

**Report Prepared for the Lumina Foundation
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Review of Student Success Frameworks to Mobilize Higher Education**

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Please note: some sections of the work commissioned for this report have been removed

Interest in increasing the number of adults who hold a high-quality postsecondary credential is at an all-time high. This goal is shared by a wide range of stakeholders including educators, policymakers, researchers, employers, organizations and foundations, corporations, parents, and students themselves. Broadly, the emphasis on student success is driven by several factors, including concerns about persistent inequities in educational attainment, expanding economic and workforce needs, and overall concerns about educational quality. Indeed, today higher education is not a luxury, but a necessity for individual economic opportunity and America's competitiveness in the global economy. At a time when jobs can go anywhere in the world, what students know and can do in large measure will determine their success.

In 2009, Lumina Foundation pledged to increase the proportion of Americans with high-quality degrees, certificates and other credentials to 60 percent by 2025. This target, known as "Goal 2025," is an outcomes-based approach to establish an equitable, accessible, responsive and accountable higher education system while fostering a national sense of urgency for action to achieve the goal.

Since Goal 2025 was announced, much has been learned about what it takes to increase attainment leading to a broader and deeper understanding of the need to increase postsecondary attainment. The good news is that nearly all states, national

higher education associations, colleges and universities, and regional and local stakeholder communities and organizations have endorsed and are working toward similar goals. Even so, much more remains to be done to achieve all that is envisioned in terms of quality, equity and student success.

To assist Lumina Foundation in its efforts to advance the student success agenda, researchers at the Indiana University Center for Postsecondary Research examined the state of current approaches and opportunities in the field. In this report we provide an analysis of work on this critical issue. We start with defining student success and summarizing extant student success frameworks. In the private report to Lumina, we offer a more extensive review of Lumina’s Student Success Framework in the context of what literature and practice show to be promising approaches for increasing the numbers of students who earn a high-quality credential, and then use driver diagrams to frame what matters to student success. We close with suggested next step considerations for Lumina’s strategies for mobilizing student success in higher education.

Defining Student Success

The term, “student success,” is now part of the higher education lexicon. But it is defined variously, depending on who uses the term for what purposes with what audiences. For example:

- Student success sometimes refers to making educational programs and services accessible to certain groups of students. The phrase is frequently used to connote what institutions can do to assist students in attaining their postsecondary aspirations.
- Student success can infer individual or group *achievement* levels.
- For state and federal policymakers, student success typically means access to affordable postsecondary education, shortened “time to degree”, degree completion, and post-college employment and earnings.
- From an institutional perspective, student success can mean first-year student retention, student persistence to completion, content knowledge

gains, engagement in educational processes that foster a high-quality undergraduate experience, and even students' personal success.

- Other definitions of student success aim for improved inclusivity and equity, or closing postsecondary achievement gaps.

In its colloquial form, student success broadly refers to institutional efforts to help students smoothly transition to and make the most of their college and university experience. The most common and parsimonious definition is of student success is the number of students who acquire a postsecondary credential.

Given the demand for improved student outcomes for all (inclusive excellence), enhanced educational quality, and an expanding range of desirable postsecondary credentials, it is not accurate to define student success solely as degree attainment. For the purposes of this report, student success is broadly defined as: **“increased numbers of diverse student groups participating in high-quality educational experiences, earning high-quality credentials (degrees, certifications, certificates).”**

Extant Frameworks for Student Success In-Brief

The literature on student success in higher education has been informed by several conceptual frameworks that represent the variety of student and institutional elements associated with student success, with an emphasis on *how* student success will be achieved.

The most widely cited framework is based on research on college effects, comprehensively summarized in two epic volumes by Pascarella and Terenzini (1991, 2005). Astin (1977, 1984, 1985, 1995) outlined the guiding theoretical underpinnings on student outcomes and how they are affected by college environments, including the type of educational program and faculty to which students are exposed as well as many other aspects of the undergraduate experience, as well as the findings that what matters in college is student involvement in educational processes, student-faculty interaction and the influence of peers. Similar research on “student effort” launched by Pace (1980), later broadened to student engagement by Kuh (1999, 2003), has done much to

operationalize the concept of student engagement in ways that can be reliably measured and, in turn, acted upon to improve student success.

Building on the college impact research are more tailored efforts to document critical aspects of student success, including the importance of the first college year, the factors influencing student persistence and retention, and the influence of college environments and student engagement, leading to the design of experiences that are positively linked with student success (Tinto, 1995; Gardner, Barefoot 1995, 2005; Kuh, 1991; Kuh, Kinzie, Schuh, Whitt & Associates, 2005, 2010). This research forms the foundation of most student success initiatives in higher education.

Growing concerns about equity gaps in college completion and the expansion 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. For example, some recent work has noted culturally-biased shortcoming in student persistence theories, such as the validity of Tinto's early work related to academic and social integration as predictors. This work has helped catalyze a growing body of literature on alternative frameworks for understanding the success of racially diverse college student populations (Hurtado et al. 2012; Museus, 2014; Museus & Quaye, 2009; Rendón & Munoz, 2011).

For example, Museus' (2014) Culturally Engaging Campus Environments (CECE) feature nine indicators, or elements of campus environments that promote success among racially diverse populations. The model builds on and expands research specifying the range of external influences that shape individual influences and success, and underscores the environmental and individual influences on success, with the practical implication that the extent to which culturally engaging campus environments exist at a particular postsecondary institution is positively associated with more encouraging individual factors and ultimately greater college student success. In a similar vein, Hurtado et al (2012) theorized a more holistic model accounting for climate, educational practices, and student outcomes to broaden frameworks for student success.

The “Inclusive Excellence” framework promulgated by AAC&U (Williams, Berger & McClendon, 2005) offers a comprehensive approach to enacting educational reform based on research and theory about “what works” to help all students succeed and what makes for responsive, educationally powerful colleges and universities. Grounded in organizational development theory, Inclusive Excellence emphasizes shared leadership, responsibility, and accountability in the pursuit of equity, diversity and excellence. Inclusive Excellence reflects a commitment to creating the diverse learning environments vital to students’ growth, learning, and achievement. It offers an overarching perspective needed to achieve diversity, equity and inclusion, by fully utilizing diversity as a resource and central component of academic quality and excellence for all students (AAC&U, 2015). The University of Wisconsin system for example explained that Inclusive Excellence “is central to institutional, student and academic planning and policy, practice and decision-making...it is designed to shift work related to diversity, equity and inclusion from the margins to the center of university life and operations, fundamental to higher education’s mission” (The University of Wisconsin Board of Regents, 2013, p.8).

“Equity-mindedness” (Bensimon 2007; Dowd & Bensimon 2015) is a perspective emphasizing fostering success for all students through educational reform; it foregrounds the policies and practices contributing to differences in educational achievement and “abstains from blaming students for those accumulated disparities” (Bensimon, Dowd & Witham, 2016, p. 1). Five principles are vital to achieving equitable practice: (a) clarifying language, goals, and measures, (b) using “equity-mindedness” as the guiding paradigm for language and action, (c) accommodating differences in how students learn, (d) continually evaluating the relevance and effectiveness of practices by disaggregating data and questioning assumptions and (e) enacting equity institution- and system-wide. Importantly, this framework for student success demands training for equity-minded campus educators who are aware of the context of exclusionary practices and racism in higher education and the impact of power imbalances on opportunities and outcomes. Faculty members, for example, must critically examine

their practices, language, disciplinary culture and identify aspect that contribute to the problem of low and inequitable student success rates. Although Dowd and Bensimon (2015) report noteworthy improvements in equitable practice, they conclude that after twenty years of focused work to increase equity using their tested “Equity Scorecard” process, institutionalized racism remains an enduring obstacle to attaining equity in higher education.

A significant investment in theorizing student success manifested in 2006 with the release of five extensive studies of student success commissioned by the National Postsecondary Educational Cooperative (NPEC). These reports aimed to review and synthesize the literature on student success, articulate an inclusive theory-informed perspective on success and its correlates, identify significant issues and limitations of the literature, and incorporate multiple perspectives on the research and its application, and propose new models and recommendations to advance student success.

