California Postsecondary Education Commission

Meeting the K-14 Challenge: Examining the Case for Doctoral Programs in Educational Leadership

December 2007

State law requires the California Postsecondary Education Commission to review and comment on the need for new degree and certificate programs proposed by the public higher education systems.

This report contains three policy recommendations intended to increase the likelihood that current and proposed doctoral programs in educational leadership will achieve desired results and consequences. Recommendations for enhancing leadership proposals are also provided.

Contents

The Commission advises the Governor and the Legislature on higher education policy and fiscal issues. Its primary focus is to ensure that the State's educational resources are used effectively to provide Californians with postsecondary education opportunities. More information about the Commission is available at www.cpec.ca.gov.

Commission Report 07-25

Introduction

Legislation passed in 2005 authorizes the California State University (CSU) to award the Doctorate of Educational Leadership independent of the University of California (UC). Following a comprehensive review of eight CSU proposals for new doctoral programs in educational leadership, the California Postsecondary Education Commission recommends that:

1. The California State University, the University of California, and the Association of Independent California Colleges and Universities (AICCU) develop collaboratively a strategic plan for preparing educational leaders in an era marked by high State and national expectations for public schools and community colleges. The central purpose of statewide and regional planning would be to prepare educational leaders to initiate K-14 reform efforts that will lead to demonstrative improvements in the quality of teaching, instruction, and student academic achievement.

2. The State invest program funds to help support the development of evaluative tools that could be used at an appropriate time in the future to assess the collective effects of public and private/independent doctoral leadership programs on K-14 student learning and reform.

3. The State encourage public and private/independent universities to include K-14 performance measures in their evaluation plans to help inform assessment of the collective regional and statewide effects of doctoral

leadership programs on student learning and achievement. Such measures might include student proficiency scores, California High School Exit Exam (CAHSEE) results, college-going rates, community college transfer rates, and school Academic Performance Index (API) scores.

The Rationale for Doctoral Leadership Programs

The level of student academic achievement at any point in time is a direct consequence of many factors, including attainment of perquisite content knowledge and skills (student readiness), student motivation, quality of teaching and instruction, teacher training, and assessment practices that precisely pinpoint teaching and learning deficiencies. Student achievement is also a consequence of a combination of support factors, including the adequacy of fiscal and learning resources; school management practices; visionary school leadership; parental support; academic preparation and equity programs; school safety; and collaborative alliances that consist of the K-12 system, the higher education system, California's industry and business community, and philanthropic partners.

School administrators and school management practices, in particular, have been the subject of extensive debate at the local, state, and federal level. It is now readily acknowledged that state and federal standards-based reform practices are requiring school administrators to manage public schools much differently than in the past and to be keenly attentive to a wider range of public expectations. Arthur Levine describes these challenges in his report, *Educating School Leaders* (2005). The excerpt shown below is from that report.

> *In an outcome-based and accountability driven era, administrators have to lead their schools in the rethinking of goals, priorities, finances, staffing, curriculum, pedagogies, learning resources, assessment methods, technology, and use of time and space. They have to recruit and retain top staff members and educate newcomers and veterans alike to understand and become comfortable with an education system undergoing dramatic and continuing change. They have to ensure the professional development that teachers and administrators need to be effective. They have to prepare parents and students for the new realities and provide them with the support necessary to succeed. They have to engage in continuous evaluation and school improvement, create a sense of community, and build morale in a time of transformation.*

In adopting *Chapter 269 of the California Education Code*, *Statutes of 2005*, the California Legislature formally acknowledged the crucial role that school leaders assume in promoting effective school and student success. The statute authorizes the California State University to offer doctoral programs in educational leadership to prepare leaders and administrators to participate effectively in school reform efforts and to formulate administrative practices that will lead to improvements in K-14 instruction and learning. The statute also requires the CSU to design and operate doctoral leadership programs in partnership with public schools and community colleges. Previously, the State University had been limited to offering the doctor of education degree only in partnership (jointly) with the University of California, or in partnership with one of the state's independent colleges and universities.

Section 66040.3 of the Education Code expresses the intent of the Legislature that the California Postsecondary Education Commission review and comment on all CSU educational doctoral proposals to ensure, among other important considerations, that such proposals address *specific* educational leadership needs. The following excerpt references the Commission's responsibility with respect to CSU doctoral leadership proposals. As stated:

> *Nothing in this article shall be construed to limit or preclude the California Postsecondary Education Commission from exercising its authority under Chapter 11—commencing with Section 66900—to review, evaluate, and make recommendations relating to any and all programs established under this article.*

Although CSU leadership proposals are being tailored to address specific local and regional challenges, it appears that all campuses share a common mission to provide doctoral-intensive instruction and clinical research experiences that will assist practitioners in (a) identifying and implementing best practices, (b) managing schools in a more fiscally-sound manner, and (c) promoting equitable educational opportunities. The CSU Chancellor's Office has requested that each campus use *California Professional Standards for Educational Leaders*, as well as examining other educational leadership programs in the country, as a framework in developing curricula and in crafting the overall design of proposed leadership programs. State-supported leadership programs have the potential to positively impact schooling and student learning if:

1. The programs are successful in attracting and enrolling educational leaders that are currently working in the field, including district and county superintendents, school principals, educational researchers and analysts, and community college presidents and department chairpersons.

2. The leadership programs are aligned with K-14 leadership needs.

3. The programs are of the highest quality.

4. Appropriate evaluative tools are developed to assess the impact of leadership programs on school and community college success.

