Journal of Transformative Leadership & Policy Studies

June 2015
Volume 5, Number 1

JTLPS

Journal of Transformative Leadership and Policy Studies

Volume 5 • Number 1
September 2015

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ISSN: 2151-5735

About the Journal

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The Journal of Transformative Leadership and Policy Studies (*JTLPS*) is a peer-reviewed journal sponsored by The California State University and the Doctorate in Educational Leadership Program at California State University, Sacramento. *JTLPS* accepts articles that focus on current research promoting and documenting work in P-20, an integrated education system that extends from pre-school through higher education.

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ISSN: 2151-5735

Educational Leadership Ed.D.
in the CSU

JTLPS Advisory Board

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Letter from the Editors

The *Journal of Transformative Leadership and Policy Studies* (*JTLPS*), Volume 5.1, proffers a major thematic link focusing on the intersectionality of leadership across both content areas and across educational systems. The thematic link across several manuscripts captures how creative leadership facilitates change that is creative and synergistic. A second theme in this volume dwells on policy implications that lead to curricular practices that promote inclusion and promote the missions that various educational systems have for their institutions.

Volume 5.1 of *JTLPS* begins by featuring two reflective essays. In the first essay, *California's State University: A Leadership Perspective*, Dr. Timothy White, as Chancellor of the California State University system, engages us on issues surrounding leadership, vision and institutional change across the largest four-year system of higher education in the United States. His reflective essay was culled from a transcribed interview and themed around six major areas: institutional vision, leadership, system level change, regional service areas and leadership legacy. A second reflective essay is also included in this volume by CAPSES - the California Association of Private Special Education Schools. CAPSES is a leading association that has supported transformational change in California for over 40 years. There are six major themes in his essay, including issues of access in special education and policy implications, services supported by CAPSES, social justice, teacher preparation, and creating an inclusive school culture for children with special needs.

The articles in this volume collectively reflect the need to promote curricular changes that foster educational equity and provide an educated citizenry for the twenty-first century that is college and career ready. Systemically, these articles coalesce around the notion of "readiness" in relationship to higher education. In T*ransforming the Institution from the Inside: Creating the Brave New Community College of the Future*, four key areas at the institutional level are discussed that must be intentionally and aggressively addressed in order for community colleges to make substantial and necessary improvements in student learning and development. These include developing a much tighter link between educational programs and student services, implementing strategic and systemic changes in the organizational structure and operations, and building a much stronger and cohesive relationship between college leaders, the faculty, and student services professionals.

A second featured article comes from a cadre of scholars that posit that teachers with knowledge of science and science teaching pedagogy are essential to teaching science in K-12 schools. Their article, *Policy in Support of Pedagogy: Collaboration Among Scientists, Science Educators, and Engineers in Preparing Qualified K-8 STEM Teachers*, discusses the use of a *Foundational Level General Science Program* to go beyond increasing science content knowledge and illustrate how they promoted a sustained collaboration between faculty in science and education to integrate inquiry-based pedagogy into curricula with the goal of recruiting and retaining STEM teachers.

A third featured article, entitled *Putting the Community Back in Community College: Critical Social Justice Leadership and the Systems of Student Success*, explores the rhetoric of achievement in relation to social justice realities and community college leadership. It then shifts to exploring the Critical Social Justice Leadership (CSJL) model to juxtapose the connection between the systemic social justice realities impacting the communities served by community colleges while shedding light on the kinds of leadership strategies that might more thoroughly and effectively address issues relating to student success.

This volume includes an engaging policy brief on the Next Generation Science Standards (NGSS) and ends with a book review and two new books that are being featured. In *All Standards, All Students? The Misalignment of NGSS with Science Course Graduation Policy*, the vision and organization of the Next Generation Science Standards (NGSS) is critically discussed while reviewing three high school curriculum implementation models based on the California Science Framework. The brief aims to promote social justice in science education, and addresses the need for reforming curriculum, policy, and practices to improve the equitable preparedness of students for college and career.

Letter from the Editors

The book review *John Dewey and the Future of Community College Education* proposes that leaders across the institution must come together and adopt a new democracy-based normative vision grounded in the writings of John Dewey, which would call upon colleges to do much more than improve completion rates and expand educational opportunity. This volume ends by featuring two new book releases: *Mentoring as Transformative Practice: Supporting Student and Faculty Diversity* and *Intentional Excellence: The Pedagogy, Power, and Politics of Excellence in Latina/o Schools and Communities*.

JTLPS and its editorial board wishes to thank the Chancellor's Office of the California State University and the College of Education at California State University, Sacramento for its continued support. We also invite future authors to submit their manuscripts with the understanding that that they are accepted for review year-round on a rolling basis.

Carlos Nevarez, PhD
Executive Editor

Porfirio Loeza, PhD
Editor

A Foreword from President Robert S. Nelsen

Dear Colleagues,

The *Journal of Transformative Leadership and Policy Studies* (*JTLPS*) is a peer-reviewed journal sponsored by the California State University system and the Doctorate in Educational Leadership at California State University, Sacramento. As the incoming President of California State University, Sacramento, I encourage you to share Volume *JTLPS 5.1* with your colleagues and scholarly communities.

The volume's contributions truly advance critical issues impacting education and underscore the importance of critical analysis while tactfully presenting new directions to common educational problems. I find this approach refreshing in a time when we are being challenged to be innovative in our practices. Of particular interest is the essay written by Chancellor White from the California State University system. His candor surrounding leadership, vision, and change provides readers with insights to strategic practices driving the future of the largest four-year system of higher education in the United States.

The stimulating articles included in this volume point us toward a future that will meet the needs of our students and nation. It provides us with a roadmap to thinking about the role of leadership in changing times.

Fondly,

Robert S. Nelsen, PhD
President
California State University, Sacramento

A Message from Dean Vanessa Sheared

Dear Colleagues,

As Dean of the College of Education at California State University, Sacramento, it is a pleasure to welcome the reader to Volume 5.1 of *The Journal of Transformative Leadership and Policy Studies* (*JTLPS*). In my tenure as dean I have seen the journal grow from its inception to its current volume. The Journal provides thoughtful research, essays, and interviews with key thought leaders, administrators, and scholars who are engaged in transformative leadership practices throughout P/K –16 educational institutions. The journal also includes various genres that range from applied research to innovative leadership and policy initiatives. Moreover, the Journal editors encourage authors to not only report their research findings, but, also demonstrate how the research is applied to make data driven decisions which are grounded in a deep understanding of transformative leadership theories and best practices. In collaboration with our colleagues across the California State University system, we are proud to host and produce the Journal of Transformative Leadership and Policy Studies.

I believe this issue will cause one to give pause, critically reflect on one's own practices, and provide some specific ways to transform the ways in which one leads and engages others within and throughout the P/K - 16 educational enterprise. For instance, in the interview with Chancellor White you get a glimpse into his vision, reflections on what it takes to keep a major higher educational system (23 universities) on the right path during challenging times; and he shares that through it all, a leader must be willing to "put a stake in the ground and move forward," redefining ones goals along the way as needed. Carlson, examines the value of Critical Social Justice within a Community College setting and offers a set of recommendations that can be extrapolated and used in most educational settings. The recommendations she offers can help shape the discourse for leaders who work to incorporate Critical Social Justice into: a) the implementation of accreditation standards across program areas; b) data collection practices which contextualizes students ways of knowing and impacts how they enter, matriculate and complete a course of study; c) professional development and hiring practices that will increase board members, administrators, and staff members" understanding of the multiple and varied perspectives of their learners, faculty and staff and local communities; and, d) how a critical justice leader influences and incorporates this perspective within and across all areas of the institution.

In a creative way, this issue collectively reflects the vivacity and tenacity I experienced as faculty, staff, administrators and students in the college work to transform and develop critical social justice practices across our programs, curriculum, professional development and hiring practices. Once again, I welcome you to *JTLPS Volume 5*.1 and encourage prospective authors to submit their manuscripts for future editions.

Sincerely,

Vanessa Sheared, EdD
Dean, College of Education
California State University, Sacramento

Call for Papers

SUBMISSION DEADLINE

April 1, 2016 (priority deadline)

ABOUT THE JOURNAL

Sponsored by the California State University's Chancellor's Office and the system's thirteen Education Doctorate programs, the *Journal of Transformative Leadership and Policy Studies* (*JTLPS*) publishes peer reviewed studies for the educational leadership and policy community in California and beyond. The focus is to advance our understanding of solutions to the problems faced by the nation's schools and colleges.

The *Journal of Transformative Leadership and Policy Studies* welcomes your submission of original research papers in the areas of educational leadership and policy in P-20 public education, including schools, community colleges, and higher education.

***JTLPS* SHOWCASES SCHOLARSHIP THAT EXPLORES:**

- Learning, equity, and achievement for all students
- Managing the complexities of educational organizations
- Strategies for educators to affect the school change process
- Educational policies that bear on the practice of education in the public setting

SPECIAL FOCUS

- Educational Leadership and Policy Studies
- Implications of Common Core other organizational changes
- Submissions with STEM (Science, Technology, Engineering, and Mathematics) themes, including pedagogy, curriculum, leadership, policy, special education across P-20
- Timely and critical issues affecting schools, colleges, students, and their families

GENRES

The *Journal* focuses on papers within the following genres:

- Empirical studies
- Concept papers grounded on empirical and scholarly literature
- Policy briefs
- Reflective leadership essays on professional experience
- Pedagogical Perspectives
- Book Reviews
- Other innovative and actionable leadership and/or policy practical research

CALL FOR PAPERS

In line with our Journal's mission, we seek submissions that address the preparation and development of P-20 educational leaders. *JTLPS's* next issue is scheduled to be published in Summer 2016. Manuscripts will be accepted on an ongoing basis.

FOR MORE INFORMATION

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ISSN: 2151-5735

REFLECTIVE ESSAY

California's State University: A Leadership Perspective

Chancellor Timothy P. White, The California State University

ABSTRACT

Editor's Introduction: Dr. Timothy P. White has served as chancellor of the California State University (CSU) system since late 2012. As chancellor, he oversees 23 campuses, over 460,000 students, and 47,000 faculty and staff. The CSU spans the entire state of California and has an annual budget of more than $5 billion. It is one of the most diverse and most affordable university systems in the country. In June 2015, members of the Editorial Board of The Journal of Transformative Leadership and Policy Studies (JTLPS) met with Chancellor White in Long Beach, California to engage on issues surrounding leadership, policy and transformational change across the largest four-year system of higher education in the United States. This reflective essay was culled from a transcribed interview and themed around six major areas: institutional vision, leadership, future of the California State University system, facilitating system level change, the CSU as a state-wide system with local flavors, and legacy foresight. The title to this reflective essay came from Chancellor's White interview as he asserted that the official name of the university was California State University and that in a sense the apostrophe "s" as a possessive would ideally reflect that the system is California's state university.

Institutional Vision

Editor's Comments: One of the best definitions of a vision comes from the Oxford English Dictionary: "something seen vividly in the imagination, involving insight, foresight and wisdom. A vision is a desired future state." JTLPS sought to inquire with Chancellor White his vision for the CSU system and how the values of high-quality, accessibility, student-centered education, and success efficiently and effectively advance this vision.

JTLPS: Our first question centers on vision. As you know, vision is about thinking ahead. It's not concrete. It is in the abstract and includes foresight. Keeping in mind

> *When storms and waves – the day-to-day particulars and politics –knock you off your path, you make corrections.*

the vision of the system, where do you see the California State University as a system in five to ten years?

Chancellor White: Vision is an interesting word. Sometimes, I think of vision as clarity of purpose – a strong, focused sight-line towards the future. Other times, I think of it as keeping an eye toward the horizon, understanding that there are numerous paths and obstacles to overcome in reaching our goals. In my work at the California State University, I try to implement both of these ideas simultaneously.

I am persistently mindful of the responsibilities that this university has to the people of California, and – excuse the ship metaphor, but we are very close to the ocean here – to keep this public university on a steady course and to maximize the wind in our sails. That's clarity. Identifying a clear path ahead, knowing what our strengths and weaknesses are and reaching port safely.

Then there's the other type of vision – keeping an eye toward the horizon, even when you might not know what's coming. It's the long-term approach. Even if you can't see what's between you and your destination, we need to stay focused, continue to do the right things, and ingrain this institution with strong values, a solid work ethic and exemplary habits. When the winds change and blow you off course, you adjust accordingly. When storms and waves – the day-to-day particulars and politics – knock you off your path, you make corrections. Yet, you always stay focused on your goal and your mission. You maintain course toward that horizon.

An institution of this importance, of this complexity, of this size – requires a team to keep that ship pointed in the right direction. The entire university needs to stick to our shared goals and be steadfast in our mission even when that horizon is a bit ambiguous.

So keeping that horizon in mind… in five to ten years,

> *I would be the first to tell you that it doesn't make much sense to have a cookie-cutter approach to our curriculum.*

I see the university as having advanced greatly towards the goals – attainable goals – set by our Graduation Initiative 2025. Meeting those graduation targets, hiring more tenure-track faculty, developing engaged advising, further solving the problem of course availability, and improving student preparation are critical components of our long-term vision.

We will also need to implement more high-impact practices, expand our ability to analyze data to make smart system-wide and individualized decisions, and bolster the pipeline of transfer students from our community colleges. If we can make major progress in five years, let alone reach – or hopefully, surpass – the goals we set in place for the Graduation Initiative 2025 in a decade, I'd be very, very happy.

> *I think relationships trump organizational charts any day of the week. Having relationships doesn't mean we love each other. It doesn't mean we are going to agree with each other. But, we are going to have honest, respectful relationships.*

I expect that we will reach those goals, and get more students to a quality degree sooner. As we achieve these goals, we will need to establish new ones – continuing to push toward that horizon.

JTLPS: A challenge within the system is that there exists a hybrid system in terms of governance and structure. It is both centralized and decentralized. What are the challenges that this brings to realizing the vision; even though we understand that maybe we will never get there (horizon)?

Chancellor White: That is a good question and one that I get asked all the time. Although I don't think it's necessarily the right question.

For me, the right question is not whether it ought to be centralized or decentralized. The question is, "How do we optimize this system using the best practices of a centralized and decentralized institution to maximize student success?"

An example is collective bargaining. Do we want to go through contract negotiations essentially 24 times – stretching out over long periods and taking a lot of hard work – to individually address each campus and the Chancellor's Office? Probably not. It makes much more sense for both sides to use the system's scale to our collective advantage.

There are often efficiencies and simplicities that result from doing things in a centralized way, so that's the approach we take. It makes little sense to have each campus

negotiate individually for the services, resources and supplies that all 23 campuses use. Scotch tape is Scotch tape, whether you're in Chico or San Bernardino.

The other side – I think this is where we really find that optimization sweet spot between centralized and decentralized – is in curriculum development. I would be the first to tell you that it doesn't make much sense to have a cookie-cutter approach to our curriculum.

Are we going to get a centralized group of faculty together to decide on the curriculum for the entire CSU? Or do we trust that Sonoma faculty members know the economic, environmental and social issues in Sonoma County? They are the experts who should design the curriculum on their campus.

At the same time, curriculum has to be related and relevant to comparable courses being offered across the California State University. Sonoma's courses should count the same as a similar course in San Diego, but San Diego will design and tailor their courses respective to their context. That's where my office can provide some assistance and some background to our campuses to leverage our ability here in Long Beach to be a clearinghouse for information, for exemplary practices. From system-wide operations to campus curriculum development, leadership requires identifying what we're ultimately trying to achieve and then determining the optimal way to achieve those goals in an efficient and effective manner.

Sometimes debates over critical issues get pretty muddy. That's where you need conversations with everybody. I understand organizational charts. In my four decade career, I have seen a lot of them. It is important that you have them, but I think relationships trump organizational charts any day of the week.

Having relationships doesn't mean we love each other. It doesn't even mean we are going to agree with each other. But, we are going to have honest and respectful relationships. We can talk about the hard stuff and still be friends or professional colleagues. To me, relationship building is a foundational cornerstone to develop and execute a vision going forward.

> *Leadership also means that, at the end of the day, we can put a stake in the ground and move forward.*

Leadership

Editor's Note: Leadership is a broad and evolving concept. At its most basic, leadership can be understood as a social process for generating the direction, alignment, and commitment needed for individuals to work together productively toward collective outcomes. JTLPS sought to elicit leadership practices that show promise in advancing the vision of the California State University as a system.

JTLPS: This leads to the next question on leadership. Once you establish the vision, how do you provide leadership to advance the vision or get closer to reaching the horizon?

Chancellor White: I've had success in my career as a result of making sure that the vision of the institution wasn't only my vision, but rather had lots of owners and stakeholders. Even if it happened to be my idea, someone else may have drawn it out in more detail and articulated that vision better than I did. I don't get to say, "I thought about that first, it's mine." Instead, I am going to say, "What a great idea! That's brilliant. So how do we get there?"

> *… the goals I have for the CSU are continually refined through conversation and constantly moving as our institution gains new ground.*

When we have these discussions about our vision with the university's stakeholders – students, faculty, staff, trustees, business leaders, legislators and thought leaders – they will often ask, "What are we trying to accomplish?" Every time, I want that discussion to lead to why we need to get more students to quality degrees sooner in California. I want people to own what we are trying to do here.

I think that's a big part of leadership. It is building awareness of why this matters – creating opportunity for more Californians to earn quality degrees sooner – and why it is important and critical to the success of California as a society and as the seventh-largest economy in the world. It is about having conversations on why our mission really matters and understanding that we, as Californians, are all in this together.

Sometimes, when I meet a young student or immigrant family, that conversation focuses on my personal story and our shared experience. With business leaders, I usually ask them to tell me their business story. So I think that a big part of building relationships – and in turn, ex-

ercising leadership – is in knowing and understanding a person's story, finding commonalities and opportunities for collaboration, and then convincing whoever is in charge at the university, system or state level that this is what we are going to do, and here's why it fits with our goals and our mission. And once we get that buy-in, it becomes a shared goal that the entire system and its stakeholders can support and rally around.

We can enable success by moving from regulation and compliance to a stance that better enables and facilitates positive change.

Leadership also means that, at the end of the day, we can put a stake in the ground and move forward. To be honest, the goals I have for the CSU are continually refined through conversation and constantly moving as our institution gains new ground.

JTLPS: What do you do when you set goals, when you communicate it and then you leave it to the campuses to decide how they are going to achieve these goals?

Chancellor White: Once we establish a shared goal, I want to be very up-front and clear on exactly what that goal means for our institution, and very loose on how we get there. For example, if I ask Sacramento, Monterey Bay and Los Angeles to reach out to students sooner and increase access, each campus will have the autonomy to figure out how to reach this goal. Their approaches, you'd imagine, would vary – particularly if you have some students grounded in privilege versus those coming out of poverty. I leave that to the campus leadership, faculty and staff, to the people who actually know the nuances at a contextual or personal level. However, with flexibility comes responsibility and accountability. We need to hold each other accountable for attaining those shared goals, even if we took differing paths to get there.

I will ask the presidents regularly, "How are we doing with the graduation rates?" If the rates aren't where they should be, it is not about shaming the campus. It is about figuring out what got in the way and how we, as a system, can help the campus succeed because it matters to me, it matters to students and their families, and it matters to the future of California.

I've gained some perspective on this having worked in several systems, some small and some large. I worked at one of the eight campuses in the then Oregon system – a system that only encompassed higher education. In contrast, Idaho has one board for everybody from primary through doctoral education. Regardless of the structure, every campus I have worked at, someone would say, "What is the system office thinking? Those trustees, those regents! They just don't understand our campus and what we are trying to do!"

It's funny. Now I get here and I hear those comments, and I think, "Wait a minute. That's me now! I am the guy that's not supposed to get it." Hearing that and understanding it from both sides – campus and system office – made me start to think about how to change the culture in this building and its reputation throughout the system. Whether it is accurate or not, a reputation is very real. My goal is to turn this office into a place that enables and facilitates success for all of our students, faculty and staff throughout the CSU.

This has been a very interesting conversation in the building that can get a little silly. You know, we don't have a marching band, we don't have a football team, and we don't have students or faculty here. Maybe we should get a mascot. Yet, in all seriousness, what we do have here is a lot of great people that work every day on answering the question, "How do we enable success at our 23 campuses?"

We can enable success by moving from regulation and compliance to a stance that better enables and facilitates positive change. We are not there yet, but I think the senior leadership has it figured out and embraced this idea. I think that our people will continue to grow in this direction. In doing so, they will enable and facilitate success across the entire system. This, for me, is a very interesting and important work in progress.

Future of the California State University System

Editor's Note: Though none of us can predict the future, a few crucial characteristics of organizations of the future are currently emerging. Organizations of the future will likely embody collaboration, partnerships, and alliances. They are likely to be increasingly transparent, will see the world as a community and create a flexible workplace. They are also likely to have greater inclusion. This section sought to identify practices that the California State University System is likely to include.

JTLPS: We like those words enable and facilitate. We will keep them in mind. This leads us to another question. What will the future look like for The California State University system in terms of collaboration and partnerships that could evolve into enabling and facilitating change across the system?

Chancellor White: First of all, we are in a revolution right now, or rather, an ecosystem shift. You could look at it from a whole host of perspectives, one having to do with what our families and students expect. There's a lot of discussion about defining the value of going to school. What is the cost to the student, the cost to the taxpayer, the accountability, the future of that student's career?

Then, there's the expectations from elected officials. For a state university, they are in a way our most significant donors, so we are wise to pay attention to their thoughts and help to inform them of what we do, what our successes are, and what we need to do to improve. Business leaders' voices also matter, as they are not only taxpayers in California, but often create the workplaces where our graduates seek employment. Then, of course, there are our employees. We have almost 50,000 faculty and staff and they want to be assured that their time with the university is suitable with a positive work and learning environment. They want to make sure that there are opportunities for career and personal advancement.

As you can see, there are all of those moving parts that are changing the ecosystem from a stakeholder perspective. On top of that is a technological perspective where more and more students interact and learn on internet-centered devices. This is both to their benefit and detriment. Regardless, it's an ecosystem shift that we need to provide leadership for and address.

So how do we think about our creative educational work going forward where many students are coming to us as digital natives, while many of our students also come from low-income households with limited or irregular access to the internet and these amazing new technologies? That's an interesting dichotomy. We are facing a situation of the haves and the have-nots and it's our responsibility to make sure that we introduce and integrate more technology into the learning space without fostering exclusion.

That speaks to a larger question. How do we, approaching half a million students, never lose track that learning is inherently individualized? The way you learn, the skills and experiences students bring all play a role. Maybe a student has a learning disability. That's intensely personal and it will affect how that student learns.

The objective must be personalized education at scale. At first, it sounds impossible, right? Common wisdom would suggest that you can either go to scale or you can localize and individualize learning. We are working on using our scale to personalize education, to understand the nuances and individualize it.

I know that when we solve that Rubik's Cube, everyone will feel that we reached a major point of change that will affect higher education going forward. So this has been percolating in my head for a while: How can we use our scale, those big numbers, to find new ways to make learning and education very individualized and very personal?

> *How do we not let the standard of averages kill the learning environment for the individuals that make it up? That is the fundamental, intellectual and practical challenge. And you know that the CSU is up to this challenge because we pride ourselves on who we graduate and not on who we exclude.*

JTLPS: Have you figured it out?

