IS THE APPLIED BACCALAUREATE DEGREE RIGHT FOR CALIFORNIA?

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IS THE APPLIED BACCALAUREATE DEGREE RIGHT FOR CALIFORNIA?

A Thesis

by

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Abstract

of

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California's ability to produce an adequate supply of educated workers to meet the demand of the market is becoming a growing concern. Low baccalaureate completion rates pose a significant workforce problem and the effects are a mismatch between supply and demand. The applied baccalaureate degree is a method some states use to address low baccalaureate degree completion rates and to meet workforce and economic needs. Currently, thirty-nine states offer the applied baccalaureate. California is one of eleven states that do not offer the degree. The focus of this paper is to examine if the applied baccalaureate degree is worth pursuing in California. This paper uses a case study approach to analyze the reasons why four states implemented the applied baccalaureate degree. The primary research method relies on data gathered via surveys that were distributed among four states with applied baccalaureate programs: Florida, Texas, Washington, and Wisconsin. The research also employs qualitative data gathered through public information available on websites and published articles. The states selected for the case study were drawn from a pool of states that have implemented the applied baccalaureate program within the last ten years and that have similar characteristics to

California. The survey consisted of open-ended and yes/no questions as well as attitudinal statements. The survey respondents consisted of state higher education representatives and college and program administrators of applied baccalaureate programs. The author concludes the applied baccalaureate degree could provide California with a valuable pathway to the baccalaureate degree and help increase the degree completion rates, address equity concerns around degree completion, and address workforce demands and shift toward an information and knowledge based economy.

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INTRODUCTION

Across the United States, states have looked into maximizing their social and economic investments in higher education by increasing college completion rates to raise their comparative workforce advantage to other states and industrialized nations. The applied baccalaureate degree is a method some states use to address low baccalaureate degree completion rates and to meet workforce and economic needs. Thirty-nine states offer the applied baccalaureate. California is one of eleven states that do not offer the degree (Townsend, 2009). The focus of this paper is to examine if the applied baccalaureate degree is worth pursuing in California. How and why have some states implemented this degree? Is this degree right for California? This paper uses a case study approach to analyze the reasons why four states implemented the applied baccalaureate degree. The analysis examines whether the degree has helped the four states in the case study achieve statewide higher education goals and meet the demand on the workforce. The results of the analysis will then be examined to provide a policy recommendation as to whether the applied baccalaureate is right for California.

This section will provide the context on why policymakers need to address the low baccalaureate completion rates. Low baccalaureate completion rates pose a significant workforce problem, as the effects result in a mismatch between supply and demand. Other pertinent issues discussed in this section include why focus needs to be on four-year degrees rather than two-year degrees and an overview of higher education in California.

Supply

California's ability to produce an adequate supply of educated workers to meet the demand of the market is becoming a growing concern. The supply problem is two pronged: it is based on demographic changes as well as deficiencies in the education systems. A recent report projects that there will be a shortage of one million baccalaureate educated workers in California by 2025 (Reed, 2008). The projection is based on demographic changes in the workforce and economic trends. We are approaching a cycle of mass retirements of the Baby Boomers, which is a group that has achieved high levels of educational attainment (Jenkins, 2006). With 34% of Baby Boomers holding a bachelor's degree, they have much higher levels of education as compared to all other generational groups (Reed, 2008). New, less qualified workers will replace these highly educated individuals as they retire. From the pool of new workers, Latinos constitute the largest growing segment of the workforce. Yet, Latinos have the lowest levels of educational attainment. In 2006, approximately 10% of Latinos held a bachelor's degree and are projected to increase to 12% by 2020 (Reed, 2008). Based on current educational trends, Latinos will not be able to fill the skills void left behind by retiring baby boomers. In the past, California relied on inter-state migration and international immigration to bolster research and technological fields, but inter-state migration has declined and it is unlikely migration will increase to past levels and address the education and skill shortage (Johnson, 2009; Reed, 2008). The high cost of living in California is partly attributed for the reduction of in-migration of highly educated

workers as well as the increased competition from other states and nations for these workers (Johnson and Reed, 2007).

Secondly, the supply of college graduates is also low due to the deficiencies in the educational institutions that include K-12 and the postsecondary institutions. The K-12 system and its failure to adequately prepare many students is a major contributor to the college attainment problem. Most college students—primarily those entering the California Community College and the California State University—require remedial classes which sets them back and lengthens the time to complete a bachelor's degree if they complete one at all (Callan, 2009; Shulock and Moore, 2007). Many are not college-ready and take remedial classes in the subjects of math, reading, and writing (Callan, 2009; Zeidenberg, 2008). The high school dropout rate is also quite staggering, as one in four high school students does not graduate, with a small percentage eventually earning a GED (Johnson, 2009). While examining the K-12 system is outside the scope of this paper, the system has a domino affect on the higher education system as the students that are ill prepared for college often drop out.

There are disparate graduation rates across all segments of the higher education system. For example, the California Postsecondary Education Commission (CPEC) reports the graduation rates for the two public four-year education systems, of the freshman class that enrolled in 2001 the following graduated within 6 years: 80.5% University of California (UC) and 47.4% California State University (CSU) (Fuller, 2009). In contrast, only about 60% of the students that enroll in the California Community College (CCC) system declare their goal as to obtain a degree, certificate, or

transfer to a four-year institution (Shulock and Moore, 2007). Of the 60%, only 24% succeeded in earning an associates degree, earning a certificate, or transferring to a four-year institution within six years (Shulock and Moore, 2007). The disparate graduation rates show there are clear deficiencies in the higher education system as many students drop out before earning a bachelorette degree.

Rising tuition costs in higher education is limiting access and thereby reducing the supply of college graduates. The ongoing state budget fiscal crisis has led to severe budget cuts across all levels of the education system. To deal with the state budget, policymakers and college administrators have reduced enrollment, increased fees and tuition, and furloughed faculty, staff, and administration. Classes and programs have been cut around the state, which impacts the remaining classes, making it more difficult for students to enroll in the classes they need, thereby lengthening the time to meet the requirements for graduation. This past year, CPEC announced that the fees and tuition were increased to account for the state budget cuts with the UC's fees increased 9.3 percent and the CSU's fees increased 10 percent from the 2008-09 to the 2009-10 school year (2009). Calculated in today's dollars, the fee and tuition increase results in over a 20 percent increase in the last ten years (CPEC, 2009), which makes the pursuit of higher education a continually more expensive endeavor. While most undergraduates receive some form of state and federal financial aid for assistance for fees and tuition (Legislative Analyst Office, 2009), the majority of the costs of attending higher education are the living and housing expenses. The reduced investment in higher education system and the

increased cost to students will hamper the state's ability to produce an adequate supply of educated workers.

Demand

Employment trends indicate a shift in demand for increased workforce skills and education. California's employment has shifted from manufacturing to a services industry that is knowledge and information based. The services sector encompasses many professional and business services such as information, finance, personal, health, legal, and education services. In 2005, the services industry held 37% of the employment and is estimated to increase to 40% by 2025 (Reed, 2008). Conversely, in 2005 manufacturing represented 11% of the employment, and is estimated to decline to 8%, which indicates that manufacturing is declining in importance as an overall share of employment. The largest employment sectors are government, services, and trade, transportation, and utilities (LAO, 2006). The services employment sector, which requires the most educated and skilled workforce, are the fastest growing segment of the labor market (Jenkins, 2006). Thus, college degree completions will have to increase to keep pace with the educational demands placed on the workforce, as the evidence suggests is occurring (Zinser and Hanssen, 2006).

Projection trends suggest that there will be a supply and demand problem in the labor market. California's public and private higher institutions award 150,000 bachelor degrees annually (Johnson, 2009), and the higher institutions would need to increase the number of bachelor degrees to 210,000 annually to meet the demand (Johnson, 2009).

Given the fiscal constraints on the higher education institutions and the reduced enrollments, increasing the number of bachelor's degrees will be unlikely if we continue with the status quo and not implement specific policies to address the educational skills gap. A failure to supply less than is demanded by employers could lead to reduced productivity and innovation, weakened ability to draw business, and weakened competitive edge in the global economy.

Why Focus on Four-Year Degrees?

There continues to be social and economic equity issues based on the different levels of education. Higher education largely determines social economic status (Orfield, 1990). Workers with a bachelor's degree obtain a much higher wage than those with a high school degree, and this wage gap is growing over time. In 1980, a man with a bachelor's degree earned 39% more than a man with a high school degree (Reed, 2008); the earning difference significantly increased to 86% by 2006 (Reed, 2008). Among the occupations that do not require a bachelor's degree, the workers with a bachelor's degree can earn up to 94% more than workers with high school degrees (Reed, 2008). While people who possess certificates and associate degrees do increase their earnings, the earnings do not increase as much as having a bachelor's degree (Call, 1997). Individuals with college degrees are less likely to be unemployed than those with high school diplomas (Johnson, 2009). In the current economic recession, the unemployment rate has disparate affects based on educational attainment, with fewer educated workers disproportionately unemployed than those with college degrees (Employment

Development Department [EDD], 2009). Workers with low-levels of education are associated with earning low wages, with high rates of unemployment, and working less than full-time can lead to a higher dependence on social services (Johnson, 2009).

Baccalaureate degrees have significant social and economic importance. With ever increasing demands for college attainment and the social and economic equity issues, employers place a higher value on four-year degrees over two-year degrees. Many agree that the bachelor's degree is the minimum requirement for many of today's higher paying jobs (Bragg et al., 2009; Kazis et al., 2007; Higher Learning Commission, 2000). A bachelor's degree is an important symbol to employers, as they reward workers whom posses it with greater economic advantages in the form of more job opportunities, promotions, and higher salaries (Bragg et al., 2009). In 2005, CPEC calculated the per capita income based on educational attainment to be $58,296 for a bachelor's degree, $39,701 for an associates degree, and $33, 674 for some college/no degree (2008)--this wage difference between associates degrees and bachelors degrees translates to 68%. The baccalaureate degree is the pathway for high paying, family-supporting jobs (Kazis et al., 2007), and it is even more critical to states' social and economic viability to ensure its population has access to higher education.

Bachelor's degrees are becoming the minimum requirement for many entry-level positions that offer the highest wages (Walker, 2005). As the economy continues to shift toward an emphasis on knowledge and information, new jobs will emerge that will require higher-level skills from the workforce. Higher education institutions will need to

be responsive to the needs of employers with specialized technical degrees for the emerging jobs in areas such as advanced technologies or in "green" jobs.

Higher Education in California

There are a significant number of students who have some college but fail to complete their bachelor's degree. Results from the 2005-2007 American Community Survey of the educational attainment of California's labor force were: 33.4% had a bachelor's degree or higher, 29.3% had some college or an associate's degree, 21.4% had a high school degree, and 15.9% had less than high school (as cited in EDD, 2009).