Policy Recommendations

This section contains three policy recommendations intended to increase the likelihood that public and private/independent doctoral programs in educational leadership will have desired instructional outcomes and societal benefits.

Policy Recommendation Regarding Collaboration

The California State University, the University of California, and the Association of Independent California Colleges and Universities should develop collaboratively a strategic plan for preparing educational leaders in an era marked by high state and national expectations for public schools and community colleges. The central purpose of statewide and regional planning would be to prepare educational leaders to initiate K-14 reform efforts that will lead to demonstrative improvements in the quality of teaching, instruction, and student academic achievement. In developing the plan, it is recommended that the higher education systems consult with the State's P–16 Council.

Policy Rationale

As shown by Display 1, eight University of California campuses and 17 private and independent universities offer doctoral concentrations in education. All but one of these institutions offer concentrations in leadership. Of the eight UC leadership programs, four are offered jointly with the State University. The CSU's long-range plans indicate a desire for each of its comprehensive campuses to offer the Doctorate in Educational Leadership independently, while the CSU system will continue to support the four joint programs that have been established. If the long-range plans are approved and implemented, the number of public and private institutions awarding doctorates in educational leadership would total 46. Presently, the State has no readily available method of determining the extent to which the combination of public and private/independent doctoral programs are meeting K–14 statewide and regional leadership needs in an efficient, cost-effective manner.

It is important to note that many of the leadership programs shown in Display 1 offer a common foundational curriculum to meet leadership needs, while also offering areas of specialization. For example, a doctoral program that emphasizes *transformational leadership* might focus on effective methods that

leaders can employ to increase the capacity of schools and school districts to innovate and support change. A program in *organizational leadership* might emphasize the various political, structural, symbolic, and human resource frameworks for understanding the role of leadership in organizations, whereas *instructional leadership* programs might place greater emphasis on effective teaching and instructional practices.

**DISPLAY 1   Public and Private California Universities Offering Doctoral Concentrations in Education**

University of California	Main Campus Location	Education Leadership Fields
UC Berkeley	Berkeley	Ed.D Educational Leadership
UC Davis (Jointly w/ CSU)	Davis	Ed.D Educational Leadership
UC Irvine	Irvine	Ed.D Administration and Leadership
UC Los Angeles	Los Angeles	Ed.D Educational Leadership
UC Riverside	Riverside	Ph.D Leadership and Policy Studies
UC San Diego (Jointly w/ CSU)	La Jolla	Ed.D Educational Leadership
UC Santa Barbara (Jointly w/ CSU)	Santa Barbara	Ed.D Educational Leadership
UC Santa Cruz (Jointly w/ CSU)	Santa Cruz	Ed.D Educational Leadership
WASC-Accredited Non-public 4-Year Institutions	**Main Campus Location**	**Education Leadership Fields**
Alliant International University – San Diego	San Diego	Ed.D Leadership and Management
Azusa Pacific University	Azusa	Ed.D Educational Leadership
California Lutheran University	Thousand Oaks	Ed.D Educational Leadership
Chapman University	Orange	No Leadership Concentration
Claremont Graduate University	Claremont	Ed.D Administration and Leadership
Fielding Graduate University	Santa Barbara	Ed.D Educational Leadership
La Sierra University	Riverside	Ed.D Educational Leadership
Loyola Marymount University	Los Angeles	Ed.D Educational Leadership
Mills College	Oakland	Ed.D Educational Leadership
Pepperdine University	Malibu	Ed.D Educational Leadership
Stanford University	Stanford	Ph.D Educational Administration
University of La Verne	La Verne	Ed.D Organization Leadership
University of San Diego	San Diego	Ed Educational Leadership
University of San Francisco	San Francisco	Ed.D Organization and Leadership
University of Southern California	Los Angeles	Ph.D K-12 Leadership
University of Redlands	Redlands	Ed.D Educational Leadership and Justice
University of the Pacific	Stockton	Ed.D Administration and Leadership

It is also important to note that key distinctions exist between the professionally-oriented Ed.D degree and the research-oriented Ph.D degree. There is, however, an appreciable degree of overlap among various specialty leadership programs and between the Ed.D and Ph.D degree requirements in education. For example, the school leadership curriculum proposed by CSU campuses would require doctoral candidates to (a) pass a qualifying examination, (b) successfully prepare and defend a doctoral dissertation, and (c) successfully complete coursework in program evaluation and assessment, strategic planning, curriculum and school reform, educational leadership, resource and fiscal planning, data-driven decision-making, theories of cross-cultural education, and qualitative and quantitative research methods. Many Ph.D programs in education administration and leadership consist of a similar foundational curriculum.
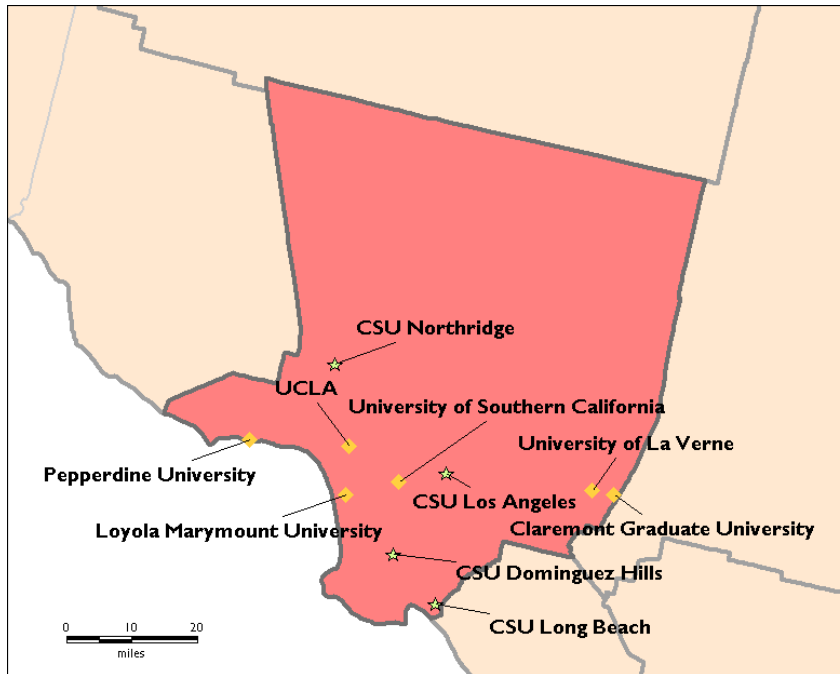
Regional planning would be one effective way to identify the common and unique features of leadership programs, and how such programs collectively can support K–14 leadership needs.