Chancellor White: I think we are making progress. This is where I have the greatest hope for technology. My context for this discussion comes from a research background in regenerative medicine. It was called muscle transplantation before, but today there is regenerative medicine and personalized medicine. I think a lot of the ideas from this research background carry over quite well to what we're experiencing in higher education today.

Here's an example. Let's say we have two people, and they both have diabetes. We run their genetic screening and we treat one person this way and the other person that way, based on their screening. They get better. If we had treated both patients exactly the same based on a standard of averages, then possibly neither person would get better.

That's the risk we have in this system. What do our college seniors do? Well, if we look at our 80,000 seniors, on average, they are doing X. That's great to report to the

trustees, but we know that there isn't a single member of that senior class that embodies the average. How do we not let the standard of averages kill the learning environment for the individuals that make it up? That is the fundamental, intellectual and practical challenge. And you know that the CSU is up to this challenge because we pride ourselves on who we graduate and not on who we exclude.

Sure, there will be those for whom the more traditional college experience isn't for them. It's okay to say, "This might not be right for you, let's explore alternative options." As long as somebody has the intellect and is willing to do the work, our goal should be – and is – to help that person reach their goals. That is where the individualization piece comes in. There are so many outside influences, factors, events and situations that will affect that student's ability to reach their goals. If we can individualize the learning experience for them, in our ecosystem, then we will be successful. That's the beauty of the CSU.

I try to take care of the task as well as the person.

Facilitating System Level Change

Editor's Note: Progress occurs when courageous, skillful leaders seize the opportunity to change things for the better. Change requires good management, but above all it requires effective leadership. The environment for change is different today for several reasons, including a connection of higher education to the global economy, greater public investment and sense of accountability, increasingly diverse students who engage campuses differently and the ever changing technology. JTLPS sought to inquire into the leadership practices that help align individuals and coordinate their actions for institutional change.

JTLPS: You described two major categories in terms of management practices and strategies that need to be instituted within the system to hold people accountable and promote a unified direction and vision. That's one end. The other is leadership, empowerment and being open to change. You gave a lot of good examples along those two lines, but at the same time, there is a lot in between. There are multiple theories out there that talk about this: transformative, transformational, transactional, transcendental, servant leadership, leader-member exchange, and the list goes on. We understand that in order to function and to lead a system that is very complex, dynamic and challenging, you need a multiplicity of leadership approaches, particularly if you want to dare to engage in changing a system. It is hard enough to maintain it, let alone to infuse yourself in trying to change a system of this magnitude. Are there particular leadership practices that help promote systemic change across the university?

Chancellor White: Well, I think our time is up… [laughter]. Joking aside, as I talk about optimization, relationships and individualizing learning at scale, I think that is also true of the individual leaders at various levels of an organization. Oftentimes, leadership gets tied to a person's title. I guess there is some merit to that, but I also believe heavily that there's merit to informal leadership. Somebody that doesn't have a particular title, but by the power of their intellect and their abilities and willingness to go beyond self, they become a leader.

These informal leaders help influence how students, faculty, staff and our stakeholders feel about something. I have always thought about leadership as not necessarily what the title is on your business card, but instead everything to do with how you build relationships, empower others to succeed and reach those shared goals.

Here's a personal anecdote that helps explain my philosophy on this. It is not very intellectual, but it really helped define my outlook towards leadership and teamwork. I was a tall, skinny kid in high school and was late to mature. I also skipped a grade when I moved to the U.S. from Argentina via Canada, so I was also very young in my class. Long story short, when I was a freshman in high school, I was 5 feet 11 inches and 118 pounds. I really wanted to relate to the other guys, so I decided I would go and play football. The coaches, being jerks perhaps, said I ought to play tackle. I broke my arm within the first two weeks.

One of the assistant coaches took me to the hospital. As we sat there for a few hours waiting for my mom, he convinced me to go out for swimming. Fast forward to senior year, I was a pretty good swimmer in a non-contact sport. Basically, due to this experience with an educator and assistant coach, I decided to go to college at Diablo Valley and Fresno State in order to become a teacher and a coach.

I coached a high school age group and tried coaching at a junior college while getting my master's degree at Cal State East Bay. I decided I wanted to coach at a four-year

college, but back then you needed to be on the faculty to be a coach. So, that's when I decided to get involved in science and had that 'ah-ha' moment, and thought, "Whoa! This is interesting!"

Due in part to my initial desire to coach, I went back and did what I needed to do. I got my doctorate from UC Berkeley, essentially completing the path envisioned by the California Master Plan for Higher Education. Then I started working on a post-doc at the University of Michigan. Ultimately, I got my own lab as a professor, and it turns out that it was exactly the same thing as being a coach. What did I learn from my previous coaching experience?

- You get a group of people together;
- You work hard on the goal;
- You practice every day to succeed;
- You aspire to be successful;
- You maintain a strong work ethic and commitment;
- You learn how to manage failure.

Same thing in the lab. What are we going to study? Muscles. Here's how we'll do it. First, build a team of students and post-docs. Second, get grants to pay for it and surround ourselves with colleagues that will support our goals. Third, practice every day on transplantation or regeneration and develop a game plan. Fourth, aspire to be successful.

When I became a department chair, it was the same thing. Dean, same thing. Provost and campus president, same thing. When I became chancellor, guess what? Same thing. It is a goal. Day and night you stay on your goal, and if the goal becomes irrelevant, change and regroup so we can keep heading toward the horizon.

The way that I approach this is to take care of the job at the very top and take care of people along the way. If somebody needs some guidance or help, and if I can give it, I will.

The things that really matter to society require more than one person working toward a goal. That whole idea of a team is key. When I look back with that 20/20 hindsight, I see notions of what a coach does. That is, to lead, or provide instrumental leadership.

As I have gotten older and wiser, my leadership style now is more carrot than stick. Yet, every once in a while I have to say to a colleague, "You know, this just isn't working. And if you don't work to fix it, we are going to have to make a bigger change." You enable and facilitate, but you can't be naïve. At some point, you have to make a change because the status quo isn't working.

The way that I approach this is to take care of the job at the very top and take care of people along the way. If somebody needs some guidance or help, and if I can give it, I will. If they can't get it done, then I will make a change. This might mean moving people out who aren't in the right place to do what California expects from us and what our society and economy need from this institution. I can't let someone in the wrong position hold us back in any meaningful way, but I am not the kind of leader who would say, "You're out of here, you're on your own, you're cut off." I try to take care of the task as well as the person. For me, it just comes down to respect and dignity.

The CSU as a State-wide System with Local Flavors

Editor's Note: The CSU is California's flagship higher educational system in terms of educating a significant percentage of its citizenry. In teacher preparation, for example, the CSU produces 60% of the teachers across the state. This is true of many other disciplines as well. Given the size of our state both geographically and in terms of our population, each campus in the system has both a "regional flavor" and also reflects core values and policies of the CSU as a system. This "identity" has been historically reflected in the names of the various campuses. San Jose State and San Francisco State have historically highlighted their local identity. In contrast, Sacramento's name is still officially CSU Sacramento, a name that links it directly to the system. There are both historical as well as practical reasons for these differences. JTLPS sought to explore the leadership and/or policy initiatives that have mediated and even grappled with the dichotomy between regional needs and identities and those that cut across the university as a system.

JTLPS: The CSU has a lot of local flavors. What are either the leading educational policies or initiatives that tend to have a greater focus on the regional nature of the various campuses? How do you find balance? How do you grapple with the "local flavors" versus the system as a whole? How do you mediate this continuum?

Chancellor White: California is a patchwork state. We have six major metropolitan areas with populations above one million: Greater Los Angeles, the San Francisco Bay

Area, San Diego, the Inland Empire, Sacramento and the Silicon Valley. But much of the state remains rural – made up of small communities with occasional mid-to-large cities like Fresno. This clearly affects decision making. For example, my recommendations to the trustees on appointing campus presidents is centered on candidates that hold a set of experiences, skills and a willingness to embrace and work within the context of regional communities.

I'll use Humboldt State in Arcata as an example. The far northwestern part of California has a large Native American community that is very intertwined into the fabric of that region. Additionally, regional industry suffered over the last two decades due to changing environmental, water and fishing regulations. So, naturally, the needs for the people of that region are quite different from the urban centers I mentioned earlier. We need to embrace this so that the campus is relevant to its regional stakeholders, and thus its patch of the quilt that comprises California.

You don't want to put a round peg through a square hole. It just won't work for the community, the person or the campus. Yet, everybody benefits when you get it right. For example, we were lucky when we appointed Dr. Lisa Rossbacher to Humboldt State. She has lived in small towns like Arcata. She's a geologist, which is a huge part of the academics there.

Another thing that public higher education has to be very mindful of, and that the CSU needs to continue to work on, is engaging alumni. We need alumni giving back either with their time or their talent. When you're a student, your affinity is to your campus, not to the system. You don't go, "Rah-rah for the CSU!" Remember, we don't have a mascot at the system level.

However, we have done a tremendous amount of work in the last year to create an identity for the 3 million living alumni spread across this state, nation and – truly – the world. This system-wide affinity is critical to create opportunity for both our students and alumni. Also, this type of broad CSU affinity means that our alumni are able to serve as our ambassadors to policymakers, employers and community leaders. Along with our current students, alumni are the best representation of the quality of a CSU education.

Legacy Foresight

Editor's Note: We know that "learning how to learn" or metacognition is one of the operative outcomes that an educated person in the 21st century must develop. This is true irrespective of academic field of endeavor. Even in the technical fields a graduate must learn how to learn. Thus, one of the goals of higher education is to provide and promote learning as a life-long process. Our legacy as educators will reflect this goal. JTLPS sought to learn what policies and leadership practices allow this vision for the system. How is "learning how to learn" enacted across the system so that our students develop this requisite outcome and they become life-long learners?

JTLPS: We would lastly like to focus on the legacy question. What will be your legacy for the system in five to ten years?

Chancellor White: I hope that it encompasses students first, students last, and students all the time. That's a personal belief that I know I share with a lot of other people. Students first requires a university leadership that is aligned with the student-focused goals of the campus community. That requires leadership to be thoughtful and engaged in our communications.

For example, I have been working on creating a more concrete outline of what my expectations are for the meeting held every other month with presidents and vice chancellors. Nothing drives me crazier than having a good meeting on a difficult topic and then you say, "Any other thoughts?" Nobody raises them, because everyone is distracted or unengaged. So I've sort of implemented the "Ted Rule." Ted (Theodore Ralph "Ted" Kulongoski) was the elected governor at the time when I was at Oregon State. He was a very nice, approachable kind of guy. The way he campaigned was to go to mom-and-pop restaurants and he always wore a bowling shirt, probably polyester.

Yet, Ted told me that if someone's cell phone went off when the governor's cabinet gathered in Salem for the weekly meeting, then that person would be off of the cabinet. This was around 1999 or 2000 when cell phones were just starting to get ubiquitous, so he just wanted everyone to turn them off. His reasoning was that when you gather once a week, everyone – the cabinet secretaries, directors, attorney general – had to focus on the work at hand. Two months into his term as governor, somebody's phone went off. Ted walked the person out and said, "We won't be needing you in this administration." He was dead serious. I haven't walked anyone out yet, but you turn everything off when you come into the council meetings. Because I want everybody to listen to each other. Because

a person cannot learn without being thoughtful and engaged.

So my legacy? I hope that it is one focused on empowering learning opportunities for student success through engaged and thoughtful leadership. I hope I'm remembered for enabling and facilitating positive change and good work for this institution. Maybe that I've encouraged a common goal of strong communication, robust accountability, and high expectations.

I also hope that when my time here is over, that Californians by and large grow their understanding and respect of the critical importance of this university and its mission to serve the public good, because they built it. They own it. It really is California's State University.

About Chancellor White

Chancellor White is the seventh chancellor to serve as head of the CSU system. Previously, he served as chancellor of the University of California, Riverside, and as a professor of biology and biomedical sciences. Chancellor White came to UC Riverside in 2008 after serving as the University of Idaho's president from 2004-2008. Chancellor White served Oregon State University from 1996-2004 as a dean, the provost, and executive vice president, and with an interim appointment as president. He previously held positions as professor and chair of the Department of Human Biodynamics at the University of California, Berkeley (1991-96), and as professor and chair of the Department of Movement Science and research scientist in the Institute of Gerontology at the University of Michigan.

Chancellor White was born in Argentina. He and his parents immigrated to Canada and then to California when he was young. Chancellor White pursued his higher education from Diablo Valley Community College, Fresno State, California State University, East Bay, and his PhD from the University of California, Berkeley. He spent two years as a post-doctoral scholar in physiology at the University of Michigan before starting his academic career at Ann Arbor in 1978. He is internationally recognized for his research in muscle plasticity, injury, and aging.

REFLECTIVE ESSAY

Transforming Special Education: The Role of the California Association of Private Special Education Schools (CAPSES)

Robert Reilly, EdD, Educator and Licensed Clinician

ABSTRACT

Editor's Introduction: In January 2015, members of the Editorial Board of The Journal of Transformative Leadership and Policy Studies (JTLPS) conducted an interview with Dr. Robert Reilly, CAPSES board member, to engage on issues surrounding special education in the 21st century. This reflective essay was culled from a transcribed interview and themed around six major areas: access, special education policy, services supported by CAPSES, social justice, teacher preparation, and creating an inclusive school culture for children with special needs.

CAPSES primary mission is to maximize the potential of individuals with disabilities by advocating for them in public policy, and promoting high quality instruction, guidance, therapy and staff development. CAPSES is dedicated to preserving and enhancing the leadership role of the private sector in offering alternative quality services to individuals with disabilities. By providing the highest quality instruction, therapy and guidance and advocacy to their clients, CAPSES members strive to help special education students maximize their potential and lead independent and dignified lives. Through this interview, JTLPS sought to ascertain how CAPSES works to build this potential with special education students and their families to ensure appropriate services for them.

CAPSES on Access in Special Education

JTLPS: To begin, why was CAPSES established as an organization and how has special education evolved since CAPSES's foundation?

CAPSES: During the fall of 1970, nine special education directors from southern California came together to explore the possibility of forming a professional association with a mission to improve communication between the public and private sectors of education. Specifically, this group, that was backed by parents of children with specific learning disabilities, was interested in focusing on the need for private schools to have a voice in developing policy and providing options for children whose education needs were lacking the individual services necessary for them to achieve at each grade level and eventually successfully complete their high school program. As the result of this effort, CAPSES was incorporated in 1973 as The California Association of Special Education Schools. CAPSES' primary mission was to promote the delivery of quality special education and related services in both the non-public and public sectors of education.

In 1976, public law 94-142, which is the Education of All Handicapped Children Act, was passed by our Federal leaders after parents, who often are the catalyst for change to occur, began to lobby the federal government for alternative educational services for these children, especially for those who could not afford private schools. This opened the door for private schools to contract with state departments of education in order to serve children that the public sector was unable to serve. This public law is currently codified as the Individuals with Disabilities Education Improvement Act (IDEA, 2004). Prior to its initial

passing, families who had children with hearing disorders, sight, or other health impairments and children with non-ambulatory disabilities, did not have anywhere to learn if they could not be served in the public schools. As a result, CAPSES mission began expanding to all areas of California providing support, direction, and appropriate interventions on behalf of all children and families that were in need of appropriate learning options and environments for vulnerable children.

CAPSES on the Current State of Special Education

JTLPS: Where is special education today? Where is it going? And what is it going to take to get there?

CAPSES: Special education is a complicated process. In order for individual states to receive federal funding for these specialized services, they must create policies that ensure a free and appropriate education for all children with disabilities (IDEA, 2004). These various state plans must be consistent with Title 20 of United States Code, Section 1400, which provides children and adults ages three through 22 with the right to be educated in "the least restrictive environment" and to "the most reasonable extent possible." This means that children with disabilities should be educated with non-handicapped students in public school general education environments and that separate classes or separate school placement occur only when the severity of the handicap prevents learning in mainstream classes or when school districts do not have the ability to provide needed special education services.

A significant problem for special education is the struggle that continues in all states to locate and retain fully qualified special education teachers. This remains one of the most important challenges for this field and for the ultimate success of all students with disabilities (DeMik, 2008). The United States Department of Education in 2011 reported that special education teachers in America are leaving the field or migrating to general education classrooms in large numbers and in less than five years (CDE, 2011). Data reported by the California Department of Education in 2010 indicated that special education teachers are transferring to general education classrooms at a rate ten times the number than general education teachers transfer to special education placements (CDE, 2010). If this trends continues, this is a problem that cannot be solved simply by recruiting thousands of new teachers (Ingersoll, 2002).

Many studies have concluded that teacher shortage in special education occurs most often with those staff assigned to classrooms of students with emotional/behavioral disorders followed by teachers serving students with severe/profound disabilities and specific learning disabilities (McLeskey, Tyler, & Flippin, 2004). For these vulnerable students this attrition creates a never ending stream of new teachers that they will need to adjust to and a learning process that most certainly can be different from teacher to teacher. This inability to adjust rapidly can result in a significant decrease in achievement levels and an increase in student dropout rates (Reilly, 2013).

JTLPS: So 40 years later how is the state better off in terms of serving the student population that CAPSES serves?

CAPSES: CAPSES efforts on behalf of families and their students with disabilities have improved the educational experience for a great number of these children. I have experienced conversations with many children attending CAPSES member schools. They talk about being happy there. They talk about wanting to go to school every day. I was a principal of a nonpublic school for 17 years and I constantly heard students say "I love this school! The food here is great! I love my teacher!" I also have listened to students say that they hate their nonpublic school when attendance records are found to be nearly perfect. When you hear students verbalize these words, it may be the first experience they have had where they are able to do so. I would say that CAPSES schools have provided an oasis for vulnerable children where they feel safe, valued, and experience sustained success in social and academic skill development.

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Members of the California Department of Education, along with administrators, teachers and support staff also cite CAPSES annual conferences, and regional meetings in providing training in all areas of teaching and administering nonpublic schools as well as keeping everyone abreast of current trends affecting special education.

One of the greater challenges facing CAPSES and its member schools and agencies is the process which is set in place in federal law that requires several conditions before a child may attend a state certified non-public school. They need to fail at every public school special education program and begin a process of evaluations of their development of which can be exasperating for both the student and responsible family members. In order for a student to receive services under IDEA, they must be tested and evaluated to determine the specific disability that may be causing an inability to process learning. Once the student's specific disabilities are identified a fifteen day student study team comprised of a parent, teacher, school counselor, testing psychologist and other interested/invited persons create an Individual Education Program (IEP).

In essence, it is a legal document that prescribes individual academic and behavioral goals designed to create a leveled learning field for the student. The most common option is an assignment to a resource specialist classroom or to be assigned a resource specialist teacher who will provide specific support in the student's general education classroom. If this plan does not provide satisfactory results in a reasonable time, another IEP meeting is called and the student may be placed in a special day class. If they fail there, the school will often transfer them at least once if there is an appropriate school in the district with like services where continued assessments will be made to determine the need for further or additional interventions. Then, after all of these adjustments to the student's program are implemented, and if there is no apparent progress in either behavior or academic achievement or both, another IEP meeting is called where discussions focus on the option of a transfer to a state certified nonpublic school.

Early interventions in kindergarten, first, second, third, and fourth grade dramatically increases the chances of students being returned to regular education classrooms as a capable learning students.

The nonpublic school then is allowed to contract with the school district and begin the process of orientation and program implementation for the new student. The attitude of the new student is often, "Hello, I am your new failure. Now fix me!" And these specialized schools do many times address their needs. They do in fact "fix" many children and have a great deal of success in providing them with fresh outlooks and hope for a successful future.

CAPSES on Policy Impacting Special Education

JTLPS: What measures are currently used to ensure that students are being properly diagnosed as needing special education? And how can this criterion be improved?

CAPSES: The California Department of Education is developing a new program that is based on the federal movement to improve the effectiveness of these evaluations.

> Response to Intervention (RtI) is emerging nationally as an effective strategy to support every student. The California Department of Education (CDE) is coining the term Response to Instruction and Intervention (RtI^2) to define a general education approach of high-quality instruction and early intervention, prevention, and behavioral strategies. RtI^2 offers a way to eliminate the achievement gap through a school wide process that provides assistance to every student, both high-achieving and struggling learners. It is a process that utilizes all resources in a school and school district in a collaborative manner to create a single, well-integrated system of instruction and interventions informed by student outcome data. RtI^2 is fully aligned with the research on the effectiveness of early intervention and the recommendations of the California P–16 Council. Access, culture and climate, expectations, and strategies are the council's themes.
> – California Department of Education (2014)

This is very promising as early intervention is critical. Waiting until a child reaches middle to high school grades, and who have experienced a multitude of failures, coupled with receiving generally poor mental health services, makes it difficult to convince them that they can be successful. It can be done. It just takes huge daily struggles. Through the application of RtI, we hopefully are making sure that all students are evaluated more effectively; not only by testing, but through observation and discussion while ensuring that teachers' and administrators pay more attention to the process of individualized education pro-

grams. Early interventions in kindergarten, first, second, third, and fourth grade dramatically increases the chances of students being returned to regular education classrooms as a capable learning students.

CAPSES on Creating an Inclusive School Culture in Public Schools

JTLPS: What resources can districts institute to improve in the area of creating an inclusive school culture in public schools to ensure that students with disabilities are full participants in the academic and social environment?

CAPSES: They can begin by removing their special education classrooms out of the basement. They can remove their special education classrooms from the mobile trailer classrooms where they tend to be located away from the general education population many times. I have visited dozens of public schools around California and it is often difficult to locate the special education classrooms. In fact, at a school district that I had been visiting for some time, I went to find the special education offices where they had always been located and they were nowhere to be found. A nice fellow walked by and asked, "Can I help you?" And I replied, "Where did they put the special education department?" He replied, "Oh, you need to go all the way down the main drag over there about three blocks, turn left and they are right next to the grave yard." I could not believe it. Sure enough I drove where he directed me, and there was the special education department backed right up to the graveyard. Bad location, I would think, if a district wants to enhance the culture of an organization.

In terms of culture-building resources, if you walk into the front doors of the Zinsmeyer Academy in Long Beach or the Institute for Effective Education in San Diego, for example, you cannot help but be happy. They are beautiful. They have pictures on the walls. They have new carpeting. Zinsmeyer Academy has a licensed contractor that comes in after school and repairs any damage the students may have done. In fact, when students get angry and punch a hole in the wall, the next day they bring their buddy over to show them, "Look what I did." The hole has already been repaired. Then their buddy says, "Well I thought you said there was a hole there?" If you take care of the school environment, students will learn to increase their level of care for their school as well. I believe that a tour of any CAPSES member school will provide the visitors an experience about what an environment for vulnerable students should look and feel like.

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The more normal and inclusive environments that these children can be provided with in public schools the greater the chances are that they will achieve success. With CAPSES serving 7,000 students out of over 600,000 attending public schools in California, the public sector is not completely failing special education children. CAPSES schools exist to ensure that there is an appropriate education experience for the most severely handicapped students who are unable to succeed in larger more comprehensive schools. CAPSES sees this as a partnership ensuring the best possible options for all children with disabilities.

CAPSES on Social Justice and Special Education

JTLPS: Why do you think there is an over representation of students of color and low-income students in special education? What can districts do to improve this overrepresentation?

