

Examining Administrators and Faculty Perspectives Regarding Community

College Baccalaureate Degrees in Texas

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## ABSTRACT

To stay competitive in the knowledge-based global economy, businesses in the United States need access to employees with bachelor's degrees. However, there is a growing gap between employers' demand and the supply of baccalaureate graduates from four-year colleges and universities. To expand access to bachelor's degrees, legislators in 18 states have expanded community college degree granting authority to include baccalaureate degrees. Nevertheless, there is little research regarding the development of Community College Baccalaureate (CCB) degrees. The current study addressed a gap in research by examining factors identified through literature review that may have contributed to the development of CCB degrees. The purpose of this quantitative correlational study was to examine faculty and administrator perspectives from three community colleges regarding factors, such as student's need for baccalaureate degrees, workforce need for employees with bachelor's degrees, college's relations with area universities, and expansion of a college's mission, which may have contributed to development of CCB degrees in Texas. Data from a random sample of 530 individuals from Brazosport College, Midland College, and South Texas College were collected through a Web-based questionnaire. Correlation coefficients were computed among four variables of student need, workforce need, college relations, and college mission to determine possible correlations between all possible pairs of variables and to assess whether association existed among all variables or only among certain variables. The results indicated positive correlations among all four variables. Results revealed a strong positive correlation between student need and workforce need  $r(359) = .82, p < .008$ . This high correlation might be explained because the specific CCB degrees developed in Texas were designed to address both students and

workforce needs. In this study, it was concluded that respondents perceived factors of student need and workforce need having had the greatest influence in development of CCB degrees in Texas. Therefore, it is recommended leaders at community colleges exploring CCB degree option assess student need and workforce need in their area before starting the process. In addition, further research is needed to determine the effect of the CCB degrees on baccalaureate degree attainment rates in states that offer such degrees.

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## CHAPTER 1: INTRODUCTION

The United States' economic and educational leadership in the world could be threatened if other industrialized countries continue to exceed the United States in the proportion of their population with college degrees (National Center on Education and the Economy, 2007; Wagner, 2006). In 1998, the United States ranked first in the percentage of its population aged 25 to 34 with college degrees; however, as of 2008, it had dropped to 10<sup>th</sup> place among industrialized nations (Postsecondary Education Opportunity, 2007; The National Center for Public Policy and Higher Education, 2008). Researchers at the National Center for Higher Education Management Systems (NCHEMS) estimated that the degree gap, the difference between the number of bachelor's and associate's degrees attained by the U.S. population and that of other industrialized nations, could reach 15.6 million by 2025 (Reindl, 2007). To close the degree gap, administrators at U.S. colleges and universities need to increase their institutions' degree completion rates by 37% each year from now until 2025. The 37% increase translates into 781,000 additional degrees a year above current levels (Reindl, 2007).

Businesses in the United States, in order to stay competitive in the knowledge-based global economy, need access to a college-level educated workforce (National Center on Education and the Economy, 2007; Wagner, 2006). Businesses in the United States could face a competitive disadvantage in the world if leaders from other nations continue to increase the share of their nation's populations with college degrees while the U.S. share stays flat (Postsecondary Education Opportunity, 2007; Wagner, 2006). To close the estimated 15.6 million degree gap, educational leaders at U.S. colleges and

universities need to expand access to a college education and increase degree completion rates (Reindl, 2007; Wagner 2006). To increase bachelor's degree attainment, legislators in some states have enacted laws that have expanded degree offerings at community colleges to include baccalaureate degrees. As of 2007, legislators in 18 states had increased community college degree-granting authority to include baccalaureate degrees (Community College Baccalaureate Association, 2009; Townsend, Bragg, & Ruud, 2008). The State of Texas is among the 18 states. In 2003, Texas legislators amended the Texas Educational Code, increasing the degree-granting authority of three community colleges (Texas Senate Bill 286, 2003a). The focus of the present study was to examine the perspectives of administrators and faculty at the three colleges in Texas regarding factors that may have contributed to the development of community college baccalaureate degrees in Texas.

Chapter 1 provides background information regarding the need for the United States to expand access to baccalaureate degree attainment. After which, the problem statement and an overview of the theoretical framework for the study are presented. Following the theoretical framework, the research questions and related hypotheses of the study are stated. Chapter 1 concludes with an explanation of significance of the study and a description of key terms used in this research study.

### *Background*

Traditionally, four-year higher education institutions grant bachelor's degrees; however, over the last decade, access and attainment of baccalaureate degrees through four-year universities and colleges has been declining for non-traditional students (Bragg, Townsend, & Ruud, 2009; Floyd, 2005; Floyd & Walker, 2009). More than half of the

students attending community colleges in the United States are considered non-traditional students. Non-traditional students are older, attend college on part-time basis, have part-time or full-time jobs, and have family responsibilities (American Association of Community Colleges, 2009; Pusser, 2007). During the last decade, the rising cost of tuition coupled with increases in standards to enter traditional universities, have placed attainment of a bachelor's degree out of the reach of most community college students (Chen, 2008; Floyd & Walker, 2009; Hemelt & Marcotte, 2008; United States Government Accountability Office, 2007).

To expand access to baccalaureate degree attainment, some state legislators have amended their states' educational codes increasing community college degree-granting authority to include baccalaureate degrees. Since the 1970s, legislators in the following 18 states (Appendix A) have authorized community colleges to confer bachelor's degrees: Arkansas, Florida, Georgia, Hawaii, Idaho, Indiana, Louisiana, Ohio, Nevada, New Mexico, New York, North Dakota, Oklahoma, Texas, Utah, West Virginia, Vermont, and Washington. After receiving authorization to offer baccalaureate degrees, the community colleges in Arkansas, Georgia, Louisiana, and Utah later became traditional universities (Community College BaccaLaureate Association, 2009; Townsend, Bragg, & Ruud, 2008).