Along with the increasing problem of low college completions, the investment California currently places in the higher education system is another consideration to examine. California heavily subsidizes higher education as student fees and tuition cover a small percentage of the total cost. As of the 2009-10 fiscal year, the state annual funding per full-time equivalent pupil based on the institution is $5,376 Community College, $11,614 California State University, and $20,641 University of California (LAO, 2010). Based on the education levels, particularly of the students that attempted but did not complete the bachelor's degree, California taxpayers could reap a much higher social and economic return in their investment by increasing college completion rates. The low completion rates reflect a leakage in the potential economic returns.

In sum, demographic and economic trends indicate a future supply and demand problem in the labor market. The changing demands of the labor market have increased

the demand for baccalaureates degrees. As mentioned, other states utilize the applied baccalaureate degree as one solution to increase educational attainment. The next section will explain what an applied baccalaureate degree is and provide contextual information that articulates the reasons that have been given for the movement toward applied baccalaureate degrees.

Chapter 2

LITERATURE REVIEW

This section will define the applied baccalaureate, provide background information on its use in higher education, discuss why some states have implemented this strategy, present the views of its critics and advocates, and discuss the impacts of the degree.

Definition and Its Application

This paper utilizes the definition of the applied baccalaureate degree by Arney, Hardebeck, Estrada, and Permente (2006) as a baccalaureate program that allows technical hours to count for credit toward a baccalaureate degree (p. 184). Thereby, the applied baccalaureate is a pathway for nontraditional career-technical students to extend associate degrees into baccalaureate degrees. It incorporates technical and occupational courses that would otherwise be terminal by combining the advanced technical skills with higher-order skills (Townsend, Bragg, and Ruud, 2008). The applied baccalaureate degree is also known as the "community college degree," and as the "workforce baccalaureate" (Bragg, Townsend, Ruud, 2009; Walker and Floyd, 2005). It is also called the "Florida model" when referred to broadly as a degree that is conferred by a community college because Florida's community colleges award the most baccalaureates degrees in the nation (Floyd, Hrabak, and Falconetti, 2009). Across the country, various types of educational institutions confer the applied baccalaureate, such as at community colleges, traditional four-year institutions, as well as at private and proprietary schools

(Townsend et al., 2008). Some of the degree titles include bachelor of applied science (B.A.S.), bachelor of science technology (B.S.T.), bachelor of technology (B.T.), and bachelor of applied arts and sciences (B.A.A.S.) (Townsend, 2009).

The applied baccalaureate degrees offer specialization in various technical fields. The first documented applied baccalaureate was in the 1970s from the Fashion Institute in New York (Townsend, 2005), which accommodated workforce demands by the rapidly growing fashion industry. Today, educational institutions across the country have expanded the applied fields to include: automotive technology management, criminal justice, computers, drafting, electronics technology, industrial technology, information systems technology, occupational training, secretarial arts, accounting, business, child care, culinary arts, and kinesiology (Townsend, 2009; Arney et al., 2006; Walker and Floyd, 2005). Nursing and teaching are other fields that offer the applied baccalaureate degree, though there is debate among researchers around the validity of their inclusion as these fields are already established four-year degrees (Walker and Floyd, 2005; Townsend et al., 2008).

Program Structure

Ignash and Kotun identify the three types of degree programs used by the applied baccalaureate as career ladder, inverse or upside down, and management ladder (2005). In a later study, Townsend et al. (2008) further describes the three type of structures identified by Ignash and Kotun. The career ladder program is designed for those already in the field to fulfill the baccalaureate degree with upper-division courses in the technical

major of the applied associates degree (Townsend et al., 2008). The inverse program or upside down degree typically begins with technical courses that count toward courses in a major, followed by general education courses. The inverse program differs from the traditional baccalaureate sequence in that the latter students take general education courses during their freshman and sophomore years, then take upper-division courses in their major during their junior and senior years. The management ladder program provides applied courses and skills in preparation for managerial positions (Townsend et al., 2008). In the management ladder program, the last two years of coursework are taken within a specified or related field, so that students gain comprehensive knowledge and acquire specific skills for management positions (Ignash and Kotun, 2005). The career and the management ladders are very similar as both programs are geared toward students already in the workforce who need additional education to promote into better paid positions. While both programs help students satisfy the requirements toward the applied baccalaureate degree, the curriculum in the management ladder incorporates specified knowledge so that students can promote into managerial positions. These three applied baccalaureate structures differ from traditional baccalaureates as they emphasize applied and contextual learning and expand on job-based learning, as opposed to learning through academic pedagogy (Walker and Floyd, 2006). Through these degree structures, nontraditional career-technical students can extend their associates degrees into baccalaureate degrees.

Reasons for the Implementation of the Applied Baccalaureate

Through the literature review, the varying reasons states implement the applied baccalaureate can be seen as: 1) to increase bachelor degree completion rates, 2) address equity concerns around degree completion, 3) address geographic gaps in access to the baccalaureate, 4) address workforce demands and shift toward an information and knowledge based economy, and 5) address competition from other higher educational institutions.

Increase Bachelor Degree Completion Rates

The applied baccalaureate degree primarily transpires as a method to address educational outcomes, remove institutional barriers to the baccalaureate, improve states' responsiveness to economic needs, and boost states national educational rankings. This degree allows the transfer and expansion of associate degrees in occupational career-technical fields that are often terminal into baccalaureates, creating more educational opportunities for students. A national report indicates that a third of all undergraduate students are enrolled in career-technical programs (Silverberg, Warner, Fong, and Goodwin, 2004). Given the large number of students that enroll in career-technical programs, increasing educational opportunities in these programs can help states meet workforce demands. Several states, such as Florida, Texas, and Washington, use the degree to extend educational opportunities to their growing segment of adult nontraditional students with vast barriers to baccalaureate completions (Bragg, Townsend, and Ruud, 2009). As bachelor's degree continue to rise in economic importance, applied baccalaureate programs are ways to ensure that segments of the

population with less than a baccalaureate degree have access to completing and furthering their education (Floyd, 2006; Bragg, Townsend, and Ruud, 2009).

Many states and researchers acknowledge that the transfer process of the community and the state universities as an institutional barrier to student success. Often, not all of the college credits students earn at the community college are counted toward graduation at the state universities, which hinders students' ability to succeed in obtaining the baccalaureate degree (Doyle, 2006; Shulock and Moore, 2009). Applied baccalaureate programs are delivery methods, achieved through articulation and institutional partnerships, for states to ensure career-technical college credits count toward baccalaureate degrees (Townsend, Bragg, and Ruud, 2009; Zinser and Hanssen, 2006; Ignash and Kotun, 2005). A national survey conducted by Ignash and Kotun (2005) examined occupational and technical degree transferability by specifically asking state officials about transfer policies, articulation agreements, and challenges. The results of the survey indicate that the majority of the states (36 of 40) place a high importance on occupational and career-technical students having the opportunity to complete the baccalaureate degree (Ignash and Kotun, 2005). Further implications are that states see a value in the specialized baccalaureate degrees and in reducing barriers to occupational/technical students as it increases states' economic viability, fosters a more educated workforce, increases students' human capital, and increases the efficacy of postsecondary educational institutions (Ignash and Kotun, 2005). Through the applied baccalaureate program and reinforced transfer mechanisms, states can ensure their postsecondary educational pipelines are streamlined and increase graduation rates.

With a host of information on educational outcomes, states and individual colleges are aware of their national and state rankings on degree completions. Low educational rankings can play a major factor in a search for alternative approaches to increase degree completions, particularly when they are a reflection of the states' economic needs. For example, Furlong Jr. (2005) documents the story of St. Petersburg College (originally St. Petersburg Junior College) in Pinellas County, Florida, to reveal how and why they implemented the applied baccalaureate program. Before the implementation of the applied baccalaureate, Pinellas County was ranked at the bottom of the 67 counties in the state in respect to their access to the baccalaureate degree (Furlong Jr., 2005). Because of their low rankings, St. Petersburg College explored solutions to help increase baccalaureate degrees. Thus, the applied baccalaureate resulted as a systemic approach to provide more pathways to higher education baccalaureate degree completion and improved their ability to address economic needs.

Equity Concerns Around Degree Completion

Research suggests that the applied baccalaureate typically serves segments of the population that are typically adult learners and underserved (Arney et al., 2006; Call, 1997). The characteristics of applied baccalaureate students resemble the characteristics of the typical community college student in that they tend to be adults (between 24 to 35 years old), low- to mid-income, work part-time or full-time, have family obligations, and face persistence issues (Ignash and Kotu, 2005; Shannon and Smith, 2006; Kazis et al., 2007; Zinser and Hanssen, 2006). In contrast, traditional students at four-year colleges

are younger (18 to 22 years of age) and attend school full-time. Compared to traditional students, community college students take longer to graduate because of their inability to enroll full-time without lapses in their admission (Lorenzo, 2005). Specifically, students with family obligations have profound persistence issues as they must provide for their dependents, balance their education and work loads, and obtain child care services. Low-income students require greater financial assistance through financial aid and loans; despite the available financial assistance, low-income students are underrepresented in higher educational institutions as a whole as compared to mid- and high-income groups (Walker, 2005). Furthermore, community college students have significantly less academic preparation than traditional students (Zinser and Hanssen, 2006), requiring academic assistance from faculty, counselors, remedial classes, adult literacy programs, and English as a Second Language programs (Jenkins, 2006). Community colleges and the applied baccalaureate programs ease students' transition academically, financially, and socially into the college system, as many of these students may not have succeeded if they had they started college at traditional four-year institutions (Zinser and Hanssen, 2006; Lorenzo, 2005; Walker, 2005). Therefore, states see the applied baccalaureate as a way to provide greater access and reduce the challenges of adult learners (Townsend, 2009), as it reduces scheduling barriers and facilitates degree completions (Kazias, 2007).

For various states with diverse populations, increasing underserved student participation in higher education and their access to degree completion is a paramount concern. There is a large disparity in educational attainment based on ethnicity (Adelman, 2006; CPEC, 2008). As mentioned earlier, various states have statewide goals in their

master plans to specifically target diverse student groups (Townsend, 2009; Washington Higher Education Coordinating Board, 2005; Glennon, 2005; Puyear, 1998). Targeting diverse populations is more pronounced in states that have large minority populations, such as Florida, Texas, Arizona, and Washington. While many states have made progress to increase access to higher education, their baccalaureate completions remain low and they see the applied baccalaureate a way to close the educational gap of diverse populations (Townsend, 2009; Furlong Jr., 2005). Closing the educational gap is accomplished through the increased number of pathways to the baccalaureate that appeal to diverse groups who may not see the traditional baccalaureate degree as an option for them.

Lastly, the applied baccalaureate degree reduces the costs barriers for degree completions. It enables low-income students to have access to the baccalaureate. As partial or full requirements are obtained at a community college, the cost of completing a baccalaureate is much lower than four equivalent years at a traditional baccalaureate granting institution. When the degree is achieved through partnerships with community colleges and traditional baccalaureate colleges (through 2+2 or 3+1 articulation programs), the seamless transfer process makes the degree more affordable for students as collaboration ensures optimal use of educational resources and guarantees that the majority of the credits will count toward the baccalaureate (Fanelli, 2007; The Higher Learning Commission, 2000). In cases where the baccalaureate degree is conferred by community colleges, the degree can be less expensive for community colleges than traditional four-year institutions as the former have lower expenses in faculty, capital,

libraries, and laboratories (Bemmel, Floyd, and Bryan, 2009); as the costs are lower for the community college, students benefit from the cost savings and lower tuition fees.