CAPSES: Currently in the United States there far more money is spent on prisons than on colleges and universities. California, for example, spent $9.6 billion on prisons in 2011 but just $5.7 billion on higher education (Kolowich, 2013). Demographically, minorities are disproportionally represented in prisons, which is a major indication that we are treating the symptoms and not the problems. There has been speculation that people who build prisons, which now are often for-profit, study third grade classroom behavior reports, teacher reports and school reports to determine demographically where these prisons should be built. While this claim cannot be substantiated, what we do know is that there is a high correlation between poor academic achievement by children of color and low-income and prisons; a phenomenon referred to as the school-to-prison pipeline (Houchins & Shippen, 2012).

The high rates at which this occurs can certainly be taken as an assessment of what issues need to be faced

by our society at large. It is not a good reflection on us that little children are being arrested, often times for stealing relatively small items. What happened to bringing the child back to the store and having him apologize and help clean the store's floors? These children are brought into court and their feet cannot even touch the floor while they sit on the bench waiting for their punishment. Unfortunately, if the speculation is true then the prison-builders are looking at it as indeed, "there is another one!" "He will be one of our prisoners because he has already been arrested for theft."

Then when they are in the court system, they are around other children who have similar challenges, and they become their mentors. Moreover, upper class families with children of color are sending fewer of them to public schools because they don't trust the process and because they have the money to do so, they enroll them in private schools. The problem that this creates is a worse outcome for poverty level children because these students need to be with other successful students that they can relate to ethnically. If they only engage with struggling or failing children their chances for succeeding diminish correspondingly.

From my perspective, the answer to reducing both the number of children in the court system and the number of children academically succeeding is the early reasonable, sensible evaluation of children that California is developing with the RtI approach in order to determine if there is a specific learning disability or mental health issue in need of intervention and/or treatment. It is important not to over react when children are being children, especially when it applies to children of color which I believe happens too often and is reason these children do find themselves in special education.

The following thoughts from a minority mother on having a child of color in special education help to clarify this discussion. Her thoughts are amazing. It is lengthy but it worth going through. It says many things that I am certainly not surprised about pertaining to children of color being found eligible for special education services when they are, in fact, not.

> It is frightening to think that schools cannot be held responsible for having minorities enter a school, only to have many of them placed in special education without any accountability on the part of the school. It seems like teachers are allowed to use special education as a way of weeding out from general education what they perceive as the "trouble[d]" children. Often a child can be the most brilliant in class, but because he cannot sit still for long periods of time he becomes a potential candidate for special education.
>
> What is so frustrating is that when a White child may be doing exactly the same thing as a Black child, it would likely be viewed as the White child just having a bad day. The word "special" in special education should be changed to "troubled" education. Was special education not designed to be innovative with teaching methods to help students with disabilities? In today's world, most well-off minority parents do not send their children to public schools. Rather, they place their children in private schools for fear they would not receive a fair and adequate public school education. Placing a Black child in the public school system is a risk every Black parent takes, especially if the child is male and of poor economic status.
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> There is a high risk that the child will be placed in special education. For many parents, the majority of the time is spent being stressed about keeping a roof over their child's head, as well as feeding and clothing him or her. School seems to be the least of their concerns. Parents trust in schools tremendously to act in the best interest of their children because that is what educators are supposed to do — prepare students to be productive assets to the community, contributors to the larger society. Unfortunately, this does not seem to apply to minorities. It seems as if special education becomes the stumbling block in these students' lives.
> – Lavine (2010)

CAPSES wants all children in special education to be provided a pathway, not a road block. Therefore we need to attend to the root problem not the symptoms. There are certain factors that we are just now paying atten-

tion to about Black children who are raised in a cultural environment where they may often react to stimulus in ways that White children do not. Their experience may be such that being raised in their environment they might simply be sensitive and reactive to specific sensory input and that could be causing the difference in how they behave. Rather than spending special education dollars and misidentifying their needs, they may respond positively to sessions with an occupational therapist to learn how to deal with their sensory integration issues. Again, with early appropriate interventions positive change can make the difference between short and long term treatment and possibly not needing to add special education services. One of the methods many CAPSES member schools have chosen to address these issues is to implement the process and the philosophy of "Catch them being good."

This philosophy is absolutely amazing. Learning and teaching school staff that punishment only stops behavior, positive interventions and appropriate awards changes behavior is a key factor. If there are positive interventions put in place which CAPSES schools do a superb job of implementing then permanent appropriate behavioral change can occur. This is especially effective for a special needs child because you can yell at a special needs child with sensory integration issues as loud as you want "You did the best job that I have ever seen! You are just turning into the best child in the world! You are just wonderful!" And if you yell loud enough they will respond "What did I do wrong now? " They are not hearing the words they are experiencing the voice inflection and yelling. This is more evidence that calm, reassuring positive interventions produce better outcomes.

CAPSES on Teacher Preparation Programs

JTLPS: What role does the university have in teacher preparation for quality special education?

CAPSES: Most school districts in America are facing chronic shortages and ongoing vacancies during the school year because qualified credentialed candidates cannot be found (Reilly, 2013). Currently, California is experiencing a teacher shortage of approximately 95,000, which includes special education teachers (California Teachers Association, 2015). A major reason for this in special education is that there is a disconnect between what is going on in the safe classrooms in university teacher preparation programs and the reality of the many surprises that lie in store when the novice teachers venture out into their first special education classrooms. They arrive at their new school, and the first thing that may happen is one of these children that become upset throws a chair at them or maybe bites them.

The response of the teacher is, "they never told me about this in teacher preparation school, I am out of here." In fact, during my third or fourth year as a principal I hired a teacher who came in looking tough and ready to go and by the end of her first week I couldn't find her. I then discovered a note she had left on my door, "I am out of here, thanks for trying me out!" This result happened despite an orientation process and an assigned mentor to assist her. This is a very tough business and is the reason that 50% of all special education teachers leave the field or move to general education within the first five years of working (CDE, 2011).

This philosophy is absolutely amazing. Learning and teaching school staff that punishment only stops behavior, positive interventions and appropriate awards changes behavior is a key factor.

This shortage signifies that more impactful and supportive teacher induction programs need to occur. This is the process that happens when teachers graduate from their teacher preparation and training and move into their new school where an orientation process takes place. The novice teacher is provided a mentor to help guide and support them, as well as a teaching plan going forward. In that plan they should know, for example, that when they see a child moving around in their seat, an occupational therapist may be available to administer a sensory integration assessment to determine if perhaps their seat is too hard. "If so, we are going to put a little cushion under you and that might make a difference."

Also, making changes in the environment can help tremendously. Certain lighting can over stimulate children with sensory integration issues. Adjusting the light in the classroom, as well as the colors of the room might be changes that could assist the learning process for students who may be more prone to react to specific sensory input and that could be the difference. Spending large amounts of money to put them in special education when they may just need some time with an occupational thera-

pist, or a mentor to learn how to deal with his or her integration of different senses that are bothering them could turn out to be a better path in the long run. They should also know and expect that on some days nothing will go right no matter what they do! If university teacher preparation programs integrated more of these kinds practical applications to their teaching curriculum I believe novice teacher attrition could be decreased significantly. It would be an additional cost to the universities but would decrease the huge costs to school districts of losing teachers and retraining new ones. These reduced school district administrative costs might then be better spent on improving teacher preparation programs and classroom environments.

Education leaders Arne Duncan, United States Secretary of Education and Tom Torlakson, California Superintendent of Public Instruction, have stated that teacher attrition in the United States is one of the most challenging problems facing education today. They both give specific attention to special education and the over six-and-a-half million students currently receiving services under IDEA (IDEA, 2010). Children in special education are often left with teachers that are not qualified to work in the field, creating an unstable environment for children who are in need of the most stability in order to achieve their optimum potential. Consequently, policy leaders and university teacher preparation administrators are challenged to create more effective programs that enhance the chances that special education teachers will remain on their jobs longer than they currently are.

I believe that ongoing collaboration between university teacher preparation programs, school district superintendents and principals, and responsible stakeholders in charge of student progress and adaptation should be established and made part of the public policy apparatus that guides this most important issue. California is currently almost one hundred thousand teachers short of providing an appropriate education for general and special education teachers. This is a pattern of failure that cannot be sustained over time and will need all the energy and attention leaders in this field are able to muster.

About the Author

Robert Reilly, Ed.D. LMFT is an educator and a licensed clinician. He has published articles, essays and public relations scripts for various nonprofit organizations. He is currently the owner of a consulting firm that provides support for organizations that work with vulnerable children and offers private therapy and life coaching for families and individual clients. You can visit him on Linkedin.com.

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JTLPS acknowledges the research, transcription, and editorial support on this article by Katrina K. Pimentel, Associate Editor.

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ARTICLE

Transforming The Institution from the Inside: Creating the Brave New Community College of the Future

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ABSTRACT

With rising and wide spread expectations that community colleges will become stronger forces throughout the nation, the stage is now set for these institutions to become even bigger players in the landscape of higher education, economic development and social justice by helping to create a more inclusive, well-educated and engaged citizenry. This article looks inward at what community college leaders, faculty and student services professionals need to do to transform their institutions into colleges that are truly ready to meet these rapidly growing expectations and to be able to take full advantage of these new opportunities. Four key areas at the institutional level are discussed that must be addressed in order for community colleges to make substantial and necessary improvements in student learning and development. These include: (1) expanding the definition and understanding of what leads to student learning and success; (2) realigning and tightly coupling every function and activity at the college to better support student learning and success; (3) confronting the myth that community colleges are innovative and flexible institutions; and (4) instituting a new kind of leadership that is focused firmly on improving student learning and success. There are enormous opportunities waiting for community colleges that will require dramatic transformation and change throughout the organization.

Community colleges have long suffered from being perceived by many as last choice postsecondary institutions for recent high school graduates and returning adult students who could not get into or did not have the resources to go to a university. We often heard that community colleges were good places to attend for someone to get general education requirements "out of the way," take a recreational course, or "learn a skill in order to get a job." These were also places where one could learn English, prepare for the high school equivalency examination or take remedial mathematics and English courses. Rarely did we hear that community colleges were places where students could receive quality higher education. In short, community colleges have suffered from a public perception that they were somehow not quite "real" colleges.

Much of that perception has changed now. Over the past five years community colleges have evolved into the "darlings" of higher education and the nation. Numerous celebrities, along with the President of the United States, are singing praises of the community college. Community colleges have even captured the ongoing attention of the popular press. Finally, there is a long overdue and growing recognition of the value community colleges have to local and regional economies, and their legitimate place in the landscape of higher education. With the anticipation that by the year 2018 nearly two-thirds of all job openings will require some postsecondary education coupled with the fact that by 2025 America will need 20 million more college graduates to support the economy, the network of nearly 1200 community colleges across the country is expected to become an even stronger and more vital force

in the economic and social health of the nation (Carnevale & Rose, 2011).

This article looks inward at what community college leaders need to do to transform their institutions into colleges that are truly ready to meet these rapidly growing expectations. Four key areas at the institutional level are discussed that must be intentionally and aggressively addressed in order for community colleges to make substantial and necessary improvements in student learning and development. These include developing a much tighter coupling between educational programs and student services, implementing strategic and systemic changes in the organizational structure and operations, and building a much stronger and cohesive relationship between college leaders, the faculty and student services professionals. It will also require a much broader understanding and support for all of the elements beyond the formal teaching and learning process that directly influence and facilitate student learning and adult development. If community colleges want to take full advantage of the many new opportunities that the future holds, they will need to be redesigned from the inside out to create an institutional environment that fully supports and facilitates a kind of symbiotic and collective effort across the college that will lead to a dramatic increase in success for all students.

At the national level there have been pledges to substantially increase completion rates and to produce many more college graduates, while simultaneously making community colleges free and accessible to all those who can benefit (American Association of Community Colleges [AACC], 2015). At the state level, there have been recent calls for legislation and policies that focus on improving success rates by increasing funding for support services and creating more rigid and defined educational pathways for students (California Community Colleges Student Success Taskforce [CCC SSTF], 2012; Little Hoover Commission, 2013). In addition, with the belief that community colleges have the ability to provide superior technical education and because of their wide accessibility, an increased number of states now allow community colleges to offer specialized bachelor's degrees (California Community Colleges Chancellor's Office, 2014; Chen, 2015).

Despite all the attention and recent praise for community colleges, most educational leaders would agree that there still are numerous challenges that must be addressed. These include low graduation and completion rates, a continuing escalation in remediation needs, lack of currency in vocational programs, and a chronic scarcity of funding to meet current demands. These challenges are not new. What is new is the changing tide for community colleges from being underappreciated and not appropriately recognized for their major contributions, to being widely praised as the institutions that are going to help increase America's global competitiveness. National and state leaders from all political persuasions are also looking to community colleges to lead the efforts to addressthe growing problem of income inequality by providing educational opportunities for those historically left behind by traditional four-year colleges and universities.

The current and growing expectations for what community colleges can deliver may now be too optimistic. Community colleges continue to be under supported in relation to other higher education sectors. Even more disconcerting is that community colleges are organized and functioning much like they did 40 years ago with little change except for the integration of technology and an escalation in the use of adjunct faculty. Most community colleges of today are essentially the same organizations and operate much like they did in the 1970's. As a result, completion rates for degrees continue to be low, dropout rates continue to be high, and students are too often poorly served by these institutions.

The combination of low graduation rates and high dropout rates, as well as growing expectations for community colleges to help grow the economy, have not gone unnoticed by many educational leaders and scholars of community colleges. Beginning around 2010 a number of taskforce reports and white papers have been widely circulated which call for improving student learning and success by revitalizing, rebooting, reimagining, retooling and reinventing the community college (AACC, 2012; CCC SSTF, 2012; Community College League of California, 2010; Nodine, Venezia, & Bracco, 2011; Pusser & Levin, 2009; Research and Planning Group for California Community Colleges [RP Group], 2012, 2013). These reports have provided educational leaders with excellent recommendations and a strong push for fundamental changes in the community college enterprise. However, for community colleges, there has never been a shortage of calls for innovation, pledges to improve, proposed new frameworks, and outlines of numerous plans to guide future efforts.

At the beginning of each decade for the past half-century we have heard similar calls for changes and improvements in the community college. Each decade took on a particular focus, but the calls were all similar in their push for fundamental change and innovation within the community college. The focus of the1960's and 1970's was on student access and improving general education. In the 1980's the emphasis shifted to improving the teaching process and increasing vocational education opportunities. During the 1990's, concerns moved toward global competitiveness and improving student learning. The first decade of the twenty-first century stressed accountability and providing "proof" of student success. There was a rise in scrutiny from accreditors and a great deal of rhetoric about student learning outcomes and institutional effectiveness.

However, by the end of each of these decades we could only look back to see in reality, little change and improvements had actually occurred. History has shown that these decennial calls for change and expectations for widespread innovation and improvements rarely manifested in long-term transformative actions at the community college. To jump start the calls for improvement in the current decade, leaders from six major national community college organizations came together in 2010 and signed a brief one page document entitled, Democracy's College: Call to Action and pledged to "produce 50 percent more students with high quality degrees and certificates by 2020, while increasing access and quality" (AACC, 2015, p. 23).

There is a growing recognition that if America is to remain economically competitive, there will need to be a substantial increase in the number of college degrees earned in the years to come (Carnevale & Rose, 2011; Carnevale, Smith, & Strohl, 2010; Public Policy Institute of California, 2015; Smith, 2010). This coupled with the fact that earning a college degree can serve as a great equalizer in addressing income inequality, the bar has been raised higher for community colleges than it has ever been. The stage is now set for community colleges to step up to the next level and become even bigger players in the landscape of higher education, economic development and social justice by helping to create a well-educated and engaged citizenry. Clearly, this is a tall order for institutions that are relatively resource poor, bureaucratically hamstrung and set in their ways of operating.

Even though these recent reports have provided some framework for change, they have fallen short in offering a clear, step-by-step way that colleges can improve their operations in order to have the capacity to implement many of the excellent ideas. There appears to be a fundamental but flawed assumption on the part of the authors of these reports that most community colleges, as they are currently designed and function, can simply and easily implement whole scale innovations and institution-wide improvements. The reality is that community colleges, like all other sectors of education, are amazingly resilient when it comes to resisting and avoiding change and impervious to outside pressures to make the fundamental changes necessary to improve student learning and success (Elmore, 2004; George, Chattopadhyay, Sitkin & Barden, 2006; Jenkins, 2011; Ravitch, 2004; Schmoker, 2006; Stein, 2004).

Despite the end of the "Great Recession" and the slow restoration of funding, resources will still be inadequate to add large-scale new programs that could improve student learning and success. Any new monies that come to the colleges will most likely be allocated to long overdue salary increases as well as for restoring funding for critical operations of the college. If improvements are to occur at the community college, they will need to come from within the organization and funded by the colleges themselves. Right now community colleges have a golden opportunity to make systemic changes rather than following the usual path of adding and layering on new programs and services that may only serve a small portion of the student population.

The national spotlight can be a double-edged sword for community colleges. On the one hand this newfound attention can provide a greatly needed nudge toward making long overdue transformative changes and systemic improvements. On the other hand, if community colleges fail to make the changes necessary to dramatically improve student learning and success, they will certainly fall short when it comes to meeting the rising expectations that have been thrust upon them. Will community colleges rise up and make the necessary improvements to move to the next level of excellence? Not likely unless there is a sea change in how the colleges are organized, operate and led. Community colleges will also need to come to grips with the fact that they simply cannot be everything to everyone and must be more realistic about

what they are capable of delivering. If community colleges continue with business as usual, it is quite possible that at the start of the next decade, we will once again see a flurry of taskforce reports and emotion filled pledges to improve student learning and success.

Unfortunately, community colleges have become trapped in a kind of iron cage of their own making, where they continue to operate with the unspoken but well understood agenda of perpetuating the status quo, while at the same time giving the illusion that they are flexible and innovative institutions. Clearly, as many of the taskforce reports and white papers point out, the status quo simply will not work if these institutions are going to serve as a major pathway toward economic self-sufficiency for the majority of Americans and a vital democratizing force in our country. What these reports have failed to do is to give community colleges any guidance on how to escape from their *iron cage*.

Breaking Out of the Iron Cage

The metaphor of the iron cage is used to describe the trap that institutions can put themselves into by continuing to follow outdated organizational routines and maintaining dysfunctional, self-serving institutional structures (Ashworth, Boyne & Delbridge, 2007; DiMaggio & Powell, 1983). The community colleges' iron cage consists of uncontested and self-limiting beliefs about what actually facilitates learning and leads to student success. At first blush, one may think that community colleges would confront and escape the self-limiting confines of their iron cage, but on closer examination, there is a kind of comfort zone inside of acceptable and "taken for granted" routines and unquestioned beliefs about how the colleges should operate. Moreover, there is a sense of vulnerability and a fear of what may lie outside the cage. This cage also serves as a force field to protect and buffer these institutions from external pressures.

For the purpose of this discussion, the iron cage has been broken down into four broad areas, each representing a part of the cage that serves to keep community colleges from taking the steps necessary to transform into dynamic student centered institutions. If community colleges are truly going to undergo the transformative changes necessary to dramatically improve student learning and success they will need to address the following critical areas by: (1) expanding the definition and understanding of what leads to student learning and success; (2) realigning and tightly coupling every function and activity at the college to better support student learning and success; (3) confronting the myth that community colleges are innovative and flexible institutions; and (4) instituting a new kind of leadership that is focused firmly on improving student learning and success. This will take hard, sustained work on the part of every employee and a willingness to change. It will also take a unified core of leaders who are willing to take risks and are committed to dramatically transforming their organizations into highly efficient and effective educational organizations. The starting point will be to identify all learning opportunities throughout the college that, if they were designed and facilitated appropriately, could provide for well-coordinated educational experiences for students. This will require expanding the technical core of the college to include those aspects beyond the classroom that contribute to knowledge acquisition and development.

Expanding the Technical Core of Student Learning and Success

The technical core of an educational institution can be defined as those elements within the organization that directly influence and lead to student learning and success (Coburn, 2004; Spillane, Parise & Scherer, 2011; Weick, 1976). Unfortunately, the technical core is often viewed only narrowly as the formal teaching/learning process within the classroom and is confined to pedagogical functions. However, there is a growing understanding of the value of engaging students in many different ways throughout their experience at the college and how these actions support transformative learning and student development (Cranton, 2006; Gardiner, 1994; Kuh, Douglas, Lund & Ramin-Gyurnek, 1994; Weinbaum, Rodriguez, & Bauer-Maglin, 2013).

The first step that community colleges must take is to create a comprehensive framework that includes all inputs, structures, functions, and environmental issues within the college that directly influence student learning and success (NASPA/ACPA, 2004; RP Group, 2012, 2013). In other words, there needs to be a broader and more holistic understanding of what the Technical Core of Student Learning and Success (Technical Core) consists of at the community college. Table 1 below identifies components that would be included in an expanded model of the

Table 1
Technical Core of the Community College

Component of the Technical Core	Description
Pedagogy	The traditional teaching/learning process
Course and Program Content and Sequencing	Content and learning strategies employed; how the content and learning strategies are sequenced, articulated and scaffolded within individual courses and through a program of study
Course and Program Availability and Modality	How courses and other learning opportunities are sequenced throughout the program including the level of predictability that necessary courses are available and accessible to the students, and modality(ies) used to deliver the courses and program
Learning Environments	The physical and intellectual environments where learning occurs
Learning Support	The support programs and services in place to assist students with learning; programs are generally outside the classroom, oftentimes voluntary, and can be general learning support or specific to a course or a discipline
Student Support and Development	Programs and services that provide assistance with educational program planning, career exploration, time management, problem solving, values and priorities clarification and emotional support
Faculty/Key Staff Characteristics, Skills and Disposition	Capability of faculty and other key staff to facilitate student learning and development; including important attitudes and a positive mindset of the faculty and key staff toward student learning and success
Student Characteristics, Skills and Disposition	Students' capacity for learning at the appropriate level; their ability to navigate the college environment in order to take advantage of support programs, complete routine administrative functions including registration and applying for financial aid; student attitudes about their ability to learn, level of responsibility for their own learning, and for being resourceful; students' mindset about the value of going to college as well as how they view the programs, services, faculty and other key staff

Technical Core.

The proposed *Technical Core* has been expanded in three ways from the more traditional view of the technical core. First, the new model recognizes many other critical aspects in addition to the teaching/learning process that may influence student learning and success. Second, it recognizes that student learning is influenced by the context and environment within which the learning process takes place. Third, this model recognizes that student learning and success cannot be understood separately from the characteristics, skills and dispositions of the students, and those who do the teaching and provide student development services.

If community college students are to grow and mature into lifelong learners, they must be repeatedly exposed to well-coordinated educational experiences that focus on moving them through three levels of learning and knowledge development. Many of these educational opportunities occur outside the traditional classroom setting. The first level of learning includes acquiring technical knowledge that allows learners to develop a foundation of content and procedural learning that helps them to manipulate and control their environment. The second level focuses on acquiring social knowledge and how to develop meaning out of learning experiences. The third level concentrates on developing knowledge that leads to personal growth and empowerment, where students learn to be self-directed, reflective, and responsible for their own future as well as others around them. Hallmarks include a strong self-efficacy, intellectual prowess, and resiliency (Cranton, 2006; Mezirow, 2000).

