The Adult Learner and the Applied Baccalaureate: *Lessons from Six States*

Debra D. Bragg
Collin M. Ruud

May 2011

Suggested citation: Bragg, D. D., & Ruud, C. M. (2011). *The adult learner and the applied baccalaureate: Lessons from six states*. Champaign: Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign.

DEDICATION

This project is dedicated to Barbara K. Townsend, who inspired and led our research team as Principal Investigator from September 1, 2007, until her death on June 11, 2009. Barbara was Professor of Higher Education and Director of the Center for Community College Research in the College of Education at the University of Missouri–Columbia. Her research on transfer and baccalaureate attainment, particularly for women and minorities; community college missions; and state policy on articulation led her to the study of applied baccalaureate degrees. Her curiosity about applied curricula and historically terminal education programs led her to partner with members of our staff of the Office of Community College Research and Leadership at the University of Illinois. This Lumina-funded project represents a culmination of a noteworthy career as a researcher, teacher, collaborator, and mentor who is sorely missed. It was a privilege to partner with Barbara, an outstanding role model who challenged our thinking and pushed us to do our very best work. Her spirit lives on in the work of countless scholars who have been and who will continue to be influenced by her pioneering studies on community college education. Our research team strives to achieve the high quality that Barbara sought in this research, as in all aspects of her professional career.

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

A number of emerging pressures are influencing policy on the local, state, and national levels. A weakened economy, growing international competition, and challenges in keeping the U.S. workforce efficient and competitive have prompted a search for innovative ways to increase college access and completion. Emerging in the 1970s, the applied baccalaureate (AB) degree gained momentum in the 1990s and 2000s as a way to prepare adults for employment in occupations that require a college education beyond the associate degree. Thus far, only modest attention has been paid to the AB degree, with the preponderance of writing coming from scholars who study the community college baccalaureate. To date, no research has examined the AB degree through a state policy lens or has acknowledged the scope of involvement of 4-year colleges and universities. This omission limits current understanding of the AB degree as a potential contributor to the higher education system and to the nation's college completion agenda in particular.

The project undertaken was a national study of AB degrees, which included documenting the scope of implementation of AB degrees by the 50 states and describing various approaches to awarding these degrees by different types of public higher education institutions. The primary goals of the study were to document the extent to which AB degrees are offered by higher education institutions in the 50 states, to examine different approaches and models for implementing and awarding these degrees, and to explore the state and institutional policy contexts that surround the awarding of AB degrees by community and technical colleges and 4-year colleges and universities. The study was conducted in two phases, beginning with a national inventory of AB degrees in the U.S. public higher education sector (Phase 1), and extending into a multicase study of 6 states (Phase 2). Our 50-state inventory was released in 2008 (see Townsend, Bragg, & Ruud, 2008), and readers are encouraged to seek out that report for a description of institutions awarding AB degrees by state.

In 2009, we began the second phase of the study by conducting case studies in six states (Arizona, Florida, Kentucky, Oklahoma, Texas, and Washington), which were selected because of their engagement in AB degrees, but also because of their diversity in policy and program approaches to various forms of baccalaureate degrees. These six states represent different types of institutional engagement in the AB degree, with four states (Florida, Oklahoma, Texas, and Washington) having associate degree-granting institutions and traditional baccalaureate degree-granting institutions that award AB degrees, and two states (Arizona and Kentucky) having only traditional baccalaureate degree-granting institutions awarding AB degrees. The states also differ in the extent to which formal statutory authority has provided the lever for AB degrees to be initiated and proliferate, versus focusing on administrative rule and institutional governance processes. Florida, Kentucky, Texas, and Washington have passed legislation giving higher education institutions degree-granting authority pertaining to the AB, and Arizona and Oklahoma deal with AB degrees through administrative rule.

Results show that the AB degree is a growing phenomenon in the United States, particularly over the past decade. This growth is evident in the number of programs and the fields of study offered as well as in the number of states and institutions that award these degrees. AB degrees represent a convergence of trends and issues that are receiving national attention, such as the push to improve transfer and award more college credentials, the weakened economy, and the need for

the United States to remain educationally competitive on an international scale. AB degrees appear to provide one way by which states and higher education institutions can enhance access to the baccalaureate degree for students who heretofore held terminal associate degrees. AB degree programs frequently benefit from close ties between postsecondary institutions and employers, and they may also enhance transfer options for students matriculating between traditional associate and baccalaureate degree-granting institutions. If so, these degrees will enhance geographic accessibility to place-bound adult learners and other underserved populations.

In looking at the six states that were the focus of Phase 2 of the study, several themes emerged. First, despite a paucity of impact data, state and institutional administrators believe that AB degrees benefit adult learners, particularly those who are currently working or who are using the degree as a means for job advancement. Although most AB programs still have small enrollments compared with traditional baccalaureate programs, the occupational-specific nature of these degrees appears to be increasingly known and attractive to employers and the diverse working adults who enroll in these programs. Students in AB degree programs confirm that they enroll because of the relevance of the course work to their employment circumstances and because of the convenience of scheduling, including online instruction and, in some cases, credit for prior learning.

Results of our online survey show patterns of degree types by state, with the bachelor of applied science (BAS) being the predominant degree. A primary model does not appear to exist for delivery of AB degree programs, as indicated both by the diversity of models identified by the survey respondents and the frequent selection of the hybrid model, which is the most poorly defined of the four types. In terms of program of study patterns, results show a predominance of programs in the fields of science, technology, engineering, and mathematics (STEM); in public service occupations such as public safety, criminal justice, and emergency management; and in business, administration, management, and supervision. Although certainly not the majority, it is noteworthy that some AB degrees are offered in general studies, liberal arts, and "applied liberal arts," suggesting the degrees are not always specific to one particular occupational field.

Also important to this investigation was the fact that interview and online survey results confirmed that students targeted for AB degrees are overwhelmingly adult learners who are working, but this group also included unemployed or dislocated workers and active military personnel. Students of color and students with disabilities were identified by program directors responding to our survey, as was also evident in our field observations and interviews. These results indicate the diversity of students who enroll in AB degree programs and point to the importance of these degrees as a potential point of access to the baccalaureate degree for student groups often underserved by higher education.

The findings lead to the following conclusions about past developments in and potential of the AB:

The AB degree provides a transfer pathway to the baccalaureate degree for students who have taken "terminal" applied associate courses or degrees. Historically, applied associate degrees have been considered terminal degrees for those planning to enter the workforce; they have been considered a separate and distinct path that is incompatible with transfer. However,

with baccalaureate degrees growing in importance for a large portion of the workforce, including positions that once required a high school diploma, some college study, and even an associate degree only, programs of study that provide transfer opportunities are growing and are potentially beneficial to students who have been underserved by higher education.

States play a gatekeeping role in authorizing AB degrees, particularly the community college baccalaureate (CCB). Our study found several examples of state-level politicians who pushed for AB and community college degrees, opening a window of opportunity for state administrative personnel to support the implementation of these degrees. Florida and Washington are the most obvious examples. At the same time, we have seen pushback from state officials who support the traditional, longstanding mission of community colleges to award subbaccalaureate degrees and credentials, and do not wish to open the door to baccalaureate degree conferral by community colleges. Illinois, Michigan, and Wisconsin, all Midwestern states, represent states where the debate over the community college baccalaureate has been contentious. In addition, several states in the New England region have decided not to implement AB programs, either because of a lack of perceived demand for these degrees or because of resistance to implementing these types of degrees owing to the belief that existing transition options already provide adequate routes of transfer to the baccalaureate.

Ambitious goals to increase college completion in the United States, especially baccalaureate completion, could facilitate growth in AB policy and program implementation. States that are setting aggressive degree attainment goals are adopting a number of strategies to increase degree attainment, with some states offering AB degrees as part of their baccalaureate completion portfolio. Because AB degrees can be awarded by both traditional associate degree-granting and baccalaureate degree-granting institutions, they offer a range of delivery options to higher education systems. In a time when pressures have never been greater to increase the number of college degrees, AB degrees have become attractive. However, the proliferation of degrees that differ from the standard baccalaureate raise legitimate questions about quality and rigor. Increasing baccalaureate degree programs without commensurate quality assurance and accountability does not serve anyone's interests, especially the student's.

Although controversial, the AB degree aligns well with policy agendas that link higher education to workforce development. As a workforce-specific degree, the AB degree is proliferating in the STEM fields, as well as in business and management jobs, and, although not considered an AB in our study, baccalaureate degrees in health care and education have undergone significant growth to address workforce shortages in some states. Proponents of AB degree programs argue that students who enroll in these programs are overwhelmingly made up of working adults, and our data confirm this phenomenon. Rather than being traditional college-age students, the adult learners who enroll in AB degree programs intend to use the degrees to advance in their chosen occupations. In many cases, they lack alternatives because of the limitations to transferring their applied associate-degree credits. Although critics claim the degrees are too narrow, threatening the notion of a broad-based liberal education that is the mainstay of higher education, the demand for higher education that prepares students and graduates for the workforce is not likely to decline.

We offer the following recommendations to continue to advance research and development concerning the AB degree.

Descriptions of AB degree models, programs, and practices are needed at the state and local institutional levels. This information needs to be detailed, categorized, and carefully disseminated so that a wide range of stakeholder groups gain a fuller and deeper understanding of AB degree programs offered in various postsecondary institutional contexts. The new degree qualification profiles (Adelman, Ewell, Gaston, & Schneider, 2011) developed with the support of the Lumina Foundation for Education may provide a useful framework for examining competencies associated with various AB degrees, thereby helping a wide range of stakeholders to understand baccalaureate degrees having a purposeful applied dimension. Examination of the instructional delivery methods, including online delivery, is also needed to better characterize the educational experiences of students from their perspectives.

Assessments of education and employment outcomes should be conducted for students who enroll in and graduate from AB degree programs. To date, no empirical analysis has been done on students' educational and employment outcomes relative to their participation in AB degree programs. To understand the potential of these various degree programs, it is important to know how students benefit, and, by extension, how the organizations to which they matriculate benefit, whether employers or other institutions of higher education. All six states selected to be part of Phase 2 of our research indicated a keen interest in knowing what had happened to their AB students. Most believed their data systems could accommodate this analysis; however, none had conducted such a follow-up study. Competing priorities and resource constraints had prevented this research from happening, but they indicated they would indeed welcome the opportunity to engage in it.

Building on the last recommendation, to fully understand AB degrees and their impact, it is necessary to conduct further economic analysis. This analysis should address the trajectory of these degrees in terms of their growth and their alignment with workforce needs in states and regions of the country where the degrees have proliferated. It would also be beneficial to understand the economic payoffs associated with these degrees, both for individuals and for their employers. To fully understand the notion of the "workforce degree" relative to other forms of baccalaureates, it would be useful to analyze this idea and further examine the assumptions and outcomes that relate to its economic utility in the current and emerging workforce.

Finally, we recommend that the study of AB degrees be set in a larger context of changing higher education systems and higher education reform. AB degrees represent a fascinating case for examining deeper questions central to the future of higher education, including which students should be served and how, what the value is of college credit and degrees, how diverse institutions can operate more effectively and efficiently as a higher education system, and what role politics can and should play in reforming the educational system. Addressing these questions in a systematic way would provide insights that have merit into the specific case of the AB, but also into the higher education system at large.

TABLE OF CONTENTS

FIGURES

TABLES

INTRODUCTION

A number of emerging pressures are influencing policy on the local, state, and national levels. A weakened economy, growing international competition, and challenges to keeping the U.S. workforce efficient and competitive have prompted a search for innovative ways to increase college access and completion. Emerging in the 1970s, the applied baccalaureate (AB) degree gained momentum in the 1990s and 2000s as a way to prepare adults for employment in occupations that require a college education beyond the associate degree. Thus far, only modest attention has been paid to the AB degree, with the preponderance of research and writing emanating from researchers who study the community college baccalaureate (cf. Floyd, Skolnick, Walker, 2005; Townsend, 2007). To date, no research has examined the AB degree through a state policy lens or has acknowledged the scope of involvement of 4-year colleges and universities. This omission limits understanding of the AB degree as a potential contributor to the higher education system and to the nation's college completion agenda in particular.

In this project, a national study of AB degrees was undertaken, including documenting the scope of implementation of AB degrees by the 50 states and describing various approaches to the awarding of these degrees by different types of public institutions of higher education. The primary goals of the study were to document the extent to which AB degrees are offered by higher education institutions in the 50 states, to examine different approaches and models for implementing these programs and awarding these degrees, and to explore the state and institutional policy contexts that surround the awarding of AB degrees by community and technical colleges (which we refer to as *traditional associate degree-granting institutions*) and 4-year colleges and universities (which we refer to as *traditional baccalaureate degree-granting institutions*).[1] The study was conducted in two phases, beginning with a national inventory of AB degrees in the sector of U.S. public higher education (Phase 1), and extending into a multicase study of 6 states (Phase 2). Our 50-state inventory was released in 2008 (see Townsend, Bragg, & Ruud, 2008), and readers are encouraged to seek out that report for a description of institutions awarding AB degrees by state.

This report details the second phase of our research, which examined AB degrees offered in states that have adopted a deliberate approach to the AB, either through state statute or administrative authority, and through the deliberate commitment of resources by the higher education institutions in those states. Even though a number of states could offer valuable lessons, we chose the six states of Arizona, Florida, Kentucky, Oklahoma, Texas, and Washington because of the deliberate policy contexts for the AB in these states, which provide insights into program design, student populations served, and workforce and economic development orientation.

This report begins with a brief review of literature related to AB degrees, including publications that show how the current context of higher education and the economy in the United States may

---

[1] At the advice of our advisory committee (named in Appendix A), near the beginning of this project we adopted the terms *traditional associate degree-granting institution* and *traditional baccalaureate degree-granting institution* rather than use terms such as 2- and 4-year institution to recognize that higher education degrees are evolving in ways that do not limit college degrees to specific institution types. The recent growth in community colleges awarding baccalaureate degrees is a visible example. As such, the notion of 2- and 4-year institutions is blurred and potentially misleading.

affect the proliferation of AB degrees. We also discuss prior research on AB degrees, with particular attention to our own 2008 inventory, including an exploration of the policy contexts associated with AB degree adoption (Bragg, Townsend, & Ruud, 2009). The next section details the case studies undertaken during the second phase of our research based on interviews with a wide range of stakeholders. We end this report by discussing implications for the future of AB degrees, and we recommend additional research to better understand the potential impact of these degrees.

RELATED LITERATURE

The bachelor's degree is widely viewed as the benchmark of a quality postsecondary education. According to the Chronicle of Higher Education's *Almanac of Higher Education 2010*, postsecondary institutions in the United States award more than 1.5 million bachelor's degrees annually, more than all other postsecondary degrees combined. This suggests that a sizable proportion of the American college-going population is enrolling in and receiving baccalaureate degrees; at the same time, the need for additional college credentials continues to grow. Many occupations either implicitly or explicitly require a bachelor's degree, especially positions that offer substantial income growth over time and that are widely sought nationally (i.e., teachers, managers, engineers, various health care workers, and others). Further, some employers require baccalaureate degrees for positions that have historically not required them (Walker, 2002). According to the U.S. Bureau of Labor Statistics, receiving a bachelor's degree "pay[s] off," in that graduates receive higher salaries and have more job prospects than those who do not receive the degree (Crosby & Moncarz, 2006). As demand for the bachelor's degree grows, it is likely to become the expected credential for more occupations.

The increased recognition of higher education to the U.S. economy is fueling greater demand for college credentials, including baccalaureate degrees. According to the National Center for Education Statistics (NCES, 2009), the growth in baccalaureate enrollment from 1987 to 1997 was 14%, and from 1997 to 2007, it was 26%. Although the majority of that growth was among traditional college-age students (those age 18 to 24), the NCES posited that "this pattern is expected to shift," noting enrollments are expected to increase by 10% from 2006 to 2017 for individuals under the age of 25 and to almost double (19%) among individuals age 25 and above (p. 269). As a result, more adults, including those who are full-time employees, those who are geographically place-bound, and those who are dealing with both work and familial responsibilities are seeking baccalaureate degrees.

Higher education has not been especially responsive to educating working adults who seek a baccalaureate degree (Pusser et al., 2007). These newest incoming students bring an array of needs that are unique to their age and life responsibilities and that require a host of different education and support services. As full-time employees, they often require courses that are either asynchronous or offered at night and on weekends. As place-bound individuals with families, they may prefer online or distance education options to gain access to and complete their programs of study. As adults with additional responsibilities, they may require support that is adaptable to their specific needs, both academically and socially. Many higher education institutions do not provide adequate programs and services to accommodate their learning needs.

Along with these pressures for access to and success in baccalaureate degree programs come the nation's political and economic pressures that necessitate expansion of the workforce to address high unemployment rates. These pressures are evident in President Obama's charge to Congress on February 24, 2009, when he called for policy changes that would put the United States above all other nations in the proportion of citizens with a college degree. President Obama's recent White House Summit on Community Colleges additionally emphasized strengthening the role of community colleges in workforce education as a way to put more American citizens back to work or to assist them in advancing in their chosen occupations. Obama's American Graduation Initiative sought to increase access to education and training in high-demand workforce fields and to support the development of educational facilities, advanced technologies, and online programs, particularly to geographically place-bound and low-income individuals who desire a postsecondary credential (Schoeff, 2009).

Although increased attention is being paid to college credentials, scholars and critics warn that higher education cannot easily accommodate the growing demand for postsecondary education for several reasons. First, colleges and universities, particularly community colleges, struggle with overcapacity because of large numbers of individuals who are returning to prepare to enter or reenter the labor force (cf., Bailey, 2011; Hauptman, 2011). Declining state and federal funding limits the ability of institutions to address the growing demand for higher education and implement new degree programs. Second, traditional baccalaureate degrees are often broad and purposefully unspecialized, with relatively weak connections to employment. They are intentionally designed to provide a breadth of knowledge in general education and the liberal arts and sciences, and they assume their students are traditional-age learners who have ample time to pursue additional college studies and enter a career after completing their bachelor's degrees. In contrast, adult students who return to college often seek to address specific vocational needs and advance in employment. They perceive that a general baccalaureate is lacking in immediate utility, and they want a highly relevant learning experience that supports their pursuit of a career.

It is important to recognize that complicating this picture is a large number of students in higher education who are not enrolled in bachelor's degree programs of study. According to NCES (2008) data for 2007–2008, approximately 9.82 million students sought subbaccalaureate credentials, and a large proportion of these students, approximately 65%, or 6.38 million students, sought credentials to enter the workforce directly after completing 1 or 2 years of college. Many of these students were seeking programs of study in career and technical education fields rather than academic or liberal education, and they were preparing to enter technical and semiprofessional occupations that offer family living-wage jobs that are essential to the health of the U.S. economy (Carnevale, Smith, & Strohl, 2010). Although some of these subbaccalaureate programs have direct lines of transfer, many do not. Consequently, occupationally specific credentials (certificates or degrees) that are considered "terminal" have limited value to baccalaureate programs. Were it possible to recognize these credentials by awarding college credit toward the baccalaureate degree, students holding subbaccalaureate credentials would have a viable pathway to the baccalaureate, and the nation would see some increase in baccalaureate degree attainment. An increase in degree attainment might also be observed if the applied associate degree were to provide a viable transfer pathway for students attending community colleges to enroll in associate degree programs that lead to employment, and also if these students could be awarded college credit toward bachelor's degrees.

One type of degree, known as the AB degree, has emerged as a credential intended to address workforce needs in the United States and to overcome the terminal nature of subbaccalaureate applied degrees. Recognizing the importance of this problem and calling for changes in state-level policy and practice, especially for adults, the American Association of Community Colleges has recommended the development of AB programs by states and local institutions as one way to facilitate pathways for adults and working individuals to the baccalaureate degree (American Association of Community Colleges, 2004). Some scholars have referred to AB degrees as "workforce" baccalaureates, which fill the gap in credentials that prepare individuals to enter the labor market in skilled and technical fields, including occupations that require the ability to use new technologies in engineering, health care, and education, among others.

The AB degree is a unique form of postsecondary credential that addresses the terminal nature of occupationally specific associate degrees, often referred to as applied associate degrees or associate of applied science (AAS) degrees. Seeking to help the field define the terminology, we defined the AB degree in the initial phase of our research for Lumina Foundation as follows:

> A bachelor's degree designed to incorporate applied associate courses and degrees once considered as "terminal" or nonbaccalaureate level while providing students with higher-order thinking skills and advanced technical knowledge and skills. (Townsend et al., 2008)

These degrees, then, take historically terminal applied associate degrees and course work and allow credits associated with these programs to transfer into baccalaureate-level programs, by supplying the requisite general education and upper division course work necessary for the degree. This view of the AB is consistent with the prior work of a number of scholars who have attempted to define and describe the fundamental components of AB degrees (Arney, Hardebeck, Estrada, & Permenter, 2006; Floyd et al., 2005; Ignash & Kotun, 2005; Walker & Floyd, 2005). Building on this earlier work, a unique contribution of our study has been to recognize that AB degrees are not limited to a particular institution type but are offered by both traditional associate degree-granting and traditional baccalaureate degree-granting institutions. Another important aspect to our definition of the AB is the recognition that higher order thinking skills need to be associated with any baccalaureate degree. This observation recognizes that the AB degree is not simply about the addition of more college credits but about increasing levels of mastery of advanced analytical skills commensurate with the baccalaureate degree. This definition of the AB recognizes that this form of baccalaureate degree must be comparable in rigor and quality to other existing baccalaureate degrees to achieve legitimacy in higher education. This perspective is consistent with the new *Degree Qualifications Profile* (Adelman, Ewell, Gaston, & Schneider, 2011) that is currently being beta tested by Lumina Foundation.

