Evaluating the Dream:
Data-Driven Change at American Community Colleges

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Richard A. Voorhees, Ph.D.
Voorhees Group LLC
rick@voorheesgroup.org
www.voorheesgroup.org

Policy and Practice Implications of a
Multi-faceted Approach to Building
Evaluation Capacity in Community Colleges

Introduction

It's both exciting and challenging to be a community college these days. Never before have so many outside the historic community college movement of the 1960's showered so much attention on these institutions. Growing enrollments and recognition of their ties to the nation's economy have spiked their visibility. Increased coverage in the popular press, their establishment in developing countries, the appointment of the first deputy assistant secretary of Education for community college education, the attention that community colleges received by both presidential candidates in the recent campaign, and the unprecedented support by the philanthropic community signal a renaissance in America's community colleges.

Increased visibility triggers increased expectations. Higher education has undergone a sea change in the past decade. The result is a focus on outcomes, as opposed to inputs, a mantra increasingly demanded by regional accreditation agencies as well as focus of the federal government. Access to higher education is no longer a sufficient quality of public good. In the not too distant past it was not uncommon to hear low-expectations at many community college campuses expressed as, "everyone has a right to fail." In the present time, those words have been largely, but not totally, discredited and replaced with rhetoric that dwells on student success. In this environment, change can be described as the evolution from compliance reporting to creating a culture of evidence, in which data driven decision-making becomes an expectation and not merely an occasional episode.

This paper discusses the changes in community colleges brought about by the national initiative known as Achieving the Dream (AtD) within the context of the community college movement's four-decade history. The AtD strategy leverages an organized, but revolutionary, system created to produce change within community colleges. AtD focuses on the elevation and use of data sources to identify college-wide issues about student learning that heretofore may have lain dormant, or perhaps ignored by state policy makers and the colleges themselves.

A central question that AtD asked the world was whether community colleges can make better use of data to improve student outcomes especially for low-income students and students of color. In this unexplored context, Achieving the Dream views itself both as educational reform and as providing a comprehensive model for change (MDC, 2008). The initiative also seeks to augment knowledge about strategies that increase student success and to expand public support for raising postsecondary attainment levels (Achieving the Dream, 2008). These strategies consist of local interventions to improve the rate of progression of students through institutions and toward formal awards and/or transfer. As a result of these efforts, the initiative seeks to help more students reach their individual goals, which may include earning a community college certificate or degree, attaining a bachelor's degree, and/or obtaining a better job.

Achieving the Dream offers lessons about top-down driven change accompanied by bottom-up implementation and the leadership challenges it created. To provide a glimpse of these dynamics we turn to the context of community colleges, a discussion of the goals of AtD from the perspective of application and the research literature of student success, and present the connections between a recent evaluative framework, Cynefin, and what might be learned about innovation from this unprecedented national initiative.

Community College Context

With their open admissions policies, convenient locations, and low tuition, community colleges are a critical resource for millions of adults who might otherwise be unable to go to college. In fall 2006, over 6.2 million students were enrolled in community colleges in the United States (Provasnik & Planty, 2008). This figure represents a 741 percent increase from fall 1963, nearly a four-fold increase over growth in 4-year institutions.[1] Community colleges now represent nearly half of all higher education enrollments in the United States and their rate of growth is accelerating (Government Accounting Office, 2008). In fact, community colleges account for most of the increase in college enrollments in the United States since 1995.

Nearly all of this recent growth has been brought about by increased enrollments of underrepresented race and ethnic groups; between school years 2000-2001 and 2006- 2007, for example, enrollment of Hispanic students grew the fastest in higher education, increasing by approximately 25 percent. Growth by Black/African-American and Asian/Pacific Islander showed double digit increases during this period while enrollment growth in White/Non-Hispanic population increased only slightly (Government Accounting Office, 2008).

Globalization and domestic labor market statistics also support the need for community colleges. If the USA wants to keep pace with other industrialized nations, studies show, more of its workforce will need to be educated, including those who have traditionally been left behind by higher education: low-income students, working adults, underserved minorities and those who need remedial help before college. Domestically it is estimated that 80 percent of the new jobs created in the next decade (Bureau of Labor Statistics, 2008) will not require a bachelor's degree, meaning that an expedient route to gainful employment is often found at the community college door.

Yet more impetus for the community college renaissance may be their cost. Baccalaureate granting institutions draw disproportionately from families with higher incomes while community colleges enroll students in fairly even proportions across all income levels (Community College Research Center, 2005). Many people, faced

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[1] . The corresponding increase in 4-year college enrollments in the public and private sector was 197and 170 percent, respectively.

with the college decision, are choosing two-year schools knowing they have the option of switching to the more expensive four-year alternative for the last two years

Even among these shining moments, shadows lurk. A report earlier this year (2008) argued that community colleges "are often invisible" to policymakers (National Commission on Community Colleges, 2008). Collectively, they survive on budgets that average about one-fifth of those of their four-year public counterparts. In 2000-2001, the latest year for which Education Department data are available, the nation spent $140 billion on four-year public universities and just under $30 billion for public two-year colleges (Provasnik & Planty, 2008). That ratio has not changed much over the years, calling into question the public's knowledge of community colleges and its willingness to support them at a level commensurate with their 4-year counterparts.