The expanded Technical Core also recognizes that many individuals between the ages 18 and 30 have not yet developed into full adulthood and are in a stage of development that is characterized by: (1) identity exploration, (2) instability, (3) self-focused, (4) feelings of being

in-between adolescence and adulthood, and (5) an exposure to the many possibilities that lie ahead (Arendt, 2005; Côté, 1999). There is a growing recognition that student characteristics and behaviors can have a strong influence on success at the community college (West, Shulock & Moore, 2012). Therefore, it is important that faculty and student services professionals intentionally provide educational experiences that can help shape positive dispositions toward education and behaviors that lead to a strong sense of efficacy and personal responsibility on the part of students. This kind of learning can occur outside the classroom and in informal settings around the college.

Each community college will need to assess all the components of its Technical Core to determine how, and to what extent, they are directly advancing student learning and development. Plans should be implemented to strengthen each of the Technical Core components first individually, and then to strengthen the overall Technical Core by better integrating and more tightly coupling each of the components with each other to create an integrated core that makes sense from the students' perspective. By expanding the Technical Core, the college can create a holistic environment that truly leads to transformative learning, where all of its components are expanded and integrated to better facilitate both the learning needs and the social/emotional development of students as they move fully into adulthood and begin to identify their place in the world.

Redesigning the Community College Organization

For seven out of the past eight years, community colleges have been faced with the largest financial crisis that they have ever experienced. There was an unprecedented and continuous drop in traditional resources at a time when most colleges had already been cut to the barebones. However, what started in 2007 was more than just another major economic downturn caused by a boom and bust economic cycle - it was, and continues to be, an outgrowth of permanent economic, political, societal and cultural shifts that have been occurring through out the United States.

College leaders must start using the shift in financial support and demographics as a window of opportunity to transform their institutions, and to challenge the traditional ways in which their colleges operate and are organized. This includes confronting and eliminating unnecessary barriers, and building more flexible organizations that can respond to the growing and changing learning needs of students (Jenkins, 2011). Leaders must also recognize that the traditional community college organizational structure, with separate and distinct divisions for instructional services, student services, and administrative services that operate primarily in isolation from each other, is an outdated artifact of the past and does not serve the best interest of students.

The traditional organizational structure often gets in the way of meaningful student engagement and learning by creating an artificial separation between what happens inside and outside the classroom (Kuh, Lund & Ramin-Gyurnek, 1994). To truly engage and retain students, organizational barriers must be removed and there must be greater integration between student services, learning support programs and administrative support services, and what happens in the classroom.

Accrediting bodies throughout the nation are taking a closer look at how colleges are organized and function, and are requiring colleges to organize key processes and allocate resources more effectively to support student learning. Accreditation agencies are not only holding community colleges accountable for offering appropriate programs and services, but also for ensuring that these institutions have organizational structures which best support programs and services to achieve the goal of student learning (Accrediting Commission for Community and Junior Colleges, 2012). This will require all community colleges to identify ways to improve and change their organizational structures and processes; all within an environment of increasing accountability, limited resources, economic changes and demographic shifts.

It is essential that all community college leaders have the courage and skills to effectively confront the barriers and obstacles to student learning that are caused by outdated organizational structures and operations. They must transform their institutions into effective educational organizations that provide a well articulated learning environment – a place where learning and student engagement can take place anytime, both inside and outside the classroom. The first step for every community college is to develop a reorganization plan that integrates and consolidates instruction, learning support, and student support programs into a coherent network that can be easily accessed and navigated by students.

Colleges must ensure that all the support functions and structures of the community college operation that lie outside the Technical Core are reviewed, and then repositioned and redesigned to provide the best support possible for those areas that directly facilitate student learning and success. These must first be broken down into individual components, key functions, structures and systems, and then reconstructed in such a way that every effort and action throughout the organization, whether directly or indirectly, supports student learning and success.

Complicating efforts to change the operating culture and organizational logic of the college is the common use of language such as "other side of the house," "my students," "student services perspective" and "administration." Such debilitating and restrictive language serves as a way to preserve the status quo by maintaining an us versus them mentality and emphasize separate roles for the various departments and services within the community college organization. Those responsible for leading change in their institution must pay particular attention to how all of the employees and students, as well as key external stakeholders make sense out of the organizational and operational changes (Fiss & Zajac, 2006; Weick & Sutcliffe, 2005). College leaders will need to construct a new and shared understanding or "sensemaking" about how the changes in the organization will improve student learning and success (Eddy, 2010). Developing and implementing a new set of descriptors and a consistent language palette that support the changes will go a long way in reshaping the way employees and stakeholders make sense out of the new way of operating, and will lead to a new kind of organizational logic (Greenwood, Diaz, Li & Lorente, 2010). Once a new understanding of the organizational changes is established and expressed collectively as the "way we do business around here," behaviors will begin to reinforce and support the new organizational structure, and the tighter integration among all programs and services.

Confronting the Myth of Innovation

Community colleges have always been ahead of other higher education sectors in developing and implementing curriculum and instructional innovations and "best practices," (League of Innovation in the Community College, 2010). Unfortunately, this has promoted the mistaken belief that community colleges, by nature and design, are innovative and flexible. The reality is that most of the "best practices" at the community college are implemented in isolated parts of the institution and rarely, if ever, adopted at a level where the majority of students can benefit (Jenkins, 2011). These are mostly small "boutique" innovations that are fueled by short-term grants, and fizzle away once the external money is gone. Colleges almost always fail to incorporate these innovations into the sustainable core fabric of their operations.

The myth that community colleges are innovative and flexible institutions has helped to shape a false sense of identity of who these institutions really are and what they are actually capable of accomplishing. The myth is perpetuated in many ways including news articles in the popular press that focus on novel programs as well as continuous presentations to governing boards and civic groups that showcase "best practices" in isolation from the large body of educational programs and wide array of support services. In addition, much of the marketing and fundraising materials that are developed feature innovative programs, again in isolation from the bigger picture of the college as a whole.

By over emphasizing novel innovations and presenting them in such a way that they are viewed as a general representative of the college has led to the widely held belief (both inside the college and in the minds of the general public) that community colleges are more dynamic and "cutting edge" than they really are. This in turn has led to a kind of false sense of confidence, where there is the assumption that community colleges are highly efficient and innovative educational institutions. There is oftentimes a lack of scrutiny and critical oversight of what is really happening in the other 90% of the programs and services at the college that never get showcased because they do not fall under the label of being innovative, unique or "best practices."

In reality, community colleges do not have the kind of entrepreneurial culture and degrees of freedom for experimentation that they may have had 50 years ago. In looking at where community colleges fall within an organizational lifecycle conceptual framework, most of these institutions have reached their cranky later middle-aged years where they are comfortable and very resistant to change (Quinn & Cameron, 1983). The current community college environment is shaped by many things including the age and history of the institution, longevity

of the faculty and staff, a resource dependent mentality, a rigid division of roles and responsibilities throughout the organization, a hodgepodge of external regulations and accountability requirements, and a product (course offerings and programs) that is standardized in many ways. All of these things work against risk-taking and innovation.

Although rarely acknowledged, community colleges, like other education institutions attract and are populated by individuals who are risk aversion by nature, and not entrepreneurs (Elmore, 2004; Schmoker, 2006). Educational institutions usually offer a great deal of job security in the form of tenure for faculty, permanent employment status for support staff, and multi-year contracts for administrators. With this kind of job security, it seems like employees would be encouraged and willing to take risks and be more innovative, but it appears this may have the opposite effect. Community colleges must come to terms with the reality that they have limitations and confront the destructive myth that by nature and design, they are agile, innovative and flexible institutions. It is essential that every college identify what can and cannot be reasonably accomplished on an institutional-wide basis.

Moving Toward a New Kind of Leadership

The failure to implement institutional-wide innovations in education can, in part, be attributed to the decoupling and disconnecting of the elements of the Technical Core from the concerns of the administration (Bidwell, 2001; Elmore, 2004). Clearly, administrators have challenging responsibilities and are constantly being pulled in multiple directions (Boleman & Gallos, 2011). Unfortunately, too many campus leaders get so burdened by the day-to-day responsibilities of their programs and departments that they get lost in what could be called the white noise of educational administration.

This noise is a result of constant and wearisome administrative challenges and demands that are ever present at all levels of the college, and has a way of beating down those who want to reform their institution. It also causes leaders to lose sight of the fact that their college has only one goal - student success. Administrators begin to confuse balancing budgets, dealing with external constituents, implementing arduous regulations, resolving difficult personnel problems and the like, as goals of the institution. In reality, these and all other management functions, while critical to the success of the college, are means toward the goal of student success, and not goals unto themselves.

Community college leaders must place a greater emphasis on improving all functions of the college if they truly want to provide better support to the Technical Core. This includes assessing and making appropriate adjustments in the college's strategic planning processes, organizational structures and systems, stakeholder accountability practices, human resource processes, governance procedures, resource generation and allocation practices, material resource allocations, and college's compliance with regulations and accreditation requirements to make sure that each of these are, in some way, supporting the Technical Core of the institution.

Unfortunately, the ever-present white noise of educational leadership serves as one of the primary ways of protecting the status quo at our colleges. It is very distracting and often causes administrators to focus only on survival and self-preservation rather than providing the transformational leadership necessary to strengthen their institution. Support programs and operations that have been in place for years are difficult to change, and when change does occur, there can be a disturbing ripple affect across the institution which creates a deafening crescendo in the white noise to the point where many educational reformers simple give up. However, giving up and focusing only on survival are not options for college leaders if their institutions are to remain viable into the future.

Community college leadership is complex, unpredictable and at times messy. However, good leadership can be learned. Therefore, colleges must turn their focus toward better ways of retaining, developing and nurturing the leadership talent pool that already exists on their campuses (Mitchell & Eddy, 2008). This talent pool is largely made up of entry level and mid-level administrators, who unfortunately are neglected when it comes to providing leadership growth opportunities (Dalpes, Baston & Sanchez, 2015; Riggs, 2009). Many community colleges provide little or no ongoing and meaningful professional development opportunities for this group of leaders, while at the same time placing increasingly higher demands on them. Clearly, the environment that now exists at most community colleges is that of high demand and low support for its administrators.

Community colleges must institute a new kind of leadership that is focused firmly on improving student

learning and success. This will require a major shift from the commonplace administrative practices of non-involvement and non-interference in the core teaching/learning processes and student development functions to one that requires all leaders throughout the college to contribute in some way to the core functions that lead to student success.

Brave New Community Colleges of the Future

For the past 40 years, community colleges have too often looked to small solutions to address large problems, muddled through difficult times and have used short-term strategies that only got them through one calamity to the next. The desire for stability has continually trumped and squelched the kind of systemic innovations and transformational change that could lead to dramatic increases in student learning and success. With limited resources and facing a rapidly changing future, community colleges have reached a tipping point; a place where they will no longer be able to maintain all of their historical functions, conventional ways of operating, or garner enough support for all their traditional missions. The way community colleges have operated in the past, and for the most part function today, simply will not work if they want to escape from their iron cages and become the brave new community colleges of the future. This will require a whole new organizational logic where all efforts and resources are tightly integrated and focused on the single goal of improving student learning and success.

Community colleges are complex organizations with smart and engaged employees. The bottom line is that we know, as educational leaders, faculty, student services professionals and planners, which reforms work and which ones do not work when it comes to improving student learning and development. However, a smattering of department and program level innovations in isolated parts of the college will do little to facilitate transformative learning on a college-wide basis or improve completion rates. What is needed is a cohesive institutional environment that facilitates and supports a kind of symbiotic and collective effort across the college that will lead to a dramatic increase in success for all students. This will require a shared understanding of how and why systemic changes must occur and how student learning and development can be dramatically improved. It will also require all employees to embrace a future of uncertainty; with its myriad of challenges, wild cards, hidden opportunities and obstacles, and non-logical force fields of resistance. A future where there is a collective understanding and mutual responsibility on the part of everyone for the real consequences of action and inaction. There are enormous opportunities awaiting community colleges that will require new delivery systems, more effective organizational structures and fresh leadership approaches.

About the Author

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ARTICLE

Critical Social Justice Leadership: Putting "Community" Back in Community College

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ABSTRACT

This article proposes that connecting to and understanding the experiences of the communities and students served must become a priority of community college work at all levels. Findings add to the understanding of social justice issues in relation to community colleges and include medium-high to high positive correlations between accuracy of knowledge of social justice issues impacting students and communities and the valuing of social justice practices. These strategies culminate in what the author calls a new model of leadership: Critical Social Justice Leadership (CSJL). Recommendations include stronger social justice training for leaders in educational leadership programs and Boards of Trustees, the incorporation of social justice understandings into accreditation standards, as well as the collection of broader and deeper data to more fully understand and address student outcomes. Through an examination of literature and data from interviews with ten California community college leaders, this article explores the rhetoric of achievement (and now student success) in relation to social justice realities and community college leadership. The article then shifts to exploring the Critical Social Justice Leadership model as a way to illuminate the connection between the systemic social justice realities impacting the communities served by community colleges and the kinds of leadership strategies that might more thoroughly and effectively address issues relating to student success.

Educational leaders acknowledge racial gaps in relation to "achievement" (Moore & Shulock, 2010; Wagner, 2008; Ladson-Billings, 2006) but discussions of the larger equity issues impacting education such as wealth disparity and segregation are startlingly absent from both public and leadership discourse. Further, the emphasis on the Achievement Gap as the problem in education masks the larger inequities of separate and unequal schools associated with segregation and economic inequality (Cross, 2007). Through an examination of literature and data from interviews with ten California community college leaders, this article explores the rhetoric of achievement (and now student success) in relation to social justice realities and community college leadership, then shifts to explore the Critical Social Justice Leadership (CSJL) model supported by the research. My goal is to offer the Critical Social Justice Leadership model as a way to illuminate the connection between the systemic social justice realities impacting the communities served by community colleges while shedding light on the kinds of leadership strategies that might more thoroughly and effectively address issues relating to student success. Finally, I offer four recommendations for community college leaders, boards of trustees, accrediting bodies, and other community leaders and policy makers to consider. Overall, connecting to and understanding the experiences of the communities and students served must become a priority of community college work at all levels.

Research on the achievement gap has tended to focus on the internal processes within schools, such as teachers' perceptions of the achievement gap and the connection to their own assumptions about students (Uhlenberg &

Brown, 2002). Other processes include micro-level causes for the "gap" such as youth culture and student behaviors, schooling conditions or practices, and individual family conditions (Lee, 2002). Still other issues relate to diversity within an institution (Nieto, 2000) and an emphasis on how multicultural curriculum and pedagogy (Banks, 2001; Stovall, 2008; Okoye-Johnson, 2011) positively impact "achievement."

A growing number of scholars argue that it is essential to consider social inequalities as part of any educational policies (Rumberger & Willms, 1992; Bower, 2011; English, 2002; Rothestein, 2004) and that out-of-school factors must be considered since the achievement gap begins and widens outside of school (Bower, 2011; Melguizo & Kosiewicz, 2013). Ladson-Billings (2006) and Cross (2007) offer a similar set of critiques of the achievement gap literature and challenge us to reconsider where to place our funding and energies if we sincerely wish to transform our educational system into one that is socially just and truly supportive of student success. These scholars argue that by focusing on the achievement gap as the problem in education we conveniently ignore the massive structural inequalities such as segregation and wealth inequality that got us to this point in the first place.

Cross (2007) argues that the gap is actually one in opportunity and quality of service combined with assumptions about the innate capabilities of poor, urban students of color. Ladson-Billings (2006) relates these structural inequalities and gaps in service to the educational debt which include an oppressive history, economic abandonment, and social and political exclusion. These are all societal debts with huge educational consequences that we have barely begun to consider how to pay down. Meanwhile, wealth gaps and achievement gaps continue to grow. Ladson-Billings recognizes that the attention placed on the symptoms directs us to short-term solutions that cannot address the larger, underlying societal problems. How might gaps in wealth, residence, service, expectations, opportunities, and leadership impact student outcomes? We turn to this next in relationship to community colleges and the so called achievement gap.

Achievement and Community Colleges

Two sets of researchers (Gandara, Alvarado, Driscoll & Orfield, 2012 and Martinez-Wenzl & Marquez, 2012) from the UCLA Civil Rights Project bring questions about achievement into the community college context. They largely focus on access, transfer, and affordability, while still recognizing the structural inequalities impacting many students attending community colleges. Moore and Shulock (2010) also look at achievement in terms of completion and transfer but tend to frame arguments for exploring these issues in terms of economic need, as opposed to economic marginalization causes, and assume the "deficit" model that sees students failing rather than institutional structures and systems failing students. Beach (2011) adds that because attending community college in California has been so affordable, it has been "easy to blame students for their lack of ability or motivation rather than targeting the social environment for structuring the failure of nonwhite students" (p.94) and that the "achievement gaps" that exist do so in this historical context of racial and economic discrimination. Harbour (2014) adds that the highlighting and focus on the Completion Agenda comes at the expense of the essential role of community colleges in supporting the needs of the communities they serve.

Santamaría and Santamaría (2011) and Santamaría (2012) introduce connections between leadership in community colleges and social justice. Santamaría (2012) offers one of the earliest looks at the achievement gap in community colleges in relation to leadership practices. While Moore and Shulock take a "deficiency" perspective, Santamaría directly connects equity issues with what she calls "critical leadership practice" – choosing to work for change on a societal level - and suggests that in order to address the achievement gap that leaders must do so in concert with the educators, stakeholders, and especially the community members they serve.

Why Social Justice?

The discussion of social justice in education has grown over time to incorporate the underlying structures of inequality. Bell (2007) expresses this definition of social justice as recognizing the need for equitable distribution of resources, as well as physical and psychological safety in pursuit of "full and equal participation of all groups in a society that is mutually shaped to meet their needs" (p. 1). Expanding this to the physical institutions that serve students, a social justice oriented institution is one that is inclusive and focuses on "community, participation, [and] comprehension" (Alvarez, 2009) – necessarily requiring a

broad and systemic look at the contexts in which these educational structures sit. Anyon (2006) merges these concepts and suggests the need for social justice researchers and educational leaders to look at "opportunity structures and policies existing outside of schools" (p.21) to understanding the full range of social justice issues impacting students and their communities. Understanding issues that impact communities also requires looking at the ways that "institutional educational systems" (Bourdieu and Passeron , 2000, p.54) can reproduce systems that maintain power relationships as they are. An emphasis on achievement and completion in both K-12 and community college conflicts with notions of opportunity and access (Harbour, 2014) by redirecting resources and attention away from the reality and needs of separate and unequal schools.

Leadership and the Social Justice Path

Examining how the leaders and those in power think and make decisions is an essential part of critical inquiry (Anyon, 2006). Using leadership to transform institutions and challenge the status quo is introduced in the concept of transformational leadership (Burns, 1978). Transformational leadership includes the notion of encouraging more than merely the compliance of followers, pushing them beyond themselves, raising their awareness, and going beyond the call of duty (Burns, 1978; Bass, 1985; Santamaría & Nevarez, 2010). Bass (1985) brought this idea into management and recognized the need for leaders to have a strong, confident vision. Nevarez and Wood (2010) connect transformational leadership practices to the education system and the ways that leaders can greatly impact community colleges. Practices include identifying barriers and underlying problems, understanding issues through dialogue and contextual analysis, designing institutional policies and practices to address the issues, implementing the appropriate programs, assessing effectiveness, and revising practices and policies based on assessments (p.92). Shields (2004) shifts the idea of transformational leadership toward "transformative" leadership to acknowledge that "needed changes go well beyond institutional and organizational arrangements" (p.113). An underlying assumption based on the literature is that change must be participatory and collaborative (St. Clair & Groccia, 2009).

While transformational and transformative leaders use their vision to empower and transfigure the personal values of those around them in support of the mission of an organization, Greenleaf (1991), Spears (1996), and Ferch (2003) argue that "servant-leadership" is required to actually transform inequitable systems and to engender socially just outcomes by becoming allies with the least powerful and making sure that their voices are heard and their needs are served. The servant-leadership literature assumes that the interests and needs of communities being served come before the needs of leaders (Santamaría & Santamaría, 2012). This is similar to the way that Freire (1974) describes change that "must be forged with, not for, the oppressed" (p.33), as "for" suggests a continuing relationship of power and domination but "with" creates the opportunities for service and alliance. Wheatley (2006), as well, explains the need for "co-creating an environment" (p.46) that allows for those in power to step back in order to support connection and creativity.

Social justice issues are implicated in servant-leadership but social justice leadership itself requires vision, action, self-reflection, and an understanding that leadership must be participatory and collaborative (Kezar, 2008; St. Clair & Groccia, 2009). All must be present to further the processes of service and justice. The concept of self-reflection in social justice leadership includes leaders' examination of their own racial identity (Ellis, 2004; Hays, Chang & Havice, 2008; Han, West-Olatuni, & Thomas, 2010) to understand their relationship to cultural competence, privilege and power. Santamaría (2012) suggests that a serious examination of power and privilege not only in the structures that intersect with educational institutions but also in relation to leaders' own positions and identities can transform leaders of any background into leaders who choose to most effectively serve their communities and work for change.

Social justice Leadership and Community Colleges

In the community college context, Santamaría (2012) calls for critical leadership practices to address issues of achievement and suggests that institution-wide "courageous conversations" (p.17) on equity issues are necessary to begin to understand the relationship between them and success in community colleges. Santamaría (2012) also invites leaders to recognize that equity and success are strongly tied to institutional inequalities, thus requiring them to actively confront these inequalities. Aragon and Brantmeier (2009) suggest a similar encouragement

Table 1
Social Justice Strategies

Visibility	Earning "Citizenship" in a Community	Intentionality
CEO - on campus - with students - in community	Building trust and relationships with the communities served	Action Responsibility Educating and Empowering Others - faculty/staff - Board of Trustees - students - community and beyond Crtical Consciousness - self-reflection and education Naming, making visible structures of inequality
College - in community - with families - with business		

of community college leaders to support equity agendas and to be guided by "diversity-affirming ethics" (p.49). Social justice leaders who truly wish to serve must be able to think long-term, grasp both history and the now to realize where we are going, while nurturing the many aspects of community to the benefit of all.

This literature advances the overall need for a better understanding of the kind of role that community college leaders can play in supporting they communities they serve. The following section incorporates data from interviews with California community college leaders to establish the essentials of what community and student centered, socially just, community college leadership can look like. These leadership essentials are then brought together in the Critical Social Justice Leadership Model, presented as a complement to Santamaría's (2012) model of Transformative Critical Leadership.

Critical Social Justice Leadership

The Critical Social Justice Leadership strategies that come out of the analysis of the interviews that are the basis of this research show the possibilities and potential for community college leaders to recognize the systemic challenges, incorporate this bigger picture into educational success strategies, and advocate for the full range of student and community needs. Ten interviews with California community college presidents and chancellors (designated CEO 1-10) were conducted for this study. The goal was to expand on the issues presented in the literature and explore the intersectionality of achievement, social justice leadership, and community colleges. These one-hour to hour-and-a-half interviews were conducted over three months and reveal a deeper understanding of how community college leaders can better serve their students and communities.