While all the commissioned NPEC papers are instructive, three reports are most relevant for the purposes of this report: Kuh, Kinzie, Buckley, Bridges and Hayek (2006) synthesized the student success literature focusing on *practices* that matter; Tinto and Pusser (2006) developed a framework to guide campus actions to foster student persistence and success; and Perna and Thomas (2006) outlined a theoretically grounded conceptual model to understand how to close gaps in student success. Notably, the Kuh, et al., (2006) report included a schematic to account for the variety of factors and conditions that affect student success (see Appendix A), depicting pre-college experiences, college experiences represented by students’ behaviors and institutional conditions and the turns, detours, and occasional dead ends that students may encounter during their educational career path, followed by post-college outcomes – themes reflected across the NPEC reports. Hearn’s (2006) concise summary of these reports teases out the major implications for building theory, policy, practice and research.

The work of Perna and Thomas (2006) is most relevant to discussions about a student success framework. They proposed a conceptual model for student success

across race-ethnicity and class and income that aims to raise success levels for all students and reduce gaps among students. Employing theories and research from sociology, economics, psychology and education, Perna and Thomas created a framework to guide the development, implementation, and evaluation of policies that would inform policymakers and practitioners how to close gaps in student success.

Their framework outlines that:

- 1) student success is a longitudinal process;
- 2) multiple theoretical approaches inform understanding of student success;
- 3) student success is shaped by multiple levels of context [individual student, family, school, and social, economic and policy contexts];
- 4) the relative contribution of different disciplinary perspectives [education, psychology, sociology, and economics], to understanding student success varies;
- 5) multiple methodological approaches contribute to knowledge of student success; and
- 6) student success processes vary across groups (p. 26).

The framework offers a guide to the development, implementation, and evaluation of student success policies and practices, and encourages policymakers, practitioners, and researchers to view student success interventions as part of a broader and longitudinal process. A thoughtful report critiquing the NPEC reports (Rendón, 2006) pointed out the importance of taking into account the dimensions of difference that students bring with them to postsecondary education, and to resist the urge to create a single “meta-model” that would attempt to account for everything related to student success.

Student Success Frameworks in Community Colleges

Research on student success in community colleges has a shorter history than in the four-year sector, and has traditionally focused on the two-year sectors’ access mission (Cohen & Brawer, 1996; Dougherty, 1994), namely the extent to which programs and services support students with a variety of goals related to their

postsecondary participation. However, in the early 2000's more educators, policymakers and scholars turned their attention to student persistence and completion (Jenkins, 2015; Wyner, 2014).

The 2004 Lumina-sponsored initiative Achieving the Dream (ATD) is particular example of the expanded emphasis on student success in the community college sector. ATD asserted that colleges should be as successful at retaining and graduating students, particularly students of color and low-income students, as they are at enrolling them (Rothkopf, 2009). The ATD student success framework centered on increasing the routine use of evidence about students and institutional performance to help students succeed academically, and undertaking broad-based, data-inform institutional improvement efforts to increase student outcomes. The theory of action was that if community colleges built a "culture of evidence" using student records and other data to examine how students perform over-time and to identify barriers to academic progress and then used this evidence to develop intervention strategies to improve student outcomes, promoted further research on student progress, and helped bring effective programs to scale.

Lessons from the ATD initiative reported in *Moving Ahead with Institutional Change* (Mayer, et al., 2014) outlined five steps that guided participating institutions in the process for improving student success:

1. Enact policies and allocate resources to support efforts aimed at increasing student success.
2. Use data to understand how students are performing, to identify groups that may need extra support, and to prioritize action.
3. Engage faculty, staff, and other stakeholders in using data and research to develop intervention strategies designed to address problems that the institution identifies as priorities.
4. Implement and assess strategies by using evaluation results to make decisions about expanding or refining strategies.

5. Establish an infrastructure to support continuous, systemic improvement by institutionalizing effective policies and practices. Program review, planning, and budgeting are driven by evidence of what works best for students.

The two primary reports evaluating the effectiveness of ATD indicate progress in terms of colleges' laying the foundation needed for student success, particularly in the development of data systems, interventions to improve student success, and enhanced leadership commitment to student success (Mayer, et al., 2014; Rutshow, et al., 2011). However, scaling the interventions proved difficult. Relatively small proportions of students experienced intervention reforms undertaken at ATD institutions, in fact, the majority of strategies reached less than 10 percent of their intended target populations.

Student success work in the community college sector has benefited from many years of Community College Research Council studies, and recently the book *Redesigning America's Community Colleges: A Clearer Path to Student Success*, (Bailey, Jaggars, & Jenkins, 2015), which outlines a framework for student success. The argument is that to substantially increase student completion, community colleges must engage in fundamental redesign, including the improvement of developmental education, instruction, student supports, and the overall student experience along with broader institutional restructuring. The authors delineate research-based design principles and strategies to help colleges achieve redesign, and lay out a path for community colleges working to achieve greater success for their students. In addition, a host of authors contributed to a special issue of *New Directions for Community Colleges* titled, *The College Completion Agenda: Practical Approaches for Reaching the Big Goal* (Phillips & Horowitz, 2014), which succinctly describes the research behind the policies and practices being implemented and the impact on the student experience of efforts to increase the proportion of Americans with high quality college degrees and credentials.

Student Success Frameworks from External Organizations

Higher education has also been informed by frameworks produced in the corporate sector, and some with private foundation funding. The Education Advisory

Board's (EAB) Student Success Collaborative, for example, promises a combination of technology, consulting, and best practice research to help institutions leverage data and analytics, optimize intervention effectiveness and improve student success. EAB has created proprietary models of student success based on a synthesis of research, field-tested practices, and the evaluation of implementation effects, for a wide range of member institutions. Other businesses including Hobsons, a provider of college and career readiness, enrollment management, and student success solutions, deliver an array of models and tools to help colleges and universities improve student retention and success. Hobsons recently acquired the Predictive Analytics Reporting (PAR) Framework, Inc., which was founded in 2011 with funding from the Bill & Melinda Gates Foundation as a national membership collaborative to help colleges, universities, and higher education systems use data to improve postsecondary success. PAR offers member organizations tools and services to inventory and measure the impact of their student success interventions, benchmark their institutions' academic success in comparison to peer institutions, and predict which students are going to be at-risk.

The influence of technology, mostly in the form of predictive analytics about students that allow institutions to take the guesswork out of identifying students at-risk, provide a framework for selecting interventions to mitigate risks, and determine the best interventions for improving student success, is one of the areas of greatest growth in student success efforts. The empirically validated Predictive Analytics Reporting (PAR) framework (www.parframework.org/about-par/overview/) is a good example of predictive analytics. Guided by the PAR Student Success Matrix, institutions can conceptualize, inventory, and organize supports aimed at improving student outcomes. The PAR Framework leverages individual institutional records by aggregating these datasets into a single data resource, and applying a variety of exploratory, inferential, and descriptive techniques, to identify patterns of risk and then mitigates those risks with the appropriate interventions at points of need.

Final Word on Student Success Frameworks

The extant student success frameworks demonstrate that we know a lot about the conceptual underpinnings that account for and support student success. All of these models are in play across a range of contexts, some inform national policy on college access and affordability, others are part of state-wide college completion agendas, while others have been adopted voluntarily by consortia interested in advancing equity. What tends to stymie efforts to increase the numbers of students who finish what they start is that institutions for various reasons are not able to implement the kinds of policies and practices that seem to work with fidelity and in ways that are appropriate for their campus context and students. Equally challenging is that students themselves often encounter obstacles to educational attainment that cannot be anticipated or positively addressed by the institution.

What Does It Take to Improve Student Success?

As is evident from the discussion so far, there is no shortage of information about *what* to do to increase student success, ranging from theoretical constructs to empirically tested approaches to time-honored practitioner wisdom. Some faculty and staff at most institutions are generally aware of the array of policies, programs, and practices associated with fostering student success. Complete College America (CCA) is working with institutions in about 37 states and U.S. territories (see www.completecollege.org) to systematically implement tested “game changers” that promise to close achievement and skills gaps; including performance funding, co-requisite remediation, enrollment in 15 credits per term, structured schedules, and guided degree pathways (Complete College America, 2013; Dadgar, Venezia, Nodine, & Bracco, 2013).