The rationale for the development of Community College BaccaLaureate (CCB) degrees was centered around three national concerns: expanding access to baccalaureate degrees, responding to workforce need for employees with bachelor's level education, and the rising cost of tuition at traditional universities (Chen, 2008; Hemelt & Marcotte, 2008; Floyd, Sholnik, & Walker, 2005; Floyd & Walker, 2009; United States

Government Accountability Office, 2007). Annually, community colleges educate more than 11 million students and train most of the students who pursue occupational degrees (AACC, 2009). The CCB was developed by community colleges to provide access and help community college students overcome barriers in attainment of bachelor's degrees (Floyd, 2005; Floyd & Walker, 2009). In addition, employers in many occupations have been increasing entry-level requirements from associate's degrees to baccalaureate degrees; therefore, community colleges have been responding by offering baccalaureate-level education to prepare students for those occupations (Chen, 2008; Jacobs & Dougherty, 2006; Walker, 2005).

Allowing community colleges to grant baccalaureate degrees has been one vehicle to improve access to baccalaureate degrees for non-traditional students, and thereby increase the percentage of the U.S. population with baccalaureate degrees (Bragg, Townsend, & Ruud, 2009; Floyd & Walker, 2009). In addition, most CCB degrees have been developed to meet United States businesses' need for a college-level educated workforce (National Center on Education and the Economy, 2007; Wagner, 2006). According to Walker (2001) community colleges with their existing infrastructure, facilities, faculty, staff and programs, are in the best position to meet the needs of the 21<sup>st</sup> century knowledge-based economy by expanding their program offering to include baccalaureate degrees.

In the United States, projections are that 90% of the fastest growing jobs will require workers with some post-secondary education, and most of them will require one or more degrees (21<sup>st</sup> century skills, education and competitiveness, 2008; U.S. Department of Education, 2006). Over the last decade, the gap between the demand by

U.S. employers for college-educated workers and the percentage of population with college degrees has increased (National Center on Education and the Economy, 2007). Furthermore, globalization has made it feasible for employers to hire workers from other countries; business owners who cannot find a skilled-workforce in the United States will look to other countries that have higher levels of college-educated workforce (National Center on Education and the Economy, 2007; The National Center for Public Policy and Higher Education, 2005). Meanwhile, the growth of the Internet and the transformation of many types of jobs into a digital format has created a worldwide workforce accessible to any employer from any part of the world (National Center on Education and the Economy, 2007). According to Wagner (2006), educational leaders in states that improve higher education opportunities for their population contribute to the advancement of their state's residents' employment prospects. Therefore, for U.S. businesses to remain competitive in the global marketplace, it is critical for educational leaders at U.S. colleges and universities to expand access to a college education and increase baccalaureate degree attainment rates (Reindl, 2007; Wagner, 2006).

In Texas, the *Closing the Gaps by 2015* educational plan, that called for educational leaders in all Texas public universities and colleges to increase the number of students completing a bachelor's degree by 50% by the year 2015 (Texas Higher Education Plan, 2005), cultivated suitable conditions for innovative solutions. One suggested course of action was to expand the degree-granting authority of some community colleges to include granting bachelor's degrees. In Texas, 75% of the students entering the state's higher education system enroll in community colleges (Texas Association of Community Colleges, 2006). Because of their accessibility, affordability,

and student-centered environment, community colleges attract a greater proportion of low-income and minority students than traditional four-year universities (Texas Association of Community Colleges, 2006). Therefore, Texas community college administrators were uniquely positioned to aid in the Texas Higher Education Coordinating Board's (THECB) *Closing the Gaps* initiative.

In 2003, the legislators comprising the 78<sup>th</sup> Texas legislature authorized the THECB staff to establish a pilot project allowing three community colleges to grant applied baccalaureate degrees. The three colleges were Brazosport College, Midland College, and South Texas College. During the following two years, administrators at the three colleges had to transform their colleges' organizational structures in order to earn level II accreditation from the Southern Association of Colleges and Schools Commission on Colleges (SACS). Then in 2007, during the 80<sup>th</sup> Texas legislative session, legislators introduced Texas House Bill (HB) 2198, which officially removed the pilot status and made baccalaureate degree programs offered by these three colleges permanent.

### *Problem Statement*

Educational leaders at U.S. colleges and universities are not producing a sufficient number of college graduates to meet the demand by U.S. employers for employees with bachelor's degrees (National Center on Education and the Economy, 2007; The National Center for Public Policy and Higher Education, 2008). Internationally, the United States is losing ground compared to other industrialized countries in preparing its young adults with college degrees (Reindl, 2007; Wagner, 2006). Researchers at the NCHEMS estimated that the degree gap, the difference between the number of bachelor's and

associate's degrees attained by the population in the United States and people in other developed nations, could reach 15.6 million by 2025 (Reindl, 2007). As a consequence of the degree gap, U.S. businesses may lose their competitive edge in the knowledge-based global economy (Postsecondary Education Opportunity, 2007; Wagner, 2006). Therefore, it is critical that educational leaders in all 50 states expand access to baccalaureate degrees and increase the percentage of their state's population with college degrees (Postsecondary Education Opportunity, 2007; National Center on Education and the Economy, 2007; Hunt & Carruthers, 2006).

To increase the college-degree attainment rate and expand access to baccalaureate degrees, legislators in 18 states have increased the degree-granting authority of community colleges to include baccalaureate degrees. In Texas, legislators amended the Texas Educational Code, thereby increasing the degree-granting authority of three community colleges to include applied baccalaureate degree programs. Educational leaders in the three colleges in Texas received authorization to contribute to the state's population with college degrees by developing specialized applied baccalaureate degrees to meet the business needs within their service area for a skilled, college-level educated workforce.