As the costs of higher education continues to rise, the affordability of the applied baccalaureate will be more significant as states look for ways to address equity concerns and increase educational outcomes for nontraditional and underserved students.

Address Geographic Gaps in Access to the Baccalaureate

In rural areas, the applied baccalaureate creates an efficient way to provide access to four-year degree completion when states confer the degree at community colleges. Across the country, community colleges have expanded their role by offering the baccalaureate degree and thereby reduced the geographical barriers (Walker, 2005). In rural areas, many place-bound students that only have access to a community college are finding expanded educational opportunities closer to home rather than having to relocate and transfer to four-year schools (Floyd, 2006; Fanelli, 2007). States reap cost savings by utilizing existing infrastructure rather than having to build new universities (Walker, 2006). Furthermore, many states only grant authorization of baccalaureate degrees in community colleges in cases where there will not be a duplication of programs as no four-year institution is located in the vicinity or the institution is unwilling to offer the program (Walker and Floyd, 2005; Washington Higher Education Coordinating Board, 2005; Puyear, 1998).

Address Workforce Demands and Shift Toward an Information and Knowledge Based Economy

States use the applied baccalaureate to meet local workforce needs as the economy has shifted toward an emphasis on knowledge and information. Research indicates there are unmet baccalaureate demands on the workforce that traditional four-year schools are not meeting (Bemmel, Floyd, and Bryan, 2009). Applied baccalaureate degrees serve students in career-technical fields with no corresponding degree to transfer to within a four-year institution (Townsend et al., 2008; Walker and Floyd, 2005; Fanelli, 2007). For example, Furlong Jr. (2005) examined a college in Florida that in 2002 had expanded its role as an associate-granting institution to a baccalaureate-granting institution and documented the reasons behind the move, the transformation process, and the program emphasis areas. He concludes that the degree was established and later expanded to address unmet workforce demands in two ways: initially, implemented to increase the supply of graduates in the fields of teaching, nursing, and information technology; and later expanded to fields with established associate-degree programs but with no corresponding four-year college to transfer as there were no corresponding majors (Furlong Jr., 2005). The nontransferable fields were dental hygiene, public safety, technology management, cyber security, and veterinary technology (Furlong Jr., 2005). Applied baccalaureate degrees have become delivery models for educational institutions to ensure they are responsive to the changing demands for increased specialization in the labor market—especially in cases where four-year institutions are unwilling or unable to meet these needs.

Applied baccalaureate degrees help states increase their responsiveness to economic needs and educational outcomes. States facing external pressures from demographic changes, demands for access and affordability to higher education, and the changing labor market, seek new strategies to address these concerns (Levin, 2004). State officials often only grant authorization of the applied baccalaureate program when it is designed to meet workforce shortages in specific occupations (Townsend et al., 2008; Glennon, 2005). The workforce shortages sometime are caused by the insufficient capacity of traditional four-year institutions to accommodate the high demand of students in specific programs (Fanelli, 2007). Many states also implement the degree as they have a large segment of their population with some college credits but with no baccalaureate degree (Townsend, Bragg, and Ruud, 2009). Consequently, many states articulate that the applied baccalaureate helps meet statewide higher education master plan goals as augmented educational opportunities lead to increased college degree completions and enables diverse and nontraditional student populations to have access to higher education (Bemmel et al., 2009; Washington Higher Education Coordinating Board, 2005; Glennon, 2005; Puyear, 1998). This assumes that increased access leads to increased degree completions.

As the labor market continues to demand higher levels of education, educational institutions will need to adapt to meet the new workforce needs for specialized skills (The Higher Learning Commission, 2000). As stated, many agree that the baccalaureate degree has become the basic requirement to access high paying jobs. The shift in educational demand is particularly important for some community colleges, as to stay relevant to the

labor market and ensure students have the necessary degree for the local jobs, they have retooled their curriculum by developing baccalaureate programs (Walker, 2005). States, accreditation associations, and colleges respond to the need for specialized workforce skills by implementing and approving programs so that students have training and expertise in the expanding technical and applied fields (Walker, 2005; The Higher Learning Commission, 2000).

Address Competition from Other Higher Educational Institutions

The final reason given for the applied baccalaureate—albeit, it is less common than the prior four reasons—is that public higher education institutions have developed the degree to address competition from for-profit schools (Walker, 2005). Employers and the public expect and demand that higher education institutions are responsive to workforce needs in the local and global economy (The Higher Learning Commission, 2000). When these demands and expectations are not met, students and employers look elsewhere for the training. The proliferation of for-profit schools, such as the University of Phoenix, is due to their marketing focus on adult learners combined with their relatively low overhead costs, Internet-based services, and the increased labor demand for higher education degrees and certificates (Cronin and Bachorz, 2006). For-profits schools focus on the adult learner comes into direct competition with the segment of the population that typically attends community colleges (Cronin and Bachorz, 2006). Some researchers state that corporate needs have led employers to utilize for-profit schools to provide specialized training for their employees as the for-profit sector is generally

quicker to respond than traditional four-year colleges (Walker, 2005; Cronin and Bachorz, 2006). Thus, applied baccalaureates programs enhance public higher education institutions' ability to provide relevant workforce skills and increase their competitive advantage in the educational marketplace.

Views from Critics and Advocates

Much of the criticism and debate surrounding the applied baccalaureate degree centers on the appropriateness of community colleges to confer the degree. The reasons behind the criticism can be seen as: 1) mission change, 2) duplication of services, 3) quality of the degree and the institution, and 4) value of the degree. While many of the issues in this section have already been discussed or alluded to, this section is meant to provide clarity on the highly contentious debate that surrounds the applied baccalaureate degree.

The primary debate is whether conferring a baccalaureate degree expands or erodes community colleges' fundamental mission of open-access. This debate is framed as "mission creep" or "mission expansion" (Meyers Fliegler, 2006). Some warn that as community colleges become four-year institutions they will move away from their original mission of open-access, as they will have to adhere to higher standards and access will be compromised as they reach enrollment capacity (Townsend 2005; Glennon, 2005). Access may decrease as community colleges reach full capacity and admission standards may likely increase to determine which students get accepted. There are fears that as baccalaureate programs gain more prominence other educational roles—

such as remedial education and transfer function—will suffer and the resources will be reallocated to focus on the baccalaureate programs (Townsend, 2005; Floyd, 2006; Glennon, 2005). On the other hand, advocates claim that the applied baccalaureate is a natural extension of the mission of community colleges as it removes barriers that restrict opportunities for higher education. Advocates further argue that the mission is extended as community colleges are the institution that is most responsible for providing access to underserved populations and responsive to local community needs (Townsend, 2005; Walker, 2005; Floyd, 2006). The applied baccalaureate degree extends the mission of access, as it is more affordable than traditional baccalaureate degrees (Bemmel, Floyd, and Bryan, 2009). Several advocates also state that increasing access to the baccalaureate is an extension of community college's mission as more people benefit from the additional pathways to higher education (Bragg, Townsend, and Ruud, 2009). Some critics see community colleges' mission expansion as an invasion of turf, as traditional baccalaureate institutions should be the "gatekeepers" of baccalaureate degrees (Floyd, 2006). While both sides have legitimate arguments in terms of access, the increased educational opportunities that individuals and society gain seem to foster the mission extension argument if it can be accommodated without eroding the traditional mission of the institution.

Secondly, some view the applied baccalaureate degree conferred by community colleges as a duplication of services. Critics state that distance learning programs at traditional baccalaureate colleges and the 2+2 partnership programs negate the need for community colleges to confer the degree (Glennon, 2005; Fanelli, 2007). However, there

are many community colleges that either do not have established transfer articulation agreements with traditional baccalaureate colleges or there are no corresponding baccalaureate programs for the associate degree (Fanelli, 2007). Therefore, the duplication of services argument is dependent on the geographical areas and whether traditional institutions offer baccalaureate degrees that correspond with associates degrees that are in high demand by the local job markets. Critics and advocates sometimes can agree that when there is no duplication of services it is extremely appropriate for community colleges to confer the degree (Townsend, 2005; Fanelli, 2007). Providing access to higher education in programs traditional baccalaureate institutions do not offer also strengthens the mission extension argument (Townsend, 2005). When services are not duplicated, the applied baccalaureate can be a good solution based on budget and fiscal constraints (Townsend, 2009). In contrast to the access argument, critics and advocates realize the value in the applied baccalaureate when duplication of services does not exist.

Thirdly, some argue that when the applied baccalaureate is conferred by a community college it is of lesser value than a degree conferred by a traditional four-year institution (Townsend, 2005). These arguments are because of the qualifications of faculty (e.g. Ph.D. versus Masters degrees), insufficient library holdings, and inadequate facilities (Glennon, 2005; Fanelli, 2007). Critics argue that the inverse structure of some programs fails to build more conceptual high-order thinking skills due to a less rigorous academic curriculum (Brint and Karabel, 1989; Dougherty, 1994). Advocates counter that applied baccalaureate programs are designed in a way that incorporates high-order

skills through the program design structure and advanced training (Townsend, 2009). Advocates also counter that community colleges go through lengthy and rigorous accreditation processes to offer applied baccalaureate programs that evaluate their institutional capacity and ensure quality programs (Walker, 2005; The Higher Learning Commission, 2000).

And lastly, some of the critics question the value of the degree. Critics warn that the market and employers will not reward students with applied baccalaureate degrees at the same level as those with traditional baccalaureate degrees (Townsend, 2005). Currently, there is a lack of empirical research to indicate if the wage and income values from the labor market are different (Townsend, 2009). However, the monetary rewards and wages for people with an applied baccalaureate degree will be greater than for people with an associates degree, which lessens the significance of the value difference. Though, more research is needed to determine the value argument for an applied baccalaureate degree versus a traditional degree to see if there is any difference at all once controlling for other factors.

Impact of Applied Baccalaureate

Despite the growing movement of the applied baccalaureate, with the majority of the states offering the degree, there is a lack of research on the comprehensive impacts of the applied baccalaureate degrees and whether this degree really helps states increase their overall rates of college completion, addresses equity issues, addresses geographical gaps in access, addresses changes in the workforce, and increases the ability of public

higher education institutions compete in the educational market. The only states with available information on the impact are Florida and Texas, which is largely because they award the most applied baccalaureate degrees in the nation (Floyd, Hrabak, and Falconetti, 2009; Texas Higher Education Coordinating Board, 2008). Further research is needed on the impacts to be able to fully assess the success or failure of this baccalaureate delivery model.