Similar efforts are underway across associates- and bachelor’s-degree granting institutions to implement structured pathways to completion (Bailey, Jagers, & Jenkins, 2015; Johnstone, 2015) and how to improve developmental education -- understood to be the largest sieve in the postsecondary system -- more effectively (Reeves Bracco, Austin, Bugler & Finkelstein, 2015). While initiatives like Achieving the Dream (www.achievingthedream.org), with an active network of more than 200 community

colleges, has made a significant impact on closing achievement gaps and accelerating success among diverse student populations by implementing comprehensive, evidence-based institutional improvement in for example, developmental education, student and faculty engagement, student-centered supports and state policy reform.

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, or to advocate for the design of culturally relevant models for student success (Museus, 2013). For example, Strayhorn (2015) argues for the importance of holding high expectations for historically underrepresented students - particularly first-generation - and ensuring that they benefit from the assistance of “cultural navigators” people who help keep students on their path and guide them until they arrive at their academic destination. Other initiatives point to the importance of building and sustaining successful “place-based efforts” that capitalize on local talents and growing evidence-based programs to support Latino and low-income student success (Excelencia in Education, 2015).

Evidence about the effectiveness of a range of initiatives directed at improving success rates among historically under-represented students, including students of color and low-income, as well as academically underprepared students, indicates that success rates can be increased through systematic implementation of guided pathways, high-impact practices and accelerated study programs (Center for Community College Student Engagement, 2013; Finley & McNair, 2013; Johnstone, 2015; Kuh, O'Donnell & Reed, 2013). A new resource, *Committing to Equity and Inclusive Excellence: A Campus Guide for Self-Study and Planning*, AAC&U (2015), outlined a dozen campus practices to help campus educators advance equity in student success, including assessing the climate for underserved students with the goal of effecting a paradigm shift in language and actions, monitoring data to ensure equitable participation and achievement among underserved students, and making underserved student achievement visible and valued. In particular, higher education reform has been infused with greater awareness

of the ways in which many groups within US society have been historically excluded from educational opportunities, with an emphasis on increasing “equity-minded” practice that will lead to improved success rates among historically underserved populations (Dowd & Bensimon, 2015; Witham, Malcom-Piqueux Dowd, Bensimon, 2015).

Still others have identified critical points and experiences between high school and college that contribute to all students’ momentum to degree completion (Barnett, 2016). Nearly all colleges and universities have implemented activities associated with improved student retention and success, labeled “high-impact practices,” such as learning communities, first-year seminars, undergraduate research, internships and culminating experiences, that also enrich student learning (Kuh, O’Donnell & Reed, 2013; National Survey of Student Engagement, 2015) and others have invested in “gateway course” redesign and the power of academic analytics to improve student success rates in historically challenging courses (Stiles, Jones & Paradker, 2011; Twigg, 2005; Underwood, Varner & Koch, 2015).

The practices that make a difference to student success are abundant. Yet, the implementation of what works is at best uneven across institutions and among student populations. For example, some students may participate in multiple high-impact practices, while many may do just one, or none. Many institutions sponsor a litany of best practice solutions, including reformed gateway courses, supplemental instruction, intrusive advising, and curricular-embedded high-impact practices, but lack intentionality and focused efforts to ensure practices are implemented systematically and equitably. An absence of integration, particularly the importance of connecting curricular and co-curricular learning, has also been identified as limiting student learning and success (Keeling, 2004).

More recently, the critique about what it takes to improve student success has taken aim at the current smorgasbord of discrete, disconnected programs at most institutions. This has manifested as “solutionitis” the problem of “doing something, anything, to and for students” (Yeager, 2015). The field of improvement sciences has

expanded the diagnosis to include jumping to implement solutions before fully developing a clear sense of what is creating the problem (Bryk, Gomez, Grunow, LeMahieu, 2015). These circumstances suggest several remedies for higher education, including incentivizing adoption of what works at scale, targeting student populations most at-risk, investing in better problem identification, increasing intentionality and planning connections among programs, and enhancing organizational capacity. More specifically, it suggests the need for a conceptual structure, or framework, that appreciates and systematically maps the broad range of approaches about what to do and is plain about how this must occur.

Stakeholder Assumptions and Beliefs and the Student Success Agenda

The aforementioned frameworks and summary of current discussions about what it takes to improve student success offer a foundation and structure for understanding and building on student success. Another approach to exploring the current structure of the student success agenda in higher education is to examine underlying assumptions and beliefs. The emphasis on underlying assumptions is borrowed from evaluation research and the logic model approach, which is a method to evaluate the effectiveness of a program by depicting how an organization does its work and assessing the causal relationships between the elements of the program. This approach underscores the importance of knowing not only *what* the program expects to achieve but also *how*, and for clarifying stakeholder assumptions and expectations about how and why a program will solve a particular problem. Logic models can include stakeholder assumptions and beliefs about the program, the context, the way they think the program will work, as well as their views about external factors such as the environment in which the program exists and how this influences action.

No literature review is complete without examining the underlying assumptions about student success held by different groups of higher education stakeholders. They include: higher education scholars, institutional sectors (community college, bachelors-granting, public, private, for-profit, online etc.), higher education associations and organizations, federal and state policymakers, policy organizations, advocacy groups,

foundations, accreditors, student and parent organizations, and corporate/consultant groups. This analysis is not exhaustive, but illustrative, designed to identify points of convergence as well as the distinctly different views of what is meant by student success and how to address the challenge.

An example of convergence in assumptions is found in the sponsorship by six higher education associations of the Student Achievement Measure (SAM), which provides a system to measure student advancement and completion and improves on the current federal tracking model by including students who enroll in multiple institutions. SAM demonstrates a unified concern about demonstrating and tracking college completion. Yet, even among the SAM sponsors there are distinct differences in perspectives on student success. For example, the Association for American Colleges and Universities (AAC&U) broadly identifies purposeful pathways from school to and through college, inclusive excellence, and the achievement of essential learning outcomes and democratic and liberal education, as markers of student success. In contrast, the Association of American Universities (AAU), an association of 60 U.S. and two Canadian public and private research universities, features increasing access as a lever to promote student success, and is squarely focused on initiatives to reform and strengthen undergraduate teaching and learning in the STEM (science, technology, engineering, and mathematics) disciplines and closing the gender and racial-ethnic gap among STEM completers at its member universities. Differences in college and university mission, from community colleges' emphasis on access and success to research universities focus on academic excellence and inclusiveness, illustrate the unique views among institutions of higher education about student success and how it can be achieved.

Regional accreditors also have a fairly consistent belief about 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 slightly more expansive definition of student

success, noting that student success includes not only strong retention and degree completion rates, but also high-quality learning; adding that students must be prepared for success in their personal, civic, and professional lives, and that they embody the values and behaviors that make their institution distinctive. Heightened expectations for evidence of student success, specifically data about retention and completion rates, time-to-degree and other measures of educational quality, reflect accreditors' affirmation of the need for greater attention to student success.

Federal and state government conceptions of student success in postsecondary education generally express the need for greater student access to and completion across a range of affordable credentials in a timelier way. The assumption is that improved degree completion will help more citizens be prepared for the knowledge economy, and that higher education is a key investment in human capital. In addition, concern about closing achievement gaps and better serving historically under-represented students, is receiving greater emphasis in states. Another current state assumption is related to funding. The shift from enrollment to outcomes-based funding in 32 states, supported by evidence that the provision of financial incentives for institutions leads to institution-level enhancements to student success and improved student outcomes (Hearn, 2015; Zaback, Carlson, Laderman & Mann, 2016), reflects a strong belief in incentives to improve student outcomes.

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. 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.

Other advocacy groups, including the United States Student Association and the Young Invincibles, work to engage young adults on issues including higher education and jobs, believe in the importance of greater access, affordability, and completion for

underrepresented student populations and the value of amplifying the student voice in local, state and national levels.

Although every set of stakeholders and higher education groups has their own perspective about student success, they share **nine broad propositions** about 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.

Stakeholder Themes about *How to Achieve Student Success*

In addition to these nine core propositions, we analyzed the range of stakeholder perspectives to identify common themes about *how* success will be achieved. Four broad themes were consistently represented across stakeholder groups.