There is little research regarding factors that may contribute to the development of CCB degrees that could guide educational leaders in other community colleges who are planning to expand their program offerings to include a bachelor's degree. Therefore, educational leaders at U.S. community colleges that are exploring the option to offer CCB degrees lack information regarding such degrees. Floyd et al. (2005) stated, "At the national level, researchers and policy makers should study this phenomenon to see what

factors facilitate or inhibit the development of the Community College Baccalaureate as a degree option in community colleges” (p. 186).

### *Purpose*

To address the lack of information in this area, the purpose of this quantitative correlational study was to examine administrator and faculty perspectives regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college’s mission that may have contributed to the development of community college baccalaureate degrees in Texas. The factors being examined in the study were identified through a thorough literature review and included student need for baccalaureate degree (Bragg, Townsend, & Ruud, 2009; Floyd, 2005; Walker, 2006; Floyd & Walker, 2009) and workforce need for employees with a bachelor’s degree (Chen, 2008; Floyd et al., 2005; Garmon, 2002; Jacobs & Dougherty, 2006; Postsecondary Education Opportunity, 2007). Additional factors also included college relations with area universities (Access to Baccalaureate, 2003; Dickeson, 2006; Floyd et al., 2005; Floyd & Walker, 2009), and the expansion of a college’s mission (Floyd et al., 2005; Floyd & Walker, 2009; Walker, 2006).

In this study, the variables were student need for baccalaureate degree, workforce need for employees with bachelor’s degree, college relation with area universities, and expansion of a college’s mission. It was hypothesized that the four variables of student need, workforce need, college relations, and college mission were linearly and positively correlated. Data for the study were collected using a Web-survey and survey participants included college presidents, vice-presidents, directors, deans, department chairs, and faculty from Brazosport College, Midland College, and South Texas College.

The minimum sample size for the study using G\* Power software, for a medium power effect, was calculated to be 159 from all three colleges (Faul, Erdfelder, Lang, & Buchner, 2007). The sample size for the study was calculated to be 530 individuals from three colleges. According to studies in the literature, response rate from an e-mail survey could range between 25% and 30% (Kittleson, 1997). In order to achieve an adequate sample size, a 30% response rate was used to attain a 530 total sample size. A stratified sample design was used to randomly select a proportional number of cases from each college.

### *Theoretical Framework*

The focus of this quantitative correlational study was to examine the perspectives of administrators and faculty in three colleges in Texas regarding factors, such as student need, workforce need, college relations with area universities, and expansion of a college's mission that might have contributed to the organizational transformation of these colleges to offer applied baccalaureate degrees in Texas. The study was conducted by surveying a random sample of faculty and administrators from Brazosport College, Midland College, and South Texas College. Theories advanced by Fullan (2007), regarding the implementation of educational change, and Schein (2004), regarding the effect of the organizational change on the organizational culture, were used to frame the discussion of community college baccalaureate degree development at the three community colleges in Texas.

*Educational Change Theory.* According to Fullan (2007), educational change could take place in response to pressures from external or internal stakeholders who might demand a solution to a problem or a new policy to meet an identified need. Three

phases comprise the change process: initiation, implementation, and continuation (Fullan, 2007). The initiation phase includes the introduction of a new idea or project. The implementation phase begins when a new idea for change has successfully gone through the initiation phase and the institution has reached the decision to adopt the change. Implementation can take up to two to three years and is considered complete when the new idea is transformed into practice. A new program initiated to meet a need that has clear goals and objectives usually has a better chance of successful implementation than one without clear goals and objectives (Fullan, 2007). Finally, a new idea that has been implemented successfully has a better chance of being institutionalized. The final phase in any change process is the continuation phase, where the new idea that has been implemented by the institution is being transformed into an institutional practice. New ideas that have become institutionalized by being embedded into the institutional budgets and policies have the highest chance of continuation (Fullan, 2007).

*Organizational Change Theory.* According to Schein (2004), most organizational transformation and change has some degree of influence on the organizational culture. Schein (2004) described a model for managed change and discussed the process of change in human systems. Schein (2004) credited the origin of change theory to Kurt Lewin (1947) whose change concept has become known as the three-stage change theory of unfreezing, changing, and refreezing (Schein, 2004a). Schein has built on this model and developed a comprehensive theory to explain transformative organizational change. According to the comprehensive change model, initiation of any organizational change will require a person or a group to unlearn something as well as to learn something new (Schein, 2004).

*Theory Integration.* Theories advanced by Fullan (2007), regarding the implementation of educational change, and Schein (2004), regarding the effect of the organizational change on the organizational culture, were utilized to explain the organizational transformation of the three colleges in Texas. The educational leaders in the three colleges have followed the three phases of change as described by Fullan (2007). Furthermore, the administrators of the three colleges faced the effect of organizational change on the organizational culture as they moved to transform their organizational structure from associate to baccalaureate degree granting institutions (Schein, 2004).

Over the last century, the organizational structure of community colleges has changed, mainly in response to the changing needs of the communities that they were created to serve (Townsend & Dougherty, 2006; Vaughan, 2006). During the 1950s, programs offered at community colleges expanded to include technical programs and contract training. During the 1970s, there were external forces that became catalysts for the expansion of program offerings at community colleges to include adult education and community services (Townsend & Dougherty, 2006). Over the last decade, community colleges' program offerings in several states have expanded to include baccalaureate degrees (Floyd et al., 2005; Floyd & Walker, 2009). All these changes are consistent with the original intent for community colleges to provide additional educational opportunities to the communities they serve (Floyd & Walker, 2009; Townsend & Dougherty, 2006; Vaughan, 2006).