The weight of the evidence leads to a reasonable position in support of the applied baccalaureate as they provide more pathways to baccalaureate degree completion, are typically in fields that traditional four-year schools do not offer, are geographically more convenient to students who live far from traditional four-year schools, enhance access to diverse populations, increase responsiveness to local labor market demands, and increase public higher education institutions ability to compete in the educational marketplace.

Chapter 3

METHODOLOGY

This paper employs various research methods to gather data and conduct a case study. The primary research method relies on data gathered via original surveys that were distributed among four states with applied baccalaureate programs. The research also employs qualitative data gathered through public information available on websites and published articles.

Case Study Analysis

This paper primarily uses the qualitative research method of case study analysis. Case study analysis offers the ability to do in-depth examination of the applied baccalaureate, allowing a close examination of the underlying conditions in four states that made it possible to implement the degree. The weakness of this research strategy is that the state-specific findings may not be representative of other states and one must use caution when generalizing findings outside of the states analyzed. Thus, the case study approach will limit whether the applied baccalaureate is an appropriate solution for other states. However, the strength of the case study approach is well suited for the aim of this paper, which is a narrow purpose, to evaluate whether the applied baccalaureate is right for California, particularly as the states chosen for the analysis have similar characteristics to California. Another strength in the case study approach is that it is an ideal research method to examine a "contemporary phenomenon within a real-life context" (Yin, 2003). The growing movement of the applied baccalaureate, particularly

as it is increasingly reshaping the higher education institutions, justifies exploring its applicability to California using the case study approach.

Selection of States for Case Study

The four states selected for the case study are drawn from a 2008 state-by-state inventory of the applied baccalaureate programs (Townsend et al.). The state-by-state inventory found 39 states to have the applied baccalaureate and 11 states without. The inventory lists the decades starting with the 1970s, when states first implemented the applied baccalaureate degree either at a community college or a traditional degree-granting institution. Since 2000, 17 states have implemented the degree. To facilitate gathering data and the likelihood that the issues for implementation will be fresh in the memories of the survey respondents, the selection for the case studies draws from the pool of 17 states. I narrowed the list by looking for states with characteristics similar to California. These characteristics include the number of higher educational institutions, and size of the college-going population, and diversity of the state. Three states were chosen that offer the applied baccalaureate at both community colleges and at traditional four-year degree-granting institutions. One state was chosen that offers the degree only at traditional four-year institutions. Based on these characteristics, I chose the following four states: Florida, Texas, Washington, and Wisconsin. Therefore, in this case study the state is the unit of analysis.

Table 1: Appearance of First Applied Baccalaureate Offered by a Public Higher Education Institution in the 2000s (Townsend et al., 2008)

Institution Where Degree is Conferred	States
Traditional Baccalaureate Degree-Granting Institutions	Florida, Hawaii, Iowa, Kansas, Mississippi, Maine, Nevada, New Mexico, North Carolina, North Dakota, Tennessee, Washington, West Virginia, Wisconsin, Wyoming
Community Colleges	Florida, Texas, Hawaii, Washington, North Dakota, Oklahoma

Table 1 illustrates the pool of 17 states that implemented the applied baccalaureate degree since 2000, and thus the selection pool for the case study. Some states implemented the degree in only traditional four-year degree-granting institutions, some states only implemented it in community colleges, and some in both. Also, the table lists the states that first implemented the program since 2000 and does not include the entire inventory of states with an applied baccalaureate program. In some cases, the states first implemented the applied baccalaureate program in the 1980s and 1990s and then expanded the programs to other types of institutions in the 2000s.

To increase the likelihood that survey respondents would have institutional knowledge of the program, the pool was limited to states that implemented the program since 2000. Florida, Texas, and Washington were selected because they resemble the size and diversity of California's higher education structure, have numerous higher educational institutions, and have a large college-going population, especially in the community college sector. Wisconsin was selected because compared to the remaining

states in the pool that offer the degree at traditional baccalaureate-granting institutions, it most resembles California; it has a higher education system that is larger and more complex than the other states, as well as data and information on the applied baccalaureate program that is widely available. In addition, the program is offered at more than one college.

Survey

The main source of data for the case study is through a survey I designed and administered to four states: Florida, Texas, Washington, and Wisconsin. The survey consisted of open-ended and yes/no questions as well as attitudinal statements. The survey respondents consisted of state higher education representatives and college and program administrators of applied baccalaureate programs. Approximately 35 respondents per state were asked to participate via email correspondence to an Internet-based survey. Three to four people within each state were contacted by phone to garner support and assistance in the participation of the survey. Calls were placed to organizations/colleges that had more than three people who would receive the survey to notify them, to expect the survey in their email, and to request their participation. To supplement the data obtained through the surveys, background data was gathered through public information available on websites, peer-reviewed articles, and newspaper articles. Research on specific background data includes information on higher education structures and the applied baccalaureate programs. The background information will facilitate the triangulation of data obtained in the surveys. To analyze the survey results,

the criteria examines how well the degree satisfies the state's economic and workforce needs. Table 2 shows the survey questions I developed. The survey questions include:

Table 2: Survey Questions

1.	Research identifies five reasons states have implemented the applied baccalaureate degree: 1) Increase bachelor degree completion rates/attainment 2) Address equity concerns around degree completion 3) Address geographic gaps in access to the baccalaureate 4) Address workforce demands and shift toward an information and knowledge based economy 5) Address competition from other for-profit higher educational institutions Please indicate how important each reason was for implementation of the applied baccalaureate degree in your state. (Not Sure, Not Important, Somewhat Important, Important, Very Important)
2.	Please indicate which of the following reasons listed above most identifies why your state implemented the applied baccalaureate degree.
3. a. b.	Were other options evaluated to increase baccalaureate degree completions or address workforce needs? Yes/No If yes, what were the other options? Why did your state choose the applied baccalaureate program over the other options?
4. a. b.	Were there workforce shortages prior to the implementation of the applied baccalaureate degree? If yes, how has the degree helped your state meet workforce needs? If the degree has not helped your state address workforce needs, why not?
5. a.	Has the applied baccalaureate degree helped your state address equity issues in baccalaureate degree completion? If yes, how has the applied baccalaureate degree helped your state address equity issues?
6.	Have admission rates increased in your college/state as a direct result of the implementation of the applied baccalaureate degree? If yes, by how much (in percentages)?
7.	Have baccalaureate graduation rates increased in your college/state as a direct result of the implementation of the applied baccalaureate degree? If yes, by how much (in percentages)?
8.	What individuals or organizations supported the implementation of the applied baccalaureate degree?
9. a.	Were there any opponents? If yes, what were their concerns? Are they still opposed to the applied baccalaureate program?
10.	What advice would you give California in the following areas? In implementation? In framing issues? In building support? In overcoming opposition? Other?
11.	What is your assessment of the applied baccalaureate degree in your state? Are there any data you can refer me to?

Interviews

To make an accurate analysis of the results and assessment, I conducted interviews with key people working in higher education within California. Through the interviews, as well as in-depth research, I obtained sufficient data to supplement the survey data and to help provide an accurate assessment of whether the applied baccalaureate program is right for California.

The next section contains a brief background on California, describing key characteristics that were considered in the selection of the states for the case study.

California

California has unique characteristics that differentiate it from other states. It has a large population of over 37 million, it is ethnically diverse, it has a large and diverse economy, and its geographical area is large relative to the other states (Department of Finance, n.d.). Its public higher education system is quite complex: it educates over 2.5 million students annually (CPEC, n.d.); it has a three-tiered system that consists of 10 UCs, 23 CSUs, and 112 CCCs. As of 2008, the population is racially composed of 42.3% White, 36.6% Hispanic, 12.5% Asian, 6.7% Black, 1.2% American Indian and Alaska Native, and 0.4% Native Hawaiian and Pacific Islander (U.S. Census Bureau, 2008).

Case Study: Florida, Texas, Washington, and Wisconsin

The remainder of this section provides brief information on the four states selected for the case study. The information for each state provides a description about their public higher education system, their college-going population size, and

demographics—all of which are key characteristics for the state selection for the case study. Other information included is the impetus for the applied baccalaureate program and the current development of the program.

States That Offer the Applied Baccalaureate at Community College and Traditional Baccalaureate Degree-Granting Institutions:

Florida

Florida has a population of 18.3 million, has 19 public four-year colleges, 21 public two-year colleges, and its combined public student enrollment is 594,432 (National Center For Public Policy and Higher Education [NCPPHE], 2008). As of 2008, the population is racially composed of 60.3% White, 21.0% Hispanic, 2.3% Asian, 15.9% Black, 0.1% American Indian and Alaska Native, and 0.1% Native Hawaiian and Pacific Islander (U.S. Census Bureau, 2008).

Florida offers the applied baccalaureate at community colleges and traditional degree-granting institutions. In 2001, Florida passed state legislation authorizing St. Petersburg College to implement the applied baccalaureate degree and to implement a process for other community colleges to offer baccalaureate degrees (S.B. 1162; Townsend et al., 2008). Through the applied baccalaureate program, the 2001 legislation allowed St. Petersburg College to address a geographic need for workers in specific high need areas and increase baccalaureate pathways. As of 2008, Florida has expanded and authorized applied baccalaureate programs to nine community colleges and two traditional baccalaureate degree-granting institutions (Townsend et al., 2008). Florida

began the most recent trend of community colleges conferring baccalaureate degrees in 2001, and is seen as a national model to increase baccalaureate access, which is being replicated by many other states (Texas Higher Education Coordinating Board [THECB], 2009). To date, Florida has the most community colleges conferring baccalaureate degrees. Within its public higher education system, Florida offers 71 distinct applied baccalaureate programs, which include 43 in education, 7 in nursing, and 21 in applied science (Townsend et al., 2008).

Texas

Texas has a population of 23.9 million, has 45 public four-year colleges, 64 public two-year colleges, and its combined public student enrollment is 980,844 (NCPPHE, 2008). As of 2008, the population is racially composed of 47.4% White, 36.5% Hispanic, 3.5% Asian, 11.9% Black, 0.8% American Indian and Alaska Native, and 0.1% Native Hawaiian and Pacific Islander (U.S. Census Bureau, 2008).

Texas offers the applied baccalaureate at community colleges and traditional degree-granting institutions. Since the 1980s, Texas has offered applied baccalaureate programs within its four-year higher education system (THECB, 2009). In 2003, Texas passed state legislation to authorize a pilot program for community colleges to implement the applied baccalaureate degree. Since the passage of the state law, the number of public institutions in Texas that offer applied baccalaureate programs has grown to three community colleges and twenty one traditional degree-granting institutions (THECB, 2009). The development and the expansion of the degree to community colleges allowed

the state to increase the number of baccalaureate completions and specifically provide further access to adult learners, as the structure of the applied baccalaureate degree allows for flexibility that attracts many nontraditional and working students.