Here is a regional planning example involving the Los Angeles County Region. Notice from Display 2 that there are currently six doctoral leadership programs serving the region. Display 3 shows what this region would look like spatially if the State were to fund new leadership programs at CSU Northridge, Los Angeles, Dominguez Hills, and Long Beach. This would increase the number of leadership programs serving the region from six to 10. What would be the value-added of increasing doctoral leadership production in the Los Angeles County Region? This question could be addressed a priori through effective regional planning.

DISPLAY 2   Regional Map of California, and campuses in Los Angeles County Region Offering Educational Leadership Doctoral Programs
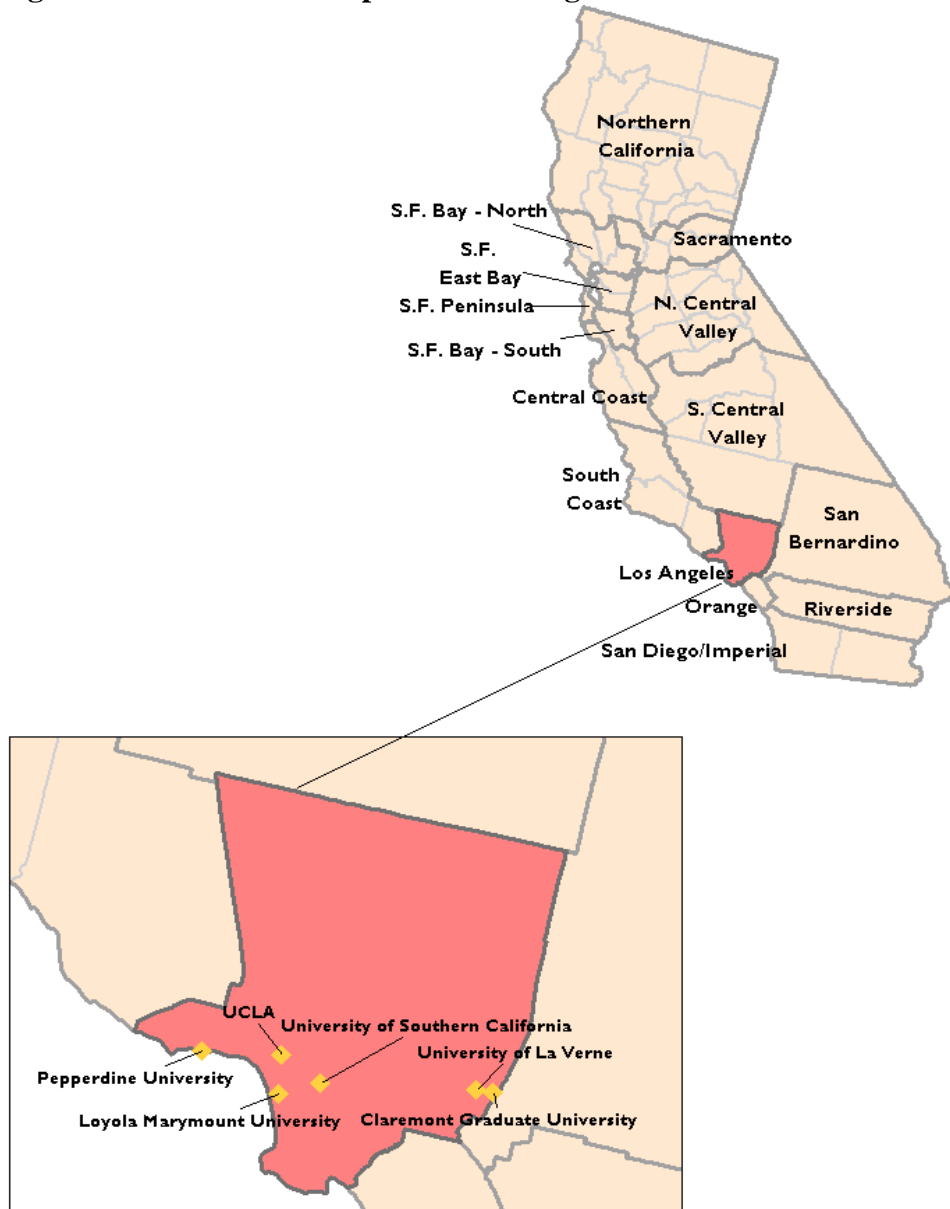
DISPLAY 3   Los Angeles County Region: Current and Prospective Locations of Educational Leadership Doctoral Programs

Note: Yellow squares are existing programs; stars represent prospective programs.