For reasons that are not always obvious, state budget systems are typically the bane of most community college administrators. Lacking, for the most part, the same number of powerful alumni that state universities boast, many of whom serve in state legislatures, most community colleges have felt powerless to argue for increased appropriations. The economic downturn in the early part of the present decade, and the corresponding hit in state revenues, further hobbled community college's ability to make a case for equity. It is often perceived that financial progress has only been recent for community colleges and earned mostly in the small percentage of their total higher education budget that most states set aside for performance funding (Jobs for the Future, 2008, July).

Community colleges' hallmark--access for the underserved—attracts favorable public notice. Yet, access is not always synonymous with achievement. At a time when degrees are increasingly important, nearly half of students who begin at community colleges do not either complete a certificate or a degree, or transfer to a four- year college within eight years of initial enrollment (MDRC, 2007). Other evidence indicates that community colleges should perform better. A recent study in California--a state with more than 2.5 million mostly part-time students enrolled in more than 100 community colleges—reported that less than one-tenth of students who started the their academic degrees at a community college earned an associate's degree. The same study found only about a quarter of students who were focused on transfer courses in their first year eventually transferred to a four-year institution (Sengupta & Jepsen, 2006).

The racial, ethnic, age, and economic diversity of community college students have been discussed above and widely elsewhere in the higher education literature. Intuitively, one could expect that outcomes associated with 4-year institutions, especially retention and graduation rates--where student bodies are more homogeneous with respect to socioeconomic status, age ranges, and academic preparation--would be superior to those of community colleges. It is this last factor, academic preparation that only recently has become a rallying cry for community colleges due, in no small part, to the exposure of national efforts such as Achieving the Dream.

A phenomenon not confined exclusively to community colleges, the under preparation of students for college-level work is endemic throughout American higher education. According to the U.S. Department of Education (2003), forty-two percent of freshmen at public 2-year colleges compared with 12 to 24 percent of freshmen at other types of institutions enrolled in one or more remedial courses in the year 2000. Public 4-year institutions had a higher proportion of freshmen enrolling in at least one remedial reading, writing, or mathematics course than did private 4-year institutions; 20 percent of freshmen at public 4-year institutions and 12 percent at private 4-year institutions enrolled in such courses in 2000 (U.S. Department of Education, 2003).

A recent report (Strong American Schools, 2008) indicates that conservative estimate of the cost of remediation in public colleges exceeds $2 billion dollars. Strong American Schools calculates the total cost of remediation per student to be between $1,607 and $2,008 for public two-year institutions and between $2,025 and $2,531 for public four-year institutions in school year 2004-2005. This report also factors the total cost to students and families and estimated that they paid $708 to $886 million in remedial education tuition and fees.

Achieving the Dream

The Achieving the Dream effort began in 2004 with 27 community colleges in five states and has grown to 83 colleges representing 860,000 students in fifteen states including four universities in Texas. Intended to improve student success, Achieving the Dream has focused especially on students of color and low-income students. Co-designed by the Lumina Foundation for Education (LFE) and eight national partner organizations, Achieving the Dream has consisted of four rounds of demonstration grants and now has successfully attracted 18 additional funders for a total investment of nearly $100,000 million (MDC, 2008). This marks the largest cumulative investment in community colleges in the history of American philanthropy. The largest contributor, by far, has been the Lumina Foundation for Education whose largesse for this initiative now totals $73 million (Chronicle of Higher Education, 2007).

Participating colleges received a $50,000 planning grant for their first year of participation, followed by a four-year, $400,000 implementation grant. It should be noted that for small colleges, $100,000 each year represents a significant sum while for large colleges the financial impact carried less weight. For all colleges, however, the impact was intended to be more than financial and directed more to establishing a new or different culture. The demonstration grants will phase out between 2009 and 2012. The partnership is now planning a national expansion scheduled to begin in 2009 that would extend AtD to more states and colleges.

Colleges were selected on their interest in the initiative and the number of disadvantaged students they served as a proportion of their total enrollment Participating colleges commit to collecting and analyzing data to improve student

outcomes — a process known as "building a culture of evidence." For this reason AtD is sometimes called, "one of several national institutional-research projects started in recent years to help community colleges" (Chronicle of Higher Education, 2007). Because of its focus on institutional change, however, broad change that cannot be brought about by the efforts of institutional research offices alone, this narrow image reflects neither AtD's goals or practice. It is worth noting that in the earliest phase of this initiative's rollout, data facilitators—recognizing the siloed nature of most institutional research offices—recommended that the data thrust for AtD be re-termed a "culture of inquiry" to reflect wider institutional responsibility for data and information.

The basic work of AtD occurred at the institutional level where colleges were expected to define and analyze the success of cohorts of students and to gather other information to understand how students are faring over time and which groups need the most assistance. From this work, colleges would implement strategies to improve academic outcomes. It was then expected that colleges would evaluate their strategies, expand effective ones, and use data to guide budgeting and other institutional decisions with the goal of creating systematic, enduring change. In recognition that this data-related journey would not be easy for all institutions, expert advisers, coaches and data facilitators were hired. Coaches chosen for the initiative were often former college presidents or others with deep experience in higher education while data facilitators were typically chosen from the ranks of directors of institutional research.