- **Factors that create inequities in student success rates must be addressed early in the educational process.** Prospects for postsecondary success have roots in students' early lives through the influences of families, peers, teachers, counselors, cultural factors, and K-12 school curriculum and experiences. Therefore, it is essential to provide postsecondary information early, accurately depict the college going experience and consider the complexity of the challenges that some students face to get to college. For example, affordability impacts students' ability to succeed, both in terms of access and retention; however, solely providing funding is not sufficient. Funding should be provided in conjunction with other support services and resources and flexible payment structures should also be made available. Even more, the social, cultural, economic, and psychological factors rooted in earlier years continue to affect student success in the postsecondary environment.
- **An institution's context and culture matter to how student success is defined, addressed and achieved.** Institutional definitions of student success differ, given their unique missions, traditions, programs, and the characteristics of the students served. Context should be kept in mind to address success. Campus climate and culture must be shaped to promote student success. The total learning environment, including in and outside the classroom, contributes to

student success. Campus and student group specific barriers to student success must be identified and remedied.

- **Both the promising practices and implementation fidelity matter to fostering greater levels of student success.** Certain core, intentionally designed and empirically-validated policies and practices are essential to student success. At the same time, the simple replication of initiatives that seem to work elsewhere may not be effective. Rather, local initiatives must be adapted to address the needs of the target student populations and be appropriate to the institutional context. In addition, scattershot implementation of student success practices will likely have limited impact. Although most colleges and universities do many things that positively influence student success, the identification and divestment in ineffective programs and practices is important. Institutional programs and practices must be continually assessed for quality and impact.
- **Student success is everybody's business.** Everyone has a role to play in student success – faculty, staff, administration, and students (as well as parents, donors, and community members, too); in fact, student success initiatives are most effective when all members of the campus community are committed to their goals. Student voices are also an integral part of defining and striving for success. With the increase in mental health concerns on campuses as well as violent and racist incidents, it is imperative that student success is addressed in holistic ways

Although these themes are not new (see Kuh et al., 2005, 2010), they represent what needs to happen to address the challenge of student success. Overall, the propositions about what matters to student success common to various stakeholders should inform the development of student success frameworks.

Review of Lumina Foundation's Student Success Framework

By now, it is apparent that there are significant, nontrivial challenges associated with efforts to improve students' odds of success in postsecondary education. To address these challenges and achieve Goal 2025, Lumina commissioned the development of the Student Success Framework (SSF) to mobilize higher education to

adopt evidence-based policies, practices and partnerships that would identify actionable pathways that colleges and universities could create to improve student persistence and completion rates. The current SSF is a comprehensive, multi-faceted guide for organizing student success in higher education including tools, resources, practical examples, and diagnostics to help catalyze action. It features three key elements: (a) five *domains* that are essential to create an institution designed for student success; (b) *diagnostics* that makes it possible for users to assess where to focus and learn about external assessment tools and metrics, and (c) *playbooks* for each domain that includes checklists of what to do to improve.

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Strategies and Recommendations for Building Student Success Frameworks

Our broad review of student success literature, identification of assumptions and beliefs and exploration of frameworks, and examination of Lumina’s SSF, reveals a strong foundation of research and wide range of stakeholders and practices. Yet, current approaches to student success have not sufficiently advanced the completion, quality and equity goals. More systemic and intentional implementation of proven approaches to improve student success, rather than continuing the practice of piling-on solutions, is a clear recommendation. Increased equity-mindedness among more educators and practitioners and the implementation of effective equitable practices is also critical to advancing the completion agenda. It is apparent that a wide array of research-based strategies and approaches are still needed to increase student success.

A key missing link in student success efforts remains a broad conceptual framework to support the range of approaches across all higher education institutions and credentialing units. Today’s agenda for student success needs a better representation of the *how* of student success -- a conceptual structure that offers a comprehensive representation of the key structural components for student success, emphasizing *how* student success will be achieved.

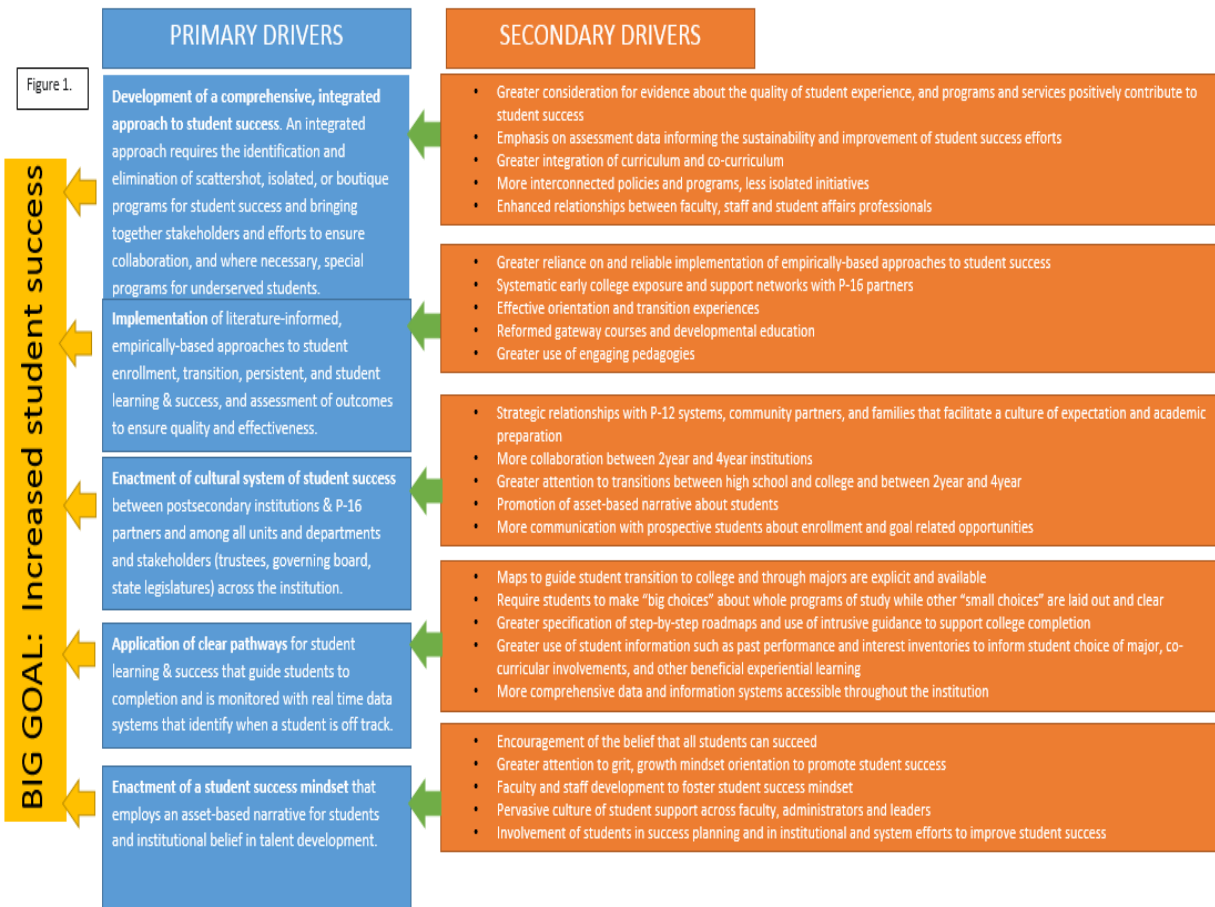
An Approach to Representing Student Success: Driver Diagrams

As the discussion of extant frameworks suggests, there are many models for student success; however, they overlap in substantive ways, covering much of the same ground so to speak. After reviewing the literature and current models, and considering emerging approaches being employed in other areas of higher education, including the National College Health Improvement Project study on high-risk drinking and the Carnegie Foundation Advancement of Teaching study of how faculty and colleges could help students develop study skills and mindsets to be successful in mathematics, we concluded that student success would benefit from the development of a “driver diagram” to depict “the how” of student success.