Since the inception of the first applied baccalaureate programs, Texas has steadily increased the number of degrees it confers each year. In 1989, Texas awarded 447 applied baccalaureate degrees (THECB, 2009). In 2008, 1,376 applied baccalaureate degrees were awarded in Texas, which is the highest to date (THECB, 2009). The types of applied degrees awarded by Texas are Bachelor of Applied Arts and Science (BAAS), Bachelor of Applied Sciences (BAS), and Bachelor of Applied Technology (BAT). The three community colleges only confer the BAT. The BAT is in very specialized fields and includes programs in organizational management, business management, safety health and environmental management, process operations management, computer and information technologies, and technology management. The most successful of all of Texas' public institutions is the University of North Texas, which confers the most applied baccalaureate degrees in the state (THECB, 2009). University of North Texas has two programs: 1) the College of Public Affairs and Community Service; and 2) the College of Information. In the 2007-08 academic year, the two programs conferred 318 degrees (THECB, 2009).

Texas continues to focus on the applied baccalaureate programs as a strategy to reach its higher education statewide goals. One of their goals is to increase the total baccalaureate enrollment as Texas has 10.9 million adults over the age of 25 without a bachelor's degree, and therefore a significant potential pool to target (THECB, 2009).

Washington

Washington has a population of 6.5 million, has 13 public four-year colleges, 34 public two-year colleges, and its public student enrollment is 277,233 (NCPPHE, 2008). As of 2008, the population is racially composed of 75.5% White, 9.8% Hispanic, 6.7% Asian, 3.7% Black, 1.7% American Indian and Alaska Native, and 0.5% Native Hawaiian and Pacific Islander (U.S. Census Bureau, 2008).

Washington offers the applied baccalaureate at community colleges and at traditional degree-granting institutions. In 2005, the Legislature authorized four pilot programs to allow community and technical colleges to award applied baccalaureate degrees (Washington Higher Education Coordinating Board, 2006); and the legislation approved partnership agreements between a community college or technical college and a regional university or state college for the applied baccalaureate program. The applied baccalaureate programs are relatively new as they began accepting students in the fall of 2007. Per the state legislation, the applied baccalaureate provided a pathway for the state to meet the strategic higher education master plan goal to increase baccalaureate access and encourage economic development (H.B. 1794, 2005). The program allowed for expansion of baccalaureate access to students in geographical areas not served by four-year public institutions. In 2007, the Legislature expanded the applied baccalaureate programs and authorized three more pilots in community college-degree granting and technical colleges (HCEB, 2009). The students for the newest pilots began taking classes in the fall of 2009.

Washington's original pilot programs began by offering applied degree in BAS. The specific programs are applied management, hospitality management, radiation and imaging sciences, and nursing (HCEB, 2007). With the additional pilots and program expansion, Washington now offers BAS in applied technology management and entrepreneurship, BAS in applied behavioral science, BAT in applied design, and BAAS in interior design (HCEB, 2007).

State That Offers Applied Baccalaureate Only at Traditional Baccalaureate Degree-Granting Institutions:

Wisconsin

Wisconsin has a population of 5.6 million, has 14 public four-year colleges, 17 public two-year colleges, and the combined public student enrollment is 248,198 (NCPPHE, 2008). As of 2008, the population is racially composed of 85.1% White, 5.1% Hispanic, 2.0% Asian, 6.1% Black, and 1.0% American Indian and Alaska Native (U.S. Census Bureau, 2008).

Wisconsin offers the applied baccalaureate only at traditional baccalaureate degree-granting institutions. In 2000, the University of Wisconsin System Board of Regents entered into transfer agreements with the Technical College System to increase pathways to the baccalaureate degree (University of Wisconsin System, 2000). Through the 2+2 programs, the articulated transfer agreements allowed the technical college students with associates degrees a seamless transfer of college credits to transition into

applied baccalaureate programs (University of Wisconsin System, 2000). In 2004, a joint effort between the University of Wisconsin System and the Wisconsin Technical College System (UWS/WTCS) led to the implementation of a plan to expand the number of baccalaureate degree holders in the state, which included the development of new applied baccalaureate degree programs (Joint UWS/WTCS Committee on Baccalaureate Expansion, 2005). Today, UW has two colleges that offer applied baccalaureate programs, which are UW-Green Bay and UW-Osh Kosh. At both of these institutions, the degree conferred is the BAS. The applied programs are in fire and emergency management, environmental policy studies, human development, organizational communication, and leadership and organizational studies. Through the 2+2 programs, technical college students that graduate with associates degrees can transfer to UW institutions into the bachelor of science, BAS, or BAAS programs within their related field of study (UW, 2000).

The UW Board of Regents and the Wisconsin Technical College System (UWS/WTCS) Joint Committee on Baccalaureate Expansion indicate the development and expansion of the applied baccalaureate degree was to increase the state's baccalaureate attainment and meet the needs of underserved and place-bound students (2004). In 2004, data indicated that Wisconsin ranked 9th nationally in the percentage of its population with associate degrees yet the state ranked 30th in the percentage of its population with a bachelor's degree or higher (UWS/WTCS, 2004). Therefore, through the applied degree programs, Wisconsin continues to target adult nontraditional students

with associate degrees as a strategy to expand baccalaureate pathways to increase the baccalaureate degree completers (UWS/WTCS, 2004).

Table 3 below provides a summary of the four states in the case study and the type of applied baccalaureate programs they offer. The information about the degree programs is gathered through a search on the colleges and higher education system websites.

Table 3: Applied Baccalaureate Degree Programs Offered at Four States

State	Institution That Confers Degree	Year Program Authorized	Type of Applied Baccalaureate Degree Programs
Florida	Community Colleges and Traditional Universities	2001	BAS, BS*
Texas	Community Colleges and Traditional Universities	1987 2003**	BAAS, BAS, BAT
Washington	Community Colleges and Traditional Universities	2005	BAS, BAT
Wisconsin	Traditional Universities	2000	BAAS, BAS

* Florida's community colleges offer BS degrees in the nursing and teaching fields. Outside of the institutions the BS degrees are considered applied baccalaureate degrees as traditional associate degree institutions confer the degrees.

** Year the applied baccalaureate degree was authorized in the community colleges.

The next section will present the results and findings of the surveys. The results provide an analysis of the underlying conditions that led to implementation of the applied baccalaureate degree within the four states.

Chapter 4

SURVEY RESULTS

Participation in the survey varied greatly across the four states in the case study. The survey received the following number of respondents per state: Washington 13, Florida 9, Texas 5, and Wisconsin 4. Based on the total numbers that were sent the survey, the participation rate is: Washington 36.1%, Florida 25.7%, Texas 13.9%, and Wisconsin 11.8%. The high nonparticipation rates in Texas and Wisconsin potentially poses a problem. Since this paper is an exploratory study, the higher participation rates obtained from Washington and Florida may offset the limited data obtained from the two states. As a note of caution, quantitative data analysis is not possible to measure from the results since the response rate is low, and therefore the results are not reflective of the entire state. However, the results are qualitative as they provide valuable feedback from those who have already implemented the applied baccalaureate degree. This section provides a comparison of how important the respondents believe the five reasons were for the implementation of the applied baccalaureate degree, results of the surveys, and advice to California.

Importance of the Five Reasons

Table 4: Importance of Five Reasons for Survey Respondents

Importance of the Five Reasons for Implementation of the Applied Baccalaureate Degree: State by State Respondent Comparison					
State	**Increase Bachelor Degree Completion Rates**	**Address Equity Concerns Around Degree Completion**	**Address Geographical Gaps in Access to the Baccalaureate Degree**	**Address Workforce Demands and Shift Toward an Information and Knowledge Based Economy**	**Address Competition from Other For-Profit Higher Educational Institutions**
Florida	X	*	X	X	*
Texas	X	X	X	X	*
Washington	X	X	X	X	—
Wisconsin	X	X	*	X	*

X - Indicate Important or Very Important
* - Indicate Somewhat Important
— - Indicate Not Important or Not Sure

Table 4 provides a matrix of the survey results of the five reasons research has indicated that states have implemented the applied baccalaureate degree. The table shows the results on the respondents' beliefs on how important each of the five reasons were for the implementation of the degree, and is displayed in a manner that makes comparison easy to see. To capture the relative importance of each reason respondents believed factored in to the implementation of the degree they were allowed to rate each reason based on the following range: not sure, not important, somewhat important, important, and very important. Rating averages were used to determine the response for each state. The values for each response were: 1 not sure, 2 not important, 3 somewhat important, 4 important, and 5 very important. Among the four states in the case study, respondents primarily indicate that increasing their state's bachelor completion rates/attainment and addressing workforce demands and shift toward an information and knowledge based

economy were both important or very important reasons for the implementation of the degree. There is variation among the respondents on the remaining three reasons. Respondents in three of the four states—Texas, Washington, and Wisconsin—indicated that addressing equity concerns around degree completion was important to the implementation, whereas respondents in Florida indicated that it was only somewhat important. Similarly, respondents in three of the four states—Florida, Texas, and Washington—indicated that addressing geographical gaps in access to the baccalaureate was important, whereas respondents in Wisconsin indicated that it was merely somewhat important. Respondents from three of the states—Florida, Texas, and Wisconsin—indicate that addressing competition from other for-profit higher educational institutions was somewhat important. In contrast, respondents in Washington indicated that addressing competition from other for-profit educational institutions was not important.

Table 5: Survey Results

States	Survey Results
Florida N=9	**Enrollment/Graduation** 6 R Report baccalaureate enrollment rates have increased as a direct result of the applied baccalaureate degree 3 R Report baccalaureate graduation rates have increased as a direct result of the applied baccalaureate degree **Workforce Demands** 7 R Report workforce shortages prior to the implementation of the applied baccalaureate degree **Reasons given on how the degree has helped address workforce needs:** • By providing workers with more educational pathways • By providing more skilled workers in the areas of nursing and education • By providing workers with managerial skills **Equity** 5 R Report the applied baccalaureate degree has helped the state address equity issues in baccalaureate degree completion **Reasons given on how the degree has helped address equity issues:** • By providing increased baccalaureate pathways • By increasing access to nontraditional students and diverse populations • Increased affordability
Texas N=5	**Enrollment/Graduation** 5 R Report baccalaureate enrollment rates have increased as a direct result of the applied baccalaureate degree 2 R Report baccalaureate graduation rates have increased as a direct result of the applied baccalaureate degree 3 R Report that it is too early to tell if graduation rates have increased as their programs are relatively new **Workforce Demands** 2 R Report workforce shortages prior to the implementation of the applied baccalaureate degree **Reasons given on how the degree has helped address workforce needs:** • By providing local businesses with specialized skills to address workforce demand • By providing workers with managerial skills **Equity** 4 R Report the applied baccalaureate degree has helped the state address equity issues in the baccalaureate degree completion **Reason given on how the degree has helped address equity issues:** • By providing increased baccalaureate pathways, particularly to students with AA and vocational degrees