Eight national partners in this initiative include the American Association of Community Colleges (AACC); the Community College Leadership Program (CCLP) at the University of Texas-Austin; the Community College Research Center (CRCC) at Teachers College-Columbia University; Institute for Higher Education at the University of Florida; Jobs for the Future (JFF) in Boston, MDC in Chapel Hill, North Carolina; MDRC; and Public Agenda. In addition there are two Achieving the Dream Consultants: JBL Associates and Lipman Hearne. Lumina has been joined by 18 other funders ranging from national foundations to regional foundations including KnowledgeWorks Foundation and the Nellie Mae Education Foundation to systems of higher education in AtD states.

Achieving the Dream is a prominent example of a large-scale initiative designed to produce change in community colleges driven by financial incentives, the prestige of participating in a national cutting-edge innovation, and continuous expert mentoring from coaches, data facilitators, and other partners in the initiative. In the early days of the initiative the refrain was to "build a bicycle while learning to ride it," a prophetic phrase! Focused primarily on success for low-income students and students of color through increasing the use of data at community colleges, the initiative also carries a state and national policy focus. Data are the first stop on a journey of inquiry.

State Policy Focus

States have an obvious interest in increasing the performance of their community college systems. Not only are community colleges the source of most transfer students to the public 4-year sector, they also represent the most visible connections to a well-educated workforce and economic health for states. State policy teams were organized to consist of the director of community colleges within that state and others with the ability to impact state policy to support the initiative's goals. Jobs for the Future, the national partner charged with creating a state policy agenda, identified six state policy "levers" early in the initiative: 1) A Clear Public Policy Commitment, 2) Strong Data-driven Accountability System, 3) Aligned Expectations, Standards, Assessments, and Transition Requirements Across Educational Systems, 4) Incentives for Improving Services to Academically Underprepared Students; 5) Financial Aid Policies and other Financial Incentives that Promote Persistence, and 6) Public Support.

Institutional Change Focus

For institutions, where the rubber meets the proverbial road in the context of student success, AtD represents a new way of organizing and bringing meaning to the student success agenda, a vision based on systematic, hard evidence rather than anecdotal stores of student success. The typical, and recommended, organizational pattern at institutions was to create a core team and a data team. The core team would consist of senior administrators and faculty, and other persons with influence, who could make recommendations in practices, policies, and procedures to promote the student success agenda. The data team consisted most typically of the college's director of institutional research and others with a stake and interest in student success data. The membership from both groups often overlapped.

As recommended by the national initiative, five predetermined data points relating to student success "transitions" became the initial focus for institutions. These data were, in turn, disaggregated by race/ethnicity, low-income status, and other factors of interest to determine where the institution was experiencing success gaps by calculating the proportion of students who:

1. successfully complete the courses they take;
2. advance from remedial to credit-bearing courses;
3. enroll in and successfully complete gatekeeper courses;
4. enroll from one semester to the next;
5. earn degrees and/or certificates.

Given these datapoints, the process of measuring student success for AtD institutions would appear straightforward: specify a cohort of entering students, most often disaggregated by race/ethnicity and low-income status, and follow their progress over time. At the colleges served by the author, the resulting profile of datapoints were surprising to all but developmental faculty and received widespread notice in presentations and internal house organs. These profiles became the

touchstone for identifying gaps in achievement along the lines of race/ethnicity and the start of discussions of how to close those gaps. The next step in the change process, developing interventions to close those gaps and determining whether those interventions were contributory was a more complex proposition.

At the intersection of both social science research and intuition, determining whether given interventions produce gains in student success is no simple pursuit. The lives of community college students are complex, perhaps chaotic, and the environment in which they live and learn is influenced by factors that are not common in the environments of their 4-year college counterparts. Community college students are quantitatively and qualitatively different, as discussed above. They also face a number of challenges and other commitments besides the pursuit of postsecondary education. These have been described as "competing demands," intervening factors that between the characteristics they bring to the community college and successful outcomes (see, for example, Voorhees, 1997).

At a sophisticated level, one would want to account for the influence of multiple influences on student success, those exogenous variables that occur outside the teaching and learning environment, as well as endogenous variables that are an integral part of that environment.[2] The large body of research on student achievement argues for a complex view of student achievement. To illustrate, original research on minority student achievement arising from national databases (Cabrera, La Nasa, & Burkum, 2001) reports significant correlations between student success and out-of-classroom experiences, quality of instruction, counseling, institutional prestige, and working on campus. Seldom are such factors considered in intervention models that use the classical experimental research design and which are typically test only the influence of a handful of independent variables on a single dependent variable.

Perhaps with the influence of the federal No Child Left Behind legislation that set new accountability rules for K through 12 education in mind, some within the AtD initiative also argued that the worthiness of student success interventions could only be certified by use of Campbell and Stanley's (1963) classic experimental research design. This design calls for random assignment of subjects to control and treatment (intervention) groups to control for variables, or student characteristics, which are not included explicitly in the study design (Campbell & Stanley, 1963). Seen as the only "true" research design by many in the U.S. Department of Education, it has many adherents. However, its mechanical nature and ability to focus on only one or two variables also obscures the basic relationships among factors previously demonstrated to be critical to student success. It is almost certain, for example, that student success can be explained by more than the several variables which are the focus of AtD: race/ethnicity, gender and low-income status.