Drawing on an approach from improvement science (Langley et al. 1996), a driver diagram explicates how a proposed solution path responds to understandings of a problem (Bennett & Provost, 2015). Briefly, the driver diagram requires attention to the specific hypotheses undergirding improvement solutions. Driver diagrams are a type of structured logic chart with three or more levels including (a) the description of a goal or vision, (b) specification of the major causal explanations hypothesized to produce the goal, known as the factors or “drivers” necessary to influence the goal, and (c) the specific activities or interventions that would act to improve these factors. Driver diagrams explicate a “theory of change” by elucidating 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 (research notes about driver diagrams is in Appendix B).

The driver diagram we begin to flesh out in this report focuses on the big goal to “increase student success” and then identifies how to get to the goal (Figure 1 below, and larger version in Appendix C).

Figure 1. Student Success Driver Diagram



The primary drivers of the goal include a range of actions postulated to need to occur to achieve the goal. The primary drivers include the following:

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 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, persistent, and 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 and 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 and that is 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 drivers in the diagram identify the range of underpinning factors, or secondary drivers, that explicate the more concrete, operational actions that must occur. Secondary drivers must link to primary drivers, and are typically interrelated. The secondary drivers in the student success model incorporate many of the practices identified in the SSF domains and playbooks. The bullets in the secondary driver boxes correspond to the primary driver boxes.

Secondary Drivers:

Box 1. Development of comprehensive, integrated systems for student success

- Greater consideration for evidence about the quality of student experience, and programs and services positively contribute to student success
- Emphasis on assessment data informing the sustainability and improvement of student success efforts
- Greater integration of curriculum and co-curriculum
- More interconnected policies and programs, less isolated initiatives
- Enhanced relationships between faculty, staff and student affairs professionals

- Clear and comprehensive financial supports
- Greater attention to the achievement of student learning outcomes, student development and non-cognitive skills, civic goals and students educational and personal goals
- Connect developmental education with supportive educational programs including learning communities and link to academic programs of study
- More holistic approach to addressing students' current realities (financial stress, food insecurity, sexual assault, racism)
- More measurement and benchmarking of student success interventions
- Continuous monitoring and improvement systems address inequities in student success

Box 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
- Investment in wide-spread, high-impact practices with attention to equity
- More widespread active and applied learning experiences
- Intensified efforts to increase student engagement
- Support for developing students cognitive and “non-cognitive” skills
- More refined adaptation and integration of approaches to address student population needs and institutional culture
- Extensive assessment of outcomes for student support services to assure quality

Box 3. Enactment of cultural system 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 2year and 4year institutions
- Greater attention to transitions between high school and college and between 2year and 4year
- Promotion of asset-based narrative about students
- More communication with prospective students about enrollment and goal related opportunities
- Recognition and reward for cultural navigators, faculty and staff that guide and support students
- Stronger relationships and information sharing with potential employers
- Strategic leadership for student success goals involving participants from across the campus
- Greater involvement of institutional stakeholders including trustees, governing boards or state legislators on the student success goals
- Attention to under-served student populations and the identification of appropriate approaches to serve them
- Ensure faculty and staff have opportunities to critically examine their practice, language approaches and the extent to which they contribute to the context of exclusionary practices and racism in higher education and provide support to remedy problems
- Greater consideration for the cultural context and climate for diverse student populations
- Faculty and staff development to support practices for inclusive excellence

Box 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
- Greater use of technology, including student information systems, advising systems, and predictive analytics, that take the guesswork out of identifying students at risk, and provide clear frameworks for selecting interventions to mitigate risks, facilitate early warnings, and track student progress
- Continuous monitoring of student success throughout student lifecycle with prompt interventions
- Improved diagnostic and placement of students including prior learning assessments
- Milestone courses that identify if a student is on track, provide realistic assessments of student progress, and give students early signals about their prospects for success in a given field of study
- Streamlined pathways to majors and careers with integrated experiential opportunities and high-impact practices
- Greater connection between students desired career outcome and links to relevant workforce experiences
- Continuous processes of learning, disaggregating data, and questioning assumptions to examine equity
- Program review processes that allow faculty to better define and prescribe instructional programs, so that program requirements are clear and course sequences efficiently guide students to a degree

Box 5. Enactment of a student success mindset

- Encouragement of the belief that all students can succeed
- Greater attention to grit, growth mindset orientation to promote student success
- Faculty and staff development to foster student success mindset
- Pervasive culture of student support across faculty, administrators and leaders
- Involvement of students in success planning and in institutional and system efforts to improve student success
- Promotion of an assets-based narrative
- 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

In sum, the student success driver diagram offers a structured representation for achieving the goal to increase student success. It depicts how to achieve the overall goal, shows how factors are connected, and provides a communication tool for explaining the overall change strategy. It builds upon shared knowledge gleaned from research, observation and practice. Most important, the driver diagram offers a logical, flexible framework illustrating the structural components for student success, emphasizing *how* student success will be achieved. An institution could, for example initiate a driver diagram exercise with a small team focused on accelerating improvement in student success. They would begin by assessing the extent to which the primary drivers, which are presumed to be necessary and sufficient for achieving the outcome, resonate with their institution and experience. After confirming and refining the primary drivers the group can map secondary drivers – identifying as many specific practices, policies and programs as possible – what they believe contributes to, or more importantly, must be implemented or changed to address the primary drivers. The use of a driver diagram recognizes that change is required to improve a system, and theory is used to articulate the knowledge about how to achieve the aim of increased student success. Again, the diagram provides a representation of the complexity of the overall

improvement strategy. Once the driver diagram is visualized, project implementation work can begin and the tool can be refined as learning occurs.

Lessons Learned from Testing the Driver Diagram Model

The proposed Student Success Driver Diagram (Figure 1) was derived from relevant literature and research on student success. Although the primary drivers, which explicate high-level factors necessary to influence and achieve the goal, are generally well-anchored in existing research and proven practice, the true test of the utility of the diagram is with practitioners interested in applying the model to achieve student success goals, and in particular, the refinement of secondary drivers and change strategies that specify projects and activities that would act upon the primary drivers. While this grant was not designed as a demonstration project, and did not include funds to test the model, several naturally occurring opportunities including conferences and meetings focused on student success were leveraged to share and get feedback on the model. Although these were not designed as systematic opportunities to share, test and collect feedback on the model, they each provided occasions to collect insights regarding the larger goal of increasing student success and the utility of the driver diagram as a solution path to increasing student success.

Conversations with student affairs professionals and academic affairs administrators about the challenges of increasing student success revealed shared concerns, including: a) heightened pressure to increase first-year student retention, and in particular, for first generation, low-income, minority, disabled, adult, part-time, transfer, veteran and other under-served students, b) the struggle to improve academic advising and counseling and gateway courses to ensure students are on a clear path to completion, c) implementing “coaching” models to support student success, d) using predictive analytics and data systems to monitor student success, and e) collaborative leadership for increasing student persistence, among others. Although these practitioners tended to focus on specific interventions and approaches in their discussion about student success, their comments about broader challenges reinforced literature, research and stakeholder group findings outlined in this Report and pointed

to the relevance of several of the primary drivers, including: the need for an integrated approach to student success, implementing empirically-based interventions, and creating clear paths and data systems to monitor progress.

Student and academic affairs professions affirmed the relevance of the primary drivers, but notably interpreted the drivers in ways that emphasized their unique professional perspectives. For example, student affairs professionals homed in on the integrated approach to student success and expressed concern about the pressure to respond to a wide range of individualized student care needs to improve success rates, while the academic affairs administrators identified integrated and empirically-based approaches and clear pathways as their focus, and raised concerns about evaluating the effectiveness of coaching models and early alert systems, gaining faculty buy-in on gateway course improvements and advising, multi-term registration, and implementing emergency and “last mile” financial aid programs. The primary drivers generally resonated with these audiences, but student affairs professionals wanted more emphasis on the pressing factor of highly-diverse students entering college with greater needs, including mental health, financial and food insecurities and overall well-being.

Another group sharing at a convening in November provided an occasion to probe the model with institutional research professionals and practitioners at two- and four-year institutions committed to improving student retention and success. This conference afforded the opportunity to formally present the model in a session and invite feedback on the approach and primary drivers. This audience was very knowledgeable about what it takes to increase student success. Participants shared empirical evidence about what worked at their institution or in their system. For example, evidence of developmental education redesign that replaced placement with skills assessment, integrated transition to college strategies into courses, and employed key pedagogies, and their impact on retention and success were demonstrated. In another example, academic tutoring/coaching focused on specific behavioral interventions, and improved early alert predictors and systems, and overhauled academic probation practices and policies, were shown to increase student success.