In the United States, the community college baccalaureate movement began in the early 1990s, when leaders at some community colleges began to ask for authority from

their state legislators to offer specialized baccalaureate degrees. The leadership of these colleges did not intend to transform their colleges into universities. Their stated goal was to maintain the community college mission while at the same time provide non-traditional students access to baccalaureate degrees (Floyd et al., 2005; Floyd & Walker, 2009). The forces that created the need for the latest expansion of the community college mission came from the changing needs and expectations of students, the globalization of the workforce, new competition, and rapidly advancing technology (Hunt, 2006; Reindl, 2007; Walker, 2006).

Advocates of Community College Baccalaureate (CCB) degrees have argued that expanding the community college mission to offer the CCB degree is a natural response by community college administrators to meet the changing needs of the communities they serve (Cohen 2002; Walker, 2001; Walker, 2006). Supporters state that community colleges have been created to meet the needs of their local population, local employers, and to prepare their citizens for work by expanding access to higher education (Cohen, 2003; Floyd et al., 2005; Floyd & Walker, 2009; Garmon, 2002; Walker, 2001; Walker, 2006).

The main concern raised by opponents of the CCB degree is regarding *mission creep*. Opponents state that community college leaders will abandon the traditional community college mission and limit remedial and developmental education (Eaton, 2005; Townsend, 2005). In addition, opponents suggest that faced with limited funding, leaders of community colleges eventually may stop offering remedial education altogether in favor of baccalaureate education (Cook, 2000; Eaton, 2005). Another argument made in opposition to the CCB degree is that leaders of community colleges

that offer baccalaureate degrees will divert resources from two-year programs to fund their institution's four-year degrees (Cook, 2000; Eaton, 2005; Glennon, 2005).

Although there is a significant body of research available about the history of community colleges, little research exists regarding the factors that may have contributed to the development of community college baccalaureate degrees movement. During the literature review, three studies were identified that focused on community college baccalaureate degrees. The first study was conducted by Jonathan McKee. McKee (2001) examined the factors and issues surrounding the development of the baccalaureate degree at Westark College in Arkansas. McKee (2001) used descriptive and case study methods and collected data by conducting seven interviews to describe the development of the baccalaureate degree at Westark College. McKee's (2001) results of the study pointed to one major theme, which was that the baccalaureate degree was developed to meet the area's manufacturing industry training needs.

In 2002, Barbara Burrows conducted a study that focused on the transformation of St. Petersburg Junior College to St. Petersburg College. Burrows (2002) used two different research methodologies, descriptive and case study, to examine the baccalaureate movement in the state of Florida. Burrows (2002) conducted 11 individual interviews with college executives and policy makers to gain an understanding of their perspectives of the community college baccalaureate movement in Florida. Burrows (2002) concluded that the driving forces of the baccalaureate movement among community colleges in Florida were access to upper division education, availability of resources, collaboration with partnering universities, campus climate, responsiveness to

workforce needs, and whether or not offering a baccalaureate degree fit within the traditional mission of the community college.

The third study was conducted by Debra Petry in 2006. The researcher presented the results of a study regarding perspectives of key leaders involved in the transformation of five community colleges in Florida to baccalaureate granting institutions. Petry (2006) used a mixed-method research methodology and incorporated both qualitative and quantitative approaches to explore and examine the research questions. The researcher interviewed 16 executives from the five colleges and surveyed 38 individuals who had been directly involved in the creation and development of the baccalaureate degree to identify their perspectives about the transformation of their two-year colleges into four-year baccalaureate granting institutions. The results of the research indicated that access to upper level education and meeting the needs of the area industry for a skilled workforce were the two main reasons for the development of baccalaureate degrees in the five colleges in Florida (Petry, 2006).

Findings of prior research, conducted in the area of the CCB, pointed to four major variables that may have contributed to the development of community college baccalaureate degrees in the State of Florida and the State of Arkansas. The first variable, identified by both Burrows (2002) and Petry (2006), was access to baccalaureate level education. Educational change theory explains that pressure from external stakeholders, such as community college students, could initiate such organizational change (Fullan, 2007).

Workforce needs of local industry were the second variable identified by all three studies. The educational change theory explains that pressure from external stakeholders,

such as employers in the area who demand access to employees with baccalaureate degree education, could initiate an educational change. The third variable was recognized by Burrows (2002) and Petry (2006), and was the collaboration with neighboring universities. Educational change theory explains that internal stakeholders, such as college leaders who encounter difficulties when collaborating with neighboring universities, may demand change as a solution to perceived problems and can initiate an educational change (Fullan, 2007).

The last variable identified by all three studies was the expansion of the community college mission. According to Schein (2004a), initiation of any organizational change will have an influence on organizational culture. Any change will require organizational members to unlearn something that they have learned and then learn something new. Community colleges that have gone through organizational transformation have expanded their missions to include offering baccalaureate programs. This change could have affected the organizational culture and translated into a process of unlearning and learning as explained by Schein (2004a).

#### *Research Questions and Hypothesis*

The purpose of the quantitative correlational study was to examine administrators and faculty perspectives regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to the development of community college baccalaureate degrees in Texas. It was hypothesized that variables of student need, workforce need, college relations, and college mission were linearly and positively correlated. The following research questions and hypotheses guided the study:

RQ 1: To what extent, if any, is perceived student need for a baccalaureate degree correlated to workforce need, college mission, and university relations?

H1<sub>0</sub>: Perceived student need for a baccalaureate degree is not correlated to workforce need, college mission, and university relations.

H1<sub>1</sub>: Perceived student need for a baccalaureate degree is correlated to workforce need, college mission, and university relations.