As noted, AB degrees provide a bachelor's degree pathway for graduates of terminal applied associate degree programs that are offered in a wide range of workforce areas. Silverberg, Warner, Fong, and Goodwin (2004) estimated that one-third of undergraduate students are enrolled in postsecondary occupational–technical programs, and Bailey, Alfonso, Scott, and Leinbach (2004) reported that adults are prevalent among these learners. This points to the importance of pathways to and through higher education for adults who have had limited access to college beyond an applied degree. But do AB degrees represent a viable curricular path to the baccalaureate, particularly for adult learners? Do these programs enroll substantial numbers of

adults who have competing work, family, and school priorities? Are the programs growing, and do they appear to be on a continued upward trajectory? The extant literature and our own national inventory confirm that the number of states with policy and institutional engagement in the AB is growing, but what do enrollments in these programs look like, and what fields of study are involved? These questions are the focus of our six-state study of AB policy and programs.

STATE-BY-STATE AND NATIONAL INVENTORY

The research began with a state-by-state and national inventory to describe the extent to which the AB exists in public institutions of higher education in the 50 states (Townsend et al., 2008). The intended audience for this work includes federal, state, and local leaders and policy makers desiring information about AB programs in the United States. Information collected for this inventory was gathered in a variety of ways, including web searches for relevant documents and interviews with one or more senior-level administrators in state agencies responsible for higher education. These same individuals were provided an opportunity to review their state's profile before publishing it in our report. The initial research was conducted in 2008, with additional information conducted in summer 2010. From the start of the project in 2007 to the year 2010, the status of AB degree programs evolved considerably, with more states engaged in deliberations about AB policy, some states planning to adopt AB policy, and a few states with institutions deciding to adopt the degree. We also found a few states that avoided adopting legislation to implement AB degrees. This section of the report shows the most current state-by-state and national inventories of the AB degree, as well as the evolution of the degrees from the 1970s, when they first emerged, to the present.

Types of AB Degrees

With the definition of the AB degree presented above, our 50-state inventory situated these degrees in different types of higher education institutions (associate degree-granting and traditional baccalaureate degree-granting institutions), and it classified them by type of degree program. Whether offered by an associate degree-granting institution or a traditional baccalaureate degree-granting institution, the literature suggested the AB consisted of three kinds of degree programs. As identified by Ignash and Kotun (2005), these kinds are "1) career ladder, 2) inverse or upside down), and 3) management ladder degrees" (p. 115), and our research confirmed this categorization. Like Ignash and Kotun, we found that career ladder programs offer a substantial number of upper level courses in the technical major of the applied associate degree, in addition to general education courses. The inverse or upside-down degrees are typically titled bachelor of general studies, bachelor of professional studies, or bachelor of applied studies, and these degrees offer associate degree courses that satisfy most of the baccalaureate requirements for a major at the upper division of a bachelor's degree, with most of the technical courses taken during the first 2 years in conjunction with the applied associate degree course work. The management ladder degree is a specialized form of inverse degree in that it provides the degree recipient with organizational and supervisory skills for a managerial position, with many of these degree programs emphasizing human resources and organizational development as their subject matter. Recipients of this degree frequently advance into supervisory positions in the technical fields, where they have substantial work experience.

In addition to the above AB degree types, our study also identified AB degree programs that do not fall into one of the three above-mentioned categories, but instead offer a combination of general education and technical education content in ways that make sense to the transfer process and the particular expectations of the transferring and transfer-receiving institutions. Some of these degrees provide opportunities for students to take credits equivalent to 3 years of course work at the community college level prior to transferring to the traditional baccalaureate degree-granting institution to finish the last year of credits. Other forms of ABs shift the course work in the other direction, with students taking fewer than the standard 2 years of credit at the traditional associate degree level and more at the senior institution. Because AB degree programs are relatively new, a standard template has not yet been developed in most states, so state education agencies are considering new options and innovations as they arise. Even in states that have a lengthy history with the AB, a fair amount of institutional autonomy exists in specifying the curriculum. (Figure 1 displays forms of AB degree curricula identified by this study.)
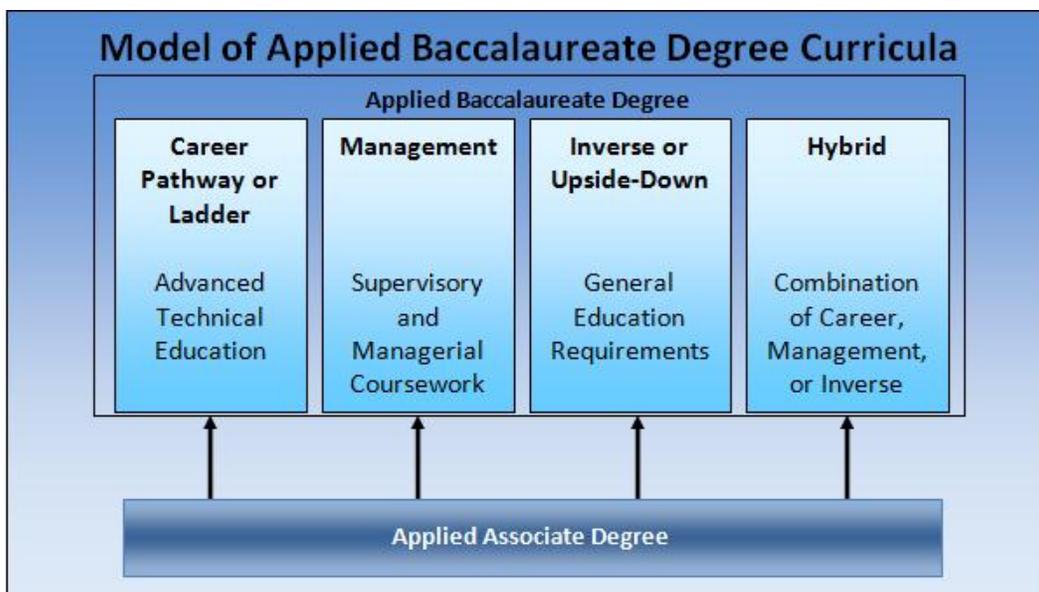
Figure 1. Model of applied baccalaureate degree curricula identified through the state-by-state inventory.

Evolution and Status of AB Degrees

The AB degree has quite a long history, beginning in the 1970s, but was relatively slow to evolve until the decade of the 2000s. The 1970s marked the emergence of the AB at public colleges granting traditional baccalaureate degrees (Troy University in Alabama, Southern Illinois University–Carbondale in Illinois, and Northwest Missouri State University in Missouri) and at a college granting an associate degree (Fashion Institute of Technology in New York City). During the 1980s in a few states, at least one public college or university granting the traditional baccalaureate degree offered an AB degree. By the 1990s, several states had authorized this degree in this sector. When the initial inventory was completed in late 2008, the number of states awarding the AB in public higher education was 39, or 78% of the 50 states. Of these 39 states, 29 offered this degree only at traditional baccalaureate degree-granting institutions, whereas 10 additional states offered the AB at associate degree-granting institutions.

The national inventory also revealed that 33 traditional associate degree-granting institutions and 139 baccalaureate degree-granting institutions in 39 states awarded AB degrees. (Appendix B provides a state-by-state depiction of AB degrees offered by traditional associate degree- and baccalaureate degree-granting institutions.)

The map shown in Figure 2 displays the status of AB degrees in the United States. Results show that only nine states are not engaged in planning or implementing AB degrees on some level (shown in white in Figure 2), with most of these states being located in the Northeast. Since our initial inventory was published in 2008 (see Townsend et al., 2008), two states, Colorado and Oregon (shown in red), have engaged in AB activity spurred by formal state legislation. In Colorado, a new state law authorized AB degree planning at Colorado Mountain College to serve the needs of students with limited geographic access to higher education. In Oregon, legislation passed in 2009 prompted state planning that involved the lead state agency and all traditional associate- and baccalaureate degree-granting institutions in the state. In a few additional states in the Midwest, specifically Illinois, Michigan, and Wisconsin, as well as in the state of Georgia, higher education institutions, state systems, and state legislatures have actively debated the AB degree, particularly AB degrees awarded by community and technical colleges. For example, in an effort to move an AB agenda forward, the University of Wisconsin branch campuses were authorized to award a unique AB degree that focuses primarily on liberal arts and general studies. In Illinois and Michigan, legislation introduced to award AB degrees in community colleges failed to pass in 2009 and 2010, respectively. Through state legislative action to reengineer the higher education system, the state of Georgia engaged in modest expansion of AB degrees.

Figure 2. Results of the state-by-state inventory regarding the applied baccalaureate degree in the United States as of September 2010.
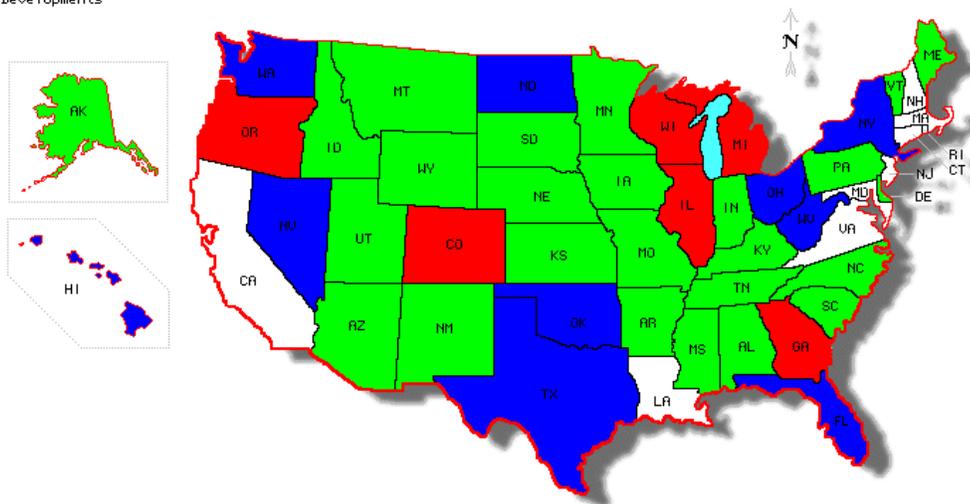
Baccalaureate Degrees in Traditional Associate Degree-Granting Institutions

The AB has been part of the rationale for authorizing some associate degree-granting colleges (mostly community colleges) in states such as Florida and Texas (which have shown a substantial commitment to the AB) to award the baccalaureate degree. Among the states authorizing one or more of their associate-degree granting institutions to offer a baccalaureate, some states (Hawaii, New York, North Dakota, and Washington) have limited the community college to the AB as defined in this report. Often because of workforce shortages in specific occupational fields, some states have authorized one or more community colleges to offer a range of baccalaureate degree programs in fields such as education and nursing. It is true that this action was prompted by workforce shortages (as are many decisions regarding higher education programming today); however, our research shows that fields such as education and nursing have been associated with transfer to traditional baccalaureate degree-granting institutions for some time. Although these degrees prepare graduates for employment, they are often not associated with terminal associate degrees and therefore are not as pivotal to the evolving AB degree agenda, which provides transfer opportunities for graduates with applied associate degrees. Indeed, we found a great deal of variation among the states in how closely the fields of education and nursing are linked to the AB, with some states considering these fields a major component of AB degree production and other states adamantly opposed to tying these programs to the AB. These latter states noted they had spent considerable time creating transfer agreements for associate-level graduates to matriculate to traditional bachelor of science (BS) degree programs, and they had no intention of aligning them with AB degrees, which signals transfer for holders of applied associate degrees. Within this argument is a recognition of the status differential that comes with different forms of baccalaureate degrees, especially the AB relative to more established forms of bachelor's degrees, such as the bachelor of arts (BA) and the BS.

It is also worth noting that not all community college baccalaureate programs are considered AB programs. Several states, including Florida, Vermont, and Washington, have 2-year institutions that offer the more traditional baccalaureate degrees in fields such as education, nursing, engineering, and information technology (Glennon, 2005). Some of these programs do not allow historically terminal applied associate degrees to transfer and likewise are not considered AB degrees. Even so, many of these programs have a workforce focus and represent a gray area concerning the appropriate terminology to use to describe the related degrees. Walker and Floyd (2005) used the term *workforce baccalaureate* to define bachelor's degree programs that have an applied focus, and they argued that the proliferation of these degrees is primarily to address a workforce shortage and enhance the economy. Floyd and Walker (2009) noted that workforce baccalaureates are offered in fields such as education, law enforcement, health (particularly nursing), and public service, and they added that "the terms 'applied baccalaureate' and 'workforce baccalaureate' have been used synonymously" (p. 103). We have also observed that these terms are used interchangeably in the literature; however, there are exceptions. Workforce baccalaureate degrees exist (such as those in teacher education programs) that are designed to articulate associate degrees that have, for a long time, had a traditional route for transfer. Similarly, programs of study extending from the associate degree in nursing to the bachelor of science in nursing (BSN) have a long history in many states, and they are well accepted as transfer pathways to the baccalaureate. Likewise, AB degrees exist (such as completion degrees) that are not focused on workforce preparation at all, and therefore do not fit the workforce baccalaureate designation.

Another development in associate degree-granting institutions having the authorization to award ABs is to authorize lower division regional or branch campuses of a traditional baccalaureate degree-granting institution to award them. This approach is occurring in states such as Ohio and Oklahoma and has been given serious consideration in Wisconsin. Oklahoma's implementation of the AB degree at a 2-year institution occurred on the two technical branch campuses of the Oklahoma State University (OSU) system, in Oklahoma City and Okmulgee. Both of these campuses required special approval from the OSU Board of Regents, which was granted in 2004. The OSU system had been interested in moving all their technical baccalaureate degree programs to the technical branch campuses because many of the transfers had been originating from these branch campuses. However, the 4-year OSU campuses decided to retain all these technical programs, and the Regents decided to add specific bachelor of technology (BT) degrees to the branch campuses in workforce-specific fields.

Factors that provide a contextual background for the emergence of AB degrees in the United States are considered next, with reference to the literature and data collected from our national inventory.

Factors Contributing to AB Degree Development

The development of AB degrees in states and institutions can be traced to four distinct factors, according to Bragg et al. (2009). These four factors are (1) improving associate-to-baccalaureate degree transfer, (2) increasing baccalaureate degree completion, (3) addressing the specific needs of adult learners, and (4) linking education to the workforce and the economy. Although all these educational developments have substantial support from the literature, several recent reports and publications are notable for addressing these concerns, some of which were confirmed by our interviews with state officials.

Improving Transfer

Community colleges have long been used to provide transfer education to students, which has allowed graduates of many associate degree programs the ability to use their credits toward baccalaureate degree completion (Cohen & Brawer, 2003). Traditionally this has been in a 2 + 2 format, wherein students attain the associate degree within 2 years and finish their bachelor's degrees within an additional 2 years. To their credit, community colleges figure prominently in baccalaureate education; this is evident through the work of Cohen (2003), who recognized that more than 40% of students who receive baccalaureate degrees have transferred some of their course work from a 2-year institution. Although transfer has been a primary mission of community colleges for decades, transfer rates remain relatively low and those who transfer often find a more difficult path to the baccalaureate. They have less likelihood of attaining a bachelor's degree than those who began postsecondary enrollment at 4-year institutions, even after as long as 9 years after entering (Long & Kurlaender, 2009).

Regardless of outcomes, students are increasingly attending community colleges and other 2-year institutions with the intent of acquiring a baccalaureate degree. This trend is due to needed geographic access, to the preference for individually tailored programs, and to the lower costs of enrollment compared with traditional baccalaureate degree-granting institutions (Moltz, 2008). Although it is true that many community college students do not have the intent of completing

bachelor's degrees (Alfonso, 2006), many do (Bailey, 2011). Even beyond student intent, there is increased pressure on state systems of higher education to improve the transfer policies and to support student matriculation from community colleges to universities.

Smith (2010) recognized an "increase in the number of transfer and articulation policies over the past decade," and concluded that this trend "demonstrates that state legislatures and higher education governing boards have recognized the need for such policies" (p. 1). The author also recognized that at least two-thirds of states have some form of statewide policy that addresses the transfer and articulation of course work from the 2-year to the 4-year level. Greater federal attention has been given to the states' responsibility to enable innovative transfer policies, for example, the Commission on Higher Education Report from past Education Secretary Margaret Spellings (U.S. Department of Education, 2006). These recommendations have been addressed more fully in some states than others, depending on competing priorities, including funding and the capacity to accommodate change. To improve transfer, some states and institutions have examined historically terminal associate degrees to determine whether they can be made transferable to baccalaureate programs.

Baccalaureate Completion

There is little doubt that postsecondary education, particularly baccalaureate degree attainment, is strongly associated with the development of innovation, international competitiveness, and economic development. According to the College Board's Commission on Access, Admissions, and Success in Higher Education, "college and high school completion ranking had dropped dramatically; the proportion of adults with postsecondary credentials was not keeping pace with growth in other industrialized nations; and significant disparities existed for low-income and minority students" (Lee & Rawls, 2010, p. iii). Lumina Foundation for Education (2007) identified 54 million working adults as being without a college degree. Such a deficit of postsecondary-trained workers has made it difficult for the United States to remain internationally competitive. In remarks to the Council on Foreign Relations in 2010, the current Secretary of Education, Arne Duncan (2010), acknowledged that "just 40% of our 25 to 34 year olds earn a 2-year or 4-year college degree—the same rate as a generation ago. Our country now ranks 10th in the rate of college completion for students in this age group" (para. 12).

To make up for these deficits, several organizations have pushed for policies and programs aimed at increasing college completion within states and the nation as a whole. The College Board's "College Completion Agenda" (http://completionagenda.collegeboard.org/), Lumina Foundation for Education's "Goal 2025" (http://www.luminafoundation.org/goal_2025/), the National Governors Association's "Complete to Compete" program (http://www.subnet.nga.org/ci/1011/), and the Bill and Melinda Gates Foundation's "Double the Number" campaign (http://www.gatesfoundation.org/postsecondaryeducation/Pages/default.aspx) all emphasize that increased college degree completion is of utmost importance to students and the economy. These agendas call for policies and practices that increase the percentage of Americans with college credentials, ranging from 55 to 60% (College Board and Lumina, respectively). Setting degree completion targets is intended to motivate new policies and programs to increase degree production dramatically. The fact that philanthropic organizations are setting these targets with substantial financial resources is putting college completion at the forefront of higher education policy in an unprecedented fashion.

Webber and Ehrenberg (2010) emphasized the importance of facilitating increased college completion and success while recognizing new efforts enacted to improve completion, such as the National Center for Academic Transformation, Lumina Foundation for Education, and the Delta Cost Project. Most notably, the authors suggest that "institutions with high percentages of students who are academically underprepared or are economically disadvantaged should consider investing in student services, even before investing in instruction" (p. 5). Many regional and national organizations are looking for innovative approaches to meeting the demand for increased baccalaureate attainment goals, such as accelerated or 3-year baccalaureate degrees (Jaschik, 2009), university centers (Bragg et al., 2009), community college baccalaureate degrees (Floyd et al., 2005), and applied or workforce baccalaureate degrees (Townsend et al., 2008).

Adult Learners

Although policymakers are emphasizing the need to increase baccalaureate completion among all populations, they recognize that nontraditional learners are a historically underserved population that deserves special attention. The NCES (2009) estimates that "over 60 percent of students in U.S. higher education can be characterized as non-traditional. . . . [W]e know that some 43 percent (or 14 million) of students in U.S. higher education are 25 or older" (p. 3). As can be seen, adult learners make up a large portion of those in American higher education, which merits that closer attention be paid to their needs.

Adult students represent a population that is well suited to many degree attainment policies, for several reasons. The first is because adults, who, not surprisingly, compose most of the working population, are dramatically undercredentialed. As a result, adults enter college to seek the credentials required for career advancement, and they often need specialized programs and services to meet their needs (Pusser et al., 2007). According to Chao, DeRocco, and Flynn (2007), the economic changes that have taken place recently have "put a premium on an educated workforce" (p. 3). Second, many adults have acquired some college credits that could make attaining a credential easier if those credits were recognized officially. Finally, adult students, as members of the workforce, can have a direct and immediate impact on the economy by attaining credentials, applying work skills, and improving productivity (Council for Adult and Experiential Learning, 2006).

Adult learners have specific needs and are "a diverse and complex set of individuals with widely divergent aspirations, levels of preparation and degrees of risk" (Lumina Foundation for Education, 2007, p. 2). Specifically, adult learners are often highly attuned to employment-specific training because they aspire to improve their career prospects. As a result, they seek career and technical training opportunities, including certificate programs or applied associate degrees. Because neither type of credential has a solid record of accomplishment of transferring, graduates of these programs hit a dead end or struggle with the transfer process, often having their course work examined course by course and resulting in a low number of transferred courses.

Adult learners often need specialized approaches, including customized institutional policies, instructional techniques, and delivery methods, to meet their unique needs and intended outcomes. The Council for Adult and Experiential Learning (2008) identified some of the challenges facing adult students, including that they are typically part-time students, are

financially independent, work full-time during enrollment, have dependents, and sometimes have GEDs rather than high school diplomas.