States	Survey Results
Washington N=13	**<u>Enrollment/Graduation</u>** 2 R Report baccalaureate enrollment rates have increased as a direct result of the applied baccalaureate degree 2 R Report baccalaureate graduation rates have increased as a direct result of the applied baccalaureate degree • The applied baccalaureate program began enrollment in 2007 with the first graduating class in June 2009, therefore, the majority of the respondents indicated that it is too early to start measuring the results of their program and their overall impact **<u>Workforce Demands</u>** 9 R Report workforce shortages prior to the implementation of the applied baccalaureate degree **Reasons given on how the degree has helped address workforce needs:** • Increasing baccalaureate degree access and a more skilled workforce • Tailoring the applied baccalaureate programs for high demand health care fields **<u>Equity</u>** 6 R Report the applied baccalaureate degree has helped the state address equity issues in the baccalaureate degree completion **Reasons given on how the degree has helped address equity issues:** • Providing increased baccalaureate pathways, particularly to students with AA and vocational degrees • Increased access for nontraditional students • Increased affordability
Wisconsin N=4	**<u>Enrollment/Graduation</u>** 4 R Report baccalaureate enrollment rates have increased as a direct result of the applied baccalaureate degree 2 R Report baccalaureate graduation rates have increased as a direct result of the applied baccalaureate degree 2 R Report that they did not know if baccalaureate graduation rates have increased **<u>Workforce Demands</u>** 1 R Report workforce shortages prior to the implementation of the applied baccalaureate degree **Reason given on how the degree has helped address workforce needs:** • The degree has increased the baccalaureate completion rates **<u>Equity</u>** 4 R Report the applied baccalaureate degree has helped the state address equity issues in the baccalaureate degree completion **Reasons given on how the degree has helped address equity issues:** • Providing increased baccalaureate pathways • Increased access for nontraditional students

* R = Respondents

** Note, not all respondents completed the full survey.

Survey Results

Table 5 provides a summary of the survey results by state, by reporting the underlying reasons the respondents in each of the states believe led to the implementation of the degree. The results provide information on how respondents believe the three main underlying reasons were to the implementation, which include enrollment/graduation rates, workforce demands, and equity concerns. Of the five reasons states implement the degree, the survey omitted asking additional questions pertaining to geographical gaps in access and competition from other for-profit institutions in the higher education market, as I believe these concerns are less relevant to California as they are to other states that have implemented the applied baccalaureate degree.

Enrollment/Graduation Rates

Respondents across all states had a variation of opinion on how well the applied baccalaureate degrees have helped their respective states in regards to enrollment and graduation rates. To capture whether respondents believe the applied baccalaureate programs have been successful in their state/college as well as to deal with limited data from relatively new programs, two separate questions were asked in the survey regarding: 1) enrollment rates; and 2) graduation rates. Respondents in three of the four states—Florida, Texas, and Wisconsin—indicated overwhelmingly that their admission rates have increased as a direct result of the applied baccalaureate degree. Respondents in Washington indicated that their program is too new to measure the enrollment rates of their program. In regards to graduation rates, the discrepancy among respondents across

the four states and within the states is due to some programs being in place longer than others or some programs being too new to measure the outcomes. The majority of the respondents in Florida indicated the graduation rates have increased as a direct result of the degree. Of the four states in the case study, Florida has had the applied baccalaureate program the longest within the community colleges, which may account for their state having the most data to report the program outcomes.

In contrast to Florida, respondents from Texas, Washington, and Wisconsin indicated that their programs were too new to be able to measure the graduation rates and the impacts of their programs. While Texas has had the applied baccalaureate degree since the 1980s, the degree program was recently expanded to the community colleges in 2003; therefore, survey respondents from community colleges may not have enough data to conclusively measure graduation rates for applied programs. For example, a respondent from Wisconsin, stated when asked if graduation rates had increased in their state/college, "Yes, but [the program] is too small to judge the impact yet." In contrast, a respondent from Florida stated, "We started with 16 students and after 3 years we are up to 625 students now taking [Bachelor of Applied Science] BAS classes and it is growing each day and week." The comment from the respondent in Florida suggests that the applied baccalaureate program has been successful in its ability to attract students into its program. Yet, the program in Wisconsin is still too new to measure the outcomes. In addition, the limited data in Wisconsin could be because they only offer the applied baccalaureate program in traditional universities, with comparatively smaller programs when compared to the larger spectrum of baccalaureate programs the institutions offer. In

cases when the programs are fairly new it is acceptable to use enrollments rates as measure of short run outcomes to indicate the success and ability of the program to attract students, though over the long run graduation rates are a better indicator of a college's ability to meet higher education goals. Overall, it appears that respondents in the case study feel that the applied baccalaureate program has been successful at increasing baccalaureate admission rates for their state/college, though more time is needed to adequately measure the graduation rates.

Workforce Demands

As noted, addressing the shifting demand on the workforce toward an information and knowledge based economy is an important reason respondents believe led to of the degree across the four states. However, not all the respondents indicate that prior to implementation of the applied baccalaureate degree their state experienced workforce shortages, which may account for the variation on whether respondents believe their state has addressed the demands on the workforce. Prior to implementation, respondents in Florida and Washington indicated that there were workforce shortages, whereas respondents in Texas and Wisconsin indicated that they did not have workforce shortages. After the implementation of the degree, respondents in all states reported the degree has helped their state improve the skills of their workforce and to better meet the demands by employers. A respondent from Washington commented, "For the last two years there has been a decrease in job opportunities. However, graduates of our [Bachelor of Applied Science] BAS degree have been able to move into management positions

within their organizations/departments." A respondent from Texas stated, "Many in our state that had terminal degrees because of the two year degree that they had, are now able to continue and acquire a Bachelor's degree due to the [Bachelor of Applied Arts and Sciences/Bachelor of Applied Technology] BAAS/BAT." The response from Texas correlates with the state's overall goal for the degree was to increase the educational attainment of the adult learners in their state. Workforce training in specialized fields, such as BAS/BAT, goes hand-in-hand with addressing the increasing demands on the workforce.

Addressing workforce shortages is only one of the many indicators that suggest efforts to deal with the shift in the economy and demands on the workforce. As not all respondents indicated workforce shortages, but all overwhelmingly agreed that addressing the workforce demands is important, in hindsight more questions should have been included on the workforce demands to better capture the opinions in this area.

Equity Concerns

For the most part, respondents from all four states indicated that the degree has significantly helped their state in addressing equity issues around degree completion. The respondents state that the degree addresses equity issues by increasing the baccalaureate pathways, increasing access to nontraditional students, and increasing the affordability of completing the baccalaureate degree. Respondents from states that confer the applied baccalaureate degree at community colleges most often referenced affordability as primary method of addressing equity concerns. A respondent from Washington stated,

"Our institution is in an extremely diverse part of the state. This degree is allowing students who may not traditionally be able to afford a baccalaureate degree the ability to pay lower tuition costs."

Additional questions were asked in the survey to gain more insight on why the respondents believe their state opted for the applied baccalaureate degree. Respondents from all four states indicated that the degree program was not the only option that was considered or implemented. But rather, the degree was implemented as part of a larger strategy to help the respective states achieve their higher education and workforce development goals. Some respondents indicated that the program was the best option to help address geographical and specialized workforce needs. For example, respondents in both Florida and Washington indicated that four-year universities were not fulfilling the workforce needs in providing advanced training for students in specified fields. A respondent from Wisconsin stated that applied baccalaureate programs are seen as extremely effective for specialized fields. A respondent from Washington also stated, "There are no other colleges in our state offering a baccalaureate in radiation imaging sciences or radiation therapy. We [only] offered these programs at the AA Degree level. We are now accredited to offer an applied baccalaureate (BAS) in Radiation and Imaging Sciences." The applied baccalaureate programs are seen as a way to meet higher education goals when combined with other academic programs. For example, another respondent from Florida stated that the applied baccalaureate program was implemented along with various other options that included partnerships with community colleges,

extension of partnerships with community colleges to K-12, curriculum alignment for grades 7-16, and early identification programs.

The respondent in Washington confirms research that suggests that applied baccalaureate programs are implemented in places where students and specified fields are not served by existing traditional baccalaureate degree-granting colleges. For example, in 2004 a task force in Washington specifically indicated that one of the principle's for the implementation of the applied baccalaureate programs is serving place bound students (Washington State Board for Community and Technical Colleges, n.d.). Another report from the state of Washington indicates that applied baccalaureate degrees help bridge the gap for workforce training for growing high demand fields, such as allied health (Joint Report by Washington Higher Education Coordinating Board, Washington State Board for Community and Technical Colleges, and Workforce Training and Education Coordinating Board, 2009). Therefore, jobs in radiation imaging sciences or radiation therapy seem to be a good fit for the applied baccalaureate degree.

Advice to California

To learn from other states, the last section in the survey asked respondents what advice they would give to California in the following areas: in implementation; in framing issues; in building support; and in overcoming opposition. Research indicates that implementing an applied baccalaureate program can be a divisive issue, particularly when the program is implemented in community colleges. Thus, learning the lessons

from other states can be an effective way to gain insight on this growing higher education movement.

For simplification, much of the advice given by respondents in the four areas listed above is combined, as often there is much overlap from one area to another, and the advice falls into two categories: building support and obtaining market data. Many respondents indicate that applied baccalaureate programs are controversial and will need a broad base of support to advocate on its behalf through the various steps along the implementation process. Overcoming opposition is a major obstacle for proponents of the applied baccalaureate degree; therefore, support should be gathered from the stakeholders, which include academia, businesses, industries, policy makers, and community leaders. A respondent from Florida suggested that all components of the higher education systems be part of the process, "Make sure all educational constituents are buying in (K-12 system, community college, and university system)." Texas recommends that the implementation and assessment process be open and transparent, which will foster support among the stakeholders. Many suggest that university faculty be a part of the framing and implementation process, which is indicative that in many states the university administration has considerable input in the curriculum that they offer and will be the ultimate deciders whether new programs are considered and implemented. Respondents also recommend that advocates understand the issues the opposition will likely have as these programs pose a fundamental change in the traditional higher education system, especially when they are implemented in the community colleges. In many cases university faculty has concerns with the quality and

academic preparation of the applied baccalaureate programs and question the capacity of the community colleges to confer the degrees, which makes their input and involvement in the process critical.

Many respondents suggest that the applied baccalaureate programs be designed so that they do not compete with the same students within close proximity to existing programs. These suggestions for non-duplication of services is indicative that it is easier to garner support and overcome opposition in cases where the new program will not compete with existing programs. For example, a respondent in Washington recommended, “Be very careful in choosing the right programs, do not try to compete with or duplicate state college programs/degrees. Start small with enrollment and increase as [the] program stabilizes.” This respondent warns that existing colleges will likely oppose new programs that would compete with them and it also suggests that resources should be strategic and maximize a new program’s value by not duplicating existing services within a geographic region. Furthermore, a respondent from Washington stated, “Frame applied baccalaureates as a ‘win-win.’ In most instances, four-year institutions aren't interested in developing applied baccalaureate programs. Ensure that there is a process or a venue in which these programs can be vetted more informally among academic affairs officers before pursuing full approval.”