RQ 2: To what extent, if any, is perceived workforce need for employees with a bachelor's degree correlated to student need, college mission, and college relations?

H2<sub>0</sub>: Perceived workforce need for employees with a bachelor's degree is not correlated to student need, college mission, and college relations.

H2<sub>1</sub>: Perceived workforce need for employees with a bachelor's degree is correlated to student need, college mission, and college relations.

RQ 3: To what extent, if any, are perceived college relations with area universities correlated to student need, workforce need, and college mission?

H3<sub>0</sub>: Perceived college relations with area universities are not correlated to student need, workforce need, and college mission.

H3<sub>1</sub>: Perceived college relations with area universities are correlated to student need, workforce need, and college mission.

RQ 4: To what extent, if any, is perceived expansion of a college's mission correlated to student need, workforce need, and college relations?

H4<sub>0</sub>: Perceived expansion of a college's mission is not correlated to student need, workforce need, and college relations.

H4<sub>1</sub>: Perceived expansion of a college's mission is correlated to student need, workforce need, and college relations.

RQ5. What are the differences, if any, in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas?

H5<sub>0</sub>: There are no differences in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas.

H5<sub>1</sub>: There are differences in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas.

RQ6. What are the differences, if any, in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions?

H6<sub>0</sub>: There are no differences in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions.

H6<sub>1</sub>: There are differences in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions.

### *Nature of the Study*

The focus of this quantitative and correlational study was to collect data regarding the perspectives of administrators and faculty in three colleges in Texas regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to development of CCB

degrees in Texas. Given the intent of the research, a quantitative correlational design was best suited for this study (Creswell, 2008). It was not the purpose of this study to prove causal relationships, but rather to examine possible correlation between variables. A correlational design was used to determine how one variable related to another, the direction (positive or negative), and the magnitude of the relationship between variables (Trochim, 2006; Zikmund, 2003). The survey method to collect data was appropriate for the study as it provided the quantitative means to test objectively research questions and hypotheses (Trochim, 2006). In addition, survey methodology is one of the most effective techniques available for the study of attributes, values, beliefs, and motives of a designated population (Crozby, 2004).

The study was conducted by surveying administrators and faculty from Brazosport College, Midland College, and South Texas College. Given that participants for the study were from three different colleges in Texas, a Web-based survey provided a fast and cost effective way to collect the quantitative data for the study (Neuman, 2006). Presidents, vice presidents, directors, deans, department chairs, and faculty from Brazosport College, Midland College, and South Texas College comprised the random sample of participants. The survey instrument in the study was a 6-point Likert-type scale Web-based survey questionnaire.

### *Significance of the Study*

Since the 1970s, the number of states that have authorized community colleges to offer CCB degrees has increased steadily (Townsend, Bragg, & Ruud, 2008). In 2008, for instance, legislators in five states (Appendix A) introduced legislation to explore the option to increase degree-granting authority of community colleges in their states to

include baccalaureate degrees (Bragg, Townsend, & Ruud, 2009). Three main factors have contributed to the growth of community colleges as baccalaureate granting institutions. First, is the need for the United States to increase percentage of the U.S. young adult population with bachelor degrees (Reindl, 2007; The National Center for Public Policy and Higher Education, 2008). The second factor is the workforce need for employees with bachelor's level education. In many occupations, employers have been increasing entry-level requirements from associate to baccalaureate degree and community colleges have been responding by offering the baccalaureate level education to prepare their students for those occupations (Chen, 2008; Jacobs & Dougherty, 2006; Walker, 2005). Finally, the rising cost of tuition at universities and colleges has limited access to baccalaureate degrees (Chen, 2008; United States Government Accountability Office, 2007; Walker, 2005).

Educational leaders at community colleges that are exploring the option to offer baccalaureate degrees lack information regarding CCB degrees. There is little research in the area of factors regarding the development of community college baccalaureate degrees that could guide educational leaders in other community colleges who are planning to expand their program offerings to include bachelor's degrees. Floyd et al.(2005) stated, "At the national level, researchers and policy makers should study this phenomenon to see what factors facilitate or inhibit the development of the community college baccalaureate as a degree option in community colleges" (p. 186).

The significance of the study is that it might serve to fill the information gap by providing actual data regarding factors contributing to the development of community college baccalaureate degrees at three colleges in Texas. This study could add to the body

of knowledge regarding community college baccalaureate degrees and may contribute to the establishment of successful strategies for the development of such degrees. Results of the study may provide information to educational leaders at other community colleges interested in developing baccalaureate degrees and thus, aid in the effort to keep American businesses globally competitive.

Furthermore, educational leaders, who are exploring this option, will have practical information regarding factors that facilitated the development of CCB degrees at the three colleges in Texas. Information concerning the obstacles that leaders at the three colleges had to overcome during their transformation, from associate to baccalaureate granting institutions, will be valuable to educational leaders considering such degrees for their institutions. Such practical knowledge could assist educational leaders at other colleges to avoid errors and capitalize on successful strategies used by the three colleges in Texas in development of their CCB degrees.

### *Definitions*

To assist with understanding of terms used in the study, a concise definition of key terms is provided.

*Applied Baccalaureate.* This degree generally articulates with an associate of applied science and is offered in specialized fields of study, such as technology management, business management, certain health fields, and information technology (Walker & Floyd, 2009).

*Associate of Applied Science Degree (AAS).* A two-year applied associate's degree program designed to lead the recipient to immediate employment and/or career advancement (Texas Higher Education Coordinating Board, 2007).

*Bachelor of Applied Technology.* A bachelor's degree program designed to meet an identified workforce need (Floyd et al., 2005).

*Community College.* A two-year institution of higher education that offers freshman and sophomore college level courses, specialized vocational-technical programs, remedial education, and community services (Cook, 2000).