Effective regional planning would also enable the public and independent higher education systems to:

- Conduct credible supply-demand analyses so that the State would have a more informed under-standing of the need for additional school leadership programs on a regional basis.

- Identify the common and unique features of leadership programs serving a region and how those features address local K-14 leadership needs.

- Identify features of various Ph.D. programs in education serving a region that address specific local K-14 leadership needs.

- Help prospective doctoral applicants select from among the Ed.D and Ph.D programs serving a region the one that best matches their specific doctoral training needs.

- Develop effective ways to increase the pool of school leaders from ethnically-underrepresented backgrounds and from economically-disadvantaged backgrounds.

Policy Recommendation Regarding Public Investment in the Evaluation of Doctoral Programs in Educational Leadership Related Fields

The State should invest program funds to help support the development of evaluative tools that could be used at an appropriate time in the future to assess the collective effects of public and private/independent doctoral leadership programs on K-14 student learning and reform.

Policy Rationale

On a national level, the literature reviewed for this report noted the difficulty in discerning the impact of educational leadership programs because little effort has been directed by universities across the nation to produce evidence that informs practitioners, scholars, and policymakers on the effectiveness of such programs. State law requires the CSU, in collaboration with the Department of Finance and the Legislative Analyst's Office, to conduct a statewide evaluation of its doctoral leadership programs by January 1, 2011. The evaluation is to include: (a) an assessment of the extent to which the programs are fulfilling educational leadership training needs, based in part on a supply-demand analysis; and (b) the collection of available evidence on the extent to which leadership programs are enhancing K–14 student learning and reform.

The Commission believes that a useful evaluation will require a mixed-methods approach that relies on both quantitative (quasi-experimental, descriptive) and qualitative (case studies, personal interviews) design features. Considerable time and expertise will be required for development and field testing. Although evaluation expertise resides within the CSU, the Department of Finance, and the Legislative Analyst's Office, the development of assessment tools will require external consultants who have extensive experience in program evaluation. In the absence of State General Fund support for the evaluation process, it is unlikely that in-depth assessments will be produced.

The Commission wishes to emphasize that it is not calling for the type of evaluations described here to be conducted in the near term. Strategic statewide and regional plans must be developed first, and the higher education systems must be given a reasonable amount of time to fine-tune their leadership programs. The State must also be willing to invest in the development and pilot-testing of evaluative tools. The earliest that such evaluations could be undertaken would be about the middle of the next decade. But the time to start systematic evaluation planning is now.

Policy Recommendation Regarding K–14 Student Performance Data

The Commission recommends that the CSU and the UC include K–14 performance measures to help inform assessment of the collective effect of doctoral leadership programs on student learning and achievement. Such measures might include student proficiency scores, California High School Exit Examination (CAHSEE) results, college-going rates, community college transfer rates, and school Academic Performance Index (API) scores. Performance results should be reported on both a statewide and regional basis.

Policy Rationale

A major criticism of doctoral leadership programs that is noted in the literature is that university self-assessments have focused almost exclusively on basic institutional measures and less on long-term impact of those programs on student achievement. Basic institutional measures include information on student admits, student enrollments, ethnic-racial composition, degrees earned, and the amount of resources required to produce a doctoral graduate. Little effort has been directed towards assessing environmental changes that have resulted as a consequence of leadership programs.

California adopted various K–12 accountability performance measures that have been subjected to rigorous reliability and validity standards. Those measures include student proficiency scores in mathematics, language arts, social sciences, and the physical and biological sciences; CAHSEE results; and school API scores. Because an ultimate aim of educational leadership programs is to enhance K-12 schooling, the Commission strongly believes that there should be some connection between advanced doctoral study undertaken by school leaders and their subsequent influence on school management practices and student performance.

The reluctance to embrace school performance measures in the evaluation of doctoral leaderships programs is associated with two common concerns. First, some education faculty members argue that effective schooling is associated with a host of cognitive and institutional factors. As such, it is not possible to separate the effects of doctoral training from other improvement factors. Second, some university faculty and department chairs do not want the success of their leadership programs to rest on the rate of improvement in student performance.

The Commission agrees that effective schooling is indeed associated with a wide range of factors (see page 2 of this report for examples). Given the number of school leaders that higher education systems anticipate enrolling on an annual basis in the near future (430 or more), the State must have a reasonable understanding of how its investment in school leadership programs is contributing to student success. Not to do so would likely compromise the public trust in doctoral training. Appendix A contains an annotated bibliography of research studies examining the indirect effect of school leadership on school reform and student academic achievement.

Recent National Research Regarding School Leadership Programs: Lessons to be Learned

Despite the challenges confronting school leaders and administrators, the potential for school leadership programs to have a positive impact can be maximized when the four critical factors listed on page 3 are addressed. High-quality leadership programs are of little value unless practitioners who enroll in these programs sincerely want to make a difference, as opposed to simply obtaining an advanced degree in order to increase salary and related executive compensation benefits.