Predictive modeling and analytics that identify “at-risk” students and help monitor when a student is off-track were key drivers of interest for participants. Interestingly, this audience also mentioned public pressure to improve student success as a motivator. They were concerned about the influence of negative rhetoric about the value of college, declining affordability and rising student debt, a lack of connection between K-12 and college educators, and skepticism about students’ preparation for 21st century workplace, and its impact on the goal to increase student success.

Although the student retention conference participants were quite knowledgeable about what works to increase student success, they expressed interest in models that would provide a broader representation of the “how” of student success. They appreciated the potential of the Student Success Driver Diagram as a conceptual representation of the key structural components for student success and about a dozen participants expressed an interest in considering it in relation to their institution and system-wide efforts to improve student success. Participants commented that the primary drivers appear connected and relevant to their existing work, it offers a wider frame for considering all the key factors simultaneously, and could offer a structure for refining secondary drivers appropriate to their context to which projects, activities and specific interventions could be linked.

The search for naturally occurring opportunities to test the model demonstrated that professional organizations are broadly addressing the topic of student success, and that higher education professionals are generally aware of interventions and approaches that work. However, the Student Success Driver Diagram seems to meet a need for a conceptual framework to explicate *how* to increase student success. This very modest testing of the model suggests that driver diagrams could be a useful component of the toolkit to increase student success.

Further refinements and testing of the driver diagram model must be undertaken to advance the model to use in the field. Our next steps with the model include submission of a manuscript for publication that covers contemporary issues in higher education -- a readable magazine format like *Change* that reaches a wide audience of

practitioners in colleges, universities, corporations, government, and readers including faculty, administrators, trustees, state and federal officials, accreditors, foundation officers, and students. This article will make a case for the approach, describe how the model can be tested in practice and refined, and will include some institutional examples of secondary drivers. Additional presentations of the model at conferences can also provide occasions for testing. We will endeavor to share the model where relevant. The production of straightforward resources describing use in institutions, systems and other coordinated efforts, could be developed next. Testing the driver diagram with institutional teams and practitioners and sharing it more widely to encourage adaptation are important next steps.

On a related note, the search for opportunities to share the model also exposed the relatively few convenings that explicitly address student success. The National Student Success and Retention conference and perhaps the AAC&U Diversity, Learning and Student Success conference, and DREAM, the annual convening of the Achieving the Dream National Reform Network in the two-year sector, provide faculty, staff, and administrators opportunities to engage in meaningful and collaborative conversations about practices and strategies that positively impact student persistence and success. Additional institution-based and regional conferences, including the Annual Maricopa Community Colleges Student Success Conference, and the new Kresge Foundation sponsored statewide student success conference at Oakland University, as well as small, more focused conferences, 2016 NASPA Closing the Achievement Gap: Student Success in Higher Education Conference, afford practitioners professional development opportunities, but the few national convenings on student success may inhibit advancements across sectors and in the field.

Recommendations for Mobilizing Higher Education for Student Success

The student success literature and frameworks discussed in this report document the rich, still growing body of theory and research and many practical strategies for advancing students' postsecondary success. Many efforts have been made to increase access and enrollment in higher education, address lagging completion rates, smooth

students' transition, and improve educational quality. Most of the approaches are well-grounded in empirical research and have made a demonstrable difference for student success. However, current approaches fail to address persistent inequities in access, completion and quality, and fall short of what is needed to increase student success rates and achieve Goal 2025. These shortcomings include: a) a success narrative that too easily blames students, b) conceptions of student success that focus too narrowly on completion, without equal attention to educational quality, c) a deficiency of illustrations of equity-minded practices, and d) piling on solutions instead of implementing problem-focused, integrated, improvement-oriented strategies. It is critical that efforts to mobilize higher education for student success address these shortcomings.

Lumina's investment in the Student Success Framework (SSF) offered a useful, easy to understand structure to guide the field and in particular, to help colleges and universities design for student success. The domains and checklists reflect the practices that matter for student success. The extensiveness of the items in the checklist document that there is no shortage of material about *what* it takes to increase student success. Unfortunately, while the checklist in the SSF seems like a clear list of ingredients for ensuring student success, the current circumstance of solutionitis makes it all too easy for colleges and universities to run down the list, identify their programs and practices that match up to items on the list, and declare mission accomplished. Missing from this approach are critical reflections about equity and quality and assessments that gauge the effectiveness and level of integration of efforts. Even more, the checklists emphasize the "know-what" aspects of student success, when the field seems to need more "know how" to advance to Goal 2025.

Key next steps are to develop a more comprehensive framework that incorporates the shortcomings in the SSF, namely greater attention to equity-minded practice and educational quality, and focuses more squarely on the critical elements regarding *how* increased student success will be achieved. The expanded 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 unique 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 common framework leads us to affirm the conclusion that a one size fits all student success framework is not feasible or beneficial. Clearly, there are core elements that should be addressed in any effort to help students succeed. And it may be possible to craft some specific models for the four- and two-year sectors, and state systems, and other groups. More to the point, any framework will have to be adapted to an institution’s context and culture, educational purposes, and students and so forth. The key is what Bryk et al. (2015) and others in the improvement science field are calling implementation with fidelity, or better, implementation with integrity, in which the achievement of outcomes requires recognition of the complexity of programs across diverse settings and is dependent on building knowledge and skill among practitioners regarding what needs to be done in their situation. In the case of student success frameworks, it means knowing what research-based principles are salient, what is required to make a framework effective in context, and how to implement, learn from local research on what is making a difference for which students, and learning from others on the same journey.

This report outlines the initial framing of the components of a broader conceptual framework for student success. It also proposes an approach to diagramming the work that could be helpful to institutions working to get beyond one-off solutions and temporary fixes, and helps more students have a fair chance of completing college, and moves institutions forward to address current and imminent issues for student success.

Reflecting on this review, we offer Lumina **four sets of suggestions to inform its next strategic plan** and related investments to mobilize higher education for student success. They are:

- a) require that interventions to increase student success such as guided pathways be based on demonstrably effective policies, programs and practices;
- b) make explicit how student success efforts are complementary and integrated as contrasted with the common practice of piecemeal incrementalism -- adding one more program or solution to an already crowded array of student success initiatives;
- c) use real-time data monitoring systems to study implementation efforts, and evaluate the efficacy of modified policies and practices: and,
- d) invest in additional field-based research to discover the additional promising structures and strategies that actually work in different institutions settings to advance and sustain gains in educational quality and inclusive excellence.

Incentivizing Advances in Student Success

This report provides a comprehensive summary of current strategies, research and practice regarding efforts to increase the number of students who earn credentials including associate and baccalaureate degrees and provides suggestions for additional work to enhance student success strategies moving forward. In this final section, we identify some elements of a strategy for advancing the work in the near term and document the links between these elements and the five primary student success drivers.

As noted from the beginning, student success is a multifaceted construct. One essential component is earning a postsecondary credential. For many reasons, as rates of educational attainment rise, both individuals and the larger society benefit in numerous, positive ways. Indeed, policy makers, government officials, business leaders, parents, and even many students seem to be fixated on “the completion agenda,” represented by the award of a badge, certification, certificate, associate degree, and baccalaureate or some other formal recognition of learning from experience.

However, completion is a hollow achievement if students *do not acquire* the knowledge, proficiencies, and dispositions that will enable them *after college* to live a self-sufficient, civically responsible, satisfying life.

The learning outcomes that make up the foundation of success during and following college are arguably the core function of the postsecondary education enterprise. Sadly, the national discourse about collegiate quality gives too little attention to the outcomes promised by postsecondary education. And while colleges, universities, and other providers are collecting more data than ever about student performance, there is embarrassingly little evidence to show that this assessment information has improved student accomplishment.

One plausible explanation for the limited impact of improvement efforts is that too few institutions, faculty, and student support staff are using effectively the policies that many studies have demonstrated to be promising in fostering student success. While more investigations into the conditions that foster student success will always be welcome, the most urgent need is to find ways to incentivize faculty, staff, institutional leaders, and governing boards to implement what are known now to be demonstratively effective policies and practices.