Critical Social Justice Leadership themes show that social justice practices are possible through the strategies of visibility, earning citizenship in local communities, and intentionality. The three strategies presented here are not the only possible sets of social justice practices, but they do represent a necessary trajectory of practice from critical self-reflection extending out to active service to the communities served. These elements work together to build a strong foundation of social justice leadership strategies. The first set of strategies cover the importance of visibility of the CEO and for the college itself. The second area introduces the notion of earning citizenship in a community to build sincere relationships beyond the almost clichéd use of "collaborations." The final area examines the concept of intentionality; borrowed from the realm of philosophy (Searle, 1983) and customized to address what it means to go beyond good intentions and to infuse practices with purposeful actions.

Visibility

One of the overarching social justice related themes suggested by these CEOs is the idea of visibility, both on the part of the CEO and on the part of the college itself. These CEOs consistently show that working for social justice whether it is the "full and equal participation of all groups in a society" (Bell, 2007) or some version of that which is empowering, encouraging, and supportive of student and equity needs requires an obvious presence as a starting point and as a basis for building relationships. Several CEOs characterized their leadership roles in relation to visibility:

> I show up at the AB 540 club and say I'm here. I show up at the LGBT club at their first meeting and let everyone on campus know that I'm going to be there, won't you join us? We are in an environment where LGBT has been not very comfortable on campus. But, you know, the president shows up and who wants to challenge me? In your face. Who wants to challenge me that these people are welcome on campus here?
> – CEO 1

> The job of the presidency is really - I find a lot of it has to do with having strong interpersonal relationship skills. Because you need people. But you can also educate them and so it's part of my job to speak up when necessary. Or to suggest alternative ideas.
> – CEO 2

> Being very visible personally…showing up at student events and saying, "Wow, I'm delighted you are doing this!" Thanking them for their activism. Helping them see themselves as part of that system that is empowering – not just for themselves but their peers, as adults, is extremely powerful to those individuals, but it's visible for everyone on campus to see. I mean there is a symbolic role for the president and I am good at Kabuki. It is very important to exaggerate movements and my visibility with students is that exaggeration.
> – CEO 1

Just as the president needs to be visible so also does the college or district itself:

> …the college realized that doing little activities, summer programs, workshops – if you have a community education program and you do activities with children, that brings the family then. They feel connected.
> – CEO 4

These quotes pull together the theme of visibility, exaggerating presence and action to draw attention to the practices being utilized. Bringing out ideas, making spaces to discuss them and drawing attention to that are part of necessary social justice leadership practices.

Earning "Citizenship"

Citizenship is intertwined with visibility because part of earning a place in a community is by being an obvious and active presence in that community. This theme, however, is set apart from the general theme of visibility for two reasons. One is that in this study the concept of citizenship in a community stands out as unique and should be brought forward. The second reason is that while visibility may be an important part of earning citizenship, visibility is not sufficient in and of itself. This idea stems from one interview in which the CEO shares an experience:

> The greatest honor I have been given - a very recent honor – a community sort of radio personality, a community leader person granted me a "doctorate in education, from the University of the Hood." That's street cred for me. Very important for a white man from the other side of the world in [this community]. Okay? To have our congress member introduce me on-campus, on my campus, to her constituents as somebody who is well-positioned in the community, who knows our issues, gives me citizenship and I call it that to her face. She's granting me citizenship in our area … that opens doors for me to say, yes, I am a community activist and I have the cred, I have the acceptance to be able to be a community activist to bring people on campus, increasingly to have engagement between town and gown.
> – CEO 1

> When you've got all these different layers of the community, the president can be out there, but what if they only attend the Chambers and never really get into some of the social service organization to understand what's really going on in the community to get a broader picture?
> – CEO 2

If community college leaders consider that part of their CEO role is to earn the trust of the community beyond simply being visible, this adds a significant dimension to the kinds of collaborations and relationships that can be developed. Many of the CEOs in this study mention collaborations and partnerships with community groups and businesses, but it is not always clear what this means beyond it sounding nice that some sort of link exists beyond the campus boundaries. Creating partnerships is one thing, but building trusted relationships in which leaders have earned their "citizenship" in the community, by actively working to understand and advocate for the communities served, affirms the necessity of that relationship. Freire (1974) describes leadership and change as being "forged with, not for, the oppressed" (p.33), which also connects with concepts of servant-leadership (Greenleaf, 1991). The idea of earning citizenship encourages us to rethink the power arrangement by placing the needs of the community before the needs of the leader. Community college leaders may need to do this to establish that trusting relationship with the community and to learn what issues impact students and what programs and practices will best serve them.

This sincere process of earning a trusted place in the community is also connected to John Dewey's vision of democratic communities and the health of our democracy being intertwined with health of our education system (Harbour, 2014). Harbour (2014) argues that democratic communities, especially as they relate to community colleges, require this same connection to gaining knowledge and understanding of the issues being faced by the college communities as is suggested by the concept of earning citizenship. Education serves democracy best when it is used to inquire and challenge socially unjust conditions. When community college leaders gain critical understanding about the communities they serve by earning their place, they gain credibility and acceptance to develop and support practices in alliance with communities that will more fully address the needs of their students.

Intentionality

The strategy of intentionality is intertwined with the other strategies, but it is actually where leaders should begin. It illustrates that social justice is not accidental and a mere desire for it to exist does not create a social justice practice. It must be fought for both on a personal level, through self-reflection, as well as on a practice level. The word "intentionality" is lifted from the discipline of philosophy which uses the idea to show how states of mind can be "directed toward some goal or thing" (Jacob, 2010). Borrowing this word and saturating this state of mind with action captures the necessary directed behavior and self-interrogation that must accompany practices. Intentionality also involves using power to educate others from the administrative cabinet, out across the campus to staff, faculty, and students, to Boards of Trustees, and out to the community about the social justice issues impacting students. The action subtheme involves accepting responsibility along with direct and persistent interventions:

> We have to act to counter the experience that students have had throughout their entire childhood that says keep your head down, don't look the policeman in the eye, don't cause any trouble in the classroom, don't distinguish yourself or you will be picked out, obey … and here I am saying functionally my job is in fact to enforce the behavior standards on campus; in practice, my job as a social activist is to undermine those efforts.
> – CEO 1

> I think that too many of our chancellors and presidents, CEOs, lose sight of that social justice agenda.
> – CEO 8

> I'm in education because it's a calling, it's an obligation, it's a responsibility to create a path so that these things can be fulfilled ... I think we've waited long enough. People of color have suffered long enough ... students have been im-

> pacted negatively by the structure of society so I see it as part of my responsibility to change that as soon as possible.
> – CEO 9

> I want people to hold us accountable because if the college doesn't see that we are being held accountable by the community and if we do a good job, the community is going to reward us by sending their children here, their family members and what have you.
> – CEO 5

CEO 5, here is not only referencing accepting responsibility, but also the idea that the community should play an essential role in holding the college responsible for meeting community needs. This is a shift in power, a shift toward communities determining their needs and becoming partners with community college leaders to meet those needs. Once more, the active commitment to develop an understanding of community needs and build shared vision and practice with those impacted empowers that community and creates greater democratic involvement (Harbour, 2014).

Educating and empowering faculty, staff, and community are also a part of intentionality. Some of these CEOs recognize the role that the college can play in bringing information and knowledge about issues impacting students and that sharing information and actively participating in campus and community education on social justice issues is essential:

> …part of my role is to bring out the issues and educate our own students, and faculty, and staff. You don't know what you don't know. And so sometimes the role of the college as a learning institution should be to provide that information.
> – CEO 2

> But you find one person, you create a champion. You give them some professional development and then you let them go because you have to assume that they're there to help students and so I help them to help our students.
> – CEO 9

Another aspect of intentionality involves naming and making visible the structures of inequality that impact communities and the students they send to community colleges. Part of social justice leadership practice therefore is coming to understand these issues and speaking up audibly on what these structures are and how students are impacted:

> I think that the wealth issue should be heavily featured in our presentation of data and our narrative analysis. Take the scorecard that's out right now. It does have demographic data but the wealth data is less available. And it really does affect policy … there's unintended consequences of some of our policies.
> – CEO 3

> Well, you certainly can't be afraid to articulate the issues. So I guess the first thing is to be willing to step forward and identify the issues that need attention. And even though you may have people within your own organization who don't want to hear that message or people within the broader society who don't want to hear that message, you may have to still bring it, but you have to bring it into the context."
> – CEO 7

The final component suggested by intentionality is critical consciousness. This concept underscores all of the strands of intentionality. Freire (1974, 2013) describes the process of developing this critical consciousness through dialogical action and reflection as conscientização, an awakening of understanding about the oppressive conditions that exist, combined with action to transform them. While Freire uses this concept to describe how the oppressed take control of their circumstances, the concept can also be a part of the development of community college leaders as they begin to educate themselves, to grapple with their own privilege and power (McIntosh, 2007; Leonardo, 2004), to see how to both transform colleges so that they do not replicate the community conditions, but also to actively address those conditions and the impact on students.

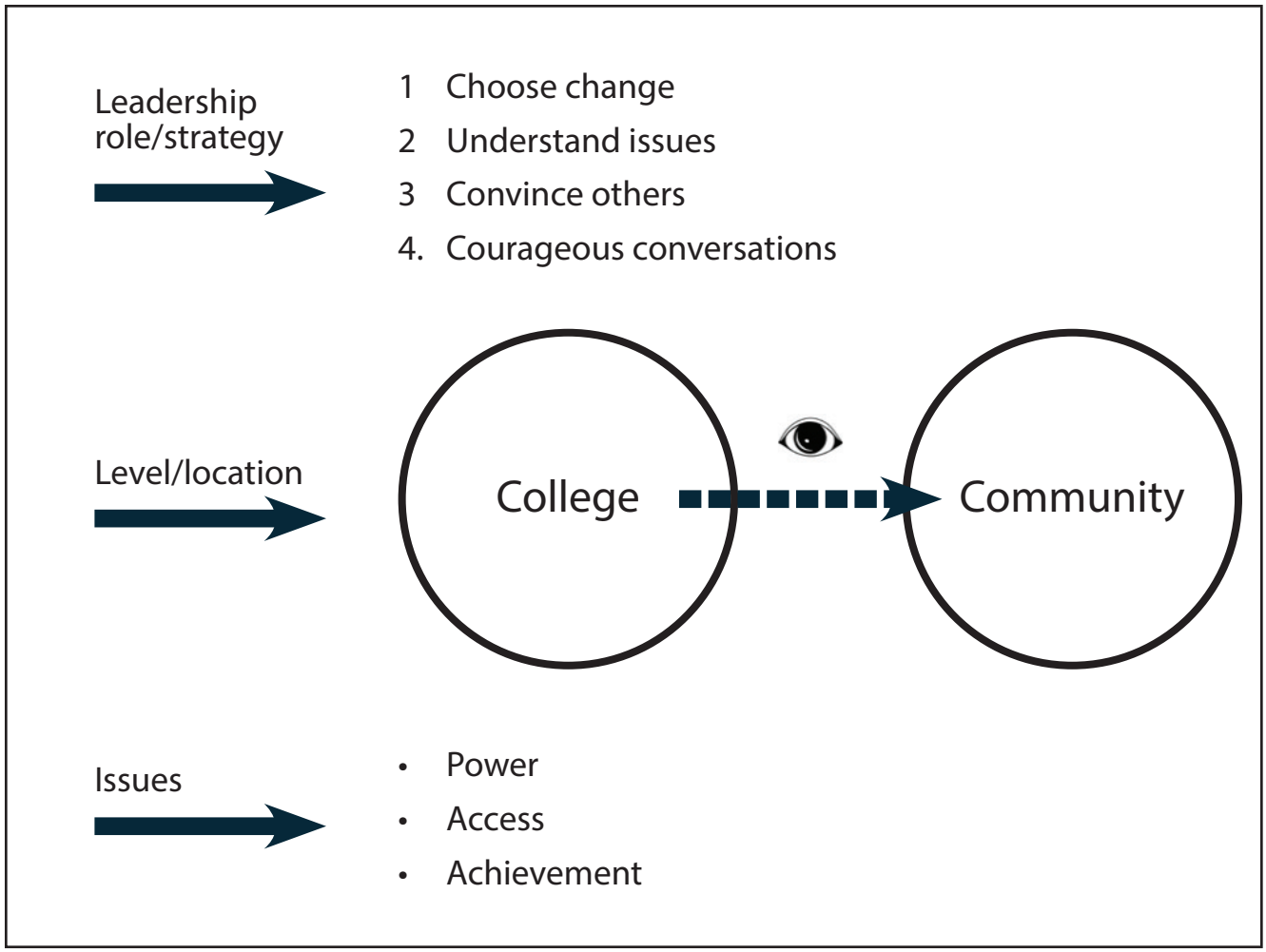

Figure 1. Transformative Critical Leadership (Santamaría, 2012).

The Critical Social Justice Leadership Model

The strategy themes that come out of these interviews are manifested in the Critical Social Justice Leadership Model. This model shows a more complete image of how CEOs or any community college leaders can engage in critical social justice practices. Visibility, earning "citizenship," and intentionality connect agreeably with Santamaría's (2012) concept of transformative critical leadership and extends the concept to the work that community college leaders should also do as part of engaging with the communities they serve. In fact, the theme of earning "citizenship" makes this extension a requirement of social justice leadership practice. The following models present the concept of transformative critical leadership by Santamaría (2012) and then the extension of that in the Critical Social Justice Leadership Model that comes out of this research.

Santamaría's (2012) transformative critical leadership model largely focuses on the college itself as an institution in which power plays a large role in the kinds of equity issues that are recognized and presented as real impacts on students. This model addresses some of the institution-level social justice needs of community colleges such that the college becomes a transformative institution through the critical leadership that creates spaces for courageous conversations and actions on issues to occur. These strategies occur with an eye on what is happening in the community and in society as a whole (Santamaría, 2012). Santamaría also suggests that this model can be used to address some of the indicators presented by Nevarez and Wood (2010) in relation to "achievement" issues such as "remediation, retention, graduation rates, and transfer" (Santamaría, 2012, p.21).

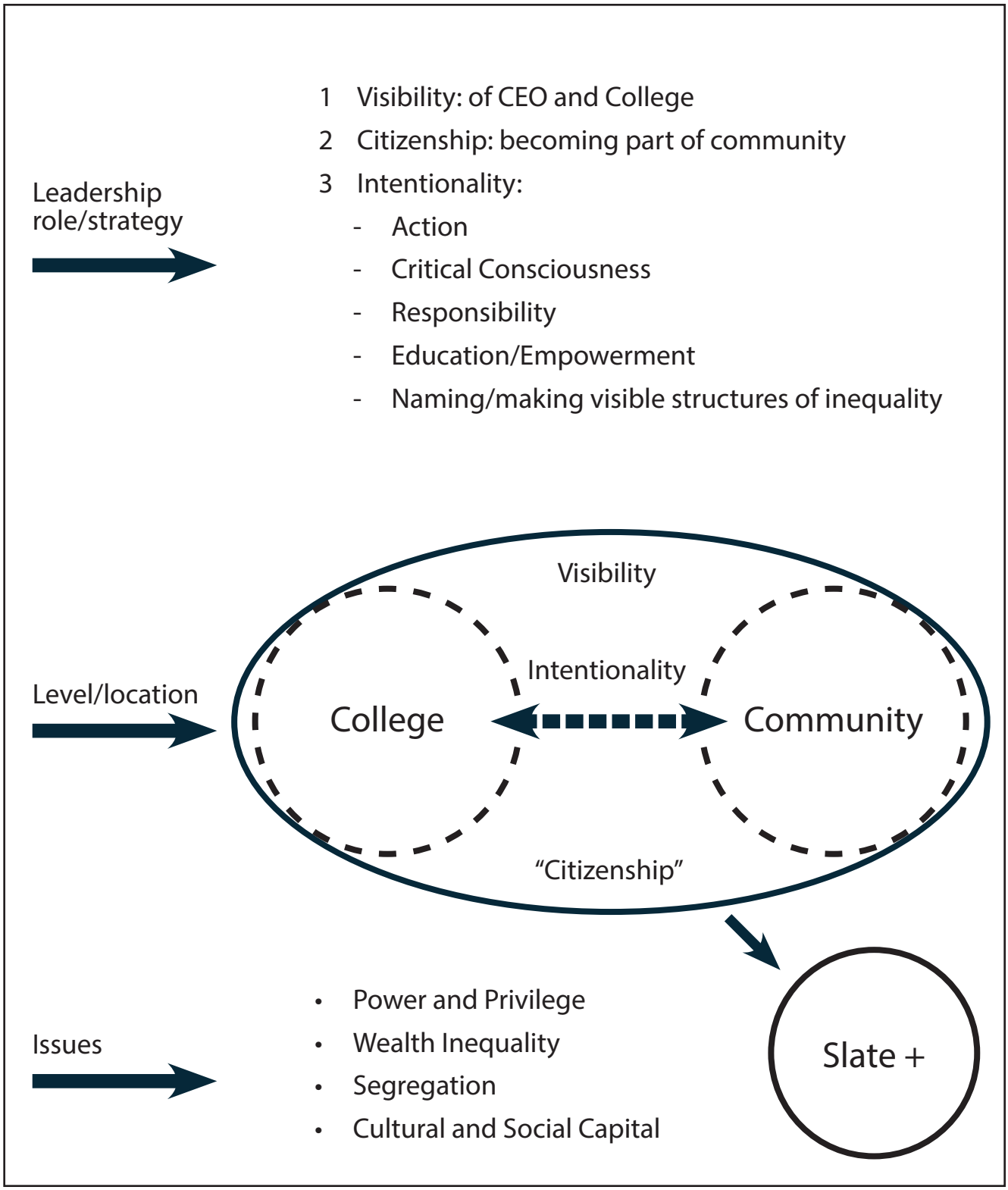

Figure 2. Critical Social Justice Leadership Model.

While Santamaría's (2012) transformative critical leadership model focuses on the micro-level work of the CEO, the Critical Social Justice Leadership model that emerges from this research extends transformative critical leadership to overtly include the strategies of visibility and earning citizenship in communities served, as well as the development of critical consciousness, responsibility, and the naming of structural inequality issues through intentionality. The relationship between college and community becomes more permeable and connected through these strategies and through intentionality, in particular. While much of the work that community college leaders will do in this model still connects to the important transformative critical leadership work that Santamaría (2012) advocates for on college campuses, the Critical Social Justice Leadership model emphasizes the essential connections to the communities served by colleges and districts and provides for stronger, sincere coalitions and alliances to address the continuing structural inequality issues impacting both communities and the students they send to community colleges.

The data and this model suggest four recommendations. Each of these recommendations provide support for not only community college leaders to do the essential social justice work that their communities require but also for policy makers and the general public to develop broader understandings of the systemic issues impacting communities everywhere and how these issues impact success. Responsibility and connection to others are an essential part of the intentionality required for social justice practice and strategies. The Critical Social Justice Leadership model also opens the possibility that communities and their colleges can connect in ways that can more strongly advocate for their needs on state or other bases. We turn next to the four recommendations based on this study.

Recommendations for Action

RECOMMENDATION #1

Critical Social Justice Leadership strategies should be incorporated into community college leadership education and work.

Although the strategies of visibility, citizenship, and intentionality are related to each other, they each point to different facets of leadership. The concept of visibility is one of the obvious ways that the CEO represents to the campus, to students, and to the community what the college (and the CEO herself) values. If students are whom we serve, we need to be visible in all aspects of their relationship to the college; this means not just current students but also potential students. It also means visibility with businesses and families that support these students. Earning "citizenship" is the way that the CEO or other community college leader becomes part of the community. This is about building trust and sincere relationships such that the CEO can have credibility to know what issues students are facing and then what policies might be most effective. This concept is what puts the "community" in community college. Intentionality is what brings a CEO's good intentions into actually working with communities and their needs. It requires no additional resources to name what is happening in a community, to make it a persistent public message that a CEO or college is willing to acknowledge the consequences of inequitable practices and policies and to continue to put that out there to the campus, the community, the Boards of Trustees, the accreditors, the policymakers. While this alone does not constitute social justice practice, making invisible structures visible is a powerful part of beginning to undermine aspects of education that replicate and reproduce the inequitable status quo. Community college leaders need not be experts on all social justice issues to be effective leaders, but if they incorporate Critical Social Justice Leadership practices they will be less fearful and able to more meaningfully address the full range of student and community needs.

RECOMMENDATION #2

Incorporate training on social justice issues into the support provided to Boards of Trustees by the Community College League of California to better serve communities and to best hire, support, and retain CEOs who are committed to social justice work.

One of the roles of the Community College League of California (CCLC) is to provide leadership and professional development to the Boards of Trustees that serve community colleges and Districts ("Leadership Development," 2014). This provides a meaningful opportunity to incorporate understandings of the experiences and impacts of segregated, inferior education on the students who do and will attend community colleges and to incorporate that understanding into policies developed and implemented by the Boards and the CEOs they hire. The Trustee

Handbook produced by the CCLC offers a definition of "equity," which connects colleges and districts to issues impacting students before they even arrive at a college:

> Equity refers to the effort to ensure that people from all ethnic and socio-economic backgrounds have the skills and knowledge to benefit from and succeed in the colleges – to close the 'achievement gap' between students from different demographic groups. (Smith, 2013, p.3)

This section does not limit the role of boards to what happens to students after they arrive at a college or district. An interpretation of this could be that boards and the work they do on social justice issues through CEOs and the colleges could be occurring simultaneously in communities and on campuses. This is further supported in other parts of the handbook (Smith, 2013) that elaborate on the role of boards: "A board's primary allegiance should be to the external community and public good" (p.45).

> Colleges can be insular institutions. One of the values of lay boards in higher education is to provide disinterested leadership and ensure that colleges are responsive to the broader community. Board members use their perspectives and knowledge to insist that faculty and administration understand the framework of the larger world. They ensure that educators are aware of needs and changes in the external communities that may influence the college mission. (p.48)

These points require direct observation of the larger circumstances impacting communities as they create policies to address the needs of students. And finally, of the 9 bulleted points listed for Trustees to consider when establishing goals and indicators for their colleges or districts, 3 of them either directly or implicitly could connect to social justice issues and establishing social justice agendas, including the following two points:

> Specific areas to explore when establishing goals and indicators might include:
> What important demographic, economic, and social trends in the state and in the local communities affect the colleges? How is the district responding to these trends? …How has the college contributed to the cultural, economic, and social health and stability of the community? How is that measured? (Smith, 2013, p. 87)

CEOs cannot do what is already difficult work if their boards do not understand the social justice issues thoroughly or if the boards do not provide the necessary support for their CEOs to do this work.

RECOMMENDATION #3

Incorporate social justice issues into the development of accreditation standards and training for accreditors implementing those standards.

Even those Boards of Trustees and CEOs who are working to redirect attention toward the larger social justice issues impacting students and communities are nevertheless compelled to pay a significant amount of attention to outcome accountability measures because the Accrediting Commission for Community and Junior Colleges (ACCJC) standards do not include or incorporate any of the essential structural inequality issues as part of understanding or addressing the outcomes they evaluate. Where is the "community" in these community college standards? These standards, while asserting to support student learning, are focusing on outcomes without context and without assessing the creative and meaningful input that could be occurring as colleges and their communities work together to address the long standing structural barriers that remain and impact students. As the ACCJC becomes part of the process of evaluating the inputs, standards can shift to promoting the community and college links necessary to truly know and understand what the needs are and how to work together collaboratively to address structural inequalities and meet those needs.