Secondly, most respondents recommend that data be obtained that supports the need for the applied baccalaureate program, which should include information on the existing workforce and the capacity and willingness of the universities to address the workforce demands. Several respondents from Washington recommend that research and

data be gathered to find out if there is market demand for the degree and the need for specialized degree programs. Obtaining market data is critical to validate the need for new programs and to make a determination on how the specialized programs would fulfill unmet local labor demands. A respondent from Washington suggested, “Talk to industry and develop programs that meet the need of the local geographic regions.” It is imperative that the implementation of new degree programs are the result of collaborative discussions between academia and employers so that the programs are developed to meet workforce needs in high demand fields that traditional baccalaureate programs are not fulfilling. In sum, much insight can be gained from respondents from states that have implemented applied baccalaureate programs.

Overall, the applied baccalaureate degree primarily has been implemented as part of larger strategy by states to address baccalaureate completion rates and address workforce demands in the economy. Respondents in each state indicate that the applied baccalaureate degree has helped their state address equity concerns and improve the skills of the workforce. The majority of the respondents indicate that the degree has helped their state increase the baccalaureate admission rates, though not all report that graduations rates have improved because of the degree. California policymakers can learn the lessons from other states’ experience should they consider implementing this degree—especially if they seek to authorize it in the community colleges—by building a broad base of support and obtaining market data to support the need for the programs.

While the responses to the surveys were extremely informative, there may be some biases in the responses that the survey design did not control. This survey was designed to gather information from individuals who have substantive knowledge of the applied baccalaureate programs and was distributed to higher education administrators and program administrators. While there is much to learn from people who work intimately with the applied programs who have a good understanding of how the programs address their respective college/state higher education goals, it is possible that the responses are not objective and reflect a much rosier view of the programs than the reality.

Chapter 5

CALIFORNIA

Results from the surveys distributed to the four states indicate that respondents believe that applied baccalaureate degrees have largely been an effective method to address their state's respective higher education goals and increase the number of baccalaureate completions. This section will examine the value an applied baccalaureate degree could add to California. To determine the value, this section examines how well the five reasons states implement the applied baccalaureate degree, discovered in the literature review, can be applied to California's higher education system. To conclude this section and make a final recommendation of the applied baccalaureate degree, this section will address the implementation challenges.

Five Reasons State Have Implemented the Applied Baccalaureate Degree

1) Increase Bachelor Degree Completion Rates

The applied baccalaureate degree could be a valuable strategy to increase the educational pathways to students and increase the number of baccalaureate completions. As mentioned in the introduction, the educational attainment of California's workforce is not sufficient to meet the growing demands of the labor market. The CSU has established a major priority to increase graduation rates and the CCC has similarly committed itself to increasing student success. Research by the PPIC and the LAO further suggest that California will need to dramatically increase the state's supply of college-educated workers. PPIC suggests that by 2025 California needs to increase its college-educated

workforce by one million workers. Demographic changes in the population combined with retirement of the Baby Boomers indicate that there is a shifting-paradigm of the educational levels in the labor supply. As California's collective higher education system is responsible for training and educating the current and future workforce and ensure the sustainability of the economy, therefore policymakers and educators will need to address the educational skills gap.

The applied baccalaureate degree could be a potential educational pathway to provide students with expanded pathways to the baccalaureate degree. The state is experiencing multi-year fiscal shortfalls which have led to drastic budget cuts across the educational spectrum. Consequently, the state must look for creative solutions to continue to train and educate the workforce and meet the growing market demand. California's sizeable workforce population with some college but without a bachelor's degree is a potential group to target, as they only require a few more years of education. By investing resources in the pool of workers that have an associates degree or some college—by increasing the type of degrees, focusing on adult learners, and removing barriers to completion—the state can potentially increase its overall educational attainment levels by investing in two to three additional years of students' education as opposed to four to six. Thus, the state could increase the educational attainment rates at a lower cost than only targeting new traditional college students. Additional educational pathways in career technical fields could provide students with options they many may not have had without the degree, which include opportunities to better jobs, higher wages, and managerial positions. In many states, the applied baccalaureate degree is not the only option that the

states rely on to increase educational attainment, but rather, it is part of a strategic plan that involves the implementation of many solutions that can include improved transfer policies, online courses, partnerships between colleges and high schools, improved college readiness, etc. While the applied baccalaureate is not the only solution to increase baccalaureate completions rates, it is an effective solution that could benefit California.

2) Address Equity Concerns Around Degree Completion

The applied baccalaureate degree can help California's higher education system address equity concerns around baccalaureate degree completions. California's underserved populations continue to lag behind on college attainment both in terms of ethnicity and socio economic status. The cost of a public four-year higher education degree in California is an astronomical expense for low- to mid-income groups, with the current estimates about 40% of their income spent on higher education after financial aid (National Center For Public Policy and Higher Education, 2008). Educational attainment by ethnicity for those with a bachelor's degree between the ages of 25 to 64 varies greatly: 50% Asian or Pacific Islanders, 40% White, 22% Black, 14% American Indian or Alaskan, and 10% Latino (The National Center For Public Policy and Higher Education, 2008).

The applied baccalaureate degree could be implemented and designed to help students who have barriers to degree completion in terms of access and affordability. Offering the degree at a community college could help the state could address affordability by providing students with a lower cost to the baccalaureate as the fees at

community colleges are much lower than at public four-year universities. Curriculum could be designed to meet the needs of students already in the workforce, give credit for relevant work experience, and offer flexible schedules. Additionally, through implementation of the inverse program structure, those students who already hold an associates degree would primarily only be required to take general education courses and a few classes in their major to satisfy the requirements for the baccalaureate degree. Thus, the applied baccalaureate degree could potentially be a valuable option for certain populations who struggle in the traditional baccalaureate degree program setting to increase the number of degree completions by reducing the institutional barriers, increasing access and affordability, and converting once terminal degrees into pathways for the baccalaureate.

California could benefit tremendously from the applied baccalaureate by concentrating efforts to address equity concerns with some of the most underserved students.

3) Address Geographic Gaps in Access to the Baccalaureate

California has an extensive public higher education system with colleges dispersed throughout the state. Many colleges have distance learning programs, outreach centers, and satellite centers to resolve geographical problems for place bound students. According to a report by the Department of Finance (DOF), using the 2000 census data, the state found that 21.4% of Californians live within 10 miles to a UC and 55.1% of Californians live within 10 miles of a CSU (2003). The report measures the distance

between the residences and the main campus and does not include satellite offices and outreach centers. If the applied baccalaureate degree were implemented within a community college, based on the DOF report, then 88.8% of the Californians would live within 10 miles of a baccalaureate-granting institution (2003)—this percentage is now much higher as it does not account for the two additional community colleges that were built this past decade. Many Californians currently live within a relative short distance to a four-year institution. However, many more Californians would benefit from residing in closer proximity and have greater access if the applied baccalaureate degree were conferred at the community colleges, and thereby further reduce the geographical gaps in access to the baccalaureate. Geographical gaps in access is not as big a concern in California as in some other states, but if the applied baccalaureate degrees were implemented at community colleges students that are place bound would significantly benefit from the increased educational opportunities.

4) Address Workforce Demands and Shift Toward an Information and Knowledge Based Economy

As the economy and workforce demands continue to shift toward an information and knowledge based economy more jobs will place higher educational requirements on workers. Today, 60% of the fastest growing jobs with annual wages greater than $50,000 in California require a bachelor's degree (EDD, 2009a). Those jobs that require a bachelor's degree include Nurses, Teachers, Managers, several computer-related occupations, and Accountants and Auditors (EDD, 2009a). California has many

workforce-geared baccalaureate degree programs within the CSU and UC system, but does not have applied baccalaureate degrees as defined by this paper. To add value to California's higher education system, the applied baccalaureate degree would need to be supported by labor market data that demonstrated unmet demands by the labor force or be in an emerging field that is projected for high growth. The next section will examine the current occupational growth and the green business sector to illustrate how the applied baccalaureate degree could benefit California.

Current Occupational Outlook

The California Employment Development Department reports that the top fastest 50 growing jobs are each projected to grow more than 24 percent within the next ten years (2009). Of these jobs, the majority are in the healthcare, education, and computer related fields (EDD, 2009b). Currently, the ten fastest growing occupations for 2006-2016 are (EDD, 2009b):

- Network Systems and Data Communications Analysts (58.8%)
- Computer Software Engineers, Applications (47.1%)
- Veterinary Technologists and Technicians (40.2%)
- Home Health Aides (39.0%)
- Pharmacy Technicians (36.1%)
- Dental Hygienists (35.7%)
- Substance Abuse and Behavioral Disorder Counselors (35.4%)
- Dental Assistants (34.9%)
- Veterinarians (34.0%)
- Graduate Teaching Assistants (32.8%)

Half of these jobs require at least a bachelor's degree. The ones that do not are Veterinary Technologists and Technicians, Home Health Aides, Pharmacy Technicians, Dental

Hygienists, and Dental Assistants. States that have the applied baccalaureate degree have implemented programs specifically for occupations in the allied health field, as well as for Veterinary Technicians. The applied baccalaureate degree could help California meet the growing labor demand in these fastest growing jobs by ensuring that the workforce has access to programs that train for relevant and in-demand occupations.

Green Jobs

California's policymakers and President Obama have implemented policies to promote and conserve environmental resources. Therefore, data indicates that green sector businesses have rapidly grown to meet legislative requirements and to capture the growing demand by the market for clean technology, green building, alternative energy sources, and sustainable construction. As such, there is a growing demand for traditional employment and emerging fields to meet the market demand. Data trends indicate that from 1995 to 2008, the green business sector grew by 45% and employment increased 36% (Next 10, 2009).

To further examine the rapid growth of green jobs, this section highlights the growth in the Sacramento Region and demonstrates that there is a regional gap in workforce preparation in this field. The Center for Excellence reports that in the next three years, the following eight energy-efficiency occupations are projected to grow in Sacramento as follows (as cited in Mazzei, K., Mayes, S., & Shepard, A., 2009):

- Energy Auditor/Home Energy Rater (57.7%)
- Building Performance/Retrofitting Specialist (42.5%)
- Resource Conservation/ Energy Efficiency Manager (31.9%)
- Compliance Analyst/Energy Efficiency Manager (31.9%)

- Construction/Design Project Manger (20.8%)
- HVAC Technicians/Installers (19.2%)
- Building Controls Systems Technicians (23.8%)
- Building Operators/Engineers (22.8%)

From these eight jobs, 58% of employers report that there is an insufficient supply of workers with the requisite skills and education to perform the job, and that they have a hard time trying to hire for these positions (Mazzei, K., Mayes, S., & Shepard, A., 2009). In three of the eight occupations employers place a high preference for the baccalaureate degree, which includes Resource Conservation/ Energy Efficiency Manager, Compliance Analyst/Energy Efficiency Manager, and Construction/Design Project Manger. Clean energy industry research and local clean energy employers recommend additional investment in the workforce training and preparation to meet the growing demand in high priority green business occupations (Mazzei, K., Mayes, S., & Shepard, A., 2009). Furthermore, employers identify occupations in solar energy as a field in which local community colleges offer coursework and training, but that additional training needs to be developed to increase the level of education needed for the jobs (Mazzei, K., Mayes, S., & Shepard, A., 2009).