To meet these needs, the Council for Adult and Experiential Learning (2008) also suggested practices that would best address the needs of adult students by identifying key principles to educational approaches: outreach, life and career planning, financing, learning outcomes assessment, teaching–learning processes, student support systems, technology, and strategic partnerships. Programs that are successful at addressing the unique needs of adult learners take these principles into account and adapt them based on the challenges that adult learners face. Examples include the development of distance education programs, the implementation of support policies for students with families, financial support, the awarding of credit for life experience, and others. The bottom line is that adults often look for and need transferable options that provide a workforce-oriented education.

Education and Workforce Development

As noted previously, some states point to the need for a better educated workforce and improved economic outcomes for the United States as an important factor contributing to the proliferation of AB degrees. This factor is often associated with increasing the number of college graduates in the nation, but it differs in that the focus is specifically on technical and workforce programs that have a direct impact on the labor market. Pusser et al. (2007) recognized that "increasing . . . attainment of the baccalaureate degree will produce the highest individual and social returns" (p. 3). They noted that educating adults within the workforce can have the most direct and immediate impact on economic development within the United States.

The National Commission on Adult Literacy (2008) warned of an impending crisis in workforce education, stating that the lack of high-quality and high-priority policies that address workforce gaps are "putting our country in great jeopardy and threatening our nation's standard of living and economic viability. . . . More and more, the American economy requires that most workers have at least some postsecondary education or occupational training to be ready for current and future jobs in the global marketplace, yet we are moving further from that goal" (p. v). The report noted that issues related to the workforce begin in the K-12 system, with current illiteracy rates at an all-time high and high school dropout rates at dangerous levels. With the departing Baby Boomer generation leaving the workforce, there is a greater imperative to bolster workforce-oriented education to supply workers where the economy needs them most. Recommendations made by the National Commission include the passage of legislation that makes workforce preparation the primary goal of adult education programs; policies that address educating the unemployed, low-skilled workers, immigrants, and other populations historically underserved by postsecondary and remedial education; and financial support for policies that directly address workforce shortages.

Finally, Symonds, Schwartz, and Ferguson (2011) recently released a paper calling for improved workforce-oriented preparation of youth and young adults through comprehensive school reform; they noted that "the percentage of teens and young adults who have jobs is now at the lowest level since World War II" (p. 1). Their argument parallels calls for new postsecondary opportunities for adults, which contend that the workforce requires more credentialed workers and that the United States has diminished its need for high school graduates who have no

postsecondary education. The authors reported, "Over the past third of a century, all of the net job growth in America has been generated by positions that require at least some post-secondary education" (p. 2). They agreed with other scholars who observed that the increasing requirement for college credentials will become a necessity for America's future workforce. Carnevale et al. (2010) supported this claim as well, noting that students of all ages who seek associate- or baccalaureate-level education in applied fields are likely to see greater job prospects and higher salaries than those having less education.

These national trends and studies provide a meaningful backdrop for examining AB degree programs in states that have made a deliberate effort to encourage and support new baccalaureate degrees. The next section discusses results pertaining to six selected states that were studied as part of the second phase of our research.

THE SIX-STATE STUDY

In 2009, we shifted to the second phase of the study, in which we conducted case studies of six states (Arizona, Florida, Kentucky, Oklahoma, Texas, and Washington) that were selected because of their engagement in AB degrees, but also because of their diversity in policy and program approaches to these degrees. The states represent different types of institutional engagement in the AB degree, with four states (Florida, Oklahoma, Texas, and Washington) having associate degree-granting institutions and traditional baccalaureate degree-granting institutions, and two states (Arizona and Kentucky) having traditional baccalaureate degree-granting institutions only. The states also differ in the extent to which formal statutory authority has provided the lever for the initiation and proliferation of AB degrees, compared with focusing on administrative rule and institution governance processes. Among the six states, four (Florida, Kentucky, Texas, and Washington) have passed legislation giving institutions of higher education degree-granting authority pertaining to the AB, and two states (Arizona and Oklahoma) dealing with the AB degree through administrative rule.

The Case Study Design

Building on the first phase of the research, which consisted of a national inventory of AB degrees (Townsend et al., 2008), we sought to improve our understanding of the contextual considerations and unique perspectives of states with notable AB degree programs and approaches. To that end, we conceptualized a case study approach consistent with that of Yin (2009), which included using multiple methods, such as interviews, observations, and surveys. Of importance to the case study is the unit of analysis. For these case studies, we chose the state as the unit of analysis because each has its own unique governance structure, organization of higher education institutions, and specific challenges and approaches that make it unique. Embedded within each state were two, three, or more postsecondary institutions that offered AB degree programs. In this regard, we investigated institutions where AB programs have a history of growth, innovation, or both, or where momentum was growing with respect to offering the degrees in additional program areas. We also listened attentively for challenges the institutions were facing, and we documented a few cases in which institutions were moving toward closing AB programs, often because of small or declining enrollment.

Interviews

The primary source of data for these case studies was interviews with groups identified as stakeholders in AB degrees, including state-level administrators in public higher education, and workforce development institutional-level administrators, including presidents and vice presidents, deans, program directors, and support staff; AB program faculty and instructors (full- and part-time); students; and employers of AB graduates, as well as elected officials and community members with a vested interest in areas related to AB degrees. Primarily, our approach was to talk with state-level administrators, followed by discussions with institutional administrators, and then faculty, students, and graduates of AB programs. To that end, we developed interview protocols for each of those groups. Interview protocols for students and graduates were designed in a focus group format to ensure student comments would be anonymous.

As mentioned above, the states were selected in a way that allowed us to examine a diversity of approaches, implementation strategies, state governance structures, and scopes of AB degrees. Additionally, states that were largely data driven in their policy and programmatic decision making were given priority because outcomes are an important part of examining innovative programs. The selection of a diverse group of states gave us the ability to look at policies and practices that contrast from one another as well as those that span the diversity of states and institutions. The six states were chosen based on data collected during Phase 1, evidence of activity surrounding the AB degree in the literature, and policy documents and legislative activity. The states chosen for the research were assessed by the project's advisory committee members, who commented on the strengths and potential weaknesses of the group as a whole.

In our Phase 1 inventory research, we had already developed contacts with officials in the six states; thus, we first reached out to these existing contacts to reestablish communication. We spoke to individuals about the potential to engage the state in the case study phase, and we also used snowball sampling to identify other state-level officials who were considered stakeholders in the state's efforts to implement AB degrees. These state-level administrators were also instrumental in identifying higher education institutions that we later contacted to gather more information.

Once primary contacts were established at the state and institutional levels, we conducted interviews using a number of methods. The primary method was face-to-face interviews, which were conducted in conjunction with site visits to relevant state offices as well as to selected institutions within the states that offered the AB. We set up 2- to 3-day visits within each state and, with the help of state officials and institutional contacts, organized interviews with as many stakeholders as time would allow. In a number of cases, visits followed a 2-phase process wherein state officials were interviewed in a first visit, and a follow-up visit was scheduled to institutions awarding ABs. Other methods for conducting interviews included face-to-face interviews at conferences and other professional events, when the identified individuals were available; phone interviews, when site visits could not be arranged; and e-mail correspondence.

Web Site Analysis

Drawing on information gathered from our personal contacts in each state, we conducted web site searches to identify AB degree programs within institutions the state officials had noted as awarding AB degrees, and we continued to monitor these web sites for information about any expansion of or modification to the AB degrees, including gathering information on degree type (e.g., BAS, bachelor of applied technology [BAT]) and program description. Appendix C summarizes the entire list of AB degree programs we identified in the six states by using the web and additional documentation supplied by the states. This list was originally compiled in spring 2009 and was updated through summer 2010.

Online Survey

Our most recent data collection activity, which took place between November 2010 and January 2011, included conducting an online survey of all identified AB programs within the six selected states. Through existing contacts as well as sources identified on the institutional web sites (mentioned above), we developed a list of all AB programs offered at public institutions within the six states. The online survey was designed to be brief but to allow standardized data to be collected for each identified program. Respondents were asked to provide descriptive information, such as the name and field of the program, total current enrollment and graduation, and the transferability of associate degrees into the AB degree program.

Our list of AB programs within the six states identified 64 institutions as offering AB degrees. In total, 144 AB programs were identified within these 64 institutions, and administrators within those institutions or programs, or officers for each AB program were contacted and asked to participate in the survey. From those 144 programs, we received responses pertaining to 66 programs, a 45.8% response rate (see Table 1). In a few cases, we received one survey response referring to multiple AB programs; thus, we kept the information consolidated in the response table. These data provide a valuable description of AB programs heretofore undocumented in the literature, including estimates of enrollment and graduation.

Table 1. Online Survey Responses

State	Number of AB institutions identified in the web search	Number of AB programs identified in the web search	Number (percentage) of programs responding
Arizona	4	24	14 (58.3%)
Florida	11	38	22 (57.9%)
Kentucky	7	9	2 (22.2%)
Oklahoma	10	15	7 (46.7%)
Texas	19	41	15 (36.6%)

State	Number of AB institutions identified in the web search	Number of AB programs identified in the web search	Number (percentage) of programs responding
Washington	12	16	6 (37.5%)
Total	64	144	66 (45.8%)

With respect to administration of the online survey, the instrument was entered into SurveyMonkey, a web site that allows for online administration. From November 2010 to January 2011, institutional representatives, program directors, and their identified contacts were sent e-mails that included a voluntary consent form and a link to the online survey. The survey was designed to take no more than 5 to 10 minutes to complete and included mostly closed-ended items but also a few open-ended items. The primary goal was to gather baseline information about the AB degree programs in order to provide an initial snapshot of the programs of study, degree types, and scale of the programs in terms of the number of students who had enrolled and the number who had graduated. (See Appendix D for a copy of the online survey questions.)

In the case descriptions that follow, summary data are provided for the AB degree programs reported through the online survey. These results begin to provide an understanding of the types of AB degree programs the six selected states have developed and supported to date.

RESULTS

The six states selected for this study offer an interesting set of results with respect to the state context and the engagement of institutions in AB policy and program implementation. The following state profiles, presented in alphabetical order, provide brief insights into AB degrees in different programs of study, including programs having a long history and those with a relatively short history. Differences in students served, curricular models, and institutional support are depicted.

Arizona

The Higher Education Landscape

Arizona has an estimated population of 6,595,778. The state has 704,245 students enrolled in higher education. According to the Chronicle of Higher Education's *Almanac of Higher Education 2010*, Arizona awarded 33,325 associate degrees and 39,016 baccalaureate degrees in the 2009–2010 school year. The state has 3 public 4-year institutions and 21 public 2-year institutions, along with 10 nonprofit and 42 for-profit institutions. Graduation rates in Arizona's 4-year institutions are lower than the national average, with an overall graduation rate of 35.9% (compared with the national average of 59.7%).

Arizona's 4-year public system of higher education is overseen by the Arizona Board of Regents. The system consists of three universities: the University of Arizona, Arizona State University (ASU), and Northern Arizona University (NAU). Additionally, the system has a partnership of

these universities (the Arizona Universities Network), which provides high-quality distance education options to students within and outside the state. Community colleges in the state are highly decentralized, with no overarching statewide board coordinating or governing institutional activity. To bring together the 10 community college districts around the state along with K-12 education and other postsecondary institutions, several groups have been formed, including the P-20 Council, the Joint Conference Committee on Colleges and Universities, Academic Programs Articulation Steering Committee, and several task forces, including a statewide AAS to BAS Articulation Task Force.

Officials at the Arizona State Regents office noted during our site visits that the state was hard-hit by the Great Recession of 2008, leading to some of the largest cuts to higher education of any state in the United States. Another issue unique to Arizona is the rural nature of the state. Beyond Phoenix and Tucson, state residents are vastly spread out, making it difficult to provide quality, accessible higher education to these residents. NAU has been tasked with reaching students where geographic access is limited. Arizona has also experienced recent and highly politicized tensions over immigration and the tragic shooting of a U.S. representative and innocent citizens gathered to attend a public rally convened on her behalf.

Despite the tense social climate and economic challenges, Arizona prides itself as a state that has an especially strong transfer system. State and institutional officials describe transfer as a hallmark of Arizona's higher education system. In particular, several of the state groups and task forces have endorsed the implementation of even stronger transfer policies, including standardized general education curricula (three separate curricula depending on focus, including arts, business, and science) that are accepted at all three Arizona public universities. Additionally, course equivalency guides have been developed for all public institutions to facilitate ease of transfer for baccalaureate-bound students. Furthermore, a pilot program was established in 2008 to begin implementation of a common course numbering system in several majors, with the intent to implement the system statewide for all fields of study.

AB Degrees

The development of the first AB programs in Arizona began as a push to solve a perceived workforce shortage of personnel in fire service management, and it grew out of a failed legislative push to offer community college baccalaureate degrees. Responding to the claim that universities were not responding effectively to shortages in workforce education, 4-year institutions began the pursuit of degrees intended to meet these needs. Although there has been a persistent push for the community college baccalaureate in Arizona, these efforts would require financial support for community colleges from the state, and legislators are unlikely to support the new programs considering the already tight budgets.

Although the state supports the AB degree at Arizona's universities, these degrees were not mandated by the state, and they were not prompted by statutory authority. Instead, they emerged out of the strong transfer policies established within the state, as a way to increase transfer options for AAS degree holders, evidence that articulation agreements, along with the awarding of credits for the full AAS block, are important dimensions of AB degrees in this state (see Table 2). Table 2 also displays information related to the online survey of AB programs conducted in Arizona. As can be seen, all three universities award AB degrees, with 14 programs identified in

the survey responses (two programs from ASU–Polytechnic [ASU-Poly] were represented in one survey response). Results showed that AB degrees have relatively small enrollment and graduation figures, which may be due to the highly specialized fields (e.g., technology management, electronics, and public agency administration) associated with these degrees. Also important was that some of the programs have not been in existence long enough to have graduates, with three programs having begun implementation in 2008 or later. The Early Childhood program at NAU was the largest AB program reported by survey respondents, with an enrollment of 157 students and 31 graduates in 2009–2010. This program and all others in Arizona report offering some instruction online and some in the classroom; none of the AB degree programs is completely online.

The majority of Arizona programs identify with the upside-down/completion degree, which emphasizes a general education curriculum in the last 2 years to complement technical courses taken during the first 2 years of college. Eleven of the programs identify adults as a primary target audience, and seven indicate that students of color are recruited. Other target audiences include displaced and unemployed workers and active-duty military personnel. All AB degree programs, except for one, operate with articulation agreements (the degree without articulation agreements allows any completed AAS degree to transfer), and all accept a full block of AAS degree credits into the AB degree program.

Table 2. Online Survey Responses for Applied Baccalaureate (AB) Degree Programs in Arizona

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
Arizona State University–West	BAS	General BAS, including an individualized area of concentration	1999	New College of Interdisciplinary Arts and Sciences	Upside-down/completion	~80	~30	N/A	Yes	Yes
Arizona State University–Polytechnic	BAS	Electronics, Manufacturing, Alternate Energy	~1998	College of Technology and Innovation	Hybrid	—	—	Adults	No	Yes
Northern Arizona University	BAS	Administration	2009	BIS/BAS Council	Upside-down/completion	43	0	Adults, students of color	Yes	Yes
	BAS	Administration of Justice	2006	BIS/BAS Council	Upside-down/completion	57	16	Adults, displaced/unemployed, students of color	Yes	Yes
	BAS	Early Childhood	2004	College of Education; BIS/BAS Council	Upside-down/completion	157	31	Adults	Yes	Yes
	BAS	Emergency Services Administration	2008	Public Agency Management; BIS/BAS Council	Upside-down/completion	14	10	Adults, displaced/unemployed, students of color	Yes	Yes

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
	BAS	Health Sciences	2006	College of Health Sciences; BIS/BAS Council	Upside-down/ completion	20	15	N/A	Yes	Yes
	BAS	Justice Systems Policy and Planning	2001	College of Social and Behavioral Sciences; BIS/BAS Council	Upside-down/ completion	27	7	Adults, students of color	Yes	Yes
	BAS	Public Agency Administration	2007	Public Agency Management; BIS/BAS Council	Upside-down/ completion	71	0	Adults, displaced/ unemployed, students of color	Yes	Yes
	BAS	Social and Community Services	2007	Public Agency Management; BIS/BAS Council	Upside-down/ completion	39	5	Adults, displaced/ unemployed, students of color	Yes	Yes
	BAS	Technology Management	2009	Business Administration; BIS/BAS Council	Upside-down/ completion	28	0	Adults, displaced/ unemployed, students of color	Yes	Yes
University of Arizona– South	BAS	Supervision	2006	Regional Non-metro Commerce	Management	40	5	Adults, active duty military	Yes	Yes
	BAS	Network Administration	2004	Applied Science	Career ladder	20	6	Adults	Yes	Yes

Note. Desig. = degree designation; Year impl. = year implemented; Admin. unit = administrative unit; Enroll. = enrollment; 09–10 grad. = number of graduates in 2009–2010; Target pops. = target populations; Articul. agrmts. = articulation agreements; BAS = bachelor of applied science; BIS = bachelor of interdisciplinary studies; N/A = not applicable.

Selected AB Program Profiles

ASU-Poly and NAU were selected because they were identified by state officials as having some of the stronger AB programs in the state. The two institutions are also different in terms of size, geographic proximity to major populations in the state, and, to some extent, mission.

ASU-Poly Campus. ASU-Poly is one of four campuses in the ASU system. Originally named ASU-East, the name was changed to the Polytechnic designation in 2005 to emphasize the technical emphasis of a majority of the programs of study at this campus. Students at ASU-Poly can earn degrees ranging from the baccalaureate to the doctoral level. ASU-Poly, as a polytechnic campus, notes that "the emphasis is on professional and technical programs that prepare students in a hands-on, project- and team-based learning environment." The campus boasts a high level of environmental and technological advances, most notably through the 2006 start of a new architectural project culminating in a three-building Academic Complex that is certified green and has optimized energy consumption (*ASU's Polytechnic Campus*, 2011).

The BAS degree offered at ASU-Poly requires an AAS degree to transfer into any of 19 different concentrations, which fall into the following broad categories:

- Aviation Management;
- Electronic and Energy Systems;
- Emergency Management;
- Graphic Information Technology;
- Manufacturing Technology and Management; and
- Software and Computer Systems.

A review of curriculum checklists indicates that course requirements for these degrees are split relatively evenly between general education requirements (19 credit hours), technical course work (20 credit hours), and managerial course work (15 credit hours), with an additional 6 credit hours of electives added to the transferred associate degree. Institutional administrators interviewed during our first site visit in winter 2009 indicated that the BAS concentrations were undergoing a revision process to consolidate and streamline the programs.

Students in ASU-Poly's BAS degree programs tend to be adult, part-time students. To respond to the need of many of these students for geographic access, ASU-Poly offers many of its courses online. Students interviewed during case study visits noted that, even though they were within close proximity to the campus and taking courses on campus, they often took courses online for added convenience or because a course was not offered on campus. Many of the students interviewed indicated they had opted for the baccalaureate program at ASU-Poly to improve their upward mobility in their current places of employment.

   NAU. NAU is one of three universities within Arizona's state Board of Regents and is a member of the Arizona Universities Network. NAU's main campus is located in Flagstaff, approximately 140 miles north of Phoenix, in the north-central region of Arizona. In addition to the main campus, NAU has an "extended campus" system of 34 campuses throughout the state, and it additionally provides courses online for geographically place-bound students. One larger campus is also located in Yuma, approximately 175 miles southwest of Phoenix. The mission of NAU is "to provide an outstanding undergraduate residential education strengthened by research, graduate and professional programs, and sophisticated methods of distance delivery" (*NAU Mission and Values*, 2011). As of spring 2010, NAU had an enrollment of 21,223, which included 13,615 students on the Flagstaff campus, 617 on the Yuma campus, 4,462 on the extended campuses, and 2,429 online.

NAU began offering a BAS degree in 1999, at the Yuma campus. This degree was designed to articulate AAS degrees from any regionally accredited community college in the nation, with concentrations specifically designed for Arizona's community college graduates. According to officials at NAU, the concentrations of the BAS degree have undergone significant changes since they began because of changes in student and workforce demands. Additionally, the BAS degrees at NAU moved from an upside-down, completion-oriented degree model to a more career- and management-focused model, which NAU officials call a "capstone model."

At present, NAU offers the following five specializations:

- Administration;
- Administration of Justice;
- Early Childhood Education;
- Public Agency Management, with concentrations in Emergency Services Administration, Administration of Justice, and Public Agency Administration;
- Management; and
- Technology Management.

In addition to those specializations, two additional specializations, Health Sciences and Computer Technology, have enrollments but are described as being of "closing status," meaning no new students are being admitted to those specializations.

Because of recent changes made by the Arizona Board of Regents, Arizona's universities are allowed to accept up to 75 credit hours of transfer credit from AAS degree holders, which has lowered the number of credits students are required to take at NAU from 56 to 45. The core courses make up 21 of the necessary credits at NAU, and students are additionally required to take 18 to 21 course credits in a specialization. A capstone course is also required for all BAS students prior to graduation.

Florida

The Higher Education Landscape

Florida has an estimated population of 18,537,969, and is the fourth largest state in the nation, by population. The state has 972,699 (5.25% of the total population) students enrolled in higher education. According to the Chronicle of Higher Education's *Almanac of Higher Education 2010*, Florida awarded 65,948 associate degrees and 77,460 baccalaureate degrees in the 2009–2010 school year. The state has 20 public 4-year institutions and 50 public 2-year institutions, along with 56 nonprofit and 104 for-profit institutions. Graduation rates in Florida's 4-year institutions are slightly lower than the national average, with an overall graduation rate of 57.1% (compared with 59.7% for the national average).