*Community College Baccalaureate Degree.* A baccalaureate degree that is conferred by a community college (Floyd et al., 2005).

*Four-year Community College.* A community college that offers baccalaureate degrees and maintains its community college identity (Cook, 2000).

*Level I Institution.* An institution that offers the associate's degree as its highest degree as classified by the Southern Association of Colleges and Schools. (Southern Association of Colleges and Schools, 2008).

*Level II Institution.* An institution that offers the baccalaureate degree as its highest degree as classified by Southern Association of Colleges and Schools. (Southern Association of Colleges and Schools, 2008).

*Mission Creep.* A shift from a Community College's original functions to a concentration on baccalaureate education (Cook, 2000).

### *Summary*

For U.S. businesses to remain competitive in the 21<sup>st</sup> century global economy, they will need access to a college-level educated workforce (Reindl, 2007; Wagner, 2006; The National Center for Public Policy and Higher Education, 2008). In response to the increased demand for higher education and bachelor degree attainment, legislators in 18 states have expanded the degree granting authority of community colleges to include

baccalaureate degrees. In 2003, administrators in three Texas community colleges, Brazosport College, Midland College, and South Texas College, received authorization to grant applied baccalaureate degrees.

The purpose of the quantitative correlational study was to examine the perspectives of administrators and faculty regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to the development of CCB degrees in Texas. The sample size for the study was composed of 530 individuals from three colleges. The study was conducted by surveying administrators and faculty from Brazosport College, Midland College, and South Texas College.

Little research exists in the area of factors that contribute to the development of community college baccalaureate degrees that could guide educational leaders in other community colleges, who are planning to expand their program offerings, to include bachelor's degrees. Results of the study may provide information to educational leaders in other community colleges interested in developing a baccalaureate program and thus, aid in the effort to keep American businesses globally competitive.

## CHAPTER 2: REVIEW OF LITERATURE

The literature review is organized around seven major themes. The first theme is a review of community college history, from its inception as an extension of a comprehensive high school to the present state as a baccalaureate degree granting institution (Brint & Karabel, 1989; Cohen & Brawer, 2003; Vaughan, 2006). In addition, the effect of the Truman Commission's Report (1947) on the growth of community colleges in the United States is discussed. The first theme also includes a discussion of the gradual expansion of the community college mission over the last 108 years, especially in the 21<sup>st</sup> century (Cohen, 2002; Floyd & Walker, 2009; Townsend & Dougherty, 2006; Vaughan, 2006).

The second theme of the literature review centers on the rationale that led to the development of CCB degrees. This theme is discussed by reviewing the emerging trends and policy issues regarding CCB degrees (Floyd et al., 2005; Floyd & Walker, 2009). Furthermore, reports generated by different governmental taskforces to assess development of CCB degrees in the United States by community colleges are reviewed (American Association of Community Colleges, 2004; Floyd & Walker 2009; The Higher Learning Commission, 2001; Townsend, Bragg, & Ruud, 2008). In addition, factors such as meeting employers' need for employees with bachelor's degrees and the need of non-traditional students to access bachelor's degrees are discussed (Dickeson, 2006; Floyd et al., 2005; Floyd & Walker 2009; Garmon, 2002; Reindl, 2007; Walker, 2006).

The third theme of the literature review focuses on arguments offered by advocates and critics of the CCB degree. The arguments offered in support of the CCB

degree center on meeting employers' needs, providing access to bachelor's programs for nontraditional students, and preparing a workforce for the 21<sup>st</sup> century (Cohen, 2003; Cook, 2000; Garmon, 2002; Floyd et al., 2005; Floyd & Walker, 2009; Jacobs & Dougherty, 2006; The National Center for Public Policy and Higher Education, 2008; Wagner, 2006; Walker, 2006). Arguments offered by opponents of CCB degrees are based on the premise that community college leaders will abandon their original mission and will stop offering remedial education. In addition, critics argue that the overall cost of attending two-year colleges will increase because of community college bachelor's degree programs (Cook, 2000; Eaton, 2005; Glennon, 2005; Pedersen, 2005; Townsend, 2005).

The fourth theme in the literature review concentrates on the role that community colleges have played in baccalaureate degree attainment over the years. A review of the major models used by community college leaders to fulfill the transfer function, including articulations, university centers, and university extensions are presented. Furthermore, the role of community college baccalaureate, including workforce and applied baccalaureate, are discussed (Bragg, Townsend, & Ruud, 2009; Floyd et al., 2005; Floyd, 2006; Floyd & Walker, 2009).

The fifth theme in the literature review focuses on the community college baccalaureate movement in Texas. Several governmental reports are discussed, including the Texas Higher Education Plan (2005) and The National Center for Public Policy and Higher Education (2008). In addition, a discussion of the legislative process that was used in Texas to grant authority to the administrators of the three colleges to offer baccalaureate degrees is presented. Finally, a profile of each of the three colleges,

comprising a brief history, the process of accreditation as Level II institutions, and the Bachelor of Applied Technology programs at each college is presented.

The sixth theme examined in the literature review relates to the organizational transformation and change in educational institutions. A discussion regarding the internal and external factors that have influenced change in community colleges is offered along with factors that have caused an overall change in higher education (Floyd et al., 2005; Townsend & Dougherty, 2006; Walker, 2006). An overview of the change process in educational institutions is also presented (Fullan, 2007; Schein, 2004).

The seventh theme in the literature review is an examination of prior research in the area of the community college baccalaureate movement. Three research studies regarding the factors that may have contributed to the development of community college baccalaureate degrees are discussed. The first study was conducted by McKee (2001) and focused on the factors and issues surrounding the development of the baccalaureate degree at Westark College in Arkansas. The second study by Burrows (2002) centered on the transformation of St. Petersburg Junior College into St. Petersburg College. The third research was conducted by Petry (2006) and was about the transformation of five Florida community colleges from associate to baccalaureate degree granting institutions. The review of the literature concludes by establishing the need for further research.