Recent scholarly research and literature on various doctoral leadership programs offer keen insights. Levine's four-year study (2005) involved a national representative sample of 28 education graduate schools. These schools were selected to reflect the diversity of the nation's education schools with respect to region, race, gender, religion, and Carnegie classification. Data were obtained from deans, department chairpersons, education school faculty members and alumni, and school principals. Education departments and schools in the sample were rated in relation to the following nine criteria:

- Program purpose
- Curricular coherence
- Curricular balance
- Faculty composition
- Admission selectivity
- Degree requirements
- Scholarly research
- Financial resources
- Assessments

The authors generally found the overall quality of educational administration programs to be poor, even for some of the nation's leading universities. Exceptions included the Education School at the University of Wisconsin, Madison, and the Peabody College of Vanderbilt University (Levine, 2005, page 23). Common criticisms were that school leadership programs do not engage in systematic self-assessment; curricula are disconnected from the needs of leaders and their schools; the professoriate are ill-equipped to educate school leaders; faculty research is detached from practice; and programs generally receive insufficient funding.

The 2002 edition of *Leadership and Public Policy in Schools* includes an article that also underscored the need for better assessment practices. The authors argued that it is difficult to discern the impact of educational leadership programs. Universities have directed little effort in producing credible evidence that informs practitioners, scholars and policymakers on such programs' effectiveness. The good news, according to the researchers, is that many universities are reforming their leadership programs in meaningful ways, such as: (a) using cohort groups, (b) aligning courses with professional standards, and (c) strengthening field experiences. The bad news is that universities have shown little interest in collecting data to link reform efforts to the asserted purpose of producing capable leaders who can enhance student learning and that can better prepare our nation's youth for jobs and citizenship.

The authors of a WestED article, *Turning Around Low Performing Schools and Districts* (2007), observed that many school administrators fail to use performance data to find the right focus for school reform, and that they often seek a prescription before studying the disease.

Enhancing California Educational Leadership Proposals

There is universal agreement that quality programs start with quality proposals. That is, when a proposal establishes a compelling case based on supporting empirical evidence of need, it is more likely that the intended program will be of high quality and will achieve its desired outcomes and societal benefits.

Findings Regarding the Most Recent CSU Educational Leadership Proposal

Commission staff found the most recent CSU educational leadership proposal to have been developed exceptionally well. Staff was especially appreciative of the inclusion of empirical data to support regional needs. The proposal information enabled staff to conduct a review in a timely manner. The only substantive staff comment was that the host campus should consider consulting with its Department of Economics to develop a more refined labor market supply-demand analysis.

Findings Regarding the Initial Set of CSU Leadership Proposals

A number of concerns and recommendations were conveyed to the State University regarding the initial set of leadership proposals reviewed by the Commission. The concerns, outlined below, were summarized in the Commission's 2007 Annual Program Review Report, and have since been discussed with a wide range of policy research agencies, including the Western Association of Schools and Colleges (WASC), the Legislative Analyst's Office, the Department of Finance, and WestED. The Commission is pleased that the most recent CSU leadership proposals contained practically no weaknesses.

Initial Concerns Regarding the Connection between Intended Outcomes and Workforce and Knowledge Needs

The Commission's guidelines require that proposals contain a reasonably informed description of the state's workforce and knowledge needs that would be addressed by a new degree program. Most of the initial proposals reviewed by the Commission made general reference to the State's educational leadership needs, but were not written with the level of specificity required by the Commission's guidelines. For example, one CSU campus proposal stated:

The gap between the achievement of students of color and low socioeconomic status and that of their privileged counterparts continues to plague California PreK–12 schools, despite some gains associated with the standards-based reform efforts. The state's community colleges continue to struggle to improve their transfer rates to an acceptable level. The struggles of these

two segments of the California education system serve to limit the opportunities for educational, social, and economic and societal well-being of the State of California.

The rationale did not include specific school achievement measures or statistical information that described the magnitude of leadership challenges related to student academic achievement and community college transfer. Further, the rationale did not reference a level of community college transfer the faculty at the CSU campus would consider acceptable for its particular region. The case for CSU educational doctorate proposals could be made more compelling through the inclusion of statistical evidence quantifying the challenges confronting school and community college administrators and how administrators with advanced leadership skills might more effectively manage public schools and colleges and lead district-level reform efforts to improve student-learning outcomes. Because the CSU is a regional system, it would be more informative if evidence of need were region-specific.

As an example, a particular region of the state could be marked by: (a) high teacher turnover; (b) low student performance; (c) significant student attrition; (d) low college-going rates; (e) inadequate classroom and laboratory facilities; (f) significant numbers of English-language learners; (g) a high proportion of district teachers who are not fully credentialed; and (h) chronic unemployment among certain ethnic-racial groups.

What specific skills and domain knowledge at the doctoral level would assist administrators and superintendents in effectively managing schools with such challenges? The first task is to more clearly define challenges by reporting statistical evidence. For instance, regional API scores could be used as a measure of school performance. Historical rates of UC and CSU freshman participation could be used to assess college- and university-going rates. Dropout rates and CAHSEE performance by ethnicity and gender could be used to assess regional student attrition.

The Commission's intent is not to prescribe the full range of evidentiary information to be included in proposals. Rather, the interest is to assist State University leaders in thinking critically about what statistical evidence will be most helpful in establishing their case that an urgent and compelling need for educational leadership doctoral programs exists. Including such statistical evidence in proposals will help focus subsequent evaluations of program effectiveness.

Concerns Regarding Societal Need — Workforce Demand and Supply Component

The Commission recognizes that the CSU intends to better prepare a preexisting administrative workforce by attracting and enrolling qualified individuals who are already employed in school and community college leadership positions. However, because the CSU also intends to prepare and train aspiring educational leaders, a comprehensive supply and demand analysis is required.