During our site visits, Florida officials noted that economic concerns are foremost in the state, with the loss of tax revenues and investment income reducing the state budget. These changes have had detrimental effects on the budgets of all the institutions of higher education. As more than one state and institutional administrator noted, increases in enrollment coupled with reductions in state funding have led to devastating consequences for higher education institutions in Florida.

Community College Baccalaureate Degrees

One feature for which Florida is well-known is the community college baccalaureate. Policies promoting the community college baccalaureate emerged around 2000 and culminated in two significant pieces of legislation passed in 2001. The first authorized one community college, St. Petersburg College (SPC), to award five baccalaureate degrees in different fields, such as Nursing, Education, and Applied Sciences (Fla. Stat. § 240.3836, 1999); the second gave broad authorization to the Florida Board of Education to allow community colleges to award

similar baccalaureate degrees (Fla. Stat. § 240.3836, 2001). Authorization is contingent on several factors. The first of these is a documented need for baccalaureate-level education from employers that shows the program will produce workers and improve the economy. The second is evidence that current educational programs are not meeting these demands, leaving an economic sector under capacity and without the potential to grow. The third is that community colleges must demonstrate that they have both the capacity and the resources to support a new baccalaureate program, including demonstrating that they are uniquely important and do not duplicate existing bachelor's degrees. A third piece of legislation, SB 2682, passed in May 2009, details the approval process for community college baccalaureate degrees. As of fall 2009, 14 community colleges (or state colleges, as many have now been called) offer 90 baccalaureate programs. Table 3 summarizes key features of the Florida legislation pertaining to authorization of AB degrees, including those degrees awarded by community colleges.

Table 3. Florida Legislation on the Applied Baccalaureate

Legislation	Passage	Goals or intent	Target audience	Focus	Degrees offered	Requirements or expectations
Fla. Stat. § 1004.73	2000	"Create an innovative means to increase access to baccalaureate degree level education in populous counties that are underserved by public baccalaureate degree granting institutions."	Those seeking employment as teachers, nurses, and business managers	Five specific fields	BS in Nursing; BA/BS in Elementary, Special, and Secondary Education; and BAS degrees selected by the college trustees	The college must seek accreditation from SACS
SB 1162, 2nd Engrossed	2001	Economic well-being, geographic access, to expand on the success of baccalaureate programs offered at university centers on community college campuses	"Place-bound, nontraditional students"	Any workforce area with a local need	No exclusions	Community colleges must show employer demand, an unmet need for graduates, and the resources and capacity to provide baccalaureates
SB 2682	2009	Outlines the Florida college system, allows for CCBs to be offered and colleges to stay part of the college system; allows for colleges to seek renaming as necessary	N/A	Any workforce area with a local need	Any baccalaureate designation	Colleges must exhibit the same as SB 1162, as well as additional information about the students' ability to complete, financial commitment, and timeline.

Note. BS = bachelor of science; BA = bachelor of arts; BAS = bachelor of applied science; SACS = Southern Association of Colleges and Schools; CCB = community college baccalaureate; N/A = not applicable.

AB Degrees

In the 1990s, legislators and postsecondary officials needed to respond to issues related to baccalaureate completion, foremost of which was the state's status as 47th place in the nation in overall baccalaureate degree production. The initial response was to allow SPC, and eventually other community colleges, to award limited baccalaureate degrees, as noted above. Recognizing that many of these degrees were ABs, a 2006 task force on AB degrees created a report on the BAS. This report identified four degree structures under which AB degrees would fall:

- Inverted;
- Management;
- Advanced Discipline and Management; and
- Discipline Saturation.

Two 4-year universities, the University of Central Florida and the University of South Florida, offer AB degrees. However, the provision of these degrees in Florida is more commonly associated with the community and state colleges. These institutions largely have authority to provide any variety of "employment-related" baccalaureate degree programs, including education and nursing. Of the 14 colleges that offer baccalaureate degrees, 13 offer a BAS degree. Among the baccalaureate degrees offered among these colleges, BAS degrees make up a majority of enrollments and degrees awarded. In 2008–2009, more than 600 of the 1,042 bachelor's degrees awarded were BAS degrees.

Table 4 displays information related to the online survey conducted of AB programs in Florida. Results showed survey responses for 22 programs. (Except for one program from SPC, all were data supplied from one survey response.) Based on enrollments, the emerging AB programs in Florida are growing in popularity. For example, the BAS degree at Broward College has more than 600 students enrolled, even though it was implemented only in 2010. Indian River State College (IRSC) and Palm Beach Community College also offer programs with large enrollments, more than 500. IRSC graduated 73 students in 2009–2010 from the Organizational Management program, after a recent start in 2008. Florida's colleges offer a number of models, including the career ladder model used by a Veterinary Technology program. All the AB degree programs in Florida operate under articulation agreements, and most, but not all, accept a full AAS block into the BAS degree. All but two of the AB degree programs (Broward College and Florida State College–Jacksonville) offer some type of online component, in addition to on-campus instruction.

Table 4. Online Survey Responses for Applied Baccalaureate (AB) Degree Programs in Florida

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
Broward College	BAS	Technology Management, Information Technology, Supervision and Management	2010	BAS Division	Upside-down/completion	600	—	Adults	Yes	Yes

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
Chipola College	BAS	Business	2007	College of Business	Management	85	8	Adults	Yes	No
Edison State College	BAS	Public Safety Administration	2006	Law and Public Service Programs	Management	124	27	N/A	Yes	No
	BAS	Supervision and Management	2009	Business and Technical Programs	Management	250	17	N/A	Yes	No
Florida State College at Jacksonville	BAS	Fire Science Management	2007	Military, Public Safety, and Security	Management	—	—	N/A	Yes	Yes
Indian River State College	BAS	Organizational Management	2008	Division of Applied Science and Technology	Hybrid	536	73	Adults	Yes	Yes
	BAS	Health Care Management	2008	Applied Science and Technology	Hybrid	141	10	Adults	Yes	Yes
	BAS	Public Safety Administration	2008	Applied Science and Technology	Hybrid	93	12	Adults	Yes	Yes
Palm Beach Community College	BAS	Supervision and Management	2009	District (central) Office	Management	530	0	N/A	No	Yes
St. Petersburg College	BAS	Veterinary Technology	2005	School of Veterinary Technology	Career ladder	125	20-40	Adults, distance learners	Yes	Yes
	BAS	(12 fields reported in one survey)	2002	Baccalaureate Programs Office (oversight)	Hybrid	—	—	N/A	Yes	Yes

Note. Desig. = degree designation; Year impl. = year implemented; Admin. unit = administrative unit; Enroll. = enrollment; 09–10 grad. = number of graduates in 2009–2010; Target pops. = target populations; Articul. agrmts. = articulation agreements; AAS = associate of applied science; BAS = bachelor of applied science; N/A = not applicable.

Selected AB Program Profiles

SPC and IRSC were selected because they were identified by state officials as having some of the stronger AB programs in the state. Both institutions began as traditional associate degree-granting institutions and evolved to "state college status" after awarding baccalaureate degrees.

SPC. SPC was formerly a 2-year junior college and has since become one of Florida's "state colleges" after receiving authority to award baccalaureate degrees. The campus is located in St. Petersburg, a small peninsula approximately 20 miles southwest of Tampa, on Florida's west coast. In addition to SPC's main campus, the college has eight "learning sites," or

campuses, within the county (Pinellas County). SPC also offers online access to several courses and programs through their *eCampus*, and the college enrolls more than 20,000 national and international students annually (*St. Petersburg College*, 2011).

SPC is the first community college in Florida to receive authorization to award baccalaureate degrees, through legislative mandate, in 2001. With the legislation also came the name change, from St. Petersburg Junior College to St. Petersburg College. In addition to four BA or BS degrees in nursing or education, SPC was authorized to create BAS degrees. According to the legislation, the BAS degrees were intended to be in "fields selected by the Board of Trustees of St. Petersburg College. The Board of Trustees shall base the selection on an analysis of workforce needs and opportunities in [surrounding] counties. . . ." The Board of Trustees was further required to ensure the provision of an associate degree that would fully articulate with any AB degrees created. SPC was formally accredited by the Southern Association of Colleges and Schools (SACS) to award baccalaureate degrees.

SPC offers BAS degrees in 11 different fields: Banking, International Business, Management and Organizational Leadership, Sustainability Management, Technology Management, Dental Hygiene, Health Services Administration, Orthotics and Prosthetics, Paralegal Studies, Public Safety Administration, and Veterinary Technology. These degrees are housed in a number of colleges, including Technology and Management, Health Sciences, Policy and Legal Studies, Public Safety Administration, and Veterinary Technology.

BAS degrees offered by the College of Technology and Management (Banking, International Business, Management and Organizational Leadership, Sustainability Management, and Technology Management) require a capstone course and a subsequent project as part of degree completion.

   IRSC. IRSC is another of Florida's state colleges, formerly named Indian River Community College before being granted authority to award baccalaureate degrees. The campus is located in Fort Pierce, approximately 120 miles north of Miami and 150 miles east of Tampa, on the east coast of Florida. In addition to the main campus of the college, it has four additional campuses and 11 centers located throughout a four-county area (*Indian River State College*, 2011). Besides the baccalaureate options offered at IRSC, the college offers associate degrees (associate of arts, associate of science, and AAS) and certificates, with a total enrollment of 33,382 students.

IRSC received authorization from the Florida State Board of Education to award baccalaureate degrees in July 2006. Because legislation was passed in 2001 allowing community colleges to apply for authorization to award baccalaureate degrees, no additional authorization beyond the Board was required. After receiving appropriate accreditation from SACS, IRSC began offering upper division course work in January 2008.

The first authorization from the State Board allowed IRSC to offer a BAS degree in Organizational Management (with concentrations in Organizational Management, Health Care Management, and Public Safety Administration), a BS in Nursing, and BS degrees in five areas of education (Exceptional Student Education, Middle Grades Mathematics, Secondary Mathematics, Middle Grades Science, and Secondary Biology). In 2009, IRSC applied for

authorization to award 2 new degrees, in Human Services and Digital Media. In 2010, the Board of Education granted IRSC authorization to award a BS in Human Services (with concentrations in Youth and Family Studies, Addiction Studies, and Human Services [Generalist]) and a BAS in Digital Media (with concentrations in Graphics and Web Design, Gaming and Video, and Modeling and Simulation). The BAS degrees, as well as the BS degree in Human Services, allow full transfer of AAS and technical associate of science degrees, qualifying them as AB degrees. Additionally, IRSC and the Florida Board of Education consider the BSN degrees offered at IRSC and other colleges to be AB degrees.

According to officials at IRSC, the degrees were created primarily to target geographically place-bound individuals in IRSC's four-county area, and to facilitate transfer of associate degrees, including technical associate degrees. Curricula for these degrees require 36 credits of general education, 18 to 36 credits within the technical core, 18 to 36 credits of major or concentration courses, and 24 credits of elective courses, with a 6-credit capstone course required of all baccalaureate degree students.

Kentucky

The Higher Education Landscape

Kentucky has an estimated population of 4,314,113. The state has 257,583 students enrolled in higher education. According to the Chronicle of Higher Education's *Almanac of Higher Education 2010*, Kentucky awarded 10,148 associate degrees and 19,639 baccalaureate degrees in the 2009–2010 school year. The state has 8 public 4-year institutions and 16 public 2-year institutions, along with 27 nonprofit and 49 for-profit institutions. Graduation rates in Kentucky's 4-year institutions are lower than the national average, with an overall graduation rate of 45.1% (compared with 59.7% for the national average).

During our case study research, state officials at the Council on Postsecondary Education (CPE) were asked to describe several prominent issues facing the state concerning higher education. For many within the CPE, the primary issue Kentucky faces is facilitating increased degree attainment. A primary campaign undertaken by the CPE is the "Double the Numbers" campaign, first legislatively outlined in 1997 and then implemented in 2000 (Council on Postsecondary Education, 2007). This campaign involves participation from K-12 education, the Kentucky Community and Technical College System, and 4-year colleges and universities. State officials projected the state could "double the numbers," meaning the state would have to increase the number of degrees annually from approximately 400,000 to 800,000.

To accomplish this goal, the CPE has outlined five overarching goals:

1. Raise high school graduation rates;
2. Increase the number of GED graduates and transition more to college;
3. Enroll more first-time students in [the Kentucky Community and Technical College System] and transfer them to 4-year programs;
4. Increase the number of Kentuckians going to and completing college; and
5. Attract college-educated workers to [Kentucky] and create new jobs for them. (CPE, 2007, pp. 10–14).

Although the CPE officials interviewed noted that they would have some involvement in all these goals, the ones of primary importance to the CPE are Goals 3 and 4 (enrollment of first-time students and transfer to 4-year programs, and increasing the number of Kentuckians going to and completing college). To respond to the need to generate more baccalaureate degree holders, an additional entity, the Department for Adult Education and Literacy, was co-located with the CPE, enhancing the emphasis of the agency on adult and postsecondary education.

AB Degrees

Beginning in 1997, higher education reforms emphasized improving the seamlessness between educational levels. This effort culminated in a 2003 report entitled "Creating a Seamless System: Focus on Transfer," which outlined the steps Kentucky's CPE had taken to improve transfer (CPE, 2003). The report also called for additional dialogue. In May 2004, a group called the Seamlessness Policy Group proposed that Kentucky look for a "more flexible, student-oriented transfer [framework] and a more standardized process for certifying and accepting transfer coursework" (CPE, 2004, p. 1). Among the recommendations made by this report was the suggestion that all 4-year institutions provide degrees that would "provide . . . AAS degree-seeking students with a direct articulation to a bachelor's degree program at a participating university" (p. 1). This recommendation actually reiterated a proposal made in the 2003 report, thereby reconfirming the importance of transfer for AAS degree holders.

In 2004, Kentucky's CPE endorsed the requirement that all public 4-year institutions implement completion degree programs that would allow all associate degree programs to transfer. At present, all 4-year public universities have implemented or are pursuing curricular options for these degrees. Largely focused on helping students finish their general education requirements for the degree, these completion-oriented degrees have provided one viable way to increase the number of baccalaureate degree holders in the state.

Table 5 displays results of the online survey of AB program administrators conducted in Kentucky. Of the seven AB or completion degree programs offered in the state, only two provided survey responses. Neither enrollment nor graduation data were provided in the survey responses, so it was not possible to draw conclusions about the size of these programs. From our interactions with state-level administrators in Kentucky, we learned that these completion programs do enjoy large enrollments (in the hundreds to thousands) despite the lack of evidence in this report owing to nonresponse to the survey. Only one university provided information on articulation agreements. This school indicated that articulation agreements are used in conjunction with AB degree programs and that the full AAS block of credits is accepted into the AB degree program. Neither AB program reported having an online component.

Table 5. Online Survey Responses for Applied Baccalaureate (AB) Degree Programs in Kentucky

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agmts.	Full AAS block
Kentucky State University	BS	Applied Information Technology	2005	Division of Computer Science and Technology	Hybrid	—	—	No response	Yes	Yes
Western Kentucky University	BIS	10 Emphasis Areas	—	University College	Hybrid	—	—	No response	No response	No response

Note. Desig. = degree designation; Year impl. = year implemented; Admin. unit = administrative unit; Enroll. = enrollment; 09–10 grad. = number of graduates in 2009–2010; Target pops. = target populations; Articul. agrmts. = articulation agreements; AAS = associate of applied science; BS = bachelor of science; BIS = bachelor of interdisciplinary studies.

Selected AB Program Profiles

Western Kentucky University (WKU) and Morehead State University (MoSU) were selected because they were identified by state officials as having some of the stronger AB programs in the state. The two institutions represent two traditional baccalaureate degree-granting institutions located in different geographic regions of the state, with distinctive organizational and institutional delivery approaches.

WKU. WKU is identified as one of the regional universities of Kentucky's system of public higher education. The university's main campus is located in Bowling Green, approximately 150 miles southwest of Lexington. The university also has campuses in Glasgow, 30 miles east of Bowling Green; Elizabethtown, 70 miles northeast of Bowling Green; and Owensboro, 70 miles northwest of Bowling Green. The university offers bachelor's through doctoral degrees, with most degrees at the bachelor's and master's levels. [The only doctoral program offered at WKU is a doctor of education (EdD) degree in Educational Leadership].

WKU offers several degrees that meet our definition of AB, all of which are housed within the University College, a wing of the university designed to focus on nontraditional students and educational plans. The degree most commonly awarded within this group is its completion degree, a bachelor of interdisciplinary studies (BIS). The BIS degree, according to the WKU web site, "provides an alternative 4-year program for nontraditional students who do not need or desire the academic specialization involved in traditional major or major/minor programs." The program requires an "area of emphasis" of 36 credit hours, which includes a capstone course, 30 credit hours of upper division course work, 44 credit hours of general education, and enough electives to reach 120 undergraduate credits. Areas of emphasis are broad, ranging from the arts to technology. The program requires that 25% of the credits (and one-third of the emphasis hours) be earned "in residence"; the rest of the program is available online (*Western Kentucky University*, 2011).

Another degree offered by WKU that qualifies as an AB degree is the BS in Computer Information Technology. The degree is offered as both a stand-alone degree and as a transfer degree, but degrees, including AAS degrees that transfer to the Computer Information

Technology degree, are individually articulated at WKU. The university actually has agreements with institutions in Kentucky, Georgia, Indiana, South Carolina, Tennessee, and Texas, suggesting both the uniqueness of and the potential draw for this degree. Students transferring into the program are required to take at least 36 credits of Computer Information Technology courses. They must meet all general education requirements and have 120 credits in total for baccalaureate degree conferral.

A third degree that qualifies as an AB at WKU is the Systems Management degree, which was implemented in 2007 and represents the management model. The degree requires eight Systems Management courses, five courses in a "professional concentration," and three departmental electives.

  MoSU. MoSU is a single-campus university located in Morehead, approximately 65 miles east of Lexington. MoSU offers degrees from the associate degree through the doctoral level, additionally providing doctoral-level education via an agreement with the University of Kentucky. In fall 2008, the latest date these data were available, MoSU enrolled 7,487 undergraduate and 1,494 graduate students.

MoSU offers several degrees that allow the transfer of AAS degrees and course work and that fit the description of AB degrees. Foremost among these degrees is the completion degree option, denoted as a bachelor of university studies. This degree is offered solely online, and it targets students "who have earned an AAS degree . . . and do not want to enter into a [MoSU] baccalaureate program that has an articulated degree transfer program agreement." Students who wish to complete this degree must acquire 128 credits, 43 of these at the 300 level and above. The option specifically designed for AAS students requires a "planned field of study," a concentration requiring 18 to 30 credits. The AAS degree makes up 64 credits of this 128-credit plan (*Morehead State University*, 2011).

Students who receive an AAS degree in a technology field are able to transfer into MoSU's BS in Technology Management. This degree is intended to "meet the expanding need for challenging jobs in technology and engineering management" and specifically targets AAS degree holders looking for a completion option with a more specialized focus. Students in the Technology Management program are required to complete 22 credits of general education, 34 credits in technology management, and 4 credits of electives in addition to the transferred associate degree.

MoSU also offers several degrees for AAS graduates in specific fields. Students with an AAS in Radiology are given the option to transfer directly into MoSU's BS in Imaging Sciences. Although this degree directly articulates with several community and technical colleges, MoSU also offers an AAS in Radiology, creating a natural stepwise progression for students interested in working toward the baccalaureate degree. Another degree at MoSU is its BS in Industrial Technology. This degree is individually articulated with an AAS degree at Ashland Technical College, the AAS in General Occupational/Technical Studies. This baccalaureate degree has several options, such as Manufacturing/Robotics and Graphic Communications.

Oklahoma

The Higher Education Landscape

Oklahoma has an estimated population of 3,687,050. The state has 206,757 students enrolled in higher education. According to the Chronicle of Higher Education's *Almanac of Higher Education 2010*, Oklahoma awarded 9,457 associate degrees and 19,218 baccalaureate degrees in the 2009–2010 school year. The state has 17 public 4-year institutions and 32 public 2-year institutions, along with 14 nonprofit and 17 for-profit institutions. Graduation rates in Oklahoma are lower than the national average, with an overall graduation rate of 47.1% (compared with 59.7% for the national average).

According to higher education administrators in Oklahoma, the most prominent challenges facing higher education are funding and how to maintain academic quality in light of reduced funding. Although the decline in the national economy has not affected Oklahoma as greatly as in other states, institutions have to respond to increased enrollments as individuals return to college seeking credentials and, ultimately, jobs. A substantial amount of current financial support for higher education comes from federal stimulus funds that are scheduled to end in 2011.

Another major challenge the state faces is geographic access. Many areas have no large cities within a 2-hour drive. Several smaller institutions were created to provide access to rural citizens. A unique feature of Oklahoma that partially responds to the issue of geographic access is the prominence of Technology Centers, a part of Oklahoma's Department of Career and Technology Education. The state currently has 29 Technology Centers. These centers are considered independent from Oklahoma postsecondary institutions and are not directly funded by any state agency; instead, they are supported by local taxes, occasional state grants, and federal Carl D. Perkins funds. These centers were historically designed to provide technical education to high school graduates, but without transferable associate or baccalaureate degree credits. Recently, the state has been allowing these Technology Centers to provide limited credit, awarded by college partners, toward applied associate degrees *only*, which has fed more students into AB degrees. Until this development, course work offered by Technology Centers had been considered terminal.