### *Historical Background*

The two-year, junior college as a new form of higher education institution began in late nineteenth century (Brint & Karabel, 1989; Cohen & Brawer, 2003). In 1851, the President of the University of Michigan, Henry Tappan spearheaded a reform movement among United States universities. Tappan proposed a new design for higher education by

suggesting that the first two years of college education were subordinate in nature and not a necessary part of university level instruction. He suggested a new two-year institution, a junior college that could offer the first two-years of college education, and thereby, allow the educational leaders at universities to concentrate on research and professional training (Brint & Karabel, 1989; Cohen & Brawer, 2003). During the following 20 years, Henry Tappan's proposal to establish junior colleges gained momentum among American university presidents such as Nicholas Murray at Columbia, David Starr Jordan at Stanford, and William Rainey Harper at Chicago (Brint & Karabel, 1989; Cohen & Brawer, 2003). All of these educators agreed that Tappan's new vision for higher education would allow universities to focus on research and professional education (Brint & Karabel, 1989; Cohen & Brawer, 2003).

The concept of the junior college became a reality due to the efforts of University of Chicago's president, William Rainey Harper, who developed the organizational structure that allowed the creation of the first junior college (Brint & Karabel, 1989). Harper's efforts included the restructuring of the coursework at University of Chicago into lower and upper level divisions, the introduction of the *associate degree* award granted to students who completed the first two years of instruction at the University of Chicago, and his lobbying efforts to convince Joliet High School to offer college level courses (Brint & Karabel, 1989). In 1901, educational leaders at Joliet Junior College began to offer college-level courses as part of a newly developed comprehensive high school; however, by 1916, due to large enrollment in college-level courses, it became necessary to separate the junior college from the high school by building a separate

facility. Therefore, in 1916, Joliet Junior College became the nation's first independent junior college (Vaughan, 2006).

Then, in 1922, a formal definition for the term *junior college* was established at the second annual meeting of the American Association of Junior Colleges. Cohen and Brawer (2003) stated that definition as, "an institution offering two years of instruction of strictly collegiate grade" (p. 3). Originally, the program offerings at Junior colleges included liberal arts studies; however, during the 1930s the program offerings expanded to include vocational job-training programs to help alleviate unemployment during the depression era (Cohen & Brawer, 2003).

The growth of junior colleges as independent higher education entities was gradual through the 1930s. Beginning in the early 1940s, the number of junior colleges increased to expand access to education opportunities and to meet new challenges. Among new challenges were the larger percentage of students graduating from high school, the lack of job opportunities for high school graduates during the depression era, and the enactment of the Government Issue (GI) Bill of 1944 that provided educational opportunities to War Veterans (Brint & Karabel, 1989).

The impetus for large-scale expansion of junior colleges took place in 1947, with the Truman Commission's Report, *Higher Education for American Democracy*, which advocated increased access to higher education for all Americans. The report also was the major reason to change the name of junior colleges to community-based colleges (Brint & Karabel, 1989). The practical result of the commission's call for equality in education was the establishment of a network of public community-based colleges to serve the

needs of specific geographic areas by offering comprehensive programs at an affordable tuition (Vaughan, 2006).

Toward the end of 1960s, the vision expressed by the Truman Commission became a reality when a large number of community-based colleges were established across the nation. The network of public community colleges grew from 412 at the end of the 1950s to 909 by the end of the 1960s (American Association for Community Colleges [AACC], 2008; Vaughan, 2006). Most community colleges were located within 25 miles of the student population and the communities that they were created to serve (Cohen & Brawer, 2003).

Today, there are 1,177 community colleges, and collectively, they serve about half of the nation's college students (AACC, 2009). Community colleges are publicly supported higher education institutions that began with the purpose of offering general education courses, but over time, in order to meet the needs of their service area, have expanded their mission and grown into comprehensive institutions with diverse program offerings. Currently, most community colleges' program offerings include transfer courses, vocational courses, developmental and remedial education, personal enrichment courses, and contract training (Cohen, 2002; Floyd & Walker, 2009; Vaughan, 2006). Traditionally, community colleges have been defined as institutions accredited to award an associate degree as their highest award (Cohen, 2002). However, according to the advocates of the Community College Baccalaureate movement, it is no longer valid to refer to community colleges as exclusively two-year higher education institutions (Floyd et al., 2005).

### *CCB Movement in the United States*

In the 1990s, community college leaders from some states began to ask for authority from their state legislators to offer specialized baccalaureate degrees to place-bound community college students (Floyd et al., 2005; Floyd & Walker, 2009). In 1998, as requests from community college leaders to offer baccalaureate degrees escalated, the Higher Learning Commission created a taskforce to study community college baccalaureate degrees. The taskforce members studied baccalaureate education in the community college setting and in 2001, presented their recommendations. One major recommendation offered by the taskforce members was that community colleges should be permitted to offer a small number of baccalaureate degrees and that such offering would not change the colleges' traditional mission (The Higher Learning Commission, 2001).