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[2] Structural models have been used to estimate the influence and complexity of interaction among multiple variables on a given dependent variable such as student learning and cognitive development. See, for example, Nora, Cabrera, Hagedorn, & Pascarella (1996). For a model of student learning and cognitive development created explicitly for community colleges see Voorhees (1997).

In educational practice the classic experimental design is rarely used because of apparent logistical and ethical concerns attendant to denying a positive intervention to students for the sake of research design. There are notable exceptions to the dearth of classical experimental studies, however, that demonstrate that these objections can be overcome to demonstrate the effectiveness of a given intervention, at least in the course of a pilot study documenting the potency of learning communities on student success (MDRC, 2008).

A natural attraction exists to using a smaller range of variables to estimate the influence of interventions on student success. Such designs provide simplicity but their application degrades knowledge of the impact of other influences on the student success equation. Colleges without strong institutional research capability or lacking in knowledge of student outcome research might also be attracted to rudimentary research designs. If reducing the number of variables under study and the expertise of institutional research offices are constraining factors, efforts to better understand the complexity of student success are also limited by the nature of administrative data systems. These software systems should not be confused with research tools. They exist to record student grades, calculate payments for tuition, and record other administrative interactions and financial transactions with the institution. Except for their capacity to hold data that, in turn, can be used to calculate retention rates in courses and programs, administrative systems cannot answer other questions about student experiences within institutions, especially their experiences within a given intervention. At the same time, keeping things simple, at least as a beginning, comes as good advice.

Given the difficulties in staging an experimental design, most AtD colleges chose a non-experimental quasi-experimental design in which the performance of intervention cohorts is compared to the historical performance of similar cohort (Voorhees, 2006). Quasi-experimental designs suffer from many of the same limitations as their randomized counterpart. Namely, they deal with a severely restricted range of variables and fail to adequately address the complexity of the student success syndrome. To supplement these designs, colleges in the initiative frequently turned to, and gained rich insight about the effectiveness of their interventions from, student and faculty focus groups.

In subsequent sections of this paper, the use of Cynefin (Snowden and Boone, 2007) as a framework for making sense of decisions confronting Achieiving the Dream, especially in the context of institutional choice of research technique are explored. The Cynefin framework would ratify choices to shift interventions (and associated research techniques) to less demanding, or simpler, domains.

Evaluating the Dream

States

Achieving the Dream has had impact in framing new definitions of student success in the community college. Many community college advocates, for example,

believe that the federal methodology for reporting graduation rates to be too simplistic, serving only to camouflage student experiences in the community colleges. For example, the federal formula reports the number of full-time, first-time undergraduates who have completed a degree or certificate within 150 percent of "normal time." For 4-year colleges this time span is six years. For community college students enrolled in degree programs the figure is three years. The AtD state policy group recommended that part-time students be included in federal measures to incorporate the largest segment of community college students. This methodology has been included for the first time in the most recent federal Graduation Rate Survey.

Another accomplishment for state policy has been to raise the visibility for student success in state performance budgeting and accountability systems. These systems reward institutions for making improvement in a number of outcomes measures but may penalize community colleges in ways that are not apparent to policy makers (see, for example, Bailey, Leinbach, and Jenkins 2006). These systems supplement the typical state funding strategy of providing money to intuitions based on the number of students enrolled. Most Achieving the Dream states are making efforts to link statewide performance measures to student success such as retention, graduation, and transfer rates. The movement to combine these rates into an overall "success rate" has been implemented in Florida, North Carolina, South Carolina, and Texas (Jobs for the Future, 2008, July).

Institutions

No small part of the difficulty of assessing the impact of Achieiving the Dream at the institutional level is the different places institutions were in the continuum of using data to support student success before they signed on to the initiative. Thus, it is difficult to gauge individual institutional impact and even more specious to judge overall institutional impact unless one makes the unlikely assumption that no attention was paid to student success using data prior to Achieiving the Dream. Most of the reports of institutional capacity prior to AtD were anecdotal and perhaps the memory of prior data-driven work may have been shifted by institutional participation in this new initiative.

Initiatives that are driven exclusively by the administrators in a top-down manner seldom build support from among the faculty that can lead to enduring change. Although a structure for innovation can be created administratively, both overt and subtle changes in instructional practices require a different type of leadership arising from the bottom-up. Part of winning faculty support for new innovations, especially in the AtD context, can best be secured by access to data and a transparent decision-making process that illustrates the use of data in those processes. Given that one goal of AtD is to create a sustained culture of inquiry and evidence-based decision making that affects student learning, such invitational use of data for making decisions seems pivotal.

Early returns. An evaluation of the first 27 colleges to join AtD conducted in the initiative's second year found that many colleges had embraced the goal of building a

culture of evidence (MDRC, 2007). The presidents at these colleges showed strong leadership and the colleges created at least a small team to plan and implement AtD. The evaluators also indicated that colleges embraced the goal of building a culture of evidence. About half the colleges used data analysis to identify problems to address on their campuses. These colleges were not always sure about how to respond to what they had learned from the data, however. Some colleges struggled because their research offices were understaffed or their computer systems were weak. Yet, at the same time, colleges implemented a wide array of strategies to improve student success, including strengthening academic advising and orientation programs, revamping developmental education, and offering professional development for faculty and staff. Six colleges showed signs of institutionalizing a culture of evidence after only one year. Most other colleges showed signs of progress toward this goal.