AB Degrees

AB degrees in Oklahoma are offered in eight 4-year institutions, and in two of OSU's historically 2-year branch campuses. The two selected institutions in this state profile reflect cases of different types of institutions that offer AB degrees. Although the AB degrees were created largely as part of institutional commitment, rather than being codified in state legislation, state-level administrators appear supportive of AB degrees and are actively working to educate employers and educators on their value. Institutions that create new degree programs are required to follow a standard review policy that consists of a review conducted every 5 years to determine whether academic quality is being maintained. Since 2004, the OSU system has authorized two OSU 2-year technical branches (Oklahoma City and Okmulgee) to award a limited number of AB degrees. These institutions required special consideration from the Regents because of their 2-year, primarily associate degree-granting, missions.

Support for these degrees is related to another initiative, called the Reach Higher initiative, which is designed to facilitate transfer for adult students through a collaborative program supported by nine public universities. In this initiative, students take accelerated, short-term, 8-week courses, primarily offered online, to accelerate their progress toward a baccalaureate degree. Such programs are representative of state-level administrative support of baccalaureate degree completion for underserved populations.

Table 6 displays online survey results for four higher education institutions, two traditional baccalaureate degree-granting institutions, and two branch campuses of OSU. Of the 15 AB degree programs identified in the state, these results represent 7, or nearly half, of the programs. Two of the AB degrees offered by the traditional baccalaureate degree-granting institutions have an Applied Technology focus, and the third program is offered in Applied Liberal Arts. This program, along with others identified in other states, provides an indication of the breadth of AB degree programs and the variety of applied associate degrees that are allowed to transfer. The Applied Technology BAT from Rogers State University (RSU), for example, is flexible enough to allow many technology-based AAS degrees to transfer, with specialized course work customized at the upper division level based on what each student needs. Enrollments in these three AB programs vary widely, from 5 students in the BAT program at the University of Central Oklahoma to 72 students in the BAT degree program at RSU. The two branch campuses offering 2-year degrees have substantially different AB degree programs, with each having highly specialized degrees that allow specific AAS degrees to transfer, such as the BT in Emergency Responder Administration that is available at OSU–Oklahoma City. Regardless, the programs at these branch campuses have larger enrollments than those reported at 4-year institutions in this survey. Three programs (the BT degree program in Applied Technology at RSU, the BT in Information Assurance and Forensics at OSU–Okmulgee/Institute of Technology, and the BT in Emergency Responder Administration at OSU–Oklahoma City) have an online component, in addition to on- and off-campus classes. These programs enroll a relatively large number of students; however, the largest AB degree program (BT in Information Technology and Civil Engineering Technology at OSU Institute of Technology [OSU-IT]) does not include online instruction.

Table 6. Online Survey Responses for Applied Baccalaureate (AB) Degree Programs in Oklahoma

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
Oklahoma State University–Oklahoma City	BT	Emergency Responder Administration	2007	Human Services	Management	140	60	Adults, students of color, students with disabilities	Yes	Yes
Oklahoma State University–Okmulgee/ Institute of Technology	BT	Instrumentation Technology and Civil Engineering Technology	2004	Engineering Technologies Division	Career ladder	298	~40	Adults, displaced/ unemployed, students of color, students with disabilities	Yes	Yes

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
	BT	Information Assurance and Forensics	2004	Information Technologies Division	Career ladder	~235	31	N/A	Yes	Yes
Rogers State University	BT	Applied Technology	2000	Department of Applied Technology	Hybrid	72	14	Adults	Yes	No
University of Central Oklahoma	BS	Applied Liberal Arts		Department of Humanities and Philosophy, College of Liberal Arts	No response	30	9	N/A	Yes	Yes
	BAT	Technology Application Studies	2004	Department of Mass Communication, College of Liberal Arts	Management	5	1	N/A	Yes	Yes

Note. Desig. = degree designation; Year impl. = year implemented; Admin. unit = administrative unit; Enroll. = enrollment; 09–10 grad. = number of graduates in 2009–2010; Target pops. = target populations; Articul. agrmts. = articulation agreements; AAS = associate of applied science; BT = bachelor of technology; BS = bachelor of science; BAT = bachelor of applied technology; N/A = not applicable.

Selected AB Program Profiles

OSU-IT and RSU were selected because they were identified by state officials as having some of the stronger AB programs in the state. The two institutions represent two traditional baccalaureate degree-granting institutions located in different geographic regions of the state and with distinctive organizational and institutional delivery approaches.

OSU-IT. OSU-IT, located in Okmulgee, approximately 40 miles south of Tulsa and 100 miles east of Oklahoma City, is one of two technical branches of the OSU system in the east-central region of the state. Most of the degrees awarded by this branch are 2-year technical associate degrees (at least 30 of these degrees are offered). According to the institutional web site, "[OSU-IT]'s mission is to serve as the lead institution of higher education in Oklahoma and the region providing comprehensive, high-quality, advancing technology programs. . . ." (OSU-IT, 2011).

In 2004, OSU-IT was given authorization from the OSU system to award bachelor's degrees in technical areas. This was due in part to conversations at 4-year OSU campuses regarding the move of their technical baccalaureate programs to 2-year campuses. Although these 4-year campuses retained their technical degrees, conversations continued regarding the feasibility of OSU-IT and OSU–Oklahoma City awarding BT degrees.

At present, OSU-IT offers BT degrees in three areas: Information Assurance and Forensics, Instrumentation Engineering Technology, and Civil Engineering Technology. These degrees are highly technical, transferring with only a limited number of AAS degrees, with their primary purpose being workforce preparation. These degrees require 44 to 54 credits of general education prior to graduation, and students are required to participate in internships. The degrees are not

specifically targeted to adult students, but many students are older than the traditional college age and are employed at the time they enroll. Several students we interviewed indicated that the rigor of the program did not afford them enough time to work full-time while enrolled. Students who plan to enter the BT programs at OSU-IT from their first year of postsecondary education are required to enroll only in an associate degree program, and they can only apply for the BT once they are near graduation at the associate level. The BT degrees at OSU-IT all boast a 100% postgraduation employment rate.

It is important to note that the BT degree in Information Assurance and Forensics from OSU-IT is separately accredited by the Accreditation Board for Engineering and Technology. The accreditation of associate-degree engineering and technology programs by the Accreditation Board for Engineering and Technology is rigorous and includes a review of faculty size and credentialing, curricular development, the technology infrastructure, and outcomes assessment.

RSU. RSU is a 4-year university with campuses in Claremore, Bartlesville, and Pryor. The main campus is in Claremore, approximately 30 miles northeast of Tulsa, in the northeastern region of the state. As a unique feature, RSU offers primarily associate and baccalaureate degrees, having historically been an associate degree-granting institution until it received legislative authorization to award baccalaureate degrees in 2000. The university remains committed to a technical education mission (*Rogers State University*, 2011).

In addition to the traditional baccalaureate degrees (e.g., BA, BS, BSN, and bachelor of fine arts) developed after 2000, RSU offers one BT degree in applied technology (BTAT). This degree was created in large part to respond to the needs of RSU's AAS graduates who were unable to transfer a significant part of their associate degree to a baccalaureate degree program. As a result, the degree was designed to articulate with a large number of applied associate degrees, offering both a business and a technical component. Although RSU has a completion degree program (BS in Organizational Leadership), it requires transfer of all general education requirements, limiting access by AAS graduates. As a result, the BTAT is often given as an option to holders of technical associate degrees because a large portion of the credits required for the BTAT are transferable technical courses. Regardless, administrators at RSU think one of the greatest advantages of this program is its flexibility to articulate credits with a number of degrees.

The 120-credit BTAT degree program requires 41 credits of general education, 37 hours as part of a "professional program core," which is largely management related; 30 credits in a "technical specialty," which an AAS typically fulfills; and 12 credits of electives. To graduate, students must also fulfill a capstone project that satisfies requirements for one of the professional program core courses. This capstone project culminates in a final paper and presentation that is developed over the final semester and that involves the student, the capstone instructor, and a faculty mentor. Using a management-related process of creating weekly deliverables and having continuous advising, students conduct "secondary research" on a topic of interest, develop a business plan for a new company, or present a new invention or product.

The degree plan and course work requirements for this AB degree were designed with involvement from an advisory board made up of employers, students, and graduates, along with institutional administrators and faculty. Students who anticipate moving on from the BTAT to a

master's in business administration program can take courses that fulfill prerequisites for the graduate program and can qualify for BTAT credit.

Texas

The Higher Education Landscape

The estimated population of Texas is 24,782,302, with 1,327,148 students enrolled in higher education. The Chronicle of Higher Education's *Almanac of Higher Education 2010* shows 45,867 degrees awarded at the associate level and 98,205 degrees awarded at the baccalaureate level. The number of higher education institutions (public and private) is extensive, to accommodate the large citizenry of the state. Specifically, Texas has 45 public 4-year colleges and universities, 64 two-year colleges, 58 nonprofit institutions, and 61 for-profit colleges. The state's report (discussed below), entitled *Closing the Gaps: The Texas Higher Education Plan* (Texas Higher Education Coordinating Board, 2000), indicated the state has 50 community college districts with 74 campuses, and 4 technical colleges with 2 extension centers. The graduation rate for Texas is lower than the national average, at 49.3% (compared with 59.7% for the national average).

Interviews with staff of the Texas Higher Education Coordinating (THEC) Board revealed the importance of the state's strategic plan as a blueprint for policy and program developments since 2000, when the *Closing the Gaps* plan was first adopted. The initial plan and subsequent reports that update goals, tasks, and timelines attempt to give guidance to the enormous higher education system of Texas. The plan was developed with broad-based support, including more than 1,500 individuals representing the educational, business, and political communities, and it offers goals for closing education gaps between Texas and other states.

The *Closing the Gaps* plan (Texas Higher Education Coordinating Board, 2000) specifies that, by 2030, the state of Texas will

- Close the gaps in participation and success in higher education across the state to build a better educated population and workforce through collaboration with institutions of higher education, the public school system, and the business community;

- Close the gaps in excellence by providing the highest quality education programs and services at every college and university and establishing centers of national and international prominence in teaching, research, and public service; and

- Close the gaps in research by building research centers to provide ground-breaking innovations that will drive the economy and raise the quality of life.

Although the AB and community college baccalaureate degrees are not mentioned specifically in the state's *Closing the Gaps* plan, the THEC staff spoke about the contributions that these degrees can make to achieving the state's ambitious participation and success (completion) goals. The commitment to increase baccalaureate attainment by addressing the postsecondary education needs of adults already working and already possessing some college credits is an articulated goal of the plan.

AB Degrees

AB programs have been a part of Texas higher education for more than 30 years, beginning at 4-year colleges and universities and later being adopted by three community colleges that were granted authority to offer specific AB degree programs. These community college AB degrees were created by legislative mandate in 2003 as a pilot project, and in 2007, the pilot designation was removed and the three colleges were authorized to award up to five ABs, all of which required approval of the THEC. Four-year institutions have used the AB degree to assist adult learners who have some credit but no baccalaureate degree. THEC officials estimate that more than 3 million adults in the state have some college credit but no baccalaureate. The provision of AB degrees at both the traditional associate and baccalaureate institutional levels is meant to increase access by providing a way for students who have AAS degrees to transfer their credits to baccalaureate programs.

The THEC defines AB degrees as

> . . . generally flexible degrees that usually involve large transfers of credit, sometimes in the form of associate's degrees. Usually the credit transferred in with the student is in the applied arts and sciences (i.e., business administration, computer application, etc.) and may include a combination of previous coursework and experiential credit. Generally, these degrees are closely tied to specific workforce needs of a region or a state. (Davis & Michie, 2009, p. 4)

According to the regulations of THEC, all baccalaureate programs must include at least 24 semester credit hours of upper level course work, meet Texas general education core requirements, and ensure that all courses are taught by appropriately credential faculty, as defined by *The Principles of Accreditation* of the SACS Commission on Colleges.

Table 7 presents state legislation pertaining to the AB degree in Texas. Included in this table is the newest bill passed by the Texas legislature regarding AB degree programs. The bill commends the three community colleges that have provided leadership for the state in developing AB degree programs, and it endorses a range of program strategies that traditional associate degree-granting and traditional baccalaureate degree-granting institutions should pursue to meet the needs of the growing higher education student population in Texas (THEC, 2010). These include online instruction, flexible scheduling, accelerated instruction, and developing and implementing higher education or university centers at a common location for instruction for a number of higher education institutions. Universities and community colleges are encouraged to partner to develop articulation agreements and better utilize resources efficiently. Although the offering of additional community college baccalaureate degrees and AB degrees is not discouraged, the report suggests additional scrutiny needs to be applied to ensure that whatever programs are recommended are of the highest quality.

Table 7. Texas Legislation on the Applied Baccalaureate

Legislation	Passage	Goals or intent	Target audience	Focus	Degrees	Requirements or expectations
SB 976	2003	Creates a pilot project of the CCB in Texas	No audience specified	Any focus; must be approved by the THEC Board	No more than five in a participating CC.	The CC must show a regional need for the degree, that degrees are not duplicative, and that the CC has the resources to provide the degree.
HB 2198	2007	Removes the "pilot" designation from SB 976	No audience specified	Any focus; must be approved by the THEC Board	No more than five in a participating CC.	Does not expand institutions; only existing institutions are included as eligible program authorities for CCB degree programs
HB 2425	2009	To produce a report that responds to the requirement to examine the success of baccalaureate programs offered at Texas CCs; also considers the feasibility of expanding CCB programs	No audience specified	Any focus	Controlled expansion, with program authorization granted by the THEC Board	Criteria provided as an example for expansion in the state report

Note. CCB = community college baccalaureate; THEC = Texas Higher Education Coordinating Board; CC = community college.

As of August 2009, 21 public universities and 3 public community colleges (Brazosport, Midland, and South Texas) were authorized to offer AB degrees. As of 2008, the year for which annual completion data are the most current, 1,376 degrees were awarded. Over the nearly 20-year period from 1989 to 2008, during which the state tracked AB degrees, 16,194 AB degrees were awarded, with 34% awarded in the last 5 years.

Table 8 presents information related to the online survey conducted of AB programs in Texas. This state has the largest number of identified programs among the six selected states, with at least 41 individual programs offered at 24 different institutions. AB degree conferral in Texas is associated primarily with baccalaureate degree-granting institutions that are mostly regional

comprehensive universities. Most notable among these institutions is the University of Houston's BS degree in Criminal Justice, with an enrollment of 1,792. The program has two different approaches to awarding the AB degree, one as a stand-alone degree and the other as an AAS-transfer degree. (These data were not disaggregated by the respondent, so we were unable to report enrollment data for the specific programs.) However, this AB program is not the only one with a sizable enrollment. Several other AB programs exceed an enrollment of 300, including the Texas State University–San Marcos bachelor of applied arts and sciences (BAAS) degree, the Midwestern State University BAAS degree, and the South Texas College BAT degree. South Texas College is a traditional associate degree-granting institution, and its AB degree programs are the largest of the community college baccalaureate programs in the state.

Most of these programs are depicted as targeting adults, displaced or unemployed working-age adults, and students of color. Of the 15 programs reported via the online survey, all but three operate with some online delivery. These are the general BAAS of Texas A&M University, with no reported enrollees or graduates; and two University of Texas–Pan American BAAS programs in Technology and Liberal Arts, with low enrollment in both programs. Two of the AB degree programs operate completely online: the BAAS program in Emergency Management Administration of West Texas A&M University, with an enrollment of 97; and the BAAS in Applied Technology and Performance Improvement of University of North Texas, with an enrollment of 285. These are not the largest AB degree programs in Texas, but the enrollment is relatively large.

A few other programs in Texas have very small enrollments, such as the University of Texas–Pan American, in which the respondent noted that the program was under consideration for termination because of low enrollment. Whether the AB programs operate under articulation agreements and award the full AAS block of credits toward the AB degree depends on the institution, but a majority responding to the survey indicated they do.

Table 8. Online Survey Responses for Applied Baccalaureate (AB) Degree Programs in Texas

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Targeted pops.	Articul. agrmts.	Full AAS block
Brazosport College	BAT	Industrial Management	2005	Business and Social Sciences Division	Management	130	28	Adults	Yes	Yes
Midwestern State University	BAAS	N/A	1985	College of Humanities and Social Sciences	Hybrid	431	97	Adults	Yes	Yes
Sam Houston State University	BAAS	No focus	mid-1980s	College of Arts and Sciences, Department of Agricultural and Industrial Sciences, BAAS	Hybrid	120	~20	Adults	Yes	Yes

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Targeted pops.	Articul. agrmts.	Full AAS block
				Program						
South Texas College	BAT	Technology Management and Computer Information Technologies	2005	Bachelor of Applied Technology Division	Career ladder	350	90	Adults, displaced/ unemployed, students of color	Yes	Yes
Texas A&M International University	BAAS	No focus		Department of Social Sciences	Upside-down/ completion	N/A	0	Adults	No	No
Texas A&M University–Kingsville	BAAS	Varies		University College	Hybrid	48	10	N/A	No	Yes
Texas State University	BAAS	Applied Arts and Sciences	1973	College of Applied Arts, Occupational Education Program	Hybrid	~300	145	Adults, displaced/ unemployed, students of color	Yes	No
Texas Woman's University	BAS	Health Studies	2008	College of Health Sciences	Management	30	N/A	N/A	No	No
University of Houston–Downtown	BS	Criminal Justice	1980	College of Public Service	Career ladder	1,792	242	Adults	Yes	No
University of North Texas	BAAS	Applied Technology and Performance Improvement		College of Information, Department of Learning Technologies	Upside-down/ completion	285	50	Adults	Yes	Yes
University of Texas of the Permian Basin	BAAS	Industrial Technology	2005	Business	Career ladder	20	2	Adults	No	Yes
University of Texas–Pan American	BAAS	Business Technology and Liberal Arts	1984	College of Social and Behavioral Sciences	Hybrid	5	0	Adults	No	Yes
West Texas A&M University	BAAS	Emergency Management Administration	2001	Political Science and Criminal Justice	Management	97	15	N/A	No	Yes

Note. Desig. = degree designation; Year impl. = year implemented; Admin. unit = administrative unit; Enroll. = enrollment; 09–10 grad. = number of graduates in 2009–2010; Target pops. = target populations; Articul. agrmts. = articulation agreements; AAS = associate of applied science; BAT = bachelor of applied technology; BAAS = bachelor of applied arts and sciences; BAS = bachelor of applied science; BS = bachelor of science; N/A = not applicable.

Selected AB Program Profiles

South Texas College, a traditional associate degree-granting institution, and Texas State University at San Marcos, a traditional baccalaureate degree-granting institution, were selected because they were identified by state officials as representative of two different institutional approaches in the state.

South Texas College. South Texas College was one of three community colleges granted pilot status to begin developing AB degrees in 2003. The South Texas College District began operations in 1993 to serve the counties of Hildago and Starr, a border region with Mexico that has a large Hispanic population. More than 95% of South Texas College students are Hispanic, more than 75% receive some form of financial aid, and more than 60% are first-generation college goers. More than 35% of South Texas students go on to a bachelor's degree program, including AB degree programs operated by South Texas. South Texas College, formerly South Texas Community College, was asked by the consulting network of the SACS Commission on Colleges to remove the word "community" to be considered for a Level II accreditation status. The Board of Trustees and South Texas College leaders, in 2004, underwent a name change, but they made a point of including references to being a community college in their comprehensive mission to prevent concerns related to mission creep or mission drift. Brazosport College and Midland College did not include the word "community" and therefore did not have to undergo a name change.

Two AB degree programs offered by South Texas College are the BAT in Technology Management and the BAT in Computer and Information Technologies (South Texas College, 2011). The programs specify that students must complete 39 to 40 semester credit hours of technical specialty course work from an approved AAS degree for the Computer and Information Technologies degree, and 30 semester credit hours of technical specialty course work from an approved AAS degree for the Technology Management degree. Course requirements at the lower division (freshman and sophomore levels) and the upper divisions (junior and senior levels) are clearly delineated.

South Texas College is interested in expanding its AB degree programs, and it has submitted a proposal to the THEC. Currently, the THEC is conducting a legislatively mandated assessment of AB degrees, with special attention given to the expansion of AB degrees awarded by community colleges. This report will advise the college on the next steps in AB degrees in Texas.

Texas State University–San Marcos. Texas State University–San Marcos has awarded AB degrees for many years, beginning with programs in the 1970s as a way to provide degree completion for military, government, and other workers. The degree programs awarding the BAAS train students as computer systems analysts, secondary school teachers, general operations managers, sales representatives, first-line construction supervisors, operating engineers, and accountants. Between 1989 and 2008, more than 2,800 students received a BAAS degree from Texas State University–San Marcos.

The AB degree (specifically, the BAAS) awarded by Texas State University–San Marcos is designed to be an interdisciplinary program that capitalizes on adults' work experience by

allowing them to count as many as 24 college credits for experience toward their BAAS (15 credit hours are awarded, on average). Students who enroll in the BAAS program are required to enroll in Occupational Education 4350, a course that instructs students in the competencies they need to evaluate their own life and professional experiences. Students are required to prepare a 70- to 100-page portfolio that provides evidence of their professional competencies (Davis & Michie, 2009, pp. 19–20). The process by which students' prior work experience is evaluated includes the development of a portfolio that undergoes blind review based on established criteria and a thorough comparison with past documentation. Credit is offered only for professional and technical experience that is defined according to the *Dictionary of Occupational Titles*. Student portfolios are kept on file for at least 5 years after graduation in case future employers raise questions.