Display 4 illustrates one way to array regional supply and demand data elements. These elements are related to the absolute size of the school administrative workforce; the annual number of administrative hires; the annual number of workforce separations and leaves; educational leadership doctoral and master's degree production; and public community college and K-12 enrollment. These elements are highlighted because the opportunity for the CSU to positively impact the management of public schools in any particular region is tied to them.

DISPLAY 4   Illustrative Example of a Supply-Demand Table for Educational Administrators

	2001	2002	2003	2004	2005	2006
Public School Administrative Workforce *(Superintendents of any level, Central Office Administrators, Principals, Assistant Principals)*						
Annual Workforce Separations						
Public School Administrative Hires *(Superintendents of any level, Central Office Administrators, Principals, Assistant Principals)*						
Doctoral Leadership Degree Production of Public and Private Institutions Serving the Region						
Master's and Doctoral Degrees in Other Relevant Fields of Education Award by Public and Private Institutions Serving the Region						
Public K-12 Regional Enrollment Data						
Community College Regional Enrollment Data						

Industry supply and demand data could have a number of helpful uses. The current ratio of regional workforce data to public school enrollment could be applied to the Department of Finance's 10-year enrollment projections in a given region to help estimate the annual number of new school administrative hires necessary to keep pace with public school enrollment growth. Estimates of doctoral degree production in educational leadership could be cross-tabulated with estimates of new administrative hires and help the CSU determine the relative opportunity it has to impact the skill and knowledge composition of a given regional administrative workforce.

## Commission Concerns Regarding the Program Evaluation Component

In considering evaluation plans associated with proposals for new degree programs, the Commission seeks to ensure that plans are reasonable and sound, and that they respond to any concerns expressed in legislation. In this regard, Section 66040.7(b) of the California Education Code calls for the State University to develop education plans that involve, among other considerations, the collection and assessment of "available evidence on the effects that graduates of the programs are having on elementary and secondary school and community college reform efforts and on student achievement." The Commission's interest is in knowing that reasonable formative steps are being taken to ensure that appropriate data will be collected at a reasonable time in the future to yield useful and meaningful results, as intended in legislation.

The Commission believes it is possible and appropriate for the State University, given Section 66040.7(b) of the California Education Code, to consider how an evaluation plan could be used to assess the indirect effect that doctoral leadership programs are intended to have on school reform and student

academic achievement. Such an evaluation procedure should be based on some theoretical model that connects management practices to schooling. It is readily acknowledged that theoretical models support the practice of evaluation by helping researchers to ask the right questions, to organize findings, and to provide insights into why one would expect various factors to be causally related.

Display 5 is a theoretical representation of direct and indirect influences on student learning. In this hypothetical example, classroom teaching and student preparedness have a direct influence on student learning. That is, the arrows from those two factors connect directly to student learning. The joint doctoral program is intended, among other outcomes, to significantly enhance the leadership and decision-making skills of school administrators by providing them with critical and practical understanding of a planning tool called evidence-based decision-making. Evidence-based decision-making is hypothesized to lead to improved school management practices. This, in turn, leads to enhanced teacher development opportunities. If all the mediating factors were positively impacted, then learning would be expected to improve.

DISPLAY 5   Hypothetical Path Analysis Depicting the Indirect Effect of a Doctoral Educational Leadership Program on Student Learning
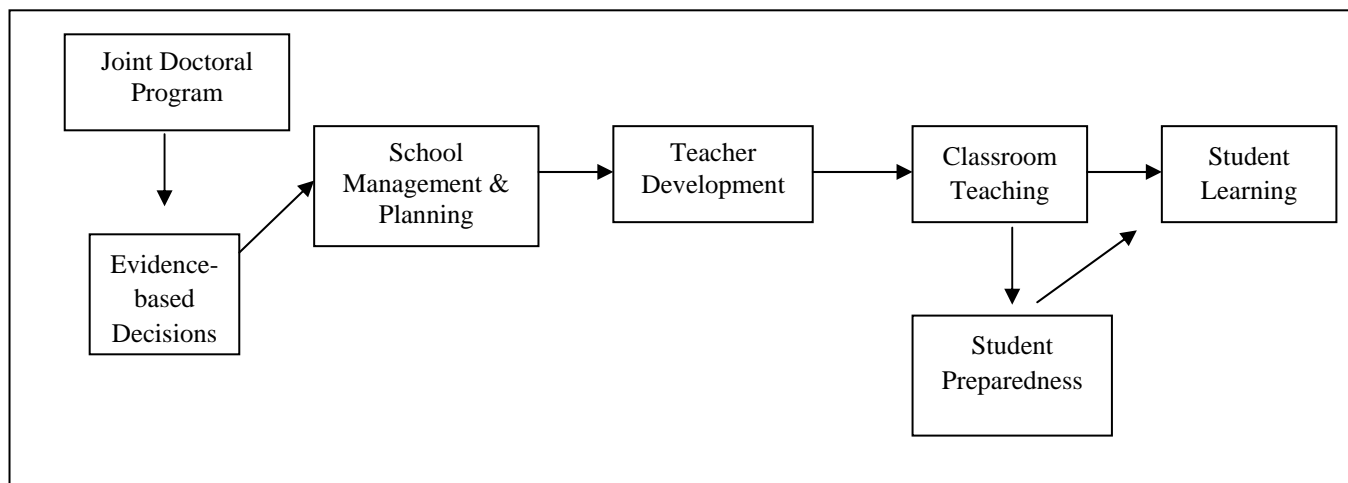
The Commission believes that such a path analysis could serve three vital purposes with respect to program review. First, and foremost, it would help program developers to think in a more exacting manner about the path by which a doctoral program in educational leadership could influence K-14 student learning. Second, the path analysis is likely to help program developers to be more attentive to key mediators that impact both the program and the terminal outcome of enhanced student learning. Third, the analysis could help developers decide when assessments should be undertaken. From Display 5, it seems that the State would want to know at a minimum if the practice of evidence-based decision-making is enhancing the practice of school management and planning. A number of evaluative designs could be used to help determine the extent to which the implementation of best practices on the part of superintendents and school principals who received CSU doctoral training are enhancing student learning in critical knowledge domains. Such evaluative methods include quasi-experimental, descriptive, and case-study designs.