The gap in the workforce preparation, as identified by research and employers, suggests that the applied baccalaureate degree could be a valuable pathway to higher level education required by the green jobs sector and other high demand jobs. Many of the green jobs are in applied fields where employers seek relevant education as well as hands-on experience. The green jobs are good candidates for expansion of career technical education into the baccalaureate degree.

5) Address Competition from other Higher Educational Institutions.

A recent agreement between CCC and Kaplan University indicates that there is a partnership between the two institutions that compete for the same nontraditional students. The agreement between the two institutions now allows community college students to take Kaplan University courses (approved by the individual community colleges) and transfer the credits to the community college (Businesswire.com, 2010). This agreement suggests that the state budget cuts have severely impacted the CCCs ability to meet the student demand and that Kaplan University is filling this need (Universitybusiness.com, 2009). This agreement also suggests that the budget cuts have led the CCCs to look for alternative solutions to continue to provide students with options despite the reduction in course offerings, full classes, and reduced enrollment. Yet, this agreement is problematic for the CCC, students, and ultimately all Californians.

For-profit institutions have risen and now constitute eight percent of the total national higher education market (Cronin & Bachorz, 2006). The rise of for-profit institutions is due to their focus on adult learners by tailoring distance learning with accelerated programs (Cronin & Bachoz, 2006). The agreement between the CCC and Kaplan will lead to more students turning to for profit-institutions for their higher educational needs and increase their market share in higher education. Furthermore, there is much evidence that suggests that there is a huge influx of graduating high school students that will be overwhelming the higher education system. According to CPEC, starting in 2013, there will be 400,000 graduating high school students annually seeking admission into the California's higher education system (CPEC, 2010). California's

public higher education system will not be able to absorb and educate these new college students without a major investment by the state in the system. Over time, the rise and popularity of for-profit institutions may result in low educational outcomes when California greatly needs to increase its supply of college-educated workers.

Research shows for-profit higher educational institutions, such as Kaplan University, are much more expensive and have lower graduation rates than an education from a public higher education system (Student Loan Borrower Assistance, 2010; CPEC, n.d.). Nationally, in 2007-08 the cost of attendance of higher education for public four-year colleges is estimated at $17,497.50, while the cost at for-profit colleges is $22,950 (Student Loan Borrower Assistance, 2010). Furthermore, for the students who graduate, the average debt incurred for public four-year students is $20,200 with 62% debt, and for for-profit four-year students the average debt is $33,050 with 96% debt (Student Loan Borrower Assistance, 2010). To make matters worse, the graduation rates are abysmal. The national graduation rate for public four-year students is 56.1%, while the graduation rate for the University of Phoenix is 8.9% (for students without prior college experience) (Student Loan Borrower Assistance, 2010). For-profit four-year college students pay a much higher cost for their education than traditional public higher education students, are also saddled with an immense amount of debt, and are more likely to not complete their bachelor's degree.

Californians would receive a significant value from the applied baccalaureate degree as the public higher education system provides a better value to students and taxpayers. Increased educational pathways to the baccalaureate degree at community

colleges could allow public institutions to compete against the for-profit higher education sector by enticing nontraditional students to opt for the more affordable route and with programs designed for students already in the workforce. Students could be expected to see better outcomes which would translate into higher tax revenue for the state.

Challenges in the Implementation of the California Higher Education System

There are two major challenges that could potentially impede the implementation of the applied baccalaureate degree. The major challenges are: which institution to confer the degree and how to fund the degree. In deciding which institution is the most appropriate, there will be opposition to the implementation of a new degree that could radically change the current mission of the institutions and threaten imbalance within the traditional higher education hierarchy. The issue that will raise the most debate is to whether to allow community colleges to confer applied baccalaureate degrees. There will also be other questions to address—such as how much to charge for tuition and fees and the accreditation process—that will be minor in comparison to the major challenges.

A major challenge California policymakers would have to address should they consider the implementation of the applied baccalaureate degree is whether the degree should be authorized at the California State University, or at the California Community College, or both. Where the degree is authorized and conferred brings about many challenges. Across the country, many states' higher education systems operate as a single system, which includes their research institutions, state universities, community colleges, and in some cases, the vocational career technical colleges. In contrast, California's

higher education system does not operate as a holistic system; but rather, the three educational bodies function with much autonomy from one another. Furthermore, the Board of Regents and the Board of Trustees govern the UC and the CSU system respectively. The CCC system is administered by the Board of Governors and by the Chancellor's Office, and the individual community college districts are governed by locally-elected Board of Trustees. To authorize the applied baccalaureate degree in the different systems would require various steps that include state legislation, faculty consultation, Academic Senate approval, approval of the respective governance body, and accreditation. Each of these steps would require much deliberation and collaboration amongst key players in the State Capitol and the higher education institutions on the need for a new type of degree. Part of the discussions regarding the development of the degree would include degree specifications, admission requirements, faculty requirements, curriculum, and formal agreements amongst the institutions.

Furthermore, should California policymakers choose to authorize and implement the applied baccalaureate degree statewide, it is easier to implement at the CSU and very problematic at the CCC. Primarily, the fact that CCCs do not currently have authority to confer baccalaureate degrees makes implementation a difficult undertaking. Secondly, as the community colleges are locally governed, the Chancellor's office is limited in dictating degree programs to the individual community colleges. In addition, while some community colleges may have the capacity to offer new degree programs, not all community colleges have the fiscal capacity to do program expansion.

California lacks a current higher education master plan as a strategic statewide document, which hinders its ability to engage in central statewide coordination and planning that is needed to implement applied baccalaureate degrees within the community colleges. The original framework of California's 1960 Higher Education Master Plan has not been substantively revised since its enactment (National Center for Public Policy and Higher Education, 2009). Higher education master plans provide policy directions and coordination among the various educational institutions so that the goals and outcomes are part of a strategic plan. Across the country, many states use the applied baccalaureate degree as a way to increase their state's bachelor degree completion rates and address equity issues in degree completions, which are a direct result of their respective statewide goals laid out in their higher education master plans. Unlike many states, California's Master Plan primarily serves as a delineation of the roles of the three institutions. Consequently, depending on which institution confers the degree, whether at the CCC or CSU, proposed implementation of a new degree program that blurs the roles of the current institutions will result in opposition; especially if the degree is proposed at the CCCs. Advocates would have to address many of the same debates seen around the country regarding mission creep versus mission expansion, duplication of services, value of the degree, and the capacity of the CCCs to confer the degree. Yet, while many states point to their updated respective master plans as a justification for implementation of the applied baccalaureate degree, a master plan will not be the guiding force to implement the applied baccalaureate in California. Therefore, the challenge in California to implement a new type of degree that radically changes the current roles of the institutions

is that it is harder to overcome the opposition without justification from a statewide planning document.

Funding the applied baccalaureate degree—and thus program expansion—is a second major obstacle to address. Over the last few years, higher education funding has been cut across all three institutions. The higher education institutions are dealing with reduced state funding, faculty furloughs, increased tuition and fees, reduced classes, which are compounded by an increase in student demand. How do we pursue program expansion in a time when core curriculum is not being fully funded? Budget crises usually force decision makers to come up with innovative and creative solutions to address fiscal and policy problems. However, the implementation of new degrees always requires investment in the accreditation process, faculty, capital, library holdings, and curriculum development. Many colleges will be resistant to offering a new type of degree when many budgets are already running pretty thin and there are not enough resources to invest in new programs. Concurrently, how much additional state funding can be provided to colleges that do feel that they have the capacity and institutional readiness to implement a new degree program?

The authorization of the education doctorate in 2005 at the CSU is indicative that policymakers do make exceptions for degree programs that do not duplicate services of the corresponding institution and can be justified as a way to address workforce needs. Prior to passage of the legislation, CSU faced staunch opposition from the UC system but was able to prove that the UC did not want to offer the education doctorate and consequently the duplication of services did not exist. The CSU also had to prove that a

market demand existed that the institution could help meet. Similarly to the education doctorate, advocates for the applied baccalaureate degree will have to justify the degree and address the concerns of the opposition. Advocates will have to gather labor market data, demonstrate unmet demands in the workforce, and show that other institutions are unwilling to implement the degree to meet those unmet workforce demands.

To summarize, implementing of the applied baccalaureate degree will require policymakers to decide which institution will confer the degree, how to fund the programs, and address the opposition.

Current Developments

Policymakers continue to examine various options to increase baccalaureate completion rates, particularly as projections suggest a supply and demand problem for college educated workers is in the horizon combined with President Obama's national goals to increase education attainment. This past legislative session, a California Legislator introduced legislation to authorize community colleges in Southern California to confer baccalaureate degrees. The bill language does not specify whether the degrees granted would be traditional or applied baccalaureate degrees, but since the author's intent is to allow community colleges to confer the degrees it is very probable that the baccalaureate degrees would be applied. The bill failed passage through the legislature as there was insufficient interest to move ahead on the applied baccalaureate front. The failed passage of this legislation underscores the challenge that would be faced by any proponent of applied baccalaureate degrees interested in trying to get it adopted in

California. Another development is the proposed revision of the Higher Education Master Plan. The Master Plan is critical to the statewide coordination of the higher education institutions as a means to reach public consensus on how to address the educational needs of the state.

In sum, the applied baccalaureate degree can add value to California's higher education system. The degree can help increase the number of baccalaureate completions, address equity concerns, address geographical gaps in access, address workforce demands, and increase the public higher educational system ability to compete. While California does not have clearly and publically articulated higher education goals in a Master Plan, the research and data projections indicates that baccalaureate attainment rates need to increase. There will be many possible challenges to implement the applied baccalaureate degree.

Chapter 6

CONCLUSION

The case study analysis evaluating the various reasons states implement the applied baccalaureate degree has demonstrated that the applied baccalaureate degree has much to offer for California. The applied baccalaureate degree could provide a valuable pathway to the baccalaureate degree and help increase the degree completion rates, address equity concerns around degree completion, and address workforce demands and shift toward an information and knowledge based economy. The applied baccalaureate degree is most successful when the programs meet workforce demands in high performing occupations and are linked with employment. Across the country, the applied baccalaureate degree has been seen as a beneficial educational option to help underserved and nontraditional learners. Baccalaureate degrees have continued to rise in economic importance, and applied baccalaureate degree programs are valuable ways to ensure that segments of the population with less than a baccalaureate degree have access to completing and furthering their education. Despite that the implementation of the applied baccalaureate degree would ignite many contentious debates over the missions and roles of the educational institutions, addressing California's current and future workforce and economic needs must be the primary concern. Projections forecast that there is a looming labor supply and demand problem. The longer policymakers take to address this looming crisis the greater the likelihood that it may result in devastating economic effects. California can gain tremendously from a more educated populace: individuals gain social

and economic benefits; and the local economy can better compete in the global market place.

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