A more recent report also reflects favorably on colleges' ability to create and sustain a culture of inquiry (MDC, 2008). All but four of the 57 institutions in the first three rounds reported at least some change in data-driven decision making during the preceding year. These results include more discussions of data with faculty and staff, more requests for institutional research data and creation of systems to manage and track these requests, restructuring AtD data an core teams for more functionality, training and software for institutional research staff, and connecting course planning and assessment, strategic planning, and budget allocations to analysis of student data.

Institutional experiences also have advanced knowledge about student success in a variety of ways. MDC (2008) reports that AtD partners have produced 50 research studies, surveys, papers, briefs, and analyses. Some are ongoing projects involving collaborations with state agencies, others are policy briefs on state data systems, and still others represent case studies of successful institutions. The list of publications generated from the Community College Research Center for 2006-2007 numbers more than 40 (MDC, 2008).

Among the most practical results of statewide studies that can influence the process of establishing student success interventions are two Florida studies. The first reported that students who were enrolled in student success courses (courses that taught skills such as study habits, interfacing with campus offices, and offered advising help) at the same time as their developmental courses experienced a success rate that was double that of developmental students who were not enrolled in success courses (Florida Department of Education, n.d.). A second study demonstrated that developmental students who completed twelve credits also enjoyed significantly higher success rates (Florida Department of Education, n.d. 2). Because statewide rates were reported with standard data methodology to measure retention, these findings became a powerful touchstone for participating institutions outside Florida to change their course placement policies and to reinvigorate programs to keep new developmental students inside the institution during the first critical semesters of attendance.

Use of data and information. A key goal for AtD is to increase the use of data and to create a culture of evidence. A recent survey of faculty and staff at all AtD

institutions reveals interesting patterns of data and information use (CCRC, 2008). These data do not tell us how AtD may have changed these patterns since the survey has only been administered once. They do, however, shed light on current data use patterns and can serve accordingly as a benchmark for the future.

Table 1 indicates that faculty use student information systems and departmental databases with about the same frequency as administrators. Administrators, in contrast, are more likely to use reports generated by institutional research offices, requests directed to information technology units, and state databases and research reports. Stated differently, faculty appear to use transactional data that is closest to their needs and to find less value in "official" data published by the institution. This may seem logical since few potential sources probed in the survey are directly connected to the immediacy of teaching and learning, presumably the area that faculty care most about.

Table 1.
Data Use by Source by Faculty and Administration

Source	Faculty	Admin
Searches using the college's student information system	39%	37%
Data from the college's website or fact book	32%	46%
Reports distributed by the college's institutional research (IR) office or other departments	32%	50%
Requests to the IR or information technology (IT) staff	31%	51%
My department's database	23%	24%
State databases or research reports	9%	31%
I generally do not need information about groups of students	32%	21%

The data of Table 2 strike at the heart of AtD's intended goals by asking how often faculty and administrators participate in organized discussions around key topics. These data generally are only slightly above average on the 7-point scale that they were collected. The assumption is that prior to Achieving the Dream these scores would have been much lower.

Table 2.
Attendance at Organized Discussions of Key Issues

Issue	Faculty	Admin
Improving academic achievement or closing achievement gaps	4.57	4.62
Academic needs or performance of students of color	3.57	4.28
Academic needs or performance of low-income students	3.69	4.27

Table 3 displays the frequency of data use by as reported by faculty only for decision-making in other key areas. Again these data suggest that data use is slightly

above the mean value (3.5) on a 7-point scale. Tables 2 and 3 may be used to benchmark changes in future behavior. One possibility for seemingly average use of data may be the data itself and its perceived ability to answer key faculty questions. Still another explanation may lay in faculty's proximity to these data at the point that their availability may be helpful.

Table 3	
Type of Decisions	Mean Responses
Curriculum	4.54
Teaching practices	5.01
Advising students	4.97
Identifying students who are struggling academically	4.86

Top 10 success factors. A content analysis of more than 300 coaching reports performed by McClenney (2007) illustrates the complicated and complex nature of the initiative at the institutional level. McClenney offers a distillation of those institutional behaviors that are equated with successful implementation of AtD. This list illustrates both the top-down and bottom-up criteria needed to be successful as an Achieving the Dream institution. Each builds upon the institutional structure—data teams and core teams—and cohort analyses first recommended by the initiative. Collectively, they demonstrate the critical nature complex relationships within the institution and the need to be both top-down and bottom-up. Finally, the accent is decidedly on data and decisions made with data, a journey that is especially daunting for those colleges lacking a history of creating a culture of inquiry. In order of importance these are:

1. The institution monitors the effectiveness of interventions and makes adjustments based on evidence
2. Leaders are engaged and pay continuous attention to progress on the student success agenda
3. There is a shared vision around a student success agenda
4. The institution is acting systemically, thereby avoiding a project mentality
5. Planning and budgeting are aligned with the vision and values of Achieving the Dream
6. There is broad faculty and staff engagement in the student success agenda.
7. Achieving The Dream is integrated with other significant initiatives
8. Quantitative and qualitative data inform priority setting and decision making
9. Student cohorts are being tracked
10. Institutional research capacity is increasing at the college