So why has it been so difficult to get colleges and universities to do the right thing and adopt and adapt promising practices? And what is keeping schools from prompting their faculty and staff to do so?

Incentivizing academics to do most anything is an extraordinarily difficult, bedeviling challenge.

At first blush, this statement may seem disingenuous or apologist. But like it or not, it accurately describes the circumstances experienced by many institutional leaders who are committed to improving institutional and student performance but become frustrated by their inability to successfully encourage or cajole their faculty and staff to do more frequently what works to foster student success. And here is part of the reason why.

Many colleges and universities – especially those that grant baccalaureate and advanced degrees -- are loosely coupled systems. That is, many functions of the institution as an organization are decentralized, meaning policies and practices are enacted at the unit level independent of in ways different from what was intended by a centralized coordinating entity. The larger the institution, the more loosely coupled it is likely to be. Moreover, the postsecondary workforce (faculty and staff) is highly educated and enjoy considerable personal and professional autonomy, especially compared with other highly educated workers in other contexts; thus, they rely essentially determine *what their work is* and *how they go about it*. In the extreme, academics can be said -- and sometimes are seen -- to operate with impunity. Yes, reward systems matter. But most institutions are cash strapped, so there is not enough money available to attract the interest and modify the behavior of large numbers of faculty and staff. The other rewards important to academics, such as promotion and tenure, are influenced as much by disciplinary and professorial norms than local circumstances. These and other characteristics common to postsecondary institutions combine to create a culture that is less responsive to administrative edicts or the kinds of incentives that shape behavior in, for example, the for-profit sector.

Many institutions have been able to work around or through these organizational features and cultural webs to create conditions that promote greater levels of student success; one of the best summaries of such efforts is *Student Success in College: Creating Conditions That Matter*, a multi-year study of 20 strong performing colleges and universities funded by Lumina. There continue to be many lessons to be learned by policy makers and institutional leaders from these and other schools that are highly engaging and focused on student success.

But to advance and support system-wide change, a systemic, long-term campaign strategy is needed. Essential to such a campaign is harnessing “outside-in” pressures (e.g., accreditors, SHEEOs, professional associations, business leaders) in ways that impel institutions and supporting organizations to commit to the work. It is

clear that too few colleges and universities have figured out on their own how to do what is required.

Here are some of the elements of such a strategy.

1. **Prepare the next generation of faculty members to be knowledgeable about and proficient with student success pedagogical approaches including advising as well as asset-based and culturally relevant approaches to teaching and learning.** Enlist the Council of Graduate Schools, American Council of Learned Societies and individual disciplinary associations to jointly mount a campaign endorsing something akin to a certificate representing knowledge about and experience with using engaging pedagogies to be earned by doctoral candidates who aspire to a postsecondary teaching position. We can imagine something similar for personnel who work with students outside the classroom (e.g., academic advisors, student affairs professionals). A number of institution-specific tactics are needed to scale student success practices and the philosophy that undergirds them.
2. **Launch a multi-year national campaign lead by a consortium of national organizations (e.g., ACE, AAC&U, AACC, AASCU, APLU, CIC) describing, advocating, and celebrating student-success friendly promotion and tenure policies that can be adapted to local circumstances.** This will require more than simple tinkering with or rewording certain performance criteria and likely will yield new designations in addition to the traditional teaching, research and service and rewards for different instructional and advising roles. Perhaps revisiting the Boyer alternate forms of scholarship can help inspire innovative thinking about this issue.
3. **Persuade accreditors to work together to double down on their requirements that institutions report on their student success goals and strategies, provide evidence of performance on key student success outcomes, and show evidence of making progress on improving student success, specifically completion and learning outcomes.** Accreditation is a key incentive lever, as the process is about

both assuring quality (accountability) and improving teaching and learning and other dimensions of student success. Like it or not, accreditors remain the most important driver for colleges and universities to assess student learning outcomes and, arguably, could further influence institutions to be more intentional about implementing policies and practices associated with fostering student success. It would also be helpful if accreditors formally expected and looked for evidence that faculty and staff members were engaging in such activities as gateway course redesign, learning analytic and other tools to provide students feedback on their performance and success and pathways that guide students to completion, assignment design that correspond to outcomes frameworks such as the Degree Qualifications Profile, and were using real-time technology-enabled student assessment, and ePortfolios as a high-impact pedagogy and record keeping system in their courses and programs. Making student participation in two or more high quality, high-impact practices inescapable is another key. Even more, some accreditors emphasis on quality improvement initiatives focused on student learning and success provide another lever to encourage the infusion of empirically-based approaches, and the assessment of outcomes to ensure quality and effectiveness. Taken together, using these approaches will almost certainly result in higher levels of student attainment, especially for students from historically underserved populations.

4. **Support the delivery of ongoing professional development on student success.** Campus-based, regional or member association professional development opportunities are essential to encourage and support faculty and staff members to experiment with promising practices. Such efforts are needed to maintain institutional enthusiasm for and support for the work. Key to making student success a priority that animates effort toward the desired ends is the enthusiastic support of provosts, deans, and department chairs as are senior faculty who have earned and enjoy the respect of their colleagues.

5. **Regularly convene groups of state system executives, policy makers, business leaders, and institutional representatives to discuss student success policies and practices** that work and garner support for funding schemes that support institutions to use such policies and practices and experiment with complementary reward systems. This is particularly needed to address the enactment of cultural system of student success between postsecondary institutions and P-16 partners and among all units and departments and stakeholders (trustees, governing board, state legislatures) across institutions. Making policy makers familiar with and endorsing promising student success policies and practices will be every bit as challenging (maybe more so) than engaging accreditors in an appropriate, effective manner. After student debt, the current policy environment related to postsecondary education is fixated on completion with student success practices, equity and inclusive excellence, and the quality of the credential as evidenced by demonstrated proficiency, at best afterthoughts.
6. **Encourage national leadership by a consortium of philanthropies.** All of the above mentioned activities must be coordinated, branded and funded by a consortium of philanthropic organizations committed to the work for a substantial period of time (e.g., ten years). The development of a comprehensive, integrated approach to student success requires the identification of and the elimination of scattershot, isolated, duplicative, or boutique programs and initiatives for student success and bringing together a range of stakeholders and efforts to ensure collaboration. Anything short of that will likely produce more of the same.

These six elements specify what would help advance and support system-wide change. Connecting the approaches with the primary drivers in the Student Success Driver Diagram further illustrates the linkages between incentives and the model and combined, begins to suggest potential partners in the effort. Some connections are and potential partners are depicted in Figure 2.

Figure 2. Mapping Incentives to Student Success Drivers and Partners

Incentives	Student Success Primary Drivers	Partners
Prepare faculty to be knowledgeable about student success	Enactment of student success mindset	Council of Graduate Schools; American Council of Learned Societies; Disciplinary associations; POD and NISOD faculty development networks; NACADA; NASPA/ACPA;
Launch multi-year campaign, led by consortium advocating for student success-friendly promotion & tenure policies	Enactment of student success mindset	ACE; AAC&U; AACC; AASCU; APLU; CIC; AGB; AAUP; AFT; NEA
Persuade accreditors to double down on student success reporting requirements	Application of clear pathways for student learning and success Implementation of literature-informed, empirically-based approaches	Regional accreditors; C-RAC;
Support delivery of ongoing professional development on student success	Development of comprehensive, integrated approach to student success Implementation of literature-informed, empirically-based approaches Enactment of a student success mindset	Campus-based, regional or national member associations, including AAC&U; AGB; ACE; SHEEO; NASPA/ACPA; CIC; AASCU; MHEC; GLCA; ACM; AACRAO; AACC; League for Innovation
Convene influential groups - state system executives, policy makers, institutional representatives - to discuss student success policies and practices that work and garner funds to support institutions to use such policies and practices	Implementation of literature-informed, empirically-based approaches Application of clear pathways for student learning and success	SHEEO; AACRAO; ECS; AGB; AACC; League for Innovation; Business Higher Education Forum; Corporation for a Skilled Workforce; Center for Education and Workforce; CSRDE;

Encourage national leadership by consortium of philanthropies to commit to supporting integrated student success effort	Development of comprehensive, integrated approach to student success Enactment of cultural systems of student success	Higher education philanthropies
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Caveat

This report presents a broad picture of the student success landscape that can be used to craft actionable frameworks for student success. While much good work has been done by individual institutions, national organizations and other groups to document and demonstrate promising policies and practices that foster student success, what has not yet been demonstrated is the extent to which the promised benefits have been realized by large numbers of students or improved institutional performance. This statement is not a summative judgment; rather it points to a non-trivial challenge, given that the history of innovation in American higher education is replete with efforts that failed to live up to their promise of improving student outcomes.