RECOMMENDATION #4

Collect all relevant, deeper and broader data to understand the full contexts from which students come and which impact success.

Deeper data requires more contextual, demographic information. Although there is some college entry data such as placement data, most is largely collected on the backend of the college experience in terms of student

learning outcomes. Very little data is considered from the larger context in which a college sits. Student Success Score Cards do disaggregate data to show "success" by race, gender, and age but how might including segregation data and wealth inequality improve our understandings of experiences and outcomes? What kinds of policies would it suggest if there are strong correlations or predictive relationships between these deeper issues and the experiences of community college students? We are currently making decisions about outcomes and success and setting policies based on a limited set of information.

CEOs, communities served, and boards of trustees can work together to share broader sets of data, understand how policies and practices interact and impact each other, and facilitate the development of mutually supportive policies. This creates opportunities and programs that benefit more constituents across the community. When community colleges become part of the consideration for policies relating to (for example) affordable housing, library location, K-12 collaborations with community colleges between instructors, and public transportation access, students benefit. If the bottom line is service to students then our policies and practices must reflect a deep commitment to that, not just ones centered on outcomes without context and understanding of experiences and barriers.

Conclusion

Critical social justice leadership is necessary for understanding the issues that communities served by community colleges are facing. The Critical Social Justice Leadership model provides a meaningful foundation for understanding how those issues impact students and their experiences on college campuses. Evidence consistently shows that diversity and diverse learning environments support student success (Orfield, Frankenburg, & Garces, 2008; Cooley, 2008) and increase opportunities in all aspects of life. On the other hand, structural inequalities point to gaps in resources, expectations, quality of service and teaching, and opportunities related to racial and economic isolation (Cross, 2007). How CEOs and other community college leaders respond to these realities can either perpetuate the invisibility of the issues or bring them out into the open for coalitions of students, faculty, staff, administrators, community groups and local governments to grapple with fervently.

The themes that arise from these ten interviews with California community college CEOs and that are incorporated into the Critical Social Justice Model suggest that critical consciousness is something CEOs can cultivate in themselves. Accepting responsibility to do social justice work is something CEOs can do as well. If some leaders believe they can lead from a distance and not really know what their students are experiencing, what they contend with every day and what barriers remain in front of them, then they cannot support or create programs that will fully serve students' needs and improve their chances of success. Community college leaders make decisions about and create policies for students who are hugely impacted by racial and economic oppressions, but these same leaders may not have fully addressed or examined their own identities and privileges in relation to these issues.

In turn, however, for the CEOs who have already made these connections and developed their critical consciousness, they need the support of their boards of trustees to continue the difficult work they are doing. If ultimately it will be a social movement that is required to undo these entrenched systems, what role will the CEO play in those movements to come? Will it be as a perpetuator of the status quo or will it be as a partner with the communities served to create and recreate social and educational systems that truly serve everyone? Until community college leaders understand the impacts of systemic social justice issues on the communities they serve they will be less effective advocates for their students and less likely to develop and promote the best policies and practices that will support their students' success.

About the Author

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PEDAGOGICAL PERSPECTIVES

Policy in Support of Pedagogy: Collaboration Among Scientists, Science Educators, and Engineers in Preparing Qualified K-8 STEM Teachers

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ABSTRACT

Teachers with knowledge of science and science teaching pedagogy are essential to teaching science in K-12 schools. We present collaborative efforts among science and science education faculty members that build a science teacher program with an overarching objective of training qualified science teachers. Our Foundational Level General Science program goes beyond increasing science content knowledge. Its design fosters a sustained collaboration for faculty in science and education to integrate inquiry-based pedagogy into curricula with the goal of recruiting and retaining STEM teachers. Our experience suggests that certain policies within the higher education infrastructure are necessary to sustain these efforts.

Introduction

Current calls for science education reform point to a need for efforts outside of teacher preparation programs and professional development to sustain more than adequate shifts in science teaching (National Board of Science of the National Science Foundation (2014), National Academy of Engineering (2009), National Research Council (2009). Modeling science and engineering practices, as delineated in the Next Generation Science Standards (NGSS, 2015) in undergraduate science courses and in added authorization education programs is an ideal arena for such shifts to take place. According to the National Academy of Engineering (NAE) and the National Research Council (NRC), teachers who have knowledge of science and science pedagogy are essential to the success of science in elementary and secondary schools. To this end, the NAE has proposed that K-12 engineering education promote "engineering habits of mind" (i.e. those that include systems thinking, creativity, optimism, collaboration, communication, and attention to ethical considerations (NAE), 2009). In order to address these needs, it is imperative that science (including engineering) faculty members work alongside science education faculty members to prepare future science teachers (Otero, Finkelstein, McCray & Pollack, 2006). Here we discuss how we have implemented programs and infrastructure to meet this need. We accomplish this through an increased awareness of the importance of collaboration among faculty within colleges of science and education. Consequently, other institutionalized structures have resulted as an ongoing function of science and education faculty working together to emphasize the importance of university-wide attention to these matters. Since the advent of our Foundational Level General Science (FLGS) program, our Institute for STEM Education has flourished to provide a mechanism for various science, math and engineering related practices and research to thrive. Science education programs at our institution, such as a NASA Lift-Off grant (NSF DUE #0851713) and an Integrated Middle School Science (IMSS) partnership (NSF DUE #0962804), as well as corpo-

rate funding from Bayer USA and Chevron, have created financial leverage to combine resources in developing the Institute. Faculty members' involvement in these programs have brought institutional attention to the shifts in science pedagogy and practice that are needed to meet the growing demands of STEM education. Our Institute for STEM Education continues to foster and support faculty work in this area. The current manuscript describes the development, implementation and successes of the FLGS program at CSU, East Bay as well as discusses its effects on faculty's own pedagogy and is integrated with other University initiatives (See Appendix and Table 5 for additional rationale for the program design).

In this narrative, we will provide the rationale for a particular community of practice related to preparing STEM teachers, how this community has driven our shifts in pedagogy, summarize the methods we use to study the effectiveness of our program evolution along with some of the evidence collected, and implications for the need of supportive policy at the university to sustain and grow such practices.

Essential Community of Practice

Effectively training the next generation of science teachers requires the cooperative work of individuals with diverse disciplinary expertise and perspective. In that regard, the development of the FLGS program has led not only to the benefit of shifts in teaching preparation and awareness, but also sparked the formation of new and strengthened existing communities of practice (COPs)(Lave & Wenger, 1991; Wenger, McDermott & Snyder, 2002). By working in interdisciplinary teams, with consultation from engineers (from Bechtel, Broadcom Engineering, and other corporations) and engineering faculty members, we have been able to address crosscutting themes outlined by the NGSS (such as cause and effect, structure and function, energy and matter) and more explicitly apply engineering skills and habits of mind in our own teaching. Recruitment of junior faculty in more science disciplines with the same educational interests further builds the content depth of our COPs.

The FLGS courses are unique in their combination of audience (a mix of pre-service, in-service teachers and regular university students using the courses to fulfill General Education requirements), goals, content focus, and format. As such, their development requires both a unique approach and time above and beyond that of preparing for a standard science course. All courses were developed by an interdisciplinary team of faculty and vetted through quarterly workshops involving both faculty and practicing engineers. This process strengthened the STEM connections between the courses (and the accompanying Single Subjects Methods courses in teacher education), ensured that real-world connections and applications were emphasized, and helped develop curricula that emphasized the skills needed for 21st century engineering and science. This is an important component of the program and highlights the impact of the design on several levels: preparation of K-8 teachers to integrate science content more deeply and accurately into their classrooms, integration of engineering habits of mind and project based learning as a matter of classroom practice. An increased awareness of and changes to pedagogical practices among science and science education faculty that benefit K-8 teachers has resulted from this COP.

Subsequently, the early design of the FLGS program prepared for the Science and Engineering Practices outlined in the NGSS (Table1). All classes were modified to align with the new Science Framework (NRC, 2012) in which scientific and engineering practices, crosscutting concepts, and disciplinary core ideas were emphasized. As the Next Generation Science Standards (NGSS) move through the adoption process in California, the courses continue to be modified to accommodate any further state-specific modifications to the NGSS (assessments, course design, etc.).

For example, science content area courses have been modified such that the homework had fewer quantitative problems and more assignments requiring teachers to describe real-world examples of phenomena or teaching strategies for the current topics (i.e. SEP #8, Table 1). The lab handouts were re-written so that the purpose of the lab, from the point of the view of the teacher, is transparent and focused on science practices and writing prompts that can be translated to their classroom (i.e. SEP #3, Table 1). Faculty members across the four major disciplines (chemistry, biology, earth science and physics) continue to work together to design course experiences to reflect common pedagogical approaches. As a result of the core science faculty being involved in the NSF IMSS project, teaching strategies that integrate argumentation from evidence is present (use of Claims, Evidence Reasoning

Table 1
Science and Engineering Practices (SEPs) (NGSS)

	Practice
1	Asking questions (for science) and defining problems (for engineering)
2	Developing and using models
3	Planning and carrying out investigations
4	Analyzing and interpreting data
5	Using mathematics and computational thinking
6	Constructing explanations (for science) and designing solutions (for engineering)
7	Engaging in argument from evidence
8	Obtaining, evaluating, and communicating information

(CER), MacNeill and Kracjik (2012). Since this is a consistent theme as a science practice and in both Common Core State Standards in English Language Arts (CCSS-ELA) and in mathematics (CCSS-M), CER is used in almost all written assignments in the sciences as well as in the science education courses. Further, students are required in homework assignments and in their final projects (in science courses and in education courses) to include explicit examples of how science and engineering principles, cross-cutting concepts and disciplinary core ideas are taught and reinforced through readings, assessments, media resources, and hands-on activities. Engaging in discourse with guest engineers and science faculty members during the initial meeting of the education courses also helped to frame the teachers' ideas about project-based learning and engineering habits of mind. These class periods not only unpack learning theory and best practices in the classroom but dissected hands-on activities for redesign to incorporate the elements of science, technology, engineering, and math. The major assignments in the education classes consist of redesigning current lessons to reflect authentic assessment of student content knowledge and skill acquisition. The ability of the school teachers in the program to make more connections to inquiry and project design appeared to be lasting, meaningful and more readily applied to their classroom teaching practices.

The process of making explicit to STEM teachers certain inquiry, science and engineering practices has driven not only a shift in our collective pedagogical approaches, but also in curriculum design. For instance, four upper division, undergraduate online courses and four corresponding in-person laboratory courses in chemistry, physics, biology, and earth science have been developed specifically for the FLGS program. These science courses are delivered along with teaching methods (Single Subjects Methods) courses that integrate the NGSS Science and Engineering practices. The science methods courses model specific examples of how engineering practices could be connected to the content in the four science content areas to boost application of inquiry practices among the teacher participants. An inquiry continuum rubric informed by research funded by a National Science Foundation project (Brandon, Taum, Young, Pottenger, & Speitel, 2008) informs curriculum design to allow for discussions about investigation and specific elements of inquiry (e.g., engaging the student in posing questions, encouraging the learner to design an experiment, developing the skills of supporting claims with evidence and practicing the skills of effectively communicating ideas). These elements of inquiry were likened to the habits of mind practiced by engineers in their own work. The use of these practices have driven course design and faculty pedagogical changes.

Sustaining the Need for FLGS: Methods for Evaluation of Success

Significant shifts in program curricular structure and

support have resulted from a common awareness and active involvement in statewide implementation of science teaching practices and their impact on science education among faculty members involved. Without the leverage of various science projects on campus, now housed in the Institute for STEM Education, the momentum of the initial faculty vision would have waned when grant supports ended. Through our mixed methodology of data acquisition, we have gathered information from the following sources to support our rationale to sustain the FLGS and related programs: open-ended reflections from faculty and FLGS program participants, CSET scores from participants, focus groups with engineers, course syllabi (to summarize types of pedagogy and assessments), and grant funded programmatic reports.

In order to sustain this necessary program, science faculty members and science education faculty members, the deans of their respective colleges, the university provost and the Institute for STEM Education, continually work together to devise courses, curricula and experiences that address the calls to train effective science teachers. Here, we describe the necessary infrastructure needed to sustain such a program supported with data gathered in a mixed methods approach (Creswell, 2014). The effectiveness and impact of the FLGS program has been evaluated in several ways: pass rates on the CSET General Science exams, pre-post assessments in each of the content area courses, exit surveys for teaching candidates, and faculty reflections on pedagogical shifts.

First, the FLGS program has been highly effective at CSET preparation. For example, participants completing the FLGS program in 2011-2012 demonstrated 100% pass rates on their first attempts on single subject General Science CSET exams (subsets I and II). The state average passing rate for the same CSET is 82.4% (Taylor, 2014). Additionally, teachers reported that the content courses helped them to pass additional, more specialized CSET exams that allow them to teach high school level sciences.

Next, content assessments are given at the beginning of each science class and then as part of the final exams. Course instructors either design their own assessments or elect to use previously validated concept inventories. The goal of these instruments is, as in any class, to assess both content knowledge gained and the ability to apply that knowledge to problems. Test questions are designed to cover grades 6-8 science content standards and CSET expectations. Eventually, these assessments will reflect those of the NGSS (currently under development, NGSS, 2015). Pre-post test scores are used to inform achievement of course learning outcomes and to identify major misconceptions held by the students in each course. Data helps instructors reflect on efficacy of their lessons/activities and inform course modifications. In the biology courses, for instance, instructors more deliberately addressed common misconceptions in the second year of the program as indicated by the insignificant learning gains seen in concept inventory results during the first year.

Additionally, the impact of the FLGS program on participant content knowledge, experience, and teaching practices were also evaluated through the administration of self-perception exit surveys. In these surveys, 100% of the participants expressed that their science content knowledge, confidence in teaching science, and use of inquiry-based learning in science had increased. A majority of them also indicated that integration of mathematics and engineering principles in their science curriculum had increased. A minority of the teachers indicated increases in time spent on science instruction, coverage of California science standards, and integration of technology into the science curriculum. This was understandable when considering that most FLGS participants were either K-5 teachers and/or were limited by school/district guidelines and resources. Participants may also have expressed interest in teaching science but were not yet in a science classroom. What most notably changed was their confidence in teaching using project- and problem-based learning activities and their understanding that this approach was essential to engaging their students in more meaningful learning.

In the free response portion of the survey, the participants expressed increased use of more engagement strategies, including inquiry-based learning, scientific experiments and free exploration, and increased use of visuals, technology, and peer-teaching strategies. The teachers commented on the increased interest level of their students, e.g., students asked more questions, and on how they efficiently integrated strategies to more actively involve students without taking up more class time. In addition, teaching practice shifts were indicated by increased use of assessment probes to diagnose and address misconceptions (Keeley, 2005), metacognitive writing (e.g., through interactive note-booking), and using videos and

podcasts to connect students to current events in science. Their students were encouraged to understand the results of their own pre-assessments and post-assessments in order to see that their ability to articulate this understanding shifted. Some participants also expressed their appreciation that the FLGS program helped them to update and further develop their content knowledge, to make cross-connections between the different science disciplines, and to help them unpack concepts, which facilitated deeper understanding and, in turn, their ability to teach these concepts.

Table 2 summarizes the most common comments provided in surveys of participant members' experiences in the FLGS program.

Participants in the FLGS program have also reflected on the pros and cons of inquiry- and project-based learning in their classrooms (Table 3). Attention to project-based learning in the classroom appeared to be one of the most compelling struggles experienced, yet provided some interesting perspectives which impacted university faculty pedagogy.

The impact of inquiry on classroom teachers has implications for science and education faculty in how we design new courses, redesign curriculum and restructure how we approach the NGSS Science and Engineering Practices. Having a university faculty with a common understanding of the values and challenges of problem-based learning has informed the work on various other STEM projects. Iterations of FLGS course lab activities have been integrated into the Hands-On Science Teaching Labs (HOST), a program aimed at developing undergraduates with science teaching aspirations. Not only does the FLGS program impact what the students experience and take to their classrooms, it impacts how faculty members prepare their own courses, learn to articulate changes with each other across disciplines, and sustain changes across STEM areas to retain and train majors and future educators.

Emphasis on Improved Pedagogy: Specific Impacts on Science and Education Faculty

Success of the FLGS program has been dependent upon close collaboration of faculty members from science disciplines. Practicing engineers contributed to course development and lab activities. These partnerships are essential to reforming science pedagogy in both K12 and higher education. Here we build a case for these synergistic efforts as they impact faculty pedagogy on campus. Because of common goals and the explicit support of the university, our efforts have stimulated a culture of attentiveness to effective practices in STEM education. During the initial development of the FLGS program, science and education faculty members reflected on the impact of the program on their pedagogical practices. They revealed that participation in the FLGS program resulted in a profound shift in their attention to creating and modeling strategies that are useful to the K-5 educator (who would then be prepared to teach grades 6-8). Table 4 summarizes trends in faculty reflections (in response to open ended,

Table 2
Common comments/ ideas from cohort member surveys (2010-2013)

	Aspects of program that impact science teaching and content knowledge
1	My increase in content knowledge has given me more confidence in teaching science in my classroom.
2	The deeper understanding of content that I have is helping me to focus on making lessons tighter.
3	The combination of greater content knowledge and the application of content to engineering and project based learning [has had a great impact].
4	The focus on hands-on learning in labs and in the implementation of problem-based learning is exciting. My students are already showing more excitement
5	I have a better understanding of how to infuse engineering habits of mind (science and engineering practices, NGSS, 2015) into my regular science lessons as well as into project based learning.
6	My students are more highly engaged in science lessons now that I have more examples of my own of how to implement inquiry.

Table 3
Benefits and barriers of problem- or project-based learning

Benefits for FLGS teachers & their students	Barriers/ challenges for FLGS teachers & their students
Learners formed reasonable and logical arguments to communicate explanations.	Element of the learner forming reasonable and logical arguments to communicate explanation was difficult for lower grade levels.
Learners became more engaged in science as a process – showed more excitement.	Some classroom students were able to communicate their argument on paper, but not verbally.
Attention to inquiry, NGSS and Common Core makes more sense in the context of implementing engineering design projects and skills.	Materials for project-based science can be scarce.
Integration of STEM and science practices are easier in the context of projects.	There is a lack of context and perspective on how to fully implement project based learning and engineering ideas into classroom science. More training and experience is needed.

written prompts) regarding these shifts in their teaching practices, making content accessible to K-5/ 6-8 educators for use in the classroom and in ways of assessing content and processing skills.

What is compelling about these trends is that it inspires faculty to increase capacity for researching these teaching styles more deeply, understanding how content is made accessible to learners and how to design authentic assessments. These are goals for many of our ongoing and future projects in STEM education in our institution. The faculty members emphasize that key to the success and sustainability of this program, future goals and its mission is more common planning time, ongoing training in assessment, use of CCSS-M and CCSS-ELA, and further integration of NGSS into more science major level content courses. Continued support from university administration for development and implementation of innovative pedagogical practices and conducting rigorous research of the program has been essential in the growth of STEM programs and the academic capacity of the faculty involved in science and math education research. Regular meeting times and release time for additional innovative planning, professional development, data analysis, and program evaluation are essential to sustained consistency and integrity of program outcomes. This is especially important for establishing institutional norms in making commitments to successful STEM teacher preparation beyond grant and foundation support. Currently, this is a priority for our sustained efforts at our university.

Preparing Qualified STEM Educators: Policy Supports Pedagogy

Ultimately, we expect that gains in teacher content knowledge, science practice, experience, and confidence will escalate the quantity and quality of science teaching in our K-8 classrooms. We have developed an inquiry-based program where assessments are geared towards measuring participants' abilities to apply content knowledge to lessons to be used in K-8 science classrooms. We have used existing relationships with community colleges, school district administrators, and local K-12 science coordinators to advertise our program. Webinars and professionally designed flyers have generated a number of inquiries. Additionally, we rely on our graduated cohorts and program alumni to disseminate their experiences and draw new participants. For instance, by requiring them to bring a guest to the final project presentation of the Science Teaching Methods course, we expose other teachers to our program. Through our connection to the Liberal Studies department at CSU East Bay, we make students in that department aware of how the FLGS courses can be used to fulfill their depth of study requirement for their degree program. We have used CSU Math and Science Teacher Initiative (MSTI) funds to offer scholarships to entice undergraduates to take these courses as a path to a STEM teaching career. What is also different about the program is that we recruit individuals who are already involved in a teacher pathway or are current teachers adding a science certification. This is in contrast to programs,

Table 4
Improvements in faculty pedagogy and approach to science education

Teaching Style	Accessibility of Content	Assessment Strategies
Adapts college level courses and lecture materials so that they are applicable to use in the classroom	Delivers content in varied forms (animations, real world examples, case studies, lab activities tied directly to lecture content)	Uses formative strategies to combat misconceptions and to build on prior knowledge
Models pedagogies that are applicable to K-8 classrooms	Identifies common misconceptions and identifies how scientific content addresses them	Assesses for ability to provide evidence for claims made and analyze data
Modifies lessons to address needs of English language learners and special needs students more explicitly	Applies content specifically to inquiry activities and engineering habits of mind to enhance relevance of concepts	Has pre/ post course assessments to reveal areas in need of improvement, where gains are or are not made
Models explicit assessment strategies for content and scientific process	Stimulates frequent communication with students (online lecture setting) to review ideas and concepts that need attention or where understanding is strong	Creates explicit course outcomes aligned more specifically to assessments
Applies content to varied inquiry approaches; Models and assesses practices more explicitly	Using the CER approach (Claims, Evidence, Reasoning) \to make content and scientific thinking accessible	Creates summative assessments that apply content to lesson planning and delivery, project design or inquiry skills

such as the Noyce Fellowship, in which there have been noted struggles in recruiting undergraduate STEM majors into the teaching profession (Schuster, 2013)(although we do recruit Noyce scholars in addition to the FLGS pathway).

We continuously improve all courses in the program based on assessment data, student feedback, workshop discussions with practicing engineers, and discussions with faculty and science educators at other institutions. Course development by faculty members is no longer compensated, because post-development course improvements are considered standard instructional practice. However, we continue to leverage new grant awards in sustaining the elements of the original FLGS program development which is crucial to sustaining our mission to train quality STEM teachers (Table 5 contains a description of qualified STEM teachers, Appendix).

Attention to and sustenance of improved science pedagogy would not exist without commitment to university solidarity and policy in support of such reforms. We continue to brand ourselves as a regional hub for STEM education and research. This is made possible via the concerted efforts of faculty to envision and implement innovative learning and research. And although our FLGS program is one of several pathways to preparing more effective science teachers, we know there is a need to support more of the various pathways in our institution to diversify and strengthen options for those gaining added science pedagogy and content skills. We know that to sustain collaborative efforts within the university and with partnering school districts, policy at the university level, and ultimately at the state level where CSU campuses are supported, require ongoing commitment to time and resources allocated to these programs (faculty time, effective teaching spaces, materials, staff support for grant implementation and research capacity among faculty and classroom educators).