There is significant support among the research community for using a path analysis approach for assessing the indirect effect of leadership on student academic achievement. In a major review of studies conducted during the 15-year period from 1980 to 1995, Hallinger and Heck (1998, page 167) concluded, after considering the range of statistical methods used in those studies, that "mediated-effects

studies (path analysis) offer concrete indications of possible means through which leadership may achieve an impact on the school's outcomes and effectiveness."

Commission Concerns Regarding Program Costs

Some CSU doctoral proposals have not used a consistent method for deriving Full-Time Equivalent Students (FTES) calculations. FTES is a key determinant of anticipated instructional cost and State marginal costs funding. For graduate programs, the Department of Finance and the CSU Chancellor's Office defines the term Annual Full-time Equivalent Students as the annual number of graduate credit units divided by 24. Fall term FTES is defined as the number of graduate credit units divided by 12. Commission staff, therefore, recommended that revenue tables include: (1) projected student credit units for the academic year, including summer session; (2) projected FTES, derived by dividing credit units by 24; and (3) marginal cost revenue, derived by multiplying the marginal cost rate by FTES.

Another concern is that some CSU doctoral proposals did not clearly report all anticipated program costs and revenues. The Commission's program review guidelines require institutions to identify the fund sources necessary for a campus to offer a new program in the near-term and in the long run. Commission staff requested that future leadership programs contain a five-year resource table that shows total anticipated program costs by expenditure category, and anticipated revenues by funding source. Funding sources are to include projected State FTES marginal costs funds, doctoral student fee revenue, professional fee revenue, financial aid set-aside funds, capital outlay funds, and funds from private sources. Expenditure categories are to include administrative, instructional, library, student support services, and capital and maintenance expenses.

Examining the K-12 Challenge

Public School Accountability

California's school accountability and reporting system is intended to raise the academic achievement of all publicly enrolled students by establishing rigorous proficiency content standards and by monitoring results and progress. Each year, students attending primary and secondary public schools in California are required to take California Standardized Tests (CST) in English/language arts, mathematics, social sciences, and science. These tests are aligned with state-adopted content standards describing the knowledge and skills that students are expected to be taught and to master at each grade level.

Performance results in various subject areas are weighted differently to derive a school performance measure called the Academic Performance Index (API). Growth targets, referred to as Adequate Yearly Progress, are established for public elementary and middle schools and districts; high schools and high school districts; unified school districts, and county offices of education.

Progress in Student Performance

Recent student performance data indicate that although student outcomes are far below federal target levels established for year 2013–14, California is achieving and sustaining a degree of progress in enhancing student learning. Since 2003, when all California tests were aligned to common performance standards, the percentage of public students in grades 2 through 11 who scored proficient in English/language arts increased from 35% in 2003 to 43% in 2007. During the same three-year period, proficiency scores in mathematics increased from 35% to 41%. Percentage point change results are highlighted in the last column of Displays 6 and 7, respectively.

DISPLAY 6 English/Language Arts, 2003–2007
Percentage of Students Scoring at and Above Proficient

Grade	2003	2004	2005	2006	2007	Change in Percentage 2006–2007	Change in Percentage 2003–2007
2	36	35	42	47	48	1	12
3	33	30	31	36	37	1	4
4	39	39	47	49	51	2	12
5	36	40	43	43	44	1	8
6	36	36	38	41	42	1	6
7	36	36	43	43	46	3	10
8	31	33	39	41	41	0	10
9	38	37	43	43	47	4	9
10	33	35	36	37	37	0	4
11	32	32	36	36	37	1	5
State Total 2–11	**35**	**35**	**40**	**42**	**43**	**1**	**8**

DISPLAY 7 Mathematics, 2003-2007
Percentage of Students Scoring at and Above Proficient

	2003	2004	2005	2006	2007	Change in Percentage 2006–2007	Change in Percentage 2003–2007
Grade 2	53	51	56	58	59	1	6
Grade 3	46	48	54	57	58	1	12
Grade 4	45	45	50	54	57	3	12
Grade 5	35	38	44	48	49	1	14
Grade 6	34	35	40	42	42	0	8
Grade 7	30	33	37	41	40	-1	10
General Mathematics	20	20	22	22	21	-1	1
Algebra I	21	18	19	23	23	0	2
First time test takers					26		
Repeat test takers					15		
Geometry	26	24	26	26	24	-2	-2
Algebra II	29	24	26	25	27	2	-2
Summative High School Math	43	41	45	46	48	2	5
Integrated 1	7	7	7	9	9	0	2
State Total, Grades 2–7 and End-of-Course tests	**35**	**34**	**38**	**41**	**41**	**0**	**6**

While the gains in language arts and mathematics are encouraging, it is well-understood by policymakers and educators that unless the rate of progress in student academic preparation and achievement is accelerated, the State will face a host of social and economic problems in the future, including:

- A shortage of young adults with the intellectual capacity to fill entry-level positions in industries and businesses that are vital to California's economic health;

- A decline in the proportion of high school graduates who are fully prepared for the academic demands of postsecondary education;

- An insufficient number of students in the educational pipeline available to fill vital professional occupations for which a baccalaureate degree is required; and

- An insufficient number of students in the educational pipeline with the cognitive and creative capacity to pursue graduate-level instruction in science-based fields that will enable California to maintain its competitive edge in the realm of scientific discovery and technological innovation.