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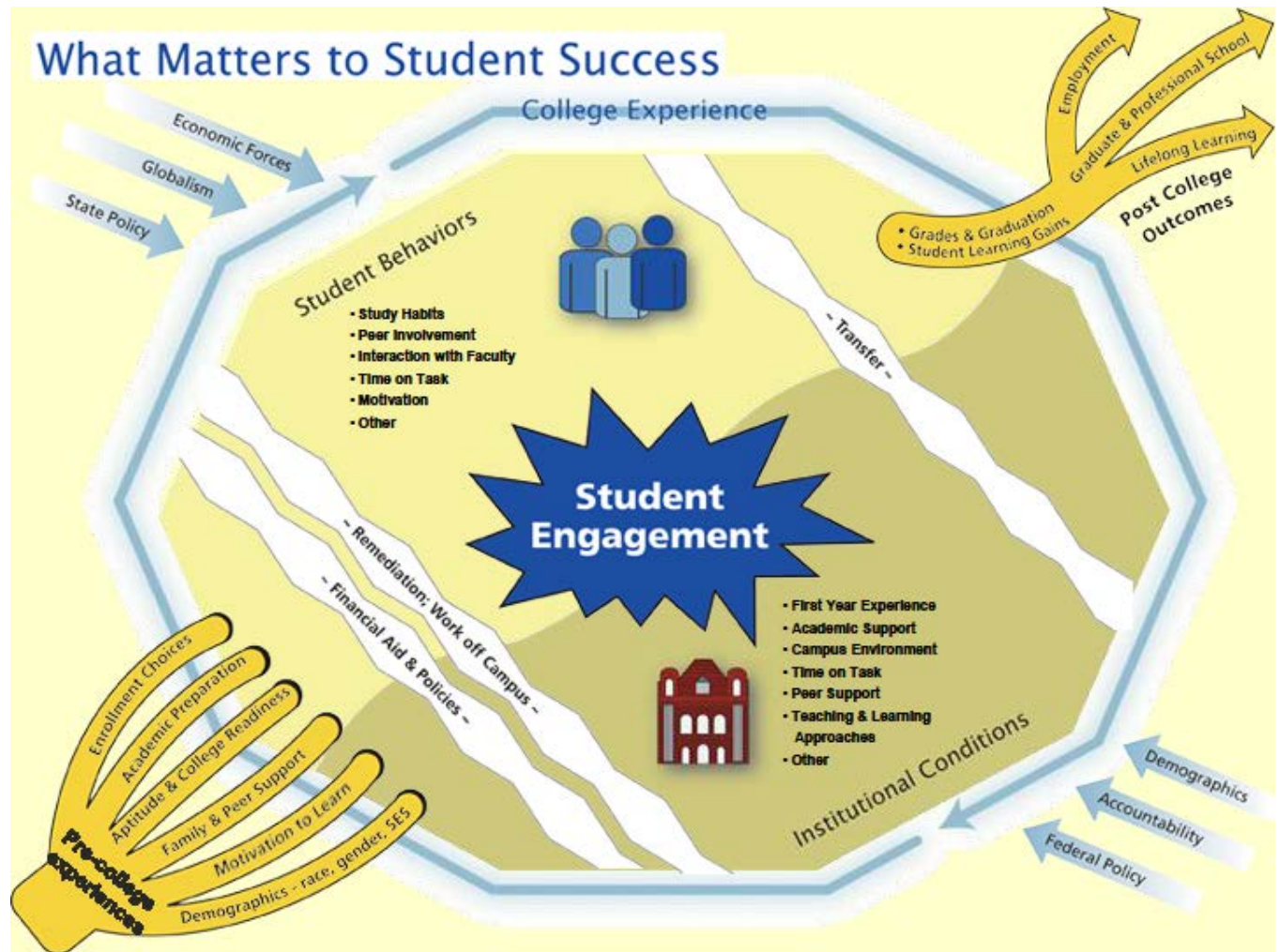
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Appendix A. What Matters to Student Success Schematic (Kuh, et al., 2006).



Appendix B. Research Notes about Driver Diagrams

Drawing on an approach from improvement science (Langley et al. 1996), a driver diagram explicates how a proposed solution path responds to understandings of a problem. In brief, the driver diagram requires attention to the specific hypotheses undergirding improvement solutions. Driver diagrams are a type of structured logic chart with three or more levels. The three levels include specification of:

1. a goal or vision
2. high-level factors necessary to influence and achieve the goal (“primary drivers”)
3. specific projects and activities that would act upon these factors (called interventions or in some cases, “secondary drivers”)

The goal or vision specifies one agreed upon outcome. The primary drivers are the major causal explanations hypothesized to produce currently observed results. Interventions or secondary drivers, in contrast, are interventions aimed at advancing improvement toward the goal. The specification for a secondary driver is that it connects the intervention with understandings about primary drivers. In so doing, an explicit causal explanation of problem-solution is developed. For more complex goals the number of levels in a driver diagram can be expanded so that each primary driver has its own set of underpinning factors (i.e. ‘secondary drivers’ etc.). It is these secondary drivers that would then be linked to projects and activities.

Driver diagrams provide a “theory of change”. They can explicate the factors that need to be addressed to achieve a specific overall goal, show how the factors are connected, act as a communication tool for explaining a change strategy, and provide the basis for a measurement framework. Driver diagrams are best used to determine the range of actions to undertake to achieve a goal. Driver diagrams provide a tool for explaining a project’s purpose and showing how the project activities will deliver that aim. Driver diagrams are intended to be flexible, and modifiable, but generally, the primary drivers are required strategies for achieving the overall goal, while the secondary drivers represent a range of interventions that could be implemented to

make progress toward the goal. The secondary drivers are the main site for tailoring to institutional needs and mission.

Appendix C.
Student
Success
Driver
Diagram

BIG GOAL: Increased student success

PRIMARY DRIVERS

SECONDARY DRIVERS

Development of a comprehensive, integrated approach to student success. An integrated approach requires the identification and elimination of scattershot, isolated, or boutique programs for student success and bringing together stakeholders and efforts to ensure collaboration, and where necessary, special programs for underserved students.

Implementation of literature-informed, empirically-based approaches to student enrollment, transition, persistent, and student learning & success, and assessment of outcomes to ensure quality and effectiveness.

Enactment of cultural system of student success between postsecondary institutions & P-16 partners and among all units and departments and stakeholders (trustees, governing board, state legislatures) across the institution.

Application of clear pathways for student learning & success that guide students to completion and is monitored with real time data systems that identify when a student is off track.

Enactment of a student success mindset that employs an asset-based narrative for students and institutional belief in talent development.

- Greater consideration for evidence about the quality of student experience, and programs and student success
- Emphasis on assessment data informing the sustainability and improvement of student success
- Greater integration of curriculum and co-curriculum
- More interconnected policies and programs, less isolated initiatives
- Enhanced relationships between faculty, staff and student affairs professionals

- 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

- Strategic relationships with P-12 systems, community partners, and families that facilitate a college preparation
- More collaboration between 2year and 4year institutions
- Greater attention to transitions between high school and college and between 2year and 4year institutions
- Promotion of asset-based narrative about students
- More communication with prospective students about enrollment and goal related opportunities

- 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 more flexible
- Greater specification of step-by-step roadmaps and use of intrusive guidance to support college preparation
- Greater use of student information such as past performance and interest inventories to inform curricular involvements, and other beneficial experiential learning
- More comprehensive data and information systems accessible throughout the institution

- Encouragement of the belief that all students can succeed
- Greater attention to grit, growth mindset orientation to promote student success
- Faculty and staff development to foster student success mindset
- Pervasive culture of student support across faculty, administrators and leaders
- Involvement of students in success planning and in institutional and system efforts to improve student success