Graduates of the BAAS program are encouraged to enroll in graduate school, including the interdisciplinary graduate programs in the master of science in Interdisciplinary Studies and the master of education with a major in Management of Technical Education. Our interviews with BAAS students and BAAS graduates confirmed that many anticipate enrolling in graduate programs, including (but not exclusively) the two graduate programs supported by Texas State University–San Marcos.

Washington

The Higher Education Landscape

Washington has an estimated population of 6,664,195, with 362,535 enrolled in higher education. The Chronicle of Higher Education's *Almanac of Higher Education 2010* shows 21,194 associate degrees and 29,524 baccalaureate degrees awarded for the 2008–2009 academic year. This statistic shows that Washington awards a high percentage of college degrees at the associate level compared with the bachelor's level, relative to other states. The state's public higher education system encompasses 2 major research institutions, 4 regional comprehensive institutions, and 34 community and technical colleges. Five branch campuses, 10 university centers, and numerous teaching sites are associated with these public institutions. In addition, the state has 28 nonprofit private institutions, and 23 for-profit private institutions. The graduation rate for Washington's 4-year institutions is 68.0%, which is above the national average of 59.7%.

Washington adopted a strategic plan for higher education in December 2007. This *Strategic Master Plan for Higher Education* (Washington Higher Education Coordinating Board, 2008) articulates the need for a higher education system that is capable of delivering up to 40% more degrees at the baccalaureate and graduate levels annually. A related *System Design Plan* (HECB, 2009) calls for the redesign of the delivery system of higher education, including a new process for determining when and where to build new campuses or centers, to develop new programs, to expand e-learning and other delivery modes, and to change college and university missions. The *System Design Plan* also calls for the state's goals to be achieved by the end of a 10-year framework, in 2018; however, the plan was almost immediately extended to 2030 in light of the economy.

The *System Design Plan* (HECB, 2009) consists of the following:
  1. Guiding principles on which to base future growth decisions;

2. A near-term strategy to increase enrollment without major capital investment;

3. The evaluation of major new expansion proposals (new branch campuses, capital investment in university centers, new campuses, or major technology innovations), including an "expand on demand" process that would require significant investments; and

4. A new Fund for Innovation to foster innovation, pilot programs, and partnerships focused on improving access and completion, system productivity, and alternative program delivery.

The plan also articulated the state's commitment to addressing low participation and success rates among rapidly growing racial and ethnic groups and an overreliance on importing degreed workers.

AB Degrees

The expansion of AB degrees at universities, university centers, and community and technical colleges is one of several strategies that Washington is using to increase bachelor's degree production. Several public colleges and universities offer AB degrees, including seven community and technical colleges that were approved to offer eight AB degrees under a pilot program established by the legislature in 2005. Passage of a new state law in spring 2010 addressing the state's *System Design Plan* (HECB, 2009) moved AB degrees from pilot status to regular program status, following normal state program approval processes (Seppanen, 2010). ABs offered by community and technical colleges were first authorized in a bill passed in 2005 (E2SHB 1794), with the goal of improving student access to college (Seppanen, Bloomer, & Thompson, 2005). This bill authorized an expanded role for branch campuses to offer lower division courses and gave transfer students flexibility in admission. The policy also encouraged collaboration among institutions associated with the delivery of baccalaureate-level education, through the implementation of proportionality and co-enrollment agreements. Table 9 provides a summary of legislation pertaining to the authorization and expansion of AB degree programs in the state of Washington.

Table 9. Washington Legislation on the Applied Baccalaureate (AB)

Legislation	Passage	Goals or intent	Target audience	Focus	Degrees	Requirements or expectations
E2SHB 1794	2005	Allows up to four community or technical colleges to offer AB degrees on a pilot basis	No audience specified	Programs that fill a workforce niche	Must be an AB, and degree programs must be approved by the HECB	Demonstrate capacity, quality, faculty qualifications, demand, and no other nearby competing institutions

							09–10 grad.	Target pops.	Articul. agrmts.	Same as before;

SSB 5104	2008	Expands the pilot program by allowing the HECB to allow three additional institutions to offer ABs	No audience specified	Programs that fill a workforce niche	Must be an AB, and degree programs must be approved by the HECB	Same as before; one institution is required to be a technical college
SB 6355, HB 2655	2009–2010	State system design plan; expands the higher education system	No audience specified	Integrates AB degree programs into the HECB program approval process	BAS and related degrees	Provides criteria and a process for community and technical colleges to offer new AB degree programs

Note. HECB = Higher Education Coordinating Board; BAS = bachelor of applied science.

Washington's pilot approach encouraged AB degree-authorized pilot projects at 4-year institutions as well as community and technical colleges. Up to four institutions were offered baccalaureate degree programs in an applied field, and community and technical colleges were allowed to contract with the regional universities, branch campuses, The Evergreen State College, or a combination of these to offer degree programs on their campuses. The state community and technical college system office conducted an analysis and supported the development of AB degrees to ensure they were responding to a documented need to serve students who had completed technical associate degrees and wanted to pursue a baccalaureate. As of spring 2010, state enrollment in AB degree programs was lower than expected, with fewer than 200 enrollees in approximately 35 degree programs.

Table 10 presents information related to the online survey conducted of AB programs in Washington. Of the 16 programs identified in the state, we received responses from 6 higher education programs. Most notable are the diversity of AB models offered by the institutions and the diversity of fields of study. The five traditional associate degree-granting institutions responding to the survey use a variety of program models, including the career ladder, management, and hybrid, whereas Central Washington University, a regional comprehensive university, uses a career ladder model. Despite most of the programs having relatively recent origins, enrollments have grown from 35 to 100 in the four programs that provided enrollment statistics.

Table 10. Online Survey Responses for Applied Baccalaureate (AB) Degree Programs in Washington

Institution	Desig.	Field	Year impl.	Admin. unit	AB model	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	Full AAS block
Bellevue (Community) College	BAS	Radiation and Imaging Sciences	2007	Health Sciences, Education, and Wellness Institute	Hybrid	—	12	Adults	No response	No response

	Desig.	Program	Year impl.	Admin. unit	Career ladder	Enroll.	09–10 grad.	Target pops.	Articul. agrmts.	
	BAA	Interior Design	2010	Arts and Humanities	Career ladder	100	N/A	Adults	Yes	Yes
Central Washington University	BS	Mechanical Engineering Technology	1983	Department of Industrial and Engineering Technology	Career ladder	—	—	N/A	Yes	Yes
Columbia Basin Community College	BAS	Management	2009	Business Division	Management	35	N/A	Adults, students of color	Yes	Yes
Peninsula College	BAS	Management	2006	BAS in Applied Management	Management	40	13	Adults	No	Some
South Seattle Community College	BAS	Hospitality Management	2007	Professional Technical Programs	Hybrid	49	22	N/A	Yes	Yes

Note. Desig. = degree designation; Year impl. = year implemented; Admin. unit = administrative unit; Enroll. = enrollment; 09–10 grad. = number of graduates in 2009–2010; Target pops. = target populations; Articul. agrmts. = articulation agreements; AAS = associate of applied science; BAS = bachelor of applied science; BAA = bachelor of applied arts; BS = bachelor of science; N/A = not applicable.

Data from the online survey as well as interviews conducted as part of our fieldwork suggest most of the AB programs in Washington target adult learners. Most responding colleges indicated that they operate their AB programs using articulation agreements and that they accept a full AAS block of credits that count toward the AB degree. The three AB degree programs with the largest enrollment (i.e., the BAA in Interior Design at Bellevue College; the BAS in Applied Management at Peninsula College, and the BAS in Hospitality Management at South Seattle Community College) offer an online component, although all of them offer course work on a main campus or at a branch or satellite campus.

Selected AB Program Profiles

Central Washington University, a regional comprehensive baccalaureate degree-granting institution, and South Seattle Community College, a traditional associate degree-granting institution, were selected because they were identified by state officials as having some of the earliest and most successful AB programs in the state.

Central Washington University. Central Washington University is located in Ellensburg in the central part of the state, less than 2 hours east of Seattle and 3 hours west of Spokane. Central Washington University has six university locations, including several sites located in close proximity to Seattle (Des Moines, Lynnwood, and Pierce County) as well as at Moses Lake, Wenatchee, and Yakima. Central Washington University also has teaching sites in Kent, Everett, and Mt. Vernon.

The first AB degree programs with the BAS designation approved by the state (in December 2004) were offered by Central Washington University. The three programs are the BAS in Information Technology and Administrative Management, the BAS in Safety and Health Management, and the BAS in Food Service Management. These AB degree programs have been

slow to attract students, although the Information Technology and Administrative Management program had evolved to a sizable enrollment of 115 students by spring 2010, the time of the last visit by the OCCRL staff.

In addition to the main campus of Central Washington University, the most robust of the AB degree programs, the Information Technology and Administrative Management, is offered in various sites in the Seattle–Tacoma metropolitan area, including the Highline Community College campus, the Edmonds Community College campus in Lynnwood, and the Everett Community College campus. These locations are convenient to the largest populated region of the state and are also located on community college campuses where students who completed AAS degrees have familiarity and convenient access. The coordinator of the Information Technology and Administrative Management program noted that many of the students who enroll in the BAS program are working in the field of information technology, and they prefer to continue attending their respective community colleges. Online and hybrid online–classroom instruction is used extensively to deliver classes in the Information Technology and Administrative Management program, as well as in the other BAS programs offered by Central Washington University.

South Seattle Community College. South Seattle describes itself as an "institution [that] is a constantly evolving educational community dedicated to providing quality learning experiences which prepare students to meet their goals for life and work" (*South Seattle Community College*, 2011).

The BAS degree in Hospitality Management prepares students for management positions who have completed the AAS-transfer (AAS-T) degree in Accounting, Business Information Technology, Culinary, or another related area. Information about the program that appears on the South Seattle web site notes that the degree is designed to "remove roadblocks" that prevent students who hold the AAS-T degree from using credits toward their baccalaureate. Other goals include preparing students for the local hospitality industry; serving a diverse student population, including students of color and English as a second language/English language learners; and contributing to the state's goals for higher education and regional economic gain.

As noted, an important aspect of the AB degree is the AAS-T, which was approved in 2002. The AAS-T degree requires a minimum of 20 credits of general education courses drawn from the Direct Transfer Agreement. AAS-T courses are designed for the dual purpose of employment and transfer to a bachelor's degree.

The program coordinator observed that courses focusing on the local hospitality industry and the 1,000-hour internship requirements contribute to a high success rate. This year, 93% of Hospitality Management graduates are continuing to work or are taking new jobs in the local hospitality industry after graduation.

CONCLUSIONS AND RECOMMENDATIONS

The AB degree is a growing phenomenon in the United States, and has shown substantial growth over the past decade. This growth is evident in the number of programs and the fields of study offered as well as in the number of states and institutions that award these degrees. AB

degrees represent a convergence of trends and issues that are receiving national attention, such as the push to improve transfer and award more college credentials, the weakened economy, and the need for the United States to remain educationally competitive on an international scale. AB degrees appear to provide one way for states and higher education institutions to enhance access to the baccalaureate degree for students who heretofore held terminal associate degrees. The degree programs frequently benefit from close ties between postsecondary education institutions and employers. The AB degree may also enhance transfer between traditional associate degree-granting and baccalaureate degree-granting institutions and provide geographic accessibility for place-bound adult learners and other underserved populations.

In looking at the six states that were the focus of Phase 2 of the study, several themes emerged. First, despite a paucity of impact data, state and institutional administrators believe that AB degrees benefit adult learners, particularly those who are currently working or are using the degree as a means for job advancement. Although many AB programs have small enrollments compared with traditional baccalaureate degree-granting programs, the workforce-specific nature of many AB degrees is attractive to working individuals and their employers. Our interviews with students in AB degree programs confirm that they enrolled because of the relevance of the course work to their employment circumstances and because of the convenience of scheduling, including online instruction and, in some cases, credit for prior learning. Some programs, such as the BT degrees at OSU-IT, report 100% job placement of their graduates, a claim that is difficult to ignore.

Table 11 provides a summary of results of the online survey for all six selected states, according to the type of degree, model, program of study, target population, and estimated enrollment and graduation. These results show patterns of degree type by state, with the BAS being the predominant degree. A primary model does not appear to exist for the delivery of AB degree programs, which is indicated by both the diversity of models identified by the survey respondents and the frequent selection of the hybrid model, which is the least well defined of the four types. In terms of program of study patterns, results show a predominance of programs in the STEM fields; in public service occupations, such as public safety, criminal justice, and emergency management; and in business, administration, management, and supervision. Although certainly not the majority, it is noteworthy that some of the AB degrees are offered in general studies, liberal arts, and applied liberal arts, suggesting the degrees are not always specific to one particular occupational field. Finally, the student populations targeted for AB degrees are overwhelmingly populated by adult learners, who also include students of color, unemployed and dislocated workers, students with disabilities, and active military personnel. These results support the diversity of students who enroll in AB degree programs and indicate the importance of these degrees as a potential point of access to the baccalaureate degree.

The findings lead to a number of conclusions about past developments and future potential pertaining to the AB, which follow.

Table 11. Summary of State Applied Baccalaureate Programs (Online Survey Results)

State	Degree type(s)	Model(s)	Programs of study	Target student population	Estimated Program Enrollment (2009–2010)	Estimated Program Graduation (2009–2010)
Arizona	BAS	• Upside-down/ completion • Hybrid • Management • Career ladder	• General • Electronics • Manufacturing • Alternate Energy • Technology Management • Administration (with several specializations) • Supervision • Health Sciences • Criminal Justice • Social and Community Services	• Adults • Students of color • Displaced and unemployed workers • Active duty military	Range of 14 to 157	Range of 5 to 31
Florida	BAS	• Hybrid	• Veterinary Technology • Technology Management • Information Technology • Supervision and Management • Business • Public Safety Administration • Management (several types)	• Adults • Distance learners	Range of 85 to 600	Range of 0 to 73
Kentucky	BS, BIS	• Hybrid	• Applied/Computer Information Technology • Systems Management • Various emphases	• Adults	No response	No response
Oklahoma	BT, BAT	• Hybrid • Management • Career ladder	• Applied Technology • Applied Liberal Arts • Emergency Responder Administration • Information Technology • Civil Engineering Technology • Information Assurance and Forensics	• Adults • Students of color • Students with disabilities • Unemployed and dislocated workers	Range of 5 to 298	Range of 1 to 60

State	Degree type(s)	Model(s)	Programs of study	Target student population	Estimated Program Enrollment (2009–2010)	Estimated Program Graduation (2009–2010)
Texas	BAS, BAAS, BAT	• Hybrid • Management • Upside down/ completion • Career ladder	• Applied Arts and Sciences • Health Studies • Applied Technology and Performance Improvement • Business Technology • Liberal Arts • Industrial Technology • Industrial Management • Emergency Management Administration • Technology Management • Computer Information Technologies	• Adults • Students of color • Unemployed and dislocated workers	Range of 5 to 1,792	Range of 0 to 242
Washington	BS, BAS, BAA	• Career ladder • Hybrid • Management	• Mechanical Engineering Technology • Radiation and Imaging Sciences • Interior Design • Management • Hospitality Management	• Adults • Students of color	Range of 35 to 100	Range of 12 to 22

Note. BAS = bachelor of applied science; BS = bachelor of science; BIS = bachelor of interdisciplinary studies; BT = bachelor of technology; BAT = bachelor of applied technology; BAAS = bachelor of applied arts and sciences; BAA = bachelor of applied arts.

The AB degree provides a transfer pathway to the baccalaureate degree for students who have taken "terminal" applied associate courses or degrees. Historically, applied associate degrees have been considered terminal degrees for those planning to enter the workforce; they have been considered a separate and distinct path that is incompatible with transfer. However, with baccalaureate degrees growing in importance for a large portion of the workforce, including positions that once required a high school diploma, some college, and even an associate degree only, programs of study that provide transfer opportunities are growing and are potentially beneficial to students who have been underserved by higher education.

States play a gatekeeper role in authorizing AB degrees, particularly the community college baccalaureate. Our study found several examples of state-level politicians who pushed for AB and community college degrees, opening a window of opportunity for state administrative personnel to support the implementation of these degrees. Florida and Washington are the most obvious examples. At the same time, we have seen pushback from state officials

who support the traditional, longstanding mission of community colleges to award subbaccalaureate degrees and credentials, and who do not wish to open the door to baccalaureate degree conferral by community colleges. Illinois, Michigan, and Wisconsin, all Midwest states, represent states where the debate over the community college baccalaureate has been contentious. In addition, several states in the New England region have decided not to implement AB programs, either because of a lack of perceived demand for these degrees or because of resistance to implementing these types of degrees, owing to the belief that existing transition options already provide adequate routes of transfer to the baccalaureate.

Ambitious goals to increase college completion in the United States, especially baccalaureate completion, could facilitate growth in AB policy and program implementation. States that are setting aggressive degree attainment goals are adopting a number of strategies to increase degree attainment, with some states offering AB degrees as part of their baccalaureate completion portfolio. Because AB degrees can be awarded by both traditional associate degree-granting institutions and baccalaureate degree-granting institutions, they offer a range of delivery options to higher education systems. In a time when pressures have never been greater to increase the number of college degrees, AB degrees have been attractive. However, the proliferation of degrees that differ from the standard baccalaureate raises legitimate questions about quality and rigor. Increasing the number of baccalaureate degree programs without commensurate quality assurance and accountability does not serve anyone's interests, especially the student's.

Although controversial, the AB degree aligns well with policy agendas that link higher education to workforce development. As a workforce-specific degree, the AB degree is proliferating in STEM fields and in the areas of business and management. In addition, although not considered an AB by our study, baccalaureate degrees in health care and education have undergone significant growth to address workforce shortages in some states. Proponents of AB degree programs argue that students who enroll in these programs are overwhelmingly made up of working adults, and our data confirm this phenomenon. Rather than traditional college-age students, the adult learners who enroll in AB degree programs intend to use the degrees to advance in their chosen occupations. In many cases, they lack alternatives because of the limitations to transferring their applied associate degree credits. Although critics claim the degrees are too narrow, threatening the notion of a broad-based liberal education that is the mainstay of higher education, the demand for higher education that prepares students and graduates for the workforce is not likely to decline.

We offer the following recommendations to continue to advance research and development concerning the AB degree.

Descriptions of AB degree models, programs, and practices are needed at the state and local institutional levels. This information needs to be detailed, categorized, and carefully disseminated so that a wide range of stakeholder groups gain a fuller and deeper understanding of the AB degree programs offered in various postsecondary institutional contexts. The new degree qualification profiles (Adelman et al., 2011) would seem to provide a useful curricular framework for examining competencies associated with various AB degrees, thereby helping the Lumina Foundation for Education and other interested stakeholders understand baccalaureate degrees with a strong applied dimension. Examination of the instructional delivery methods,

including online delivery, is also needed, to better characterize educational experiences from students' perspectives.

Assessments of student outcomes should be conducted for students who have enrolled in and graduated from AB degree programs. To date, no empirical analysis has been done on students' educational and employment outcomes relative to their participation in AB degree programs. To understand the potential of these various degree programs, it is important to know how students benefit, and, by extension, how the organizations to which they matriculate benefit, whether they be employers or other higher education institutions. All six states selected to be part of Phase 2 of our research indicated a keen interest in knowing what has happened to their AB students. Most believed their data systems could accommodate this analysis; however, none had conducted such a follow-up study. Competing priorities and resource constraints had prevented this research from happening, but they indicated they would indeed welcome the opportunity to engage in it.

Building on the last recommendation, to fully understand AB degrees and their impact, it is necessary to conduct further economic analysis. This analysis should address the trajectory of these degrees in terms of their growth and their alignment with workforce needs in states and regions of the country where they have proliferated. It would also be beneficial to understand the economic payoffs associated with these degrees, for individuals as well as for their employers. To fully understand the notion of the "workforce degree" relative to other forms of baccalaureates, it would be useful to analyze this idea and further examine the assumptions and outcomes that relate to it.

Finally, we recommend that the study of AB degrees be set in a larger context of changing higher education systems and higher education reform. AB degrees represent a fascinating case for examining deeper questions central to the future of hig er education, including which students should be served and how, what the value isof college credit and a college degree, how diverse institutions can operate more effectively and efficiently as a higher education system, and what role politics can and should play in reforming the educational system. Addressing these questions in a systematic way would provide insights that have merit for the specific case of the AB, but also for the higher education system as a whole.

REFERENCES

Adelman, C., Ewell, P., Gaston, P., & Schneider, C. G. (2011). *The degree qualifications profile.* Indianapolis, IN: Lumina Foundation for Education. Retrieved from http://www.luminafoundation.org/publications/The_Degree_Qualifications_Profile.pdf

Alfonso, M. (2006). The impact of community college attendance on baccalaureate attainment. *Research in Higher Education, 47*(8), 873–903.

American Association of Community Colleges. (2004). *Improving access to the baccalaureate*. Washington, DC: Community College Press.