Various programs across numerous universities and community colleges have worked to address the need to prepare highly qualified science teachers by developing pathways for undergraduates, and even high school students, to become interested in science, technology, engineering and mathematics (STEM) teaching careers. Recruitment of future mathematics and science teachers occurs in other pathways including the Noyce Teaching Fellowships and undergraduate pre-scholarship preparation programs (NSF, 2010; Schuster, 2013). However, even as Monk (1994) has indicated, individuals with a strong

ADDITIONAL BACKGROUND INFORMATION AND RATIONALE FOR THE FLGS PROGRAM

Table 5
Developing and retaining high quality mathematics and science teachers

	Aspects of program that impact science teaching and content knowledge
1	Attract and retain precollege science and mathematics teachers: resources must be provided to compensate teachers of mathematics, science and technology comparably to similarly trained science and engineering professionals in other economic sectors.
2	Provide quality, sustained professional development experiences for all K–12 science and mathematics teachers that will: increase and deepen content knowledge, promote a variety of pedagogical approaches and develop questioning strategies, which will advance higher order thinking of all their students.
3	Encourage higher education leaders to strengthen K–8 teacher education programs to provide a deeper understanding of the content knowledge necessary to teach mathematics and science.
4	Invest in research on teaching and learning that will better inform development of science and mathematics curricula and pedagogical approaches.
5	Review teacher education programs focusing on the extent to which prospective teachers are grounded in academic content in the subjects they will teach.

background in math and science have been difficult to recruit into science teaching positions because of their capacity to find employment in other more monetarily lucrative careers. Since then, Darling-Hammond (2000) and various others (Hill, Rowan & Ball, 2005; Rice, 2003) add that high quality teaching and student achievement are linked and addressing teacher preparation is essential for that achievement. These issues confound the need for excellent science teachers and drive changes to programs that prepare future teachers.

Additionally, the U.S. Department of Education (D.O.E.) has identified areas of teacher shortages and content areas in high need. Their reports spanning from 1990 to 2014 have consistently indicated (across all 50 states) the need for science teachers (predominantly life and physical sciences) in K-12 schools (U.S. D.O.E., March 2014). The following (Table 5) summarizes several recommendations from the National Science Board of the National Science Foundation (2014) in order to develop and retain high quality mathematics and science teachers.

The FLGS program and the resulting collaborative and synergistic efforts among leadership and faculty members have addressed these recommendations in Table 5 in various settings and projects with various targeted efforts to recruit and prepare more highly qualified science teachers. We present one approach to these needs via a narrative of a program that builds a science teacher pathway with the overarching objective of training more confident and "highly qualified" (No Child Left Behind Act, 2001) science teachers. In 2010, we began recruiting current educators to enroll in a yearlong program that builds their science content knowledge to a level suitable for the Added Authorization in Foundational Level General Science (FLGS). The goals of the FLGS program go beyond increasing the science content knowledge of program participants (typically K-5 teachers adding authorization to teach 6-8th grade science or become lead science teachers in their K-5 setting). The development of the FLGS program stimulated sustainable discourse that facilitated teachers' and faculty members' abilities to integrate science practice and active, inquiry-based pedagogy into their curricula and design additional programs that foster these practices.

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POLICY BRIEF

All Standards, All Students? The Misalignment of NGSS with California's Science Course Graduation Policy

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ABSTRACT

This policy brief provides an overview of the vision and organization of the Next Generation Science Standards (NGSS), and reviews three high school curriculum implementation models developed for the California Science Framework. The brief aims to promote social justice in science education, and addresses the need for reforming curriculum, policy, and practices to improve the equitable preparedness of students for college and career. Recommendations for policy improvements to high school science course requirements will also be presented.

Introduction

The United States science, technology, engineering, and mathematics (STEM) workforce has grown over the past decade and is expected to increase by 17 percent through 2018 (Langdon, McKittrick, Beede, Khan, & Doms, 2011), yet we do not have sufficient numbers of STEM-prepared graduates to fill the jobs. Current education fails to prepare high school graduates with the necessary knowledge and skills in STEM (National Research Council, 2010). A potential cause for this may simply be that California high school graduation requirements in math and science are only two years. Likewise, college admission requirements (A-G approved courses) are only two years for science, but three years for math. According to the United States Department of Education (2015), we must prioritize STEM education to prepare students for the competitive global economy. But continued achievement gaps contribute to the lack of diversity in STEM. In particular, Blacks, Hispanics, and American Indians are underrepresented in science and enigneering fields (National Science Foundation, 2015). Thus, STEM education must emphasize providing equitable opportunities for all students.

Numerous curricular reforms and policies such as No Child Left Behind (NCLB) have attempted to narrow achievement gaps, but have failed (Darling-Hammond, 2007; Zhao, 2009). The NCLB policy regards high quality education as scores on standardized tests in reading and math, intending to narrow the gap by increasing students' scores. The NCLB high school reform effort also included increasing the number of required courses in math and English but further disadvantaged some students by failing to address underlying factors associated with educational performance such as poverty and the different abilities of students (Zhao, 2009). Moreover, the NCLB policy has forced many schools to emphasize basic literacy and math, limiting science education (Mervis, 2011), which mainly focuses on breadth versus conceptual depth (National Research Council, 2007). Common approaches to science instruction have also typically provided few opportunities for students to engage in authentic experiences (National Research Council, 2012).

In the wake of NCLB, there has been an overwhelming movement toward nationally recognized standards to prepare all students for college and career. The Common Core State Standards (CCSS) address kindergarten through 12th grade curriculum in English language arts/literacy and mathematics. They also include new standards for integrating literacy with History/Social Studies, Science,

and Technical Subjects. Following the adoption of Common Core was a national effort to revitalize science education, so the Next Generation Science Standards (NGSS) were developed. Unlike previous content standards, many components of the CCSS and NGSS are aligned, including common practices for science, mathematics, and literacy. For example, one component of the NGSS requires students to use mathematics and computational thinking. Because science is a quantitative discipline, some of the standards are naturally consistent with math. One of the Common Core literacy standards for science asks students to obtain, synthesize, and report findings clearly and effectively in response to task and purpose. While this new method of integrating standards and practices across disciplines is designed so that connections can be made across subject areas, it will initially be more cognitively demanding for all students (NGSS Lead States, 2013).

The new standards also introduce more intensive language demands for students. For example, two of the NGSS science and engineering practices are to construct explanations and engage in argument from evidence, which requires students to participate in classroom discourse and be able to articulate their thinking via writing and dialogue. The introduction of these language demands in science will require additional support for all students, particularly English learners. While English fluency is necessary for academic success, a deep foundation in subject area knowledge is also needed (Callahan, 2005). Many English learners are assigned to courses with remedial curriculum, resulting in a very small proportion of them graduating with A-G approved courses (Callahan, 2005). So the implementation of NGSS will require additional support for students who have typically been underserved in science.

But will this new set of standards be enough to shift thinking about equitable preparedness for college and career? Furthermore, will the adoption and implementation of NGSS force a restructuring of education policies so that its vision can be met?

Several factors contribute to the persistence of achievement gaps, including tracking, institutional racism, and a deficit belief model of student ability (Anyon, 1997; Jencks & Phillips, 1998; Kozol, 1991; Oakes, 1986). These structures influence the lack of opportunity for many students to experience connecting interdisciplinary concepts or apply science in meaningful ways. This type of engagement has typically been reserved for students who are assigned or tracked into in honors or gifted courses (NGSS Lead States, 2013). The NGSS acknowledge continued achievement gaps in science for students with diverse backgrounds, including English learners, as well as inequitable opportunities for some students to learn (NGSS Lead States, 2013; National Research Council, 2012). In particular, recent achievement data from the National Assessment of Educational Progress illustrates discrepancies between average scale scores in science of White (163), Black (129), and Hispanic (137) students (National Center for Education Statistics, 2012).

Transforming education to prepare all students for college and career is needed. A fundamental part of the NGSS design is to make the standards accessible to all students. "All Standards, All Students." One goal of the NGSS is that all students, not just those pursuing college or careers in STEM, gain sufficient knowledge of science and engineering to become critical consumers of information that is essential for a life well-lived in the twenty-first century. But will this new set of standards be enough to shift thinking about equitable preparedness for college and career? Furthermore, will the adoption and implementation of NGSS force a restructuring of education policies so that its vision can be met?

Policy Options

The NGSS promise to provide equitable opportunities to deepen students' conceptual knowledge and application of science and engineering in preparing them for college and career. Unlike the old state standards, the new ones are written as performance expectations, integrating three dimensions that are interwoven across Kindergarten through twelfth grade: (1) science and engineering practices, (2) disciplinary core ideas, and (3) crosscutting concepts. The NGSS also cover four domains (the physical sciences; the life sciences; the Earth and space sciences; and engineering, technology, and applications of science), where engineering, technology, and application of science standards are embedded into the other three domains.

The NGSS are currently being used to develop a California Science Framework, which was permitted by Sen-

ate Bill 300 (Hancock), and passed in 2013. Written as performance expectations, NGSS do not specify curriculum, nor is the framework itself a curriculum manual. Rather, the framework is designed to provide guidance for curriculum development and implementation of the standards. The NGSS are organized differently than prior standards across K-12. For grades K-5, they are organized by individual grade level. However, the standards are banded for middle school (grades 6-8) and high school (9-12). This is due to the varying policies across states in curriculum decision-making. In California, Education Code (EC 51225.3) allows Local Education Agencies such as school districts and county offices of education to make curriculum decisions for grades 6-12, and choose how to organize the standards. Because Local Education Agencies will select which model to implement, various curriculum plans will exist. Thus, the standards must be bundled in meaningful ways to develop courses. The Science Curriculum Framework and Evaluation Criteria Committee (CFCC) approved a Framework document that includes the following three curriculum implementation options for high school.

Less than half of Earth science courses offered are A-G approved, implying that the course content is not as important as the others. Alternatively, 91% of the Physics courses are A-G approved, even though there are fewer number of courses offered.

Policy Option 1 - Four Course Model

This model promotes a four-year course sequence to address all of the performance expectations, which appears to promote the "All Standards, All Students" curriculum vision of NGSS, and the advancement of STEM education. This option is based on the National Research Council's (2012) Science Domain Model, and divides the high school performance expectations into separate courses that cover these domains: life science (Biology), Earth and space science (Earth science), and physical science. The performance expectations for physical science are sub-divided further into two separate courses: Chemistry and Physics. A potential advantage of this model is that teachers of these domain specific courses can provide specialized instruction in one content area. Studies on teacher effectiveness have suggested that the higher pedagogical content knowledge teachers have in their subject area, the more effective they are (Loucks-Horsley, Hewson, Love, & Stiles, 1998; Nilsson, 2014; Shulman, 1986).

In this model, however, fulfilling the vision of NGSS would mean that every student would need to take all four of these proposed courses. But some students do not take four years of high school science. Only two years are required to graduate, and not all of them meet UC and CSU college entrance requirements (A-G approved). So which science courses are A-G approved and which students are taking them? Table 1 outlines the number of courses that are A-G approved in each science domain.

Less than half of Earth science courses offered are A-G approved, implying that the course content is not as important as the others. Alternatively, 91% of the Physics courses are A-G approved, even though there are fewer number of courses offered. One reason for this may be that Physics has traditionally been a course assigned to students who are in honors or have already passed the

Table 1
High School Science Course Offerings

	Total # of Courses	A-G Approved	Percent A-G Approved
Earth Science	6,782	3,179	47%
Biology	17,398	13,712	79%
Chemistry	9,083	8,479	93%
Physics	3,508	3,201	91%

Note. California Department of Education DataQuest: 2012-2013 Academic Year.

other courses. So which students are taking the A-G approved courses? Only 39% of high school graduates in California met college entrance requirements in 2013, and numbers varied based on students' ethnicities (see Table 2). Hispanic and African American student populations were among the lowest percentages of students that met college admission requirements, highlighting institutional course assignment policies to track particular students into or out of A-G approved courses.

This four course model appears to be like most existing high school curriculum, but its adoption would require substantial changes to education policies. First, if this model were adopted, there may not initially be enough certified teachers to teach Earth science and Physics, simply because fewer of the courses exist, so the current demand for teachers in those areas is low. Second, for equitable opportunity to learn, all students would need to take all four courses. This means that science course requirements for graduation also need to increase. Otherwise, the Earth science course will continue to be viewed as unimportant for college admission, and a wide gap between the numbers of courses offered in each discipline will persist. Finally, Table 2 illustrates the varying levels of preparedness for college admission based on ethnicity, so changes in institutional practices for assigning students into (or out of) A-G courses is also needed.

Policy Option 2 - Three Course Model with ESS Integrated

This model promotes a three-year course sequence to address the performance expectations, and removes Earth and space science (ESS) as a stand-alone course. It is based on the National Research Council's (2012) Modified Science Domain Model, where science domains are assigned to commonly taught high school courses (Biology, Chemistry, and Physics). These only address the life science and physical science domains, so Earth and space science performance expectations are distributed across all three courses as they are conceptually related. One advantage is that it is more likely for students to take three years of A-G science approved courses than four, as described above. Likewise, the courses easily align with currently approved courses for college admission, promoting preparedness for college and career in STEM. Another advantage is that Earth and space science can be used to contextualize content in the other disciplines, such as addressing earthquakes when studying waves in Physics,

Table 2
Number of Graduates Meeting UC/CSU Entrance Requirements (A-G)

Ethnicity	Percent
American Indian or Alaska Native, Not Hispanic	26%
Asian, Not Hispanic	68%
Pacific Islander, Not Hispanic	35%
Filipino, Not Hispanic	54%
African American, Not Hispanic	29%
White, Not Hispanic	47%
Two or More Races	47%
Hispanic or Latino	29%
None Reported	30%
Total	39%

Note. California Department of Education DataQuest: 2012-2013 Academic Year.

versus studying waves void of interdisciplinary context.

However, a potential limitation of this model is that single subject credentials in Biology, Chemistry, and Physics allow teachers to teach Earth science, but those with an Earth science credential (Geoscience) are not authorized to teach Biology, Chemistry, or Physics without additional authorizations on their credential. With the Earth science credential, teachers are certified to teach introductory general science courses and even 7-12 grade Integrated Science courses, but this model is different. It takes existing courses and integrates Earth and space science performance expectations across the other three core courses. Thus, this model could lack coherent curriculum and be implemented in such a way that the "core" part of the courses (Biology, Chemistry, and Physics) is taught as usual, with some time set aside to cover the Earth and space science standards. It could also displace some Earth science teachers who do not have added authorizations on their credential. Contrary to the four course model, this model could potentially limit teaching effectiveness in terms of teachers' pedagogical content knowledge because teachers may not have expertise in their single subject area plus Earth and space science, which are both required for this model.

In California, Education Code (EC 51225.3) allows Local Education Agencies such as school districts and county offices of education to make curriculum decisions for grades 6-12, and choose how to organize the standards. Because Local Education Agencies will select which model to implement, various curriculum plans will exist.

Adoption of this model would also require change to education policy. To ensure equitable opportunity to learn, all students would need to take all three courses, which contradicts current high school graduation requirements. Furthermore, because Physics currently isn't offered as frequently as Biology and Chemistry, additional Physics teachers would need to be hired and more courses offered. Moreover, if the science graduation requirements remain two years, which two courses would students take? Based on Table 1, most students would probably take Biology and Chemistry (with some integrated Earth and space science), but could be assigned or tracked out of the Physics course. This could perpetuate existing achievement gaps if Physics continues to be viewed as a course reserved for some students but not others, limiting opportunities for all students to access all the standards.

Policy Option 3 - Three-Year Model: Every Science, Every Year.

This is an integrated model, combining performance expectations from Earth and space science, life science, and physical science into each of the courses. This model is designed to address all performance expectations in three years, but was written with the realization that many students will only take the minimum two years of science required for high school graduation. Thus, the sequence of courses is designed to follow a developmental progression such that the first two years address the foundational concepts from all domains, reserving the third year for introducing more complex concepts that build upon years one and two.

One benefit of this model is that it is integrative, supporting inter-disciplinary teaching and learning, which could improve students' ability to apply their knowledge of the content in more relevant ways. In California a similar model for grades 6-8, the Integrated Learning Progression model, was recommended by the State Superintendent of Public Instruction, and adopted in 2013 by the State Board of Education as the preferred model. For high school, this model would ensure that students are exposed to all domains because they are integrated within each course, whereas the other options may discourage students from taking courses such as Earth Science or Physics. This model also appears to fulfill the "All Standards, All Students" vision of NGSS, but only if all students take all three courses.

While this model's integrative structure may provide opportunities for students to engage in all science domains, it is designed in response to California's science course graduation policy. Thus, one limitation of this model is that students can be assigned or tracked out of the third year of science. Since the NGSS are not designed to fit into two courses, those not taking the third course will be disadvantaged, and will not have opportunities to engage in the culminating third of the curriculum. Again, education policy on science course graduation needs to be revised to require three years of science if we want all students to have equitable opportunities to learn. Otherwise, students will graduate with only basic foundational understanding in science and engineering, and may not

have learned or practiced the advanced skills needed to apply that knowledge to relevant societal problems, which is what NGSS are designed to support.

This model also introduces a discrepancy between which courses are approved for UC versus CSU entry. For CSU, two years of integrated science fulfills the A-G requirement. However, for UC, "the final two years of an approved three-year integrated science program that provides rigorous coverage of at least two of the three foundational subjects may be used to fulfill this requirement" (UC Admissions, 2015). So students who take two years of science at schools whose Local Education Agencies have selected this curriculum model would be eligible for CSU, but not UC. While this integrated model and sequence has the potential to prepare students for college and career, it limits opportunities for students to meet A-G requirements for UC admission. This has major implications for college admission requirements to UCs and must be considered by Local Education Agencies as decisions are made about which model to adopt.

Conclusion and Policy Recommendations

The newly adopted Common Core and Next Generation Science Standards (NGSS) promise a paradigm shift in K-12 education: to serve diverse populations, engage students in critical thinking, and to prepare them for college and career. However, NGSS are not aligned to current California high school graduation policies. Only two years of science are required, potentially discouraging many students from college or careers in STEM. The California Science Framework proposes three different models for course organization. But the science course graduation policy limits each of them in terms of allowing students to be assigned or tracked out of third or fourth year courses. Furthermore, achievement gaps will persist in science education unless additional support is provided for underserved students and transformations to institutional policies for course assignment are made. If NGSS are truly designed for all students, then alignment must be made between curriculum, policy, and practice.

Two major recommendations for policy improvement are: (1) increasing the science course graduation requirements from two to three years and (2) transforming course assignment policies so that all students have equitable opportunities to learn.

Current state mandated high school graduation policy is merely two years. If the NGSS are intended to improve current science education, and are designed to span across K-12, that cannot possibly be done effectively if only two years of science are required for high school graduation. Rather, "students are better prepared for post-secondary work when the practices are used over three years of science in high school" (NGSS Lead States, 2013, p. 13). Preparing students to meet the increasing demand for STEM jobs will mean aligning school policies to meet the vision of the new standards. Under current policy, the vision of "All Standards, All Students" won't be realized because inequitable opportunities to learn science will continue to exist if some students take the minimum two courses but others take three or four.

Preparing students to meet the increasing demand for STEM jobs will mean aligning school policies to meet the vision of the new standards.

Because NGSS span across K-12, embracing the vision of NGSS in preparing students for college and career means transforming science education across all grade levels. Current high school students have little experience with NGSS in K-8, so increasing science course requirements could be challenging for them. More time needs to be devoted to science instruction across all grade levels so that students entering high school are prepared to engage in this new method of science instruction. If science course requirements increase to three years, perhaps a phase-in approach can be applied. During the early implementation of NGSS over the next couple of years, all high school students could be allowed to graduate with two years of science. Curriculum must be adopted and teachers must learn how to effectively implement it. After this transition phase is completed, the science graduation policy could increase such that all incoming freshmen would be required to take three years of science to graduate.

We cannot raise the number of science course graduation requirements without considering the consequences. One potential unintended consequence for this type of policy change is an increase in high school dropout rates (Plunk, Tate, Bierut, & Grucza, 2014). While there are various reasons students drop out, the review of 25 years of

research on high school dropout illustrates that no single factor has been identified as a predictor of high school dropout, nor is school policy alone responsible for higher levels of dropout rates (Rumberger and Lim, 2008). Rather, a combination of factors associated with both individual student characteristics (i.e. educational performance, attitudes, behaviors, background) and institutional characteristics (i.e. family structure, composition of student body, school policies) predict high school student dropout (Rumberger and Lim, 2008). But putting additional demands on students to graduate, without providing the necessary support, could contribute to increased dropout rates. We cannot continue demanding more of students and teachers with little or no support, especially since structural inequities in schools contribute to achievement gaps, which could be exacerbated with an increase in science course requirements.

If science course requirements increase, historically underserved populations will need additional support just to catch up. First language or bilingual science courses should be offered to support English learners, especially with the increased language demands of NGSS. Likewise, achievement data on the discrepancies between ethnic groups for meeting A-G requirements demands transformation of school policies such as course assignment. Why are there higher percentages of Blacks, Hispanics, and American Indians graduating without meeting college entrance requirements? Which science courses are they taking and how are students being assigned to them?

One potential underlying factor responsible for this type of structural inequity is tracking (Anyon, 1997; Callahan, 2005; Kozol, 1991; Oakes, 1986). New standards and an increase in science course requirement alone will not be sufficient for transforming science education because tracking limits some students' opportunities to learn. A paradigm shift in institutional and cultural beliefs about which students have the opportunity to learn which content is needed. All students must be given equitable opportunities to participate in high quality science education to prepare for college and career. Thus, science course assignment policies should allow students to access the same curriculum, and schools' academic advising policies should reflect inclusive practices such that students cannot be tracked out of higher level (A-G college approved) courses based on their language or ethnicity status.

In addition to the implementation of new science standards, pedagogical transformation within all science classrooms is required. Even if the prescribed NGSS curriculum is improved, the enacted curriculum can be vastly different because teachers' beliefs about science often differ from how curriculum is implemented in the classroom (Tobin & McRobbie, 1997). Thus, the pedagogy and implementation of standards will need to focus not just on the science content, but the cultural relevance to students and society. Teachers must transform their ideas about schooling, and practice culturally relevant pedagogy (Ladson-Billings, 1995) and critical pedagogy (Freire, 1970). We cannot continue using one-dimensional methods that emphasize basic knowledge of facts and expect students to be prepared for solving challenging problems or advancing knowledge to support the global economy. Instead, teachers and students must discover how to apply three-dimensional methods of teaching and learning that integrate science and engineering practices, disciplinary core ideas, and concepts that cut across all domains in the application of science. This transformation will take time and collaborative efforts of students, teachers, administrators, academic advisors, parents, and policymakers must align to provide equitable structures for accessing curriculum.

First language or bilingual science courses should be offered to support English learners, especially with the increased language demands of NGSS.

Future investigations on the effectiveness of NGSS implementation should be conducted to study how well the standards are equitably preparing students for college and career. Specifically worth examining is the extent to which the current two-year graduation policy will sufficiently prepare students for college and careers in STEM. Also worth consideration is how teacher credential programs and policies will change because of NGSS implementation. Finally, data needs to be collected on the different curriculum options that Local Education Agencies select to implement, the number of science courses students take, and what students take which courses. This would be useful in determining if or how the implementation of NGSS provides curricular access to students. These types of studies can yield critical information for improv-

ing science education. Under current policy, there is a misalignment in the application of NGSS. A truly effective transformation in science education will require realignment between educational policies, teaching practices, and NGSS's promise of "All Standards, All Students."