Sense Making and Achieving the Dream

Given its intended dynamic and change-making nature, how can one make sense of the knowledge about institutional transformation generated by Achieving the Dream? How would others, looking over the shoulder of successful colleges within the initiative decide where to begin to replicate gains for disadvantaged students? A partial answer may be located in the emerging Cynefin framework. In the parlance of philosophy, Cynefin has both ontological and epistemological elements. It can be used in two modes, one to discover via categorization how complex phenomena are interrelated. A second purpose is to distinguish between "knowing how" and "knowing that."

Cynefin

Cynefin has its roots in, and perhaps extends, the field of knowledge management. Based on recent advances in complexity science, Cynefin has been used most recently in the context of leadership (Snowden and Boone, 2007). Snowden and Boone suggest that leaders who understand the world as often an irrational and unpredictable place would find Cynefin a particularly useful framework. Achieving the Dream meets both criteria. For institutions AtD represented a degree of unpredictability; one might also argue that the reward system for community colleges--especially given their fundamental commitment to access and the prospects they provide for student success by providing developmental education for those who need it to succeed in collegiate programs—is irrational. A rational world, the argument goes, would have recognized and supported the challenges that community colleges confront and, as a result, national initiatives like Achieving the Dream would have been unnecessary. The framework's five domains are characterized by the relationship between cause and effect. The first four domains are:

- *Simple*, in which the relationship between cause and effect is obvious to all, the approach is to Sense - Categorize – Respond. Best practices can be applied and exhaustive communication usually is not required.
- *Complicated*, in which the relationship between cause and effect requires analysis or some other form of investigation and/or the application of expert knowledge, the approach is to Sense - Analyze – Respond. This is the domain of experts; analogous to the role that institutional research plays in AtD's fundamental tasks. Here, the "unknown" is "known." Since several options are possible, good practice, as opposed to best practice, can be applied. At least one right answer exists.
- *Complex*, in which the relationship between cause and effect can only be perceived in hindsight, not *a priori*, the approach is to Probe - Sense – Respond. "Right" answers can't be ferreted out. This is the domain of emergent practice.
- *Chaotic*, in which there is no relationship between cause and effect at systems level, the approach is to Act - Sense – Respond. Novel practice is discovered in this domain. The boundary between chaotic and simple is seen as catastrophic.

The fifth Cynefin domain is Disorder, which is the state of not knowing what type of causality exists. Leaders, not knowing where to place an event in the first four domains will frequently place it in the Disorder category. In Disorder, people will revert to their own comfort zone in making a decision.

As an exercise, institutional activities intended to support the goals of Achieving the Dream can be placed in Cynefin domains, thereby conceptualizing and managing the knowledge produced by the initiative. It is certain that the multiple perspectives inherent in AtD, including those of students, faculty, administrators, data facilitators, coaches, and national partners could find a useful framework in Cynefin. These perspectives are likely to diverge as what may be complicated or complex to one stakeholder group may be simple to another. While other views may contrast those presented in Table 4, its categorization of knowledge represents the author's first-hand experience as both data facilitator and coach at five community colleges.

The categorizations in Table 4 represent mature experiences of the five participating colleges, drawn after approximately one year's experience in implementing Achieving the Dream.

Table 4.
Cynefin Domains, Institutional Organizational-Related , and Impact on Leadership

Domain	Activities	Leadership Challenges
Simple	-Initial buy-in by senior administration -Organizing core and data teams	-Oversimplification -Entrained thinking by *senior leaders* -Complacency -Context shifting
Complicated	-Process of cohort tracking -Using data to identify gaps in student achievement -Gearing up the work of core and data teams -Identifying appropriate interventions	-Entrained thinking by *experts* -"Analysis Paralysis"
Complex	-Implementing interventions -Assessing student success using between one and three variables -Estimating student success using multiple measures including structural models	-Top-down strategies seldom work in complex situations -An attraction to fail-safe -Requires experimental mindset
Chaotic	-No uniform progress in the initiative	-No known cause and effect relationship -No anticipated manageable patterns exist

Simple. Most of the institutional work of Achieving the Dream occurs between the complicated and complex domains. If the national leadership of Achieving the Dream did not strongly recommend the establishment of a separate core and data team as best practice, for example, and require presidential buy-in, we might speculate that these basic organizational tasks would been complicated if not complex. Were all work framed as simple there would be no burden to find effective

interventions. Certainly, AtD gave those institutions already predisposed to action a level of permission, and perhaps cover, to launch a student success initiative.

Complicated. Making the initiative "real" at a given campus is likely to be more time-consuming than its basic organization as the risk of making mistakes rises. In this context, multiple right answers surface as good practice is acknowledged without depending on a single right answer. The complicated domain is also populated by experts, in this example institutional researchers, developmental education faculty, and those with experience in operating programs created for low-income students and students of color. Colleges can benefit from this knowledge, of course, but there is also danger that the expertise of "nonexperts" may be overlooked.