Avoidance of this last potential problem might be especially challenging. As shown in Display 8, the level of student proficiency in any of the science subject matter areas during the 2007 reporting period did not exceed 37%.

DISPLAY 8	Science, End-of-Course, 2003–2007 Percentage of Students Scoring at and Above Proficient						
Test	**2003**	**2004**	**2005**	**2006**	**2007**	**Change in Percentage 2006-2007**	**Change in Percentage 2003-2007**
Earth Science	21	22	23	23	26	3	5
Biology	37	30	32	35	37	2	0
Chemistry	31	28	27	27	31	4	0
Physics	29	29	31	32	36	4	7
Integrated 1	7	5	8	9	11	2	4
Integrated 2	8	8	6	5	7	2	-1
State Total, End-of-Course Tests	**29**	**24**	**27**	**28**	**31**	**3**	**2**

Source: California Department of Education.

Student Performance by Gender and Selected Ethnic-racial Groups

Displays 9 and 10 reveal that student proficiency varies by gender and ethnic-racial group. In 2007, females outperformed males in language arts proficiency by eight percentage points. The performances of males and females in mathematics proficiency were nearly the same, with males slightly ahead of females by a single percentage point.

Differences in proficiency by ethnic-racial groups are more noticeable. In 2007, 66% of Asian students, and 62% of White students were proficient in language arts. Thirty-one percent of African Americans and 29% of Latino students tested at or above proficiency in 2007. Both ethnic-racial groups have made significant progress since 2003, when 22% of African Americans and 20% of Latino students were pro-

ficient in language arts. Superintendent of Public Instruction Jack O'Connell has stated that the ethnic-racial achievement gap is unacceptable, and that intense intervention efforts are at work in low-performing schools with significant numbers of African American, Latino, and socio-economically disadvantaged students.

In terms of mathematics 67% of Asian students and 53% of White students scored at or above proficiency. Twenty-five percent of African American, and 30% of Latino students tested proficient.

DISPLAY 9 Language Arts Proficiency Results by Gender and Selected Ethnic-racial Groups

Ethnic-Racial Group/Gender	2003	2004	2005	2006	2007	Change
African American	22%	23%	27%	29%	31%	8
Asian (excludes Filipino students)	55%	56%	62%	64%	66%	11
Hispanic/Latino	20%	21%	25%	27%	29%	9
White	53%	54%	58%	60%	62%	9
Female	39%	40%	44%	46%	48%	9
Male	31%	32%	36%	38%	40%	9

Source: California Department of Education.

DISPLAY 10 Mathematics Proficiency Results by Gender and Selected Ethnic-racial Groups

Ethnic-Racial Group/Gender	2003	2004	2005	2006	2007	Change
African American	19%	19%	23%	24%	25	6
Asian (excludes Filipino students)	60%	60%	65%	67%	67	7
Hispanic/Latino	23%	23%	27%	30%	30	7
White	47%	46%	51%	53%	53	6
Female	34%	34%	38%	40%	40	6
Male	35%	35%	39%	41%	41	6

Source: California Department of Education.

The Relationship between State-level School Accountability and the Federal No Child Left Behind Act

California's accountability system is tied to the federal No Child Left Behind Act of 2001 (NCLB), which is being considered for reauthorization by Congress. The law enacted a nationwide, standards-based education reform program. The expectation was that setting high performance goals would be the most effective way to ensure success for all students. NCLB requires that all public schools of the same type (e.g., elementary, middle, and senior high schools) meet the same academic targets throughout any given state. Federal results are reported in terms of how well schools meet state-established annual growth targets. Under NCLB, schools that fall short of their growth targets are required to provide students with the option of transferring to a higher performance school. This option is referred to as public

school choice. By the academic year 2013–14, 100% of the nation's public students are expected to be proficient in English/language arts and mathematics. States that elect to ignore certain provisions of NCLB are at risk of losing federal education funding.

It is very unlikely that Congress will re-authorize NCLB without substantial revisions, given the level of criticism that has been directed at various provisions of the law since its enactment. The bipartisan National Conference of State Legislatures is requesting that Congress and the Bush Administration adjust the law in a manner that will enable states to have greater flexibility in responding to unique schooling needs.

Schooling

Schooling is the process of imparting knowledge and skills to individuals through curriculum and instruction, experiential learning, and work-based learning. Effective schooling provides individuals with the necessary tools to become productive citizens, pursue higher education and lifelong learning, engage in meaningful employment, and work toward achieving their life goals.

Next Steps

Following Commission adoption of this report, staff will engage in three related planning efforts. First, a follow-up agenda item will be prepared that summarizes the literature on valid research methods that have been used to assess the impact of leadership on school reform and student achievement. Second, Commission staff will continue to assist and advise the State University on the development of its educational leadership proposals. Third, a working group comprised of Commissioners and representatives from the public and independent higher education systems, the Department of Education, the Department of Finance, and the Legislative Analyst Office will be formed to develop plans for implementing the recommendations contained in this report.

APPENDIX A References for Studies Examining the Relationship Between Educational Leadership and K-12 Student Achievement

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