic accommodations, assistance with learning and physical disabilities, academic skills coaching, and other support services.

achieved. Current practices that exemplify these aims and could also be secondary drivers are featured in Figure 4.

The framework must map and integrate empirically verified policies, programs, and practices that are effective for *all* students. Yet, it is crucial to be mindful of the differences among

students, to respect distinctive institutional missions and approaches to student success, and as Rendón (2006) wisely cautioned, resist the urge to create a single “meta-model” for student success. Heeding this caution while acknowledging the desire for a broad common framework, represented in

the driver diagram approach, suggests that a one size fits all student success framework is not feasible or beneficial.

Although we are convinced of the merits of the student success propositions and primary drivers discussed earlier, any framework with similar aims must be adapted to the institution's context and culture, educational purposes, and students. The key is what Bryk and colleagues (2015) and others in the improvement science field are calling implementation with fidelity, or better, implementation with integrity. That is, the achievement of desired outcomes requires a deep understanding of the complexity of how programs and practices are enacted across diverse settings and relies on practitioners building the knowledge and skill needed to do what needs to be done in their particular context to address and ameliorate the problems and challenges.

In terms of fostering student success in postsecondary educational institutions, this means we must develop and

insist on using approaches that explicate and are faithful to a “know-what, know-how, and can-do” mantra. To make it possible for more students to succeed, we must know what the salient, actionable, research-based principles are, know how to implement these principles through a comprehensive, integrated strategy to achieve the targeted objectives, and enact in real time what is being learned from local action research on what is making a difference for which students. This will help committed educators use this information to change what they and their colleagues do to help more students succeed. □

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