Another lurking difficulty in the complicated domain is the tendency toward "paralysis by analysis" a common situation which often would stall either the implementation of interventions or the subsequent thinking about their effectiveness. The role of the data facilitator and coach become increasingly important at this juncture and may explain, in part, the attraction to simpler analyses of student outcomes. To reduce complexity, however, is to miss opportunities to identify small trends in student outcome data and to overlook weak signals (Snowden & Boone, 2007). The journey toward data needs to start somewhere, especially among institutions lacking a history in this area.

Complex. For the Achieving the Dream initiative, the complex domain is characterized by multiple right answers, suggesting that the initial suggestions made by the initiative's data facilitators that a shift in image from "evidence" to "inquiry" was not shortsighted. While the act of selecting evidence may fall in the complicated domain, sifting through outcome data and weighing their impact on future actions introduces both unpredictability and flux into the equation. It is here, though, that the most learning about students occurs as emergent practice is encouraged. There is an inevitable hierarchy within the complex domain, however, a situation represented in Table 4 by taking on more "complex" models of student success utilizing multiple measures.

Use of more substantial models of student success would not, by itself, cause disequilibrium at the institutional level although going down that path may have unpredictable consequences. What happens, for instance, if an intervention that works for a given race/ethnic group only works because of factors that have not been considered but for which the institution could intervene, such as late afternoon childcare, tutoring provided between terms, or other innovations that a simple study would obscure? In that context, a simplistic or reductionist mindset would obviously not produce the cause-and-effect information required to guide institutional practice.

Chaotic. Snowden and Moore (2007) indicate chaotic situations are rare. For Achieving the Dream institutions, there were few actions stemming from the initiative that might derail action. The search for right answers in student success is seldom pointless. In the author's experience, no institutions would be placed in the chaotic domain for long periods of time. Changes in presidential leadership or by other senior

leaders of the local initiative, however, might result in a chaotic position, but perhaps not for the long-term.

Conclusions

Given the boldness of this national initiative, what may be fairly said about how its organization contributed to its outcomes at this point in its life cycle? As a complex national initiative involving 83 institutions serving more than 860,000 students what lessons can be learned? First, the collective wisdom that allowed colleges to chart a course through waters that, for the most part, were heretofore unexplored was prudent. There always is great temptation to reduce the complicated and complex to the simple but this obstacle was successfully avoided. Second, the top-down advice to institutions about organizational structure of the local initiative, the need to analyze cohorts of students, and the expectation to create a culture of evidence provided a common frame of reference for all participating institutions. Institutions were expected to create cohort data on all students both going back and forward in time and submit this to the national initiative for research purposes. The systematic components of Achieving the Dream were relatively few. This allowed colleges the flexibility to identify gaps and determine interventions for student success unencumbered by national dictates.

Third, there were recommendations made from the national initiative about the desirability of using the classical experimental design to "prove up" the effectiveness of interventions, there were no penalties for colleges who elected to use other methods of inquiry. Few colleges, at this writing, appear to have engaged in complex structural modeling of student success, but that, too, is a matter of choice. After all, there is an evolution of steps that need to be taken from the simple to the complex, as the Cynefin model would suggest. The act of disaggregating cohort data is a start to asking not just the "how" questions, but the "why" questions about student experiences. It is not a judgmental statement to say that Achieving the Dream is presently functioning at the "how" level.

Those institutions that made the most progress were institutions that were able to engage and empower faculty in the journey of creating a culture of inquiry. The authors experience in working with community colleges pursuing the student success agenda is that those institutions who presented data to faculty and asked for their perspectives were also likely to be much further along the pathway to creating a culture of inquiry in other ways. The wisdom to require basic, comparative data be developed coupled with the freedom to experiment with interventions and to pursue models of faculty engagement are, in hindsight and in the author's opinion, the largest contributors to institutional success. The permission to experiment in these areas also marks a watershed. The result was a national initiative that was mostly able to avoid the pitfalls common to knowledge management identified by Snowden (2007): "consultants running roughshod across pre-existing 'primitive' cultures with intent of enrichment and enlightenment that too frequently degenerated into rape and pillage" (p. 110).

A public and visible commitment to using data for decision-making is a critical victory for both community colleges and for Achieving the Dream. One might also ask whether colleges would have ventured down this path without the permission and shelter of a national initiative. Perhaps more than a handful would have undertaken this work by themselves; these institutions were likely to have a history of work with data and perhaps recent experience with the heightened expectations of a regional accrediting association. Others may have done so based on the enlightened leadership reported by McClenney (2007). AtD, however, provided the national prestige and the momentum to take developmental education and student success in developmental education to new and very visible levels.

Achieving the Dream also provided clear victories for states. The clout of the national initiative to accomplish desired ends within states was both practical and desired. AtD's goals include the use of data to improve student success and to provide access to information from other states that could be used to trigger change. The dissemination of statewide Florida data discussed above is a potent example of providing the basis for institutional transformation based on fresh and highly reliable data.

Achieving the Dream was not without its shortcomings. Critical evaluation will always suggest ways in which elements of this innovation could be improved. As the initiative moves to further expansion, it will be important to clarify methodology and evaluative expectations. Closer communication with data facilitators, coaches, and institutions can contribute to a greater level of learning about which parts of the initiative require more top-down guidance and which parts can be guided from the valuable learning that occurs from the bottom-up.