Arney, J. B., Hardebeck, S., Estrada, J., & Permenter, V. (2006). An innovative baccalaureate degree: Applied versus traditional. *Journal of Hispanic Higher Education, 5*(2), 184–194.

ASU's Polytechnic Campus. (2011). Retrieved from http://campus.asu.edu/polytechnic

Bailey, T. (2011, February). *Can community colleges achieve ambitious graduation goals?* Presented at the American Enterprise Institute Conference. Retrieved from http://www.aei.org/docLib/Can%20Community%20Colleges%20Achieve%20Ambitious%20Graduation%20Goals%20by%20Thomas%20Bailey.pdf

Bailey, T., Alfonso, M., Scott, M., & Leinbach, T. (2004, August). Educational outcomes of postsecondary occupational students. *CCRC Brief, 22*. New York, NY: Community College Research Center. Retrieved from http://ccrc.tc.columbia.edu/Publication.asp?uid=252

Bragg, Townsend, & Ruud. (2009). *The adult learner and the applied baccalaureate: Emerging lessons for state and local implementation.* Champaign, IL: Office of Community College Research and Leadership, University of Illinois.

Carnevale, A. P., Smith, N., & Strohl, J. (2010, June). *Help wanted: Projections of jobs and education requirements through 2018.* Washington, DC: Georgetown University, Center on Education and the Workforce. Retrieved from http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/FullReport.pdf

Chao, E. L., DeRocco, E. S., & Flynn, M. K. (2007, March). *Adult learners in higher education: Barriers to success and strategies to improve results*. Washington, DC: Employment and Training Administration. Retrieved from http://www.jff.org/sites/default/files/adultlearners.dol_.pdf

Chronicle of Higher Education. (2010). *Almanac of Higher Education 2010*. Washington, DC: Author.

Cohen, A. M. (2003, April). *The community colleges and the path to the baccalaureate* (Research and Occasional Papers Series CSHE.4.03). Berkeley: Center for Studies in Higher Education, University of California. Retrieved from http://cshe.berkeley.edu/publications/docs/ROP.Cohen.4.03.pdf

Cohen & Brawer. (2003). *The American community college* (4th ed.). San Francisco: Jossey-Bass.

Council for Adult and Experiential Learning. (2006). *Building blocks for building skills*. Chicago, IL: Author. Retrieved from http://www.cael.org/pdf/publication_pdf/BuildingBlocksforBuildingSkills.pdf

Council for Adult and Experiential Learning. (2008). *Adult learning in focus: National* and *state-by-state data.* Chicago, IL: Author. Retrieved from http://www.cael.org/pdf/State_Indicators_Monograph.pdf

Council on Postsecondary Education. (2003). *Creating a seamless system: Focus on transfer*. Retrieved from http://cpe.ky.gov/NR/rdonlyres/94802AD5-B65D-4B52-AAAC-FC4F09D587C1/0/20030921_AgendaItem11.pdf

Council on Postsecondary Education. (2004). *Seamlessness policy group: Statewide transfer initiatives*. Retrieved from http://cpe.ky.gov/NR/rdonlyres/29A2EBB8-C86D-456A-A33C-675676BFCBD5/0/20031222_DRAFTstatesideTransferIntitiatives.pdf

Council on Postsecondary Education. (2007). *Double the numbers: Kentucky's plan to increase college graduates*. Retrieved from http://cpe.ky.gov/NR/rdonlyres/76889317-86C5-4AFF-9046-AD95E4137602/0/DoubletheNumbersPlanFINALNov15.pdf

Crosby, O., & Moncarz, R. (2006). The 2004–14 job outlook for college graduates. *Occupational Outlook Quarterly, Fall 2006.* Retrieved from http://www.bls.gov/opub/ooq/2006/fall/art03.pdf

Davis, V., & Michie, A. (2009, August). *Status report: Applied baccalaureate programs in Texas*. Austin: Texas Higher Education Coordinating Board.

Duncan, A. (2010, May 26). *International engagement through education: Remarks by Secretary Arne Duncan at the Council on Foreign Relations meeting.* Retrieved from http://www.ed.gov/news/speeches/international-engagement-through-education-remarks-secretary-arne-duncan-council-forei

E. 2 S. H. B. 1794, 59th Gen. Assem., Reg. Sess. (Wash. 2005).

Fla. Stat. § 1004.73 (2000).

Fla. Stat. § 240.3836 (1999).

Fla. Stat. § 240.3836 (2001).

Floyd, D. L., Skolnik, M. L., & Walker, K. P. (Eds.). (2005). *Community college baccalaureate: Emerging trends and policy issues.* Sterling, VA: Stylus.

Floyd, D. L., & Walker, K. P. (2009). The community college baccalaureate: Putting the pieces together. *Community College Journal of Research and Practice, 33*, 90–124.

Glennon, K. (2005, November). *Community college baccalaureate degrees: A review of issues, policies and other states' programs*. Retrieved from http://www4.nau.edu/insidenau/bumps/12_7_05/Four_year_degree_report.pdf

H. B. 2198, 80th Gen. Assem., Reg. Sess. (Tex. 2007).

H. B. 2425, 81st Gen. Assem., Reg. Sess. (Tex. 2009).

H. B. 2655, 61st Gen. Assem., Reg. Sess. (Wash. 2010).

Hauptman, A. M. (2011, February). *Increasing higher education attainment in the United States: Challenges and opportunities.* Presented at the American Enterprise Institute Conference. Retrieved from http://www.aei.org/docLib/Increasing%20Higher%20Education%20Attainment%20in%20the%20United%20States%20-%20Challenges%20and%20Opportunities%20by%20Arthur%20Hauptman.pdf

Higher Education Coordinating Board. (2009, December). *The system design plan: A statewide plan for moving the blue arrow*. Olympia: Author. Retrieved from http://www.hecb.wa.gov/research/issues/documents/ReportSystemDesign-FINAL2010.pdf

Ignash, J., & Kotun, D. (2005). Results of a national study of transfer in occupational/technical degrees: Policies and practices. *Journal of Applied Research in the Community College, 12*(2), 109–120.

Indian River State College. (2011). Retrieved from http://www.irsc.edu

Jaschik, S. (2009, February 17). The buzz and spin on 3-year degrees. *Inside Higher Ed*. Retrieved from http://www.insidehighered.com/news/2009/02/17/three

Lee, J. M. Jr., & Rawls, A. (2010). *The College Completion Agenda: 2010* progress report. Reston, VA: CollegeBoard. Retrieved from http://www.diversityresources.com/att/CollegeCompletion2010.pdf

Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis, 31*(1), 30-53.

Lumina Foundation for Education. (2007, March). *Returning to learning: Adults' success in college is key to America's future*. Indianapolis, IN: Author.

Moltz, D. (2008, August 22). The community college enrollment boom. *Inside Higher Ed*. Retrieved from http://www.insidehighered.com/news/2008/08/22/growth

Morehead State University. (2011). Retrieved from http://www.moreheadstate.edu

National Center for Education Statistics. (2008). *Career/technical education (CTE) statistics*. Accessed via http://nces.ed.gov/surveys/ctes/tables/index.asp

National Center for Education Statistics. (2009). *Digest of education statistics, 2008* (NCES 2009-020). Washington DC: United States Department of Education

National Commission on Adult Literacy. (2008, June). *Reach higher, America: Overcoming crisis in the U.S. Workforce.* Retrieved from http://www.nationalcommissiononadultliteracy.org/ReachHigherAmerica/ReachHigher.pdf

NAU mission and values. (2011). Retrieved from http://www4.nau.edu/president/missionandvalues.html

Oklahoma State University Institute of Technology. (2011). *Mission.* Retrieved from http://www.osuit.edu/campus_community/mission.html

Pusser, B., Breneman, D. W., Gansneder, B. M., Kohl, K. J., Levin, J. S., Milam, J. H., et al. (2007, March). *Returning to learning: Adults' success in college is key to America's future.* Indianapolis, IN: Lumina Foundation for Education. Retrieved from http://www.luminafoundation.org/publications/ReturntolearningApril2007.pdf

Rogers State University. (2011). Retrieved from http://www.rsu.edu

S. B. 976, 78th Gen. Assem., Reg. Sess. (Tex. 2003).

S. B. 2682, 2009 Gen. Assem., Reg. Sess. (Fla. 2009).

S. B. 6355, 61st Gen. Assem., Reg. Sess. (Wash. 2010).

S. S. B. 5104, 60th Gen. Assem., Reg. Sess. (Wash. 2008).

Schoeff, M., Jr. (2009, July 14). Obama, private sector call for better workforce preparation. *Workforce Management*. Retrieved from http://www.workforce.com/section/news/article/obama-private-sector-call-better-workforce-preparation.php

Seppanen, L. (2010). Development of Washington's community and technical applied baccalaureate degrees. *Update on Research and Leadership, 21*(2), 12–16. Champaign, IL: Office of Community College Research and Leadership, University of Illinois.

Seppanen, L., Bloomer, T., & Thompson, M. (2005, April). *Baccalaureate enrollment growth needed to meet educational needs of technical associate degree graduates* (Research Report No. 05-1)*. Olympia, WA: Workforce Training and Education Board and Washington State Board of Community and Technical Colleges. Retrieved from http://www.sbctc.ctc.edu/docs/data/research_reports/resh_05-1_baccalaureate_apr2005.pdf

Silverberg, M., Warner, E., Fong, M., & Goodwin, D. (2004). *National assessment of vocational education: Final report to Congress.* Washington, DC: U.S. Department of Education. Retrieved from http://www.ed.gov/rschstat/eval/sectech/nave/naveexesum.pdf

Smith, M. (2010, December). Transfer and articulation policies. *StateNotes*. Denver, CO: Education Commission of the States. Retrieved from http://www.ecs.org/clearinghouse/90/70/9070.pdf

South Seattle Community College. (2011). Retrieved from http://www.southseattle.edu/campus/mission.htm

South Texas College. (2011). *South Texas college fact sheet 2009–2010*. Retrieved from http://www.southtexascollege.edu/about/factsheet/pdf/fact0910.pdf

St. Petersburg College. (2011). Retrieved from http://www.spcollege.edu/

Symonds, W. C., Schwartz, R. B., & Ferguson, R. (2011, February). *Pathways to Prosperity: Meeting the challenge of preparing young Americans for the 21st century*. Report issued by the Pathways to Prosperity Project, Harvard Graduate School of Education. Retrieved from http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperity_Feb2011.pdf.

Texas Higher Education Coordinating Board. (2000). *Closing the gaps: The Texas higher education plan*. Retrieved from http://www.thecb.state.tx.us/reports/DocFetch.cfm?DocID=0379&Format=PDF

Texas Higher Education Coordinating Board. (2010). *Feasibility of expanding Texas' community college baccalaureate programs: A report to the 81st Texas legislature.* Retrieved from http://www.thecb.state.tx.us/files/dmfile/IVKCommunityCollegeBaccalaureateReport.pdf

Townsend, B. K. (2007, October). Interpreting the influence of community college attendance upon baccalaureate attainment. *Community College Review, 35*(2), 128–136.

Townsend, B. K., Bragg, D. D., & Ruud, C. M. (2008). *The adult learner and the applied baccalaureate*: *National and state-by-state inventory*. Retrieved from http://education.missouri.edu/orgs/cccr/_files/Final%20Inventory.pdf

U.S. Department of Education. (2006). *A test of leadership: Charting the future of US higher education. A report of the Commission appointed by Secretary of Education Margaret Spellings*. Washington, DC: Author. Retrieved from http://www.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf

Walker, K. P. (2002). The case for the community college baccalaureate degree. *U.S. Society & Values, 7*(1), 15–17.

Walker, K., & Floyd, D. L. (2005). Applied and workforce baccalaureates. In D. L. Floyd, M. L. Skolnik, & K. P. Walker (Eds.), *The community college baccalaureate* (pp. 95–102). Sterling, VA: Stylus.

Washington Higher Education Coordinating Board. (2008). *2008 strategic master plan for higher education in Washington*. Retrieved from http://www.hecb.wa.gov/research/masterplans/documents/2008MasterPlan-fromPRT.pdf

Webber, D. A., & Ehrenberg, R. G. (2010, August). Do expenditures other than instructional expenditures affect graduation and persistence rates in American higher education? *The Progress of Education Reform, 11*(4), 4–5.

Western Kentucky University. (2011). Retrieved from http://www.wku.edu

Yin, R. K. (2009). *Case study research: Design and Methods* (4th ed.). Thousand Oaks, CA: Sage.

Appendix A

The Applied Baccalaureate Project Advisory Committee Members

Davis Jenkins, Chair, Senior Research Associate, Community College Research Center, Teachers College

George Boggs, President (retired), American Association of Community Colleges

Peter Ewell, Vice President, National Center for Higher Education Management Systems

Deborah Floyd, Professor of Higher Education, Florida Atlantic University

Kimberly Green, Executive Director, National Association of State Directors of Career and Technical Education

Beth Hagan, Executive Director, Community College Baccalaureate Association

Paul Lingenfelter, President, State Higher Education Executive Officers

Loretta Seppanen, Assistant Director of Education Services (retired), Washington State Board for Community and Technical Colleges

Judy Wertheim, Vice President for Higher Education Services, Council for Adult and Experiential Learning

Holly Zanville, Lumina Foundation for Education (ex officio)

Appendix B

State	Any AB	4Y ABs	2Y ABs	Prior CCB	AB legislated	Accreditor	No. 2Y ABs	No. 4Y ABs	Decade implemented	AB degree designation
AL	✓	✓				SACS	0	1	1970	BAS
AK	✓	✓				NWCCU	0	1	1990	BST
AZ	✓	✓			✓	NCA-HLC	0	4	1990	BAS
AR	✓	✓		✓	✓	NCA-HLC	0	4	1990	BAS
CA										
CO	✓		✓		✓	NCA-HLC	1	0	2000	Planning phase
CT										
DE	✓	✓				MSCHE	0	1	1980	BAS
FL	✓	✓	✓		✓	SACS	9	2	2000	BAS, BSBA
GA	✓	✓	✓	✓		SACS	4	6	1990	BAS, BS
HI	✓	✓	✓			WASC	1	1	2000	BAS
ID	✓	✓				NWCCU	0	3	1980	BAS, BAT
IL	✓	✓				NCA-HLC	0	11	1970	BS, BAAS
IN	✓	✓	✓			NCA-HLC	1	2	1980	BA, BS
IA	✓	✓				NCA-HLC	0	3	2000	BAS
KS	✓	✓				NCA-HLC	0	3	2000	BAS, BAAS
KY	✓	✓				SACS	0	8	1990	BS, BA, BGS, BUS, BIS, BOL
LA										
ME	✓	✓				NEASC	0	2	2000	BAS
MD										
MA										
MI	✓	✓				NCA-HLC	0	3	2000	BAS, BAA, BS
MN	✓	✓				NCA-HLC	0	7	1990	BAS
MS	✓	✓				SACS	0	1	2000	BAS
MO	✓	✓			✓	NCA-HLC	0	5	1970	BS, BSIT
MT	✓	✓				NWCCU	0	5	1990	BAS
NE	✓	✓				NCA-HLC	0	2	1980	BAS
NV	✓	✓	✓			NWCCU	3	1	2000	BAS
NH										
NJ										
NM	✓	✓		✓		NCA-HLC	0	2	2000	BAS
NY	✓	✓	✓			MSCHE	1	3	1970	BT, BBA
NC	✓	✓				SACS	0	1	2000	BS, BSIT
ND	✓	✓	✓			NCA-HLC	1	3	2000	BAS
OH	✓	✓	✓		✓	NCA-HLC	2	4	1990	BIS, BS, BAOT
OK	✓	✓	✓			NCA-HLC	2	8	1980	BAAS, BAT, BT, BS
OR	✓				✓	NWCCU			2000	Planning phase
PA	✓	✓				MSCHE	0	1	1980	BS
RI										
SC	✓	✓				SACS	0	3	2000	BS, BETM
SD	✓	✓				NCA-HLC	0	2	1990	BATS
TN	✓	✓				SACS	0	1	2000	BAS
TX	✓	✓	✓		✓	SACS	3	15	1980	BAT, BAAS
UT	✓	✓		✓	✓	NWCCU	0	3	1990	BIS
VT	✓	✓		✓		NEASC	0	1	1980	BS
VA										
WA	✓	✓	✓		✓	NWCCU	4	4	2000	BAS, BAA, BS, BA, BT
WV	✓	✓	✓			NCA-HLC	1	4	2000	BAS, BAT
WI	✓	✓				NCA-HLC	0	2	2000	BAS
WY	✓	✓				NCA-HLC	0	1	2000	BAS
Total	**41**	**39**	**13**	**5**	**10**		**33**	**139**		

Note. Accreditors: SACS = Southern Association of Colleges and Schools; NWCCU = Northwest Commission on Colleges and Universities; NCA-HLC = North Central Association of Colleges and Schools' Higher Learning Commission; MSCHE = Middle States Commission on Higher Education; WASC = Western Association of Schools and Colleges; NEASC = New England Association of Schools and Colleges. Degree designations: AB = applied baccalaureate; CCB = community college baccalaureate; BAS = bachelor of applied science; BST = bachelor of science in technology; BSBA = bachelor of science in business administration; BS = bachelor of science; BAT = bachelor of applied technology; BAAS = bachelor of applied arts and sciences; BA = bachelor of arts; BGS = bachelor of general studies; BUS = bachelor of university studies; BIS = bachelor of interdisciplinary studies; BOL = bachelor of organizational leadership; BAA = bachelor of applied arts; BSIT = bachelor of science in information technology; BBA = bachelor of business administration; BAOT = bachelor of applied organizational technology; BT = bachelor of technology; BETM = bachelor of engineering technology management; BATS = bachelor of applied technical science.

Identified Applied Baccalaureate Programs in the Six Selected States

Arizona		
Institution	**Degree**	**Description from web site**
Arizona State University, West Campus	BAS	"Builds upon the knowledge a student gained while pursuing an A.A.S., while providing the management, communication and critical-thinking skills that open career opportunities . . ."
Arizona State University– Polytechnic Campus (formerly Arizona State University–East)	BAS–Aviation Management Technology	"For students who have received training and education in some aspect of the air transportation industry." "Students received an orientation in management practices."
	BAS–Electronic and Energy Systems	No description on web site.
	BAS–Emergency Management	"Opens the door to a challenging career as a professional emergency manager." Need for students with a "solid foundation in scientific and technical disciplines as well as management skills."
	BAS–Fire Service Management	"Prepares students and practitioners to successfully perform managerial duties in fire departments and related fire service industries."
	BAS–Graphic Information Technology	"Goal . . . is to provide management, leadership, critical thinking, and communication skills—along with significant work in a professional specialization."
	BAS–Internet and Web Development Concentration	"Designed to offer the working professional with an A.A.S. degree . . . an opportunity to learn advanced Web site design and development skills."
	BAS–Manufacturing Technology and Management	"Program includes a series of manufacturing-related courses to provide a broad understanding of the complex world of manufacturing."
	BAS–Operations Management Technology	"Prepares students with the skills needed to be effective supervisors and managers in industry, manufacturing, public service, and other service organizations."
	BAS–Software and Computing Systems	"Combines the technical experience gained in the student's associate degree program with a broader education of management, leadership, critical thinking and communication skills."
	BAS–Technical Communication	"Students learn how to produce, design and manage information using both traditional and developing technologies."
Northern Arizona University	BAS–Administration	"For students . . . who seek entry or advancement in a variety of administrative occupations."
	BAS–Administration of Justice	"For students with an associate degree from a community college who seek entry to or promotion within public agencies in the areas of administration or social and community service."
	BAS–Early Childhood Education	"For nontraditional students who have earned the appropriate A.A.S. degree."
	BAS–Emergency Services Administration	"For students with an associate degree from a regionally accredited community college who seek entry to or promotion within public agencies in these areas."

Arizona

Institution	Degree	Description from web site
	BAS–Health Sciences	"For allied health professionals who have earned the appropriate A.A.S. degree." "Plan focuses on health sciences and disease prevention."
	BAS–Justice Systems Policy and Planning	"For nontraditional students who have earned the appropriate A.A.S. or A.A. degree." "Includes coursework in criminology and criminal justice plus upper-division courses to sharpen your communication, computer, and quantitative skills . . ."
	BAS–Public Agency Administration	"For students with an associate degree . . . who seek entry to or promotion within public agencies."
	BAS–Social and Community Service	"For students with an associate degree . . . to provide the education and skills to enter into or seek promotion within careers in government, private, or public agencies whose focus is on public service."
	BAS–Technology Management	"Offers opportunities to advance your career while continuing to work, and to expand your knowledge of organization, management, and technology issues in the IT arena."
University of Arizona–South	BAS–Human Services	"Designed for students who work with people in our community. Students learn basic counseling skills, crisis intervention, mediation skills, and referrals."
	BAS–Network Administration	"Prepares students for entry-level positions in network administration. The curriculum covers telephone, switching, Cisco and related theoretical and application topics."
	BAS–Supervision	"[Students] will learn and develop skills in the supervisory function. The student will come to understand the critical role of supervision in effective organizations and develop the unique skills required to be an effective supervisor."

Note. BAS = bachelor of applied science; AAS = associate of applied science; AA = associate of arts.