About the Author

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Acknowledgments

Matthew d'Alessio (CSU, Northridge)
Rich Hedman (Center for Math and Science Education, CSU, Sacramento)
Margarita Berta-Avila (CSU, Sacramento)
Deidre Sessoms (CSU, Sacramento)

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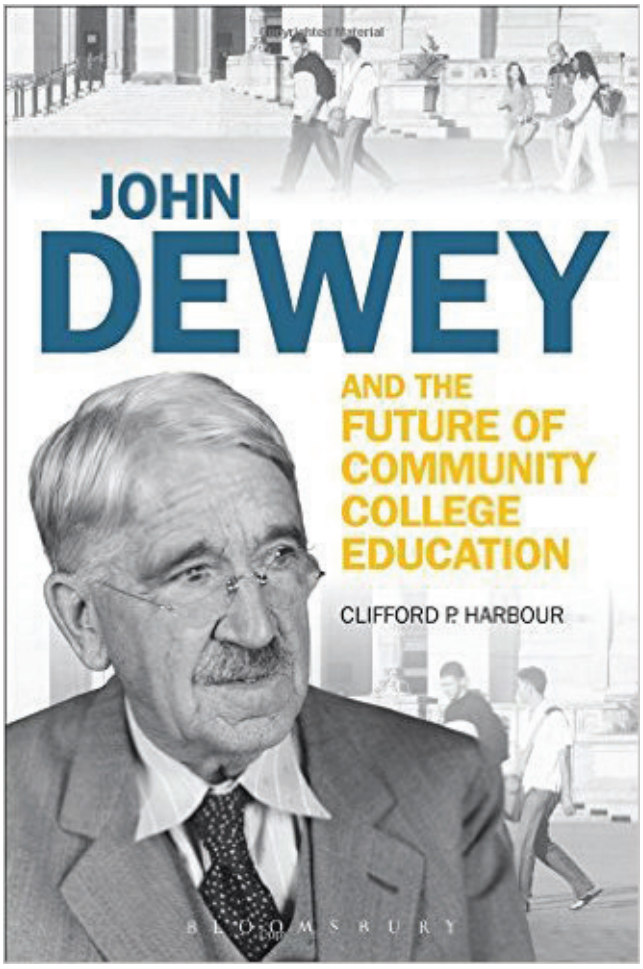
BOOK REVIEW - *JOHN DEWEY AND THE FUTURE OF COMMUNITY COLLEGE EDUCATIO*N

Review by Stan Skrabut, PhD, Director for Technology Enhanced Instruction, Jamestown Community College



John Dewey and the Future of Community College Education

by Clifford P. Harbour

Bloomsbury Academic, 2014, 192 pp.
ISBN 13: 978-1441172921 $29.95

In his book, *John Dewey and the Future of Community College Education*, Clifford Harbour has shown community colleges to be quite adept at taking on increased responsibilities by adapting to their communities' changing needs throughout the decades. His concern lies with the increased external completion pressures and their effect on community colleges. While Harbour believes community colleges should improve graduation rates, he also believes community colleges should be more than institutions to impart knowledge and skills but also shape democracy in local communities. To help support his position, he reflects on John Dewey's teachings.

When Harbour wrote this book, community colleges were not only tasked with increasing access to education but now required to increase completion rate with successful job transition. During the beginning of the 20th century, the United States suffered from wage inequalities, unemployment, unprecedented technology changes, high immigration rates, increased poverty, and war issues that continue to hold the United States back. Then and now, legislators promote education as means to prosperity and equality. Yet, the world's economy has increasingly become complex. To compete in this new economy, the nation needs a more educated workforce. President Obama advocates for community colleges to produce 5 million new graduates (The White House, n.d.). "Policymakers, legislators, and private foundations are calling upon community colleges to retain their commitment to access while also significantly improving their graduation rates" (Harbour, 2014, p.vi). To help community colleges create a framework to navigate this new mission, Harbour's purpose is threefold:

- explain how community colleges developed over the

decades as a means to provide education opportunities for all.
- reflect upon the writings of John Dewey as they relate to the expansion of education opportunity to all and the impact to communities.
- "identify and explain the values and priorities that would comprise a Deweyan normative vision for the community college of the future" (Harbour, 2014, p.8).

John Dewey and the Future of Community College Education has eleven chapters spread across three sections. To provide context in part one, Harbour looks at the contemporary community college, the community college of the future, and introduces John Dewey. Part two focuses on the community college evolution by first looking at the beginning of the junior college, how junior colleges evolved during the Great Depression, and how community colleges developed in the late twentieth century. Part three explores John Dewey's writings on education, democracy, and community. Finally, Harbour explores the Deweyan community college, a possible framework for moving community colleges forward under this new mandate.

Throughout the book, Harbour ties his writing back to essential documents and events shaping junior and community college development to include John Dewey's documents. He points out key historical events such as the two world wars, the Great Depression, and the Great Recession and their impact upon the community college system. As he notes, this book is not an exhaustive account of documents and events related to the community college movement. He focuses only on elements necessary to develop his Deweyan normative vision framework.

Part One - The Context

In part one (chapters 1-3), Harbour focuses on three topics: the contemporary community college, the community college of the future, and an introduction to John Dewey. In this section, he provides an important glimpse into the community colleges' mindset through a quick community college system overview. While looking at contemporary community colleges, he examines governance, organizational leadership, and structure; faculty education, composition, and teaching loads; student population; curriculum; core missions; funding; and the Completion Agenda. A student population examination shows rising but stable growth with a higher proportion of minority and low income students as compared to universities. He outlines the community college's core mission as one providing open access to a comprehensive curriculum and serving a local community's needs. The curriculum may deliver associate degrees, vocational certificate programs, or non-credit programs. He explains community college funding sources and variables affecting funding such as less tax revenue, incarceration costs, and Medicaid costs. Expenditure increases and income decreases have yielded less funds available for community colleges. This naturally affects affordable open access. With an increased emphasis on completion due to the Completion Agenda, there may be unintended consequences, e.g., encouragement to complete certificate programs and vocational programs rather than degree programs just to report success. Harbour draws attention to the difficulty of measuring completion when students are practicing "swirling" and "double-dipping" by taking courses from more than one institution. He argues community college education should promote more than access and completion but also democratic growth.

An examination of contemporary community colleges helps focus a lens on the future. Harbour identifies five areas influencing future community college development. "These are (a) income inequality, (b) technological change and learning analytics, (c) globalization, (d) the generational equity problem, and (e) public higher education funding" (Harbour, 2014, p. 32). The income inequality gap, the greatest since the Great Depression, disrupts governance at every level and threatens our nation's democracy (Harbour, 2014). It is imperative individuals continue to learn and advance their education as a means to close the income inequality gap and develop as educated voters. Community colleges can help learners by improving instruction. Harbour points out we still teach the same way we did 100 years ago in spite of technological advances.

Educators should use learning analytics to help students learn and complete degree programs. Generational inequity also affects community colleges; for example, different elderly programs exhaust funds younger citizens need to succeed. As a result, money must come out of the student's pocket; this is during a period when wages have remained stagnant. While community colleges continue to be prudent community investments by providing high

quality education at a reasonable price, more can be done to control costs.

This section closes with an introduction into John Dewey. Harbour provides detail into the events that shaped Dewey's character and educational philosophy. Dewey saw labor issues, war, poverty, income inequality, civil rights, and suffrage issues. These events helped him realize education is not just for the privileged; society should not use education to support a class separation system. Dewey believed "the purpose of an education was to promote individual growth, to become a better person, and to acquire the skills and knowledge needed to work with others in building a better society" (Harbour, 2014, p. 54).

Part Two - The Evolution of the Community College

The second section (chapters 4-7) of Harbour's book explores community college development from the junior college movement. This section's first chapter focuses on junior college movement beginnings. According to Harbour, junior colleges were a connection between public high schools and universities. They helped strengthen a high school's curriculum as well as served as a release valve for universities, which could not easily accept more students, especially students who were not adequately prepared for university rigor. In this section, he uses specific junior college examples, various laws, and key documents written by Floyd McDowell, George Zooks, Leonard Koos, and Walter Eells to illustrate key advancements

The Great Depression had a significant impact on junior colleges. During the Great Depression, funding for education was in short supply and communities closed higher education institutions to save money. However, junior colleges, a cheaper alternative to universities, saw an enrollment increase. Additionally, the federal government used junior colleges as means to advance economic policy under the Emergency Education Program. "What the Great Depression revealed was that the nation had a genuine need for low-cost postsecondary education and many adult learners were grateful for the opportunity to take college classes at the junior college" (Harbour, 2014, p. 54). Harbour stresses the importance the federal government had addressing the economic crisis, a crisis the states were unable to address on their own.

As Harbour addresses the period from 1940 until 1970, different events and documents had a role in shaping the junior college landscape. These events and laws included World War II, the GI Bill, the Truman Commission Report, the Donahue Act, and the California Master Plan for Higher Education of 1960. Across these events, junior colleges adjusted to training citizens and soldiers for war, and postwar reintroduced servicemen back into the civilian workforce thus expanding the new community college program. The Truman Commission Report, the Donahue Act, and the 1960 Master Plan created the community college system, delineated the roles of each higher education institution type, and decided the distribution of degrees. Community colleges also assumed a greater role of filtering out students who did not meet university standards.

In the last chapter of this section, Harbour focuses on important documents that are changing the direction of community college education: 1988 American Association of Community Colleges (AACC) policy document, *Building Communities: A Vision for a New Century* and 2012 AACC report, *Reclaiming the American Dream*. In the first document, authors believed community colleges could stem economic degradation and social polarization. The recent document's authors believed the United States no longer leads the world in degree completion and lack of completion contributes to income inequality. The report recommended changes to community college funding, operations, and structure.

Part Three - Dewey on Education, Democracy, and Community

The last section (chapters 8-11) focuses on John Dewey. The first three chapters look at John Dewey's writings and presentations in a historical context. The last chapter creates a normative vision framework for advancing community college education based on Dewey's teaching.

"We can learn from John Dewey, an American who thought carefully about the relationship between education and democracy during an era that in many respects is similar to our own" (Harbour, 2014, p. 117). Harbour uses Dewey's book, *Democracy and Education*, to highlight the importance education has had in building a better society. Dewey believed knowledge sharing about diverse people helps create greater understanding and reduces conflict. Because society keeps evolving, individuals need lifelong learning to make the society better. Community colleges are well suited to handle lifelong learning.

Dewey recognized Americans would cling to the *status quo* unless they were responding to a crisis. Seeing social injustices all around him, he regularly wrote about them and how education could help mitigate them. Harbour used Dewey's book, *Human Nature and Conduct*, the debate with Walter Lippmann, and the Great Community to illustrate how educated citizens could solve world problems through collaboration and communication. For a Great Community to work, members would have to communicate with others, create community symbols, have ability to inquire, understand how to leverage social sciences for better policy, and disseminate results to all community members.

Harbour explains Dewey increased his leadership role through more writing and presentations as the Great Depression unfolded. Dewey often wrote about injustices and how schools failed to prepare citizens who could think about community issues. He spoke against a subject-centered curriculum that did not address real issues, and did not require critical thinking. "Simply relying on political institutions to solve the great problems was no longer a feasible strategy to advance American democracy" (Harbour, 2014, p. 151).

Framework for a Deweyan Normative Vision

The book concludes with a list of priorities and values for a Deweyan normative vision for community colleges. These eleven priorities and values center on grounding instruction, guiding democratic campus community development, and guiding the institution's relationship with the community. Of these eleven priorities and values, some resonated with me more than others. For example, Harbour explains educators must prepare learners to live and support their communities; this means educators must not teach sterile disciplines but provide a context for the topic within the community at large. Dewey and Harbour also stressed the need for learners to understand an occupation both historically and within society to adapt to changes in the future. Community colleges need to end the practice of tracking students and instead prepare learners for an occupation. Finally, community colleges should not only prepare learners for a democratic society but also model the process through transparent and open problem-solving within the institution. As Harbour concludes, community colleges need to recognize their past and leverage Dewey's teachings to assert themselves in shaping their future. This priorities and values framework can help community colleges shape their role as one for making their society better.

The limitation of this book would have to be the last chapter outlining a list of priorities and values for a Deweyan normative vision for community colleges. While I believe the list is accurate and beneficial, Harbour did not provide leaders with a clear blueprint on how to implement the framework. He noted each community college could use all, some, or none of the framework. It was up to each community college to implement the framework to suit their needs. I believe the book could have been made stronger with a more prescriptive approach to the framework. Harbour could have include more specific examples how to implement what he believes is necessary for the future of the community college system.

The book's greatest strength is how the author drew parallels from the period of Dewey's life to what is happening in the United States today. In the news, we hear about income inequality, poverty, unskilled labor, unemployment, war, etc. Community colleges were born in similar times and contributed to American greatness. The nation, states, and local communities are calling upon community colleges once again to aid a troubled nation. Harbour and Dewey advocate that an education is more than just developing knowledge and skills, it is also to benefit society.

This book is also a useful primer for understanding how community colleges differ from universities, colleges, and private liberal arts colleges. While I have served at a private liberal arts college and a land grant university, I am new to community colleges. I realized each institution has different missions, faculty, and curriculum; this book helped me gain a real understanding of the differences. Even though Harbour has not provided a detailed blueprint, an examination of the framework will serve college leaders well. Additionally, community college leaders will be able to see how recent changes to the core mission will impact their institutions. Harbour offers cautions throughout the book on how recent policy changes to meet completion mandates could alter the curriculum as institutions try to meet these mandates. Community college leaders need to take the completion mandates as a call to action to improve instruction, improve student support, and improve connection to community. While a detailed blueprint still needs to be developed, Harbour's book pro-

vides college leaders and faculty with a framework that they could use to improve their institutions for educating students for a better society.

Further Reading

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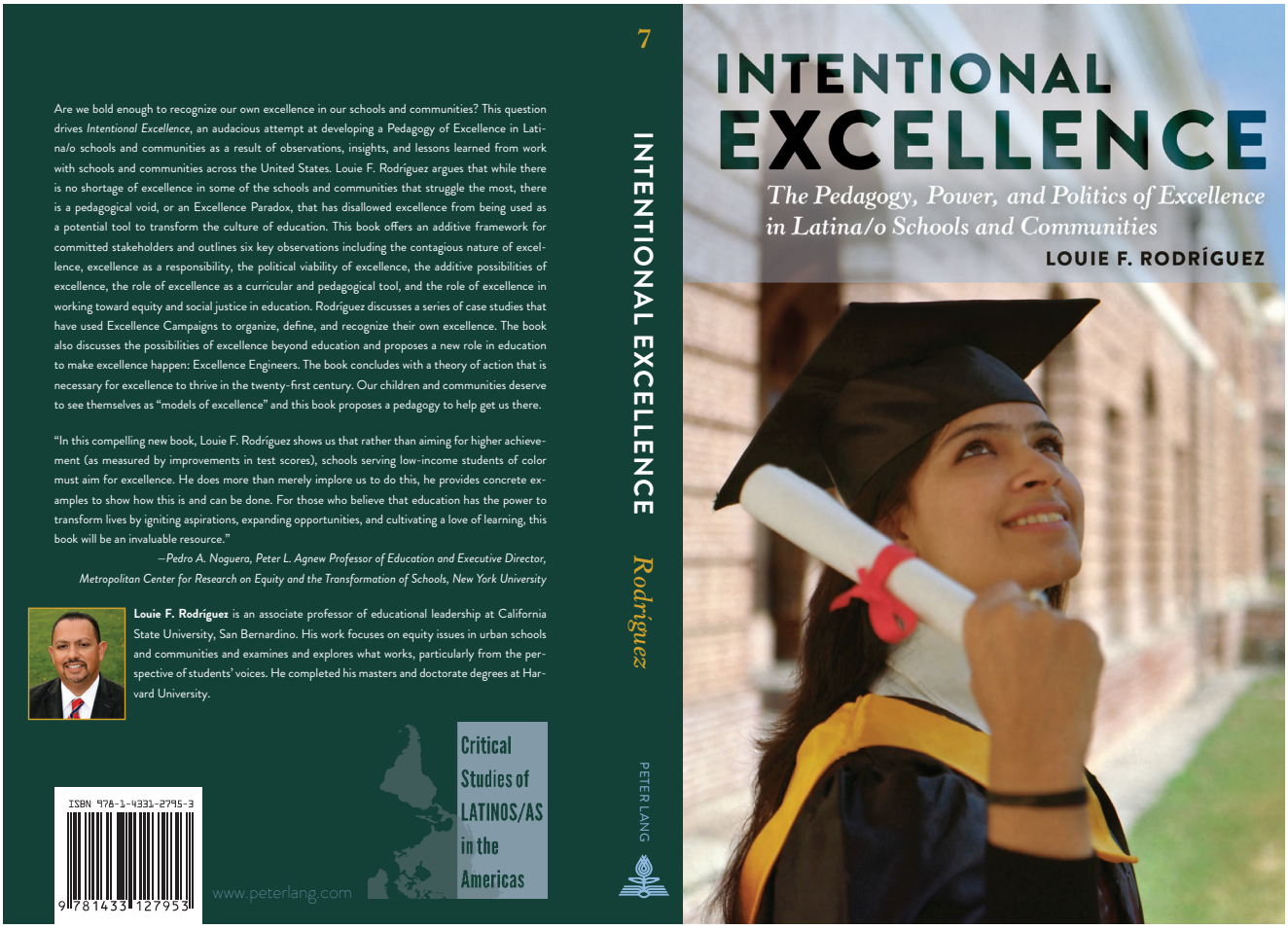

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Peter Lang Publishing, 142 pp.

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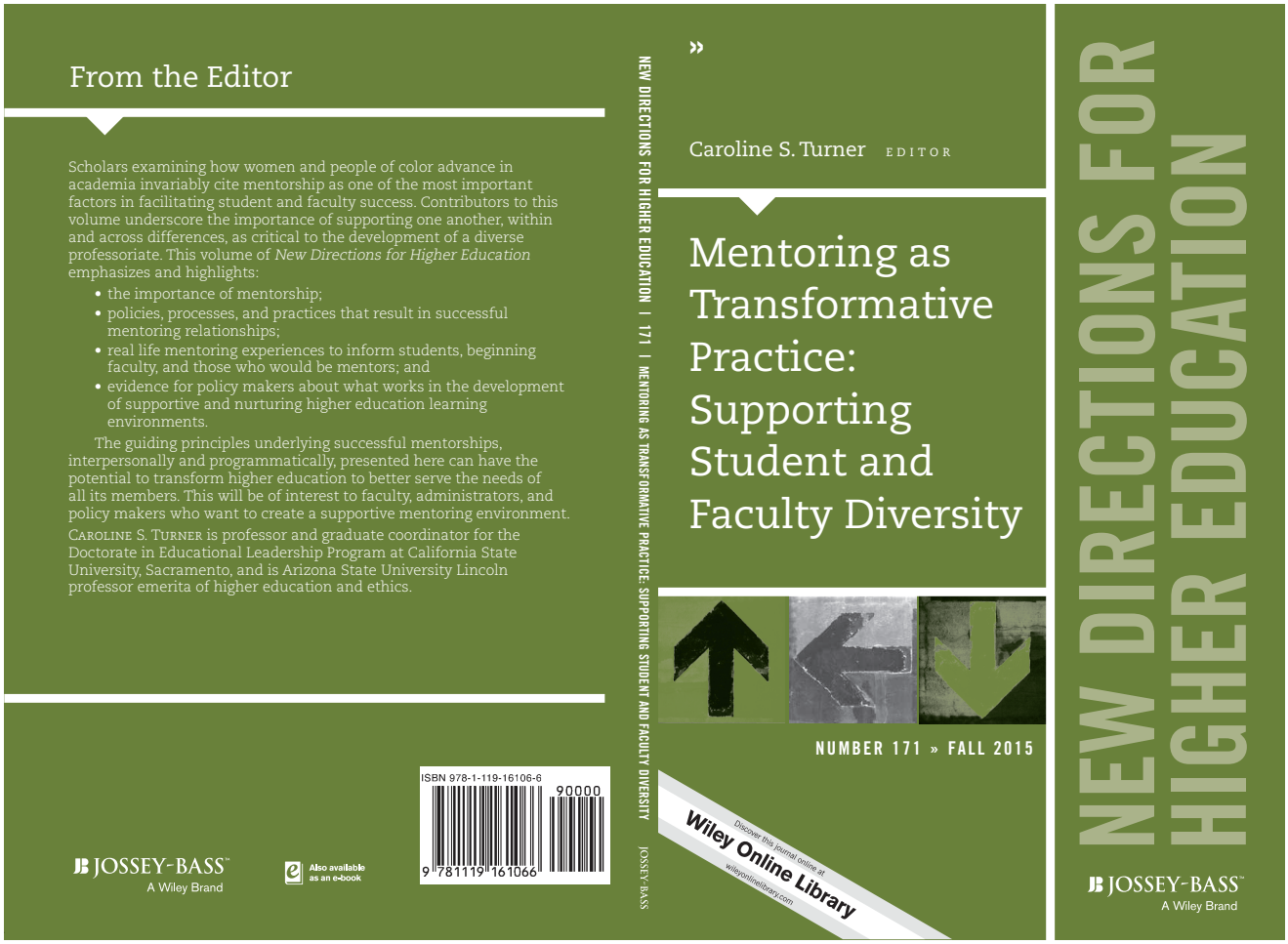

Mentoring as Transformative Practice: Supporting Student and Faculty Diversity

By Caroline S. Turner (ed.)
Jossey-Bass, 120 pp.

ISBN 978-1119161066 $29.00

Submission Guidelines

JTLPS, ISSN: 2151-5735, primarily publishes peer-reviewed empirical studies of interest to the educational leadership and policy community that advance our shared understanding of possible solutions to the many inequities present in America's schools and colleges. Our offerings are meant to help focus our distributed, collective actions to transform schools and colleges from places with uneven opportunities to learn from to institutions that provide an abundance of opportunities for all learners. We believe that leadership and policy are twin levers in the struggle for social justice. We are particularly interested in research into leadership in STEM education and plan to publish 1-3 articles per issue on this topic as a regular part of the journal.

We invite submissions in the following genres:

- Empirical studies:
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General guidelines regarding format must be applied to all submissions. Particular guidelines for empirical studies and for policy briefs are applied as appropriate. Independent of the genre selected for publication submission, all submissions will follow a strict peer review process. At the same time, every effort will be made to match topics with the expertise area of respective reviewers.

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4. Include a title page with each author's name and contact information. (Please indicate the institutions and/or grant numbers of any financial support you have received for your research. Also indicate whether the research reported in the paper was the result of a for-pay consulting relationship.) If your submissions is derived from a paper you have published elsewhere, please make that evident on your title page as well.
5. Include an abstract of 175 or fewer words. The abstract should reflect the content and findings of the article and emphasize new and important aspects of or observations related to the study. In general, it should include information on the background or context of the study as well as the purpose(s), methods, results, conclusions, and policy and/or leadership recommendations.
6. Using the APA Style Manual, 6th edition, fully reference all prior work on the same subject and compare your paper to that work. In addition to referencing the work of other scholars, you should be certain to cite your own work when applicable.
7. Figures and Tables
   - Please state the number of figures, tables, and illustrations accompanying your submission so that editorial staff and reviewers can verify their receipt.
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