References

Bailey, T., Leinbach, T. and Jenkins, D. (2006). Is student success labeled institutional failure? Student goals and graduation rates in the accountability debate at community colleges. Community College Research Center Working Paper No. 1. Retrieved October 19, 2008 at http://ccrc.tc.columbia.edu/Research.asp

Cabrera, A. F., La Nasa, S. M., and Burkum, K. R. (2001). Pathways to a Four-Year Degree: The Higher Education Story of One Generation. Paper prepared for the Association for Institutional Research. Retrieved September 23, 2008 at http://www.education.umd.edu/EDPA/faculty/cabrera/Pathway to a Four-Year Degree.pdf

Campbell, D. and Stanley, J. (1963). Experimental and Quasi-Experimental Designs for Research. Boston: Houghton Mifflin.

Chronicle of Higher Education (2007, March). March 1, 2007. Lumina Foundation increases its support for community college project. Chronicle News Blog. Retrieved September 24, 2008 at http://chronicle.com/news/article/?id=1730

Community College Research Center (2008, September). Results of the first survey of the use of data by community college faculty and administrators in Achieiving the Dream. Author: New York.

Community College Research Center (2005, April). Struggling to achieve: Outcomes for low-income and minority students at community colleges. CRCC Currents. Author: New York.

Government Accounting Office (2008, July). Higher Education: Tuition Continues to Rise, but Patterns Vary by Institution Type, Enrollment, and Educational Expenditures. Washington, D.C.: Author.

Florida Department of Education (n.d. ,1). Taking student life skills course increases academic success. Tallahassee: Author.

Florida Department of Education (n.d., 2). Developmental education in Florida community colleges. Tallahassee: Author.

Jobs for the Future (2008, July). Performance measures that promote student success: A comparative analysis of state policies. Achieving Success: The State Policy Newsletter of Achieving the Dream: Community Colleges Count. Author: Boston.

Jobs for the Future and the Achieving the Dream Cross-State Data Work Group (2008, July). Test Drive: Six States Pilot Better Ways to Measure and Compare Community College Performance. Author: Boston.

Jobs for the Future (2007, October). Building a Culture of Evidence in Community Colleges: Lessons from Exemplary Institutions. Author: Boston.

McClenney, B. (2007). Top Ten Reasons for Progress with Achieving the Dream. Community College Leadership Program. Author: Austin, TX.

MDC (2008, October). 2007-2008 College Annual Report Analysis, Rounds 1-3. Chapel Hill, NC: Author.

MDC (2008, May). Achieving the Dream: The State of the Initiative. Chapel Hill, NC: Author.

MDRC (2008, March). A Good Start: Two-Year Effects of a Freshmen Learning Community Program at Kingsborough Community College. Retrieved September 12, 2008 http://www.mdrc.org/publications/473/overview.html

MDRC (2007, May). Building a Culture of Evidence for Community College Student Success. Retrieved September 17, 2008 at http://www.achievingthedream.org/DATARESEARCH/EVALUATION/mdrcreports.tp

National Commission on Community Colleges (2008, January). Winning the Skills Race and Strengthening America's Middle Class: An Action Agenda for Community Colleges. Princeton, NJ: College Board. Retrieved September 17 2008 at http://www.collegeboard.com/prod_downloads/prof/community/winning_the_skills_race.pdf

Nora, A. & Cabrera, A. F., Hagedorn, L. S., & Pascarella, E. T. (1996). Differential impacts of academic and social experiences on college-related behavioral outcomes across different ethnic and gender groups at four-year institutions. Research in Higher Education, 37(4), 427-752.

Provasnik, S., and Planty, M. (2008). Community Colleges: Special Supplement to The Condition of Education 2008 (NCES 2008-033). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

Sengupta, R. and Christopher Jepsen (2006, September). California's community college students. Public Policy Institute of California. Author: San Francisco.

Snowden, D. (2002). Complex acts of knowing. Journal of Knowledge Management, 6(2), 100-111.

Snowden, D.J. and Boone, M.E. (2007). A leader's framework for decision making. Harvard Business Review. November: 69–76.

Strong American Schools (2008, September). Diploma to Nowhere. Retrieved September 16, 2008 at www.EDin08.com

U.S. Department of Education, National Center for Education Statistics (2003). Remedial Education at Degree- Granting Postsecondary Institutions in Fall 2000, NCES 2004-010, by Basmat Parsad and Laurie Lewis. Washington, DC: 2003.

Vedder, R. (2008, August). Rising Community College Enrollments. Center for College Affordability and Productivity. Retrieved September 16, 2008 at http://collegeaffordability.blogspot.com/2008/08/rising-community-college-enrollments.html

Voorhees, R. A. (2006). Evaluating the effectiveness of intervention programs for low-income students and students of color. Presentation at the Florida Statewide Achieving the Dream Annual Conference. Orlando: Author. Retrieved September 24, 2008 at http://www.voorheesgroup.org/tools.html

Voorhees, R. A. (1997). Student learning and cognitive development in the community college. In J. C. Smart (ed.), Higher Education: Theory and Research. New York: Agathon.