Florida

Institution	Degree	Description from web site
Broward College	BAS–Supervision and Management	"Designed as a learner-centered degree program that provides specific program learning outcomes. Students who successfully complete the Supervision and Management degree program will gain technical hands-on skills to include case studies and a capstone project."
Central Florida Community College (not included in the state inventory)	BAS–Business and Organizational Management	"Our primary mission of providing access through an open door philosophy will remain in place. We will also continue our strong focus on the '2 Plus 2' articulation process as the primary means for our students to obtain 4-year degrees."
Chipola College	BAS–Business Management: Accounting Concentration	"BAS students who have earned an AA, AS, or AAS degree, have completed the eight Florida common business prerequisites, have completed the 36 semester general education requirement, and are interested in a career in accounting should select this area."
	BAS–Business Management: General Management Concentration	"BAS students who have earned an AA, AS, or AAS degree, have completed the eight Florida common business prerequisites, have completed the 36 semester general education requirement, and are not interested in Accounting should select this area of study."
	BAS–Business Management: Supervision and Management Concentration	"Because their Associate Degree did not require the completion of the eight Florida common business prerequisites, Supervision and Management is the appropriate area of study for these students."
Daytona State College	BAS–Supervision and Management	"Prepares individuals who already have skills in specific occupational/technical areas for supervisory and management roles and positions."
Edison State College	BAS–Public Safety Administration	"The Bachelor of Applied Science (BAS) in Public Safety Administration degree program is designed as a pathway to advancement for first responders and other professionals dedicated to the safety and welfare of our citizenry."
	BAS–Supervision and Management	"The Bachelor of Applied Science (BAS) in Supervision and Management program is designed to prepare individuals as managerial and supervisory personnel in a variety of professions. The program provides a career and educational pathway."
Florida State College at Jacksonville (previously Florida Community College at Jacksonville)	Computer Systems Networking and Telecommunications (BAS)	"The Bachelors of Applied Science (B.A.S.) degree in Computer Systems Networking and Telecommunications is designed to provide students with the requisite knowledge and skills essential for management of challenging network engineering roles . . ."
	BAS–Fire Science Management	No description on web site.
	BAS–Information Technology Management	No description on web site.
	BAS–Public Safety Management	"The mission for the Bachelor of Applied (B.A.S.) in Public Safety Management degree is to provide Jacksonville residents with the opportunity to attain a degree that will enhance their placement in higher-level management and supervisory positions . . ."
	BAS–Supervision and Management	No description on web site.

Florida

Institution	Degree	Description from web site
Indian River State College	BAS–Organizational Management	"If you're ready to move up to the next level in your career, . . . If you hold an Associate in Science degree or Associate in Applied Science degree, this versatile program offers seamless transfer of your credits into the Bachelor's degree program."
	BAS–Healthcare Management	"The program is specially designed for people who possess skills in a health care field and want to advance to higher level supervisory positions. . . . The rapid growth of the health care industry is fueling the need for managers . . ."
	BAS–Public Safety Administration	"The program is specially designed for people who possess skills in criminal justice, fire science, emergency management or another public safety field and want to advance to higher level supervisory positions. . . ."
Miami Dade College	BAS–Public Safety Management	"The 4-year Bachelor of Applied Science degree is a workforce-driven baccalaureate degree in Public Safety Management designed to provide education and training, resulting in immediate employment possibilities for students in numerous careers in Public Safety."
Palm Beach Community College	BAS–Supervision and Management	"As a graduate of this program, you will have the knowledge, skills and opportunity to pursue managerial-level positions in a variety of careers related to business."
St. Petersburg College	BAS–Banking	"The program was developed in partnership with local banks, industry leaders and the Florida Bankers Association, and is the first of its kind in Florida."
	BS–Business Administration	"This new degree will provide students with a foundation in the following areas of business: economics, accounting, finance, management, marketing, business law, statistics and operations management."
	BAS–Educational Studies	"The Educational Studies major has been specifically designed for students who want to deepen their understanding of the learning and teaching process, yet seek careers in non-school settings."
	BAS–Dental Hygiene	"This degree is the first and only Baccalaureate Program in Dental Hygiene in the State of Florida and is currently one of the largest degree completion programs in the nation."
	BAS–Health Services Administration (formerly Interdisciplinary Health and Human Studies)	"This program provides career advancement for entry-level health profession practitioners. Classes are offered online, blended, modmester (8-week session) and some of the courses are offered in the traditional classroom."
	BAS–International Business	"Students . . . will be prepared to gain international employment in a variety of industries such as banking, consulting, international trade, and information technology."
	BAS–Orthotics and Prosthetics	"Upon completion of the program, graduates are eligible to enter a NCOPE residency training program in either orthotics or prosthetics. Upon completion of the 1-year residency program, graduates will qualify to sit for the ABC National Certification exam."
	BAS–Management and Organizational Leadership	"This degree program is designed with the active assistance of business and industrial leaders. This integrated program will give students a broad range of organizational and management skills necessary for a variety of supervisory positions."

Florida

Institution	Degree	Description from web site
	BAS–Paralegal Studies	"Organizational skills remain one of the highest attributes a paralegal can maintain. A paralegal often performs many tasks that include information gathering, client maintenance, filing systems, calendar maintenance, document preparation, pre-trial investigation, and trial preparation."
	BAS–Public Safety Administration	"This program develops competencies that help students solve management problems, understand finance and budgets, fine tune strategic plans, develop and evaluate programs, enhance human resource potential, increase productivity and address internal organizational issues."
	BAS–Sustainability Management	"Our program's affordable 8-week courses, available online or evening on-campus, help students understand the broad concepts and systems involved in sustainability initiatives. Students with this knowledge can be valuable contributors to the growing sustainability needs worldwide."
	BAS–Technology Management	"This is an innovative, 4-year degree program that strikes a balance between management training and the technology skills needed to make the graduate competitive with a world-class company."
	BAS–Veterinary Technology	No description on web site.
University of Central Florida	BAS–Criminal Justice BAS–Early Childhood Education BAS–Health Services Administration BAS–Industrial Operations BAS–Information Technology	"The program builds upon the technical or professional skills acquired in the A.S. to develop competencies in management and communication, with emphasis on developing skills in critical thinking, problem solving and decision making. The curriculum consists of core courses in ethics, management and communication, and a concentration chosen by the student."
	BAS–Interdisciplinary Studies	"The Bachelor of Applied Science serves all A.S. graduates who desire a B.S. degree for career or personal advancement."
	BAS–Information Technology BAS–Legal Studies BAS–Supervision and Administration	"The Bachelor of Applied Science serves all Associate in Science (A.S.) graduates who desire a Bachelor of Science (B.S.) degree for career or personal advancement. The program builds upon the technical or professional skills acquired in the A.S. to develop competencies in management and communication, with emphasis on developing skills in critical thinking, problem solving and decision making. The curriculum consists of core courses in ethics, management and communication, and a concentration chosen by the student."

Note. BAS = bachelor of applied science; BS = bachelor of science; AA = associate of arts; AS = associate of science; AAS = associate of applied science.

Kentucky

Institution	Degree	Description from web site
Eastern Kentucky University	BGS	". . . [D]esigned for students intending to complete a baccalaureate degree whose educational objectives are not aligned with a more traditional degree program."
Kentucky State University	BA–Liberal Studies	"Students who have completed all general University requirements for a B.A. degree, but have not completed the requirements for any particular major, may apply for this general studies 'completion degree' through the Whitney Young School."
Morehead State University	Bachelor in University Studies	"This option is for students who have earned an AAS degree from KCTCS and do not want to enter a [specifically articulated] program."
Murray State University	Bachelor of Independent Studies	" . . . [G]rants students an alternative baccalaureate degree . . . designed for adults with previous college credit . . ."
Northern Kentucky University	Baccalaureate of Organizational Leadership	"[I]ndividuals who need a 4-year degree to advance into supervising, managing, or directing people."
University of Louisville	BS–Workforce Leadership	"This program is a great alternative for adults who need that extra edge in today's job market."
Western Kentucky University	Bachelor of Interdisciplinary Studies	" . . . [A]n alternative 4-year program for non-traditional students who do not need or desire the academic specialization . . ."
	BS–Computer Information Technology	". . . [W]ill prepare you for a career in such technical areas as Web design and programming, database administration, computer network administration, and information security."
	BS–Systems Management	"The [SM] major is open to all interested WKU students. Unlike some other programs, SM does not have a complicated admissions policy or require a series of prerequisite courses before letting you dive into your major."

Note. BGS = bachelor of general studies; BA = bachelor of arts; BS = bachelor of science; KCTCS = Kentucky Community and Technical College System; WKU = Western Kentucky University.

Oklahoma

Institution	Degree	Description from web site
Cameron University	BS–Electronic Engineering Technology	No description on web site.
	BS–Engineering Design Technology	"Students . . . have been placed in engineering level jobs and . . . to supervisory or management levels."
	BS–Information Technology	"Builds upon knowledge gained in the AAS and provides new areas of study."
	BS–Technology	"Provides opportunity for AAS-level technicians . . . to become technologists, supervisors or managers."
Northeastern Oklahoma State University	BT–Fire/Emergency, Manufacturing, or Supply Chain/Logistics	"Designed to serve students who have an AAS degree . . . and who desire a bachelor's degree."
Northwestern Oklahoma State University	BAAS–Technical Management	No description on web site.
Oklahoma Panhandle State University	Bachelor of Technology (BTEC)	No description on web site.
Oklahoma State University–Oklahoma City	BT–Emergency Responder Administration	"This degree program . . . ensure[s] all emergency relief efforts are coordinated for maximum benefit . . ."
Oklahoma State University–Okmulgee/Institute of Technology	BT–Civil Engineering Technology	"Graduates gain a wide range of skills and knowledge in [technical] areas . . ."
	BT–Information Assurance and Forensics	"Prepares graduates to meet the growing need for IT security and digital forensics professionals."
	BT–Instrumentation Engineering	"Students . . . gain in-depth knowledge and training in . . . industry specific problem-solving skills."
Rogers State University	BT–Applied Technology	"For individuals who possess an AAS . . . and need additional education . . . to advance their careers."
Southeastern Oklahoma State University	BAAS	"[This] program can provide the avenue to career advancement or a total change of career."
University of Central Oklahoma	BAT–Technology Application Studies	No description on web site.

Note. BS = bachelor of science; BT = bachelor of technology; BAAS = bachelor of applied arts and sciences; BAT = bachelor of applied technology; AAS = associate of applied science.

Texas

Institution	Degree	Description from web site
Brazosport College	BAT–Business Management	"To educate, train, and develop successful business leaders and managers who are prepared to utilize technology and leadership skills to the competitive advantage of their enterprise."
	BAT–Industrial Management	
	BAT–Process Operations Management	
	BAT–Safety, Health, and Environmental Management	
Midland College	BAT–Organizational Management	"Designed to broaden career opportunities for students and better their chances for promotion to supervisory positions." "Designed to provide a career ladder."
Midwestern State University	BAAS–Criminal Justice	"Provides students the background to pursue employment options in the criminal justice career field."
	BAAS–Liberal Arts	"Designed to fulfill the needs of students who wish to prepare for the challenges of today's world by acquiring the skills and tools provided by a broadly based liberal arts education."
	BAAS–Traditional	"Designed to offer students with workforce education, vocational-technical training and/or professional experience in occupational fields the opportunity to obtain a baccalaureate degree."
Sam Houston State University	BAAS	"To provide an educational program to allow students with technical AAS degrees from accredited community/junior colleges to seamlessly continue into the Bachelor of Applied Arts and Sciences degree program."
South Texas College	BAM–Computer and Information Technology	"Will educate, train, and develop successful supervisors who will be prepared to utilize technology to create a competitive advantage for their enterprise."
	BAT–Technology Management	
Stephen F. Austin State University	BAAS	"Designed for people who are pursuing a vocational–technical specialization and desire a bachelor's degree."
Tarleton State University	BAAS–Business Administration Emphasis	"Designed for the student with training in any technical area."
	BAAS–Business Occupations Concentration	"Designed for the student with training in a business-related technical area."
Texas A&M International University	BAAS	"Offers students the opportunity to obtain a baccalaureate degree by building on the coursework they have already achieved."
Texas A&M University–Commerce	BAAS	"Highly flexible degree that will enhance many career paths."

Institution	Degree	Description from web site
Texas A&M University–Kingsville/Texas A&M University–San Antonio	BAAS	"Intended primarily for persons who have a significant amount of technical/vocational training coupled with work experience and need to earn a 4-year bachelor's degree in order to advance in their careers."
Texas State University	BAAS	"Designed for mature adults who need individualized academic programs that award credit for nontraditional forms of learning."
Texas Woman's University	BAAS–Culinary Science and Food Service Management	"This program will enable the student to have a valuable degree that will result in maximizing career opportunities in the culinary arts and the food industry."
	BAS–Health Studies	"[Students] are interested in furthering their career in the applied health field . . ." "The BAS will . . . enable them to advance in their careers to more diverse positions with managerial responsibilities."
University of Houston–Downtown	BAAS–Criminal Justice	"Most AAS students are practitioners with established careers in criminal justice agencies who are seeking to advance themselves in their careers with degrees in higher education."
	BAAS–Safety Management	"Students . . . will be exposed to the human and equipment aspects of safety. They will also be trained in the ability to absorb new technologies generated from industry."
University of North Texas	BAAS–Applied Technology and Performance Improvement	"Combine almost any technical area of study with career development courses to develop a professional career path." "Learn skills in communication, human relations, leadership and management."
	BAAS–Applied Arts and Sciences	"Enhances your previous education and experience while targeting your new career goals."
University of Texas Brownsville	BAAS–Interdisciplinary	"Provides a general bachelor's degree needed for promotions, personal enrichment, to continue towards a master's, or for education."
	BAAS–Applied Business Technology	"Prepares students for careers in business, industry, or services which require skills in business and technology."
	BAT–Computer Information Systems Technologies	"Prepares individuals for various employments in industry, business, banking, services or fields where computer-related knowledge, competencies and skills are essential."
	BAT–Health Services Technology	"Designed to build on a career developed at the AAS level by adding skills in leadership and management, or teaching in secondary and post-secondary education."
	BAT–Technology Application/Training	"Prepares persons for careers in mid-management in industry, public service, and corporate settings with responsibilities in extensive supervision and for instructional responsibilities in vocational/technical instruction, industrial training, and other related fields."
	BAT–Workforce Leadership/Supervision	"Prepares individuals for responsibilities in vocational, business services, governmental, and industrial occupations, and other related fields."
University of Texas of the Permian Basin	BAAS–Industrial Technology	"Offer[s] career advancement opportunities to students who have previously earned the A.A.S. degree." "Will enhance students' technical education and will prepare them with leadership skills relevant in their respective working environments."

Texas

Institution	Degree	Description from web site
	BAAS–Human and Legal Studies	"Will enhance students' technical education and will prepare them with leadership skills relevant in their respective working environments."
	BAAS–Health Professions	
University of Texas–Pan American	BAAS–Applied Business Technologies	"Students . . . will receive preparation in areas that can be applied to different occupations."
	BAAS–Liberal Arts	"Students . . . may be prepared for careers in hotel/motel management or state/federal services in which skills in the use of modern languages are required."
University of Texas–San Antonio	BAAS–Children, Family, and Community	No description on web site.
	BAAS–Criminal Justice	No description on web site.
	BAAS–Infancy and Childhood Studies	"Emphasizes the study of language and reading in early childhood development."
	BAAS–Mexican American Studies	No description on web site.
West Texas A&M University	BAAS–Applied Arts and Sciences	"This degree assumes completion of an associate of applied science degree at a community college or completion of an appropriate occupational certificate prior to starting work on the BAAS degree."
	BAAS–Emergency Management Administration	"Goal is to prepare students for advanced levels of administration and management within the emergency services professions."

Note. BAT = bachelor of applied technology; BAAS = bachelor of applied arts and sciences; BAM = bachelor of applied management; BAS = bachelor of applied science; AAS = associate of applied science.

Washington

Institution	Degree	Description from web site
Bellevue (Community) College	BAS–Radiation and Imaging Science	"Designed for the working professional." "Career-oriented program . . ."
	BAA–Interior Design (January 2010)	"The BAA program provides a learning environment based on a foundation of holistic, creative problem-solving."
Central Washington University	BAS–Food Service Management	"Degree combines knowledge of the dietetic and nutrition field with business management skills."
	BAS–Industrial Technology	"Prepares technical and/or management-oriented professional[s] for employment in business, industry, education, and government."
	BAS–Information Technology and Administrative Management	"Designed to prepare information technology workers with the management, communication, and leadership skills necessary in a variety of businesses."
	BAS–Safety and Health Management	"Graduates will be able to provide technical assistance in . . . workplace and other industrial hazards."
Columbia Basin Community College	BAS–Applied Management	"Designed for those who have earned an AAS degree, but lack the broader business-related education needed to move into leadership positions."
Eastern Washington University	BS–Technology	"Allows students to continue their education by taking liberal arts courses, additional advanced technology courses, and supporting courses to complete a bachelor of science degree."
The Evergreen State University	BA–Interdisciplinary Program	No description on web site.
Lake Washington Technical College	BT–Applied Design	"Designed for one purpose: to advance your career." "Gives you the opportunity to earn a 4-year degree and obtain management and supervisory skills."
Olympic College	BSN	"Designed to foster professional development of the student." "RN-BSN program allows students to broaden their career range . . ."
Peninsula College	BAS–Applied Management	"Designed to enable applicants to combine their lower-division technical or transfer preparation . . . with upper-division credits in business management, resulting in a practical, application-oriented, 4-year degree."
Seattle Central Community College	BAS–Applied Behavioral Science	"Creates a continuing educational and professional pathway for AAS students."
South Seattle Community College	BAS–Hospitality Management	"Will prepare those students who have completed a 2-year technical degree . . . in all facets of the hospitality industry . . ." "Unique in its focus."
Washington State University	BSN	"Program is ideal for the non-traditional adult student managing a demanding schedule. Full and part-time options for study are available and efficient scheduling of courses offers working RN's maximum flexibility."

Note. BAS = bachelor of applied science; BAA = bachelor of applied arts; BS = bachelor of science; BA = bachelor of arts; BT = bachelor of technology; BSN = bachelor of science in nursing; AAS = associate of applied science.

Appendix D

The Applied Baccalaureate (AB) Online Survey Instrument

1.) What is the name of your institution? _____

2.) What is the AB's degree designation?

    a. BAS (Bachelor of Applied Science)

    b. BAT (Bachelor of Applied Technology)

    c. BAA (Bachelor of Applied Arts)

    d. BAAS (Bachelor of Applied Arts and Sciences)

    e. BT (Bachelor of Technology)

    f. BS (Bachelor of Science)

    g. Other (please specify) _____

3.) What is the field of your AB degree program? (Examples include Engineering Technology, Organizational Leadership, etc.) _____

4.) If known, in what year was this degree program implemented? _____

5.) What unit administers your AB program? (Examples include College of Engineering Technology, IT Department, etc.)

AB programs often fit in one of four program models:

- *Career Ladder programs*, which take AAS programs and extend them with advanced academic and technical course work;

- *Management programs*, which take AAS programs and provide business and management-focused course work;

- *Upside-Down/Completion programs*, which take a wide range of AAS programs and supply the general education course work to facilitate baccalaureate completion; and

- *Hybrid programs*, which represent a convergence of two or three models.

6.) What AB model would you consider the best fit for your program? (Choose one option.)

    a. Career Ladder

    b. Management

    c. Upside-Down/Completion

    d. Hybrid

    e. N/A, Other, or Unknown (please explain)

7.) What is the total headcount enrollment of your program as of fall 2010? _____

8.) How many students graduated from your program during the 2009–2010 school year? _____

9.) Does this program specifically target any populations? (Check all that apply.)

    a. Adults (individuals age 25–64)

    b. Displaced/Unemployed Workers

    c. English Language Learners

    d. Immigrants

    e. Students of Color

    f. Students with Disabilities

    g. Other (please specify) _____

10.) Does your AB program have any articulation agreement(s) with associate degree programs or institutions outside your own? _____

    a. Articulated programs and/or comments: _____

11.) If you answered "Yes" above, which party or parties had a part in the creation and development of the agreement(s)? (Check all that apply.)

    a. State-level coordinating/governing board

    b. Your institution

    c. Other institution(s)

    d. Other (please specify) _____

12.) Does your AB program accept the applied associate (typically AAS) degree as a full block of credit toward transfer? _____

13.) What instructional settings are used in the delivery of this program? (Check all that apply.)

    a. On-campus classrooms

    b. Off-campus sites

    c. Online delivery

    d. Distance education not online

    e. Employer/business setting

    f. Other (please specify): _____

14.) What instructional approaches are used in this program? (Check all that apply.)

a. Active learning

b. Capstone experience(s)/project(s)

c. Collaborative or team-based learning

d. Contextualized teaching and learning

e. Customized training

f. Formalized and/or mandatory tutoring (supplemental instruction, etc.)

g. Interdisciplinary or multidisciplinary courses

h. Internships

i. Laboratory or hands-on learning

j. On-the-job training

k. Problem- or project-based learning

l. Other (please specify): _____

These last questions pertain to your willingness to participate in follow-up research and the availability of data should we pursue further research.

15.) Would you be willing to participate in follow-up research on AB degree programs? _____

16.) If you answered "Yes" above, are any of the following student-level data available for your program?

a. Age

b. Gender

c. Race/ethnicity

d. Marital status

e. Employment status during program

f. Enrolled credit hours (per term/total)

g. GPA (course-level/cumulative)

h. AB degree completion

i. Entry into any employment

j. Entry into graduate degree programs

k. Promotion

l. Salary

Comments _____