In 2000, the policy paper *Community College Baccalaureate Degrees: A New Delivery Model for the Future* (Cook, 2000) was published and the conclusions reached by the author were that financial pressures, changing demographics, and employers needs were the main reasons that have compelled community college leaders to offer CCB degrees (Cook, 2000). In the same year, in order to identify barriers to baccalaureate education and develop strategies to address these obstacles, the American Association of Community Colleges and the American Association of State Colleges and Universities conducted a survey of their memberships, which included college and university presidents, administrators, and faculty (Access to Baccalaureate Degree, 2003). According to the participants of the study, the major barrier to baccalaureate education attainment was the reluctance of the senior institution to accept credits from Associate of

Applied Arts and Associate of Applied Sciences degrees and the overall difficulty of transfer of credits between two-year and four-year institution based on articulation agreements (Access to Baccalaureate Degree, 2003). Another important set of obstacles were the special needs of non-traditional students, which include students' need for flexible class schedules, academic support, advisement, and financial aid. Finally, cost and distance were noted as key factors preventing graduates of community colleges in geographically isolated areas to transfer to a university sometimes hundreds of miles from their jobs and families in order to earn a baccalaureate degree (Access to Baccalaureate Degree, 2003). The increased cost of upper-level education at universities was also a major deterrent in bachelor's degree attainment. One recommendation for addressing the obstacle to baccalaureate degree attainment was to allow administrators of some community colleges to grant baccalaureate degrees in high-demand programs where the senior institution is not able to meet the need (Access to Baccalaureate Degree, 2003).

In 2004, *Improving Access to Baccalaureate* was published by the American Association of Community Colleges, one of the recommendations offered by the authors of this study was that local and state policies need to change to allow development of applied baccalaureate degrees to address the needs of adult learners for baccalaureate attainment (American Association of Community Colleges, 2004). Furthermore, a report published in 2004, *Update on the Community College Baccalaureate* reported that as of 2004, the degree granting authority of community colleges in 11 states have been expanded to include bachelor's degrees. The conclusion reached from analyzing the data in this report was that most states have selected this option to address challenges of

access, cost, and capacity (American Association of State Colleges and Universities, 2004).

In 2008, a research initiative sponsored by Lumina Foundation studied the challenges faced by adult learners and cited Applied Baccalaureate degrees as one option to baccalaureate degree attainment. Researchers conducted a state-by-state inventory of states that offer such degrees. Conclusions reached by the authors were that higher education institutions must develop programs to ensure that adult learners have access to baccalaureate level education. As of August 2009, 39 states offer applied baccalaureate degrees either through traditional universities or community colleges (Townsend, Bragg, & Ruud, 2008). Since the 1970s, 18 states (Appendix A) have authorized community colleges to offer CCB degrees. Community colleges in some states, (Utah, Arkansas, Georgia, Louisiana) after receiving authorization to offer the CCB degree, have later changed to traditional universities (Bragg, Townsend, & Ruud, 2009; Community College Baccalaureate Association, 2008; Townsend, Bragg, & Ruud, 2008). The interest among community college leaders to explore this option has been increasing. In 2008, legislators in Illinois, Michigan, Oregon, Rhode Island, and Wisconsin have introduced legislation or created taskforces to study the feasibility of authorizing community colleges to offer baccalaureate degrees (Bragg, Townsend, & Ruud, 2009; Community College Baccalaureate Association, 2009; Townsend, Bragg, & Ruud, 2008).

#### *Rationale for Development of CCB Degree*

The rationale for the development of Community College Baccalaureate (CCB) degrees has centered around three national concerns. One important concern was the need to expand access to baccalaureate degree attainment for adult students (Floyd & Walker,

2009; Townsend, Bragg, & Ruud, 2008). Another concern was the need to address employers call for employees with bachelor's degrees (Jacobs & Dougherty, 2006; Jenkins, 2006; Floyd & Walker, 2009; Postsecondary Education Opportunity, 2007). Finally, the national concern regarding the increasing cost of higher education especially at public four-year universities was an important driving force for development of CCB degrees (Chen, 2008; Dickeson, 2006; Floyd & Walker, 2009; United States Government Accountability Office, 2007).

*Expansion of Access to Baccalaureate Degrees.* Since their inception, community colleges have played an important role in providing access to baccalaureate degree attainment (Floyd, 2005; Floyd & Walker, 2009; Vaughan, 2006). Preparing students to transfer to four-year universities to earn baccalaureate degrees has been an important goal of leaders at community colleges. Traditionally, educational leaders at community colleges have achieved the transfer function in several ways: by developing articulation agreements with four-year universities, by developing university centers in partnership with four-year universities to offer upper level coursework, and by establishing off campus university extensions (Floyd, 2005; Floyd & Walker, 2009). In each transfer model mentioned above the curricular control often stays with the four-year institution that grants the baccalaureate degree (Floyd, 2005; Floyd & Walker, 2009). However, during the last decade, the community college baccalaureate degree has emerged as a vehicle to expand access in specialized workforce fields (Bragg, Townsend, & Ruud, 2009; Garmon, 2002; Floyd et al., 2005; Floyd & Walker, 2009; Townsend, Bragg, & Ruud, 2008). Unlike the collaborative transfer models where curriculum control takes place with the universities that grant the bachelor's degree, the leaders of the community

colleges that offer the CCB degree have jurisdiction over the curriculum development (Floyd, 2005; Floyd & Walker, 2009).

One of the reasons for the development of applied baccalaureate degrees by community college leadership has been to provide a pathway to baccalaureate attainment for students who graduate from career programs with Associate of Applied Science (AAS) degrees (Bragg, Townsend, & Ruud, 2009). One-third of students attending community colleges are enrolled in occupational programs and they graduate with AAS degrees. It has been documented that students graduating from occupational programs encounter obstacles and difficulties when transferring to four-year universities (American Association of Community Colleges, 2004; Silverberg, Warner, Fong, & Goodwin, 2004). In response, CCB degrees have been developed by community colleges to provide a seamless pathway to baccalaureate degree attainment for students graduating with occupational degrees (Bragg, Townsend, & Ruud, 2009; Floyd & Walker, 2009). Community colleges could be contributing toward the national goal of increasing the percentage of the U.S. population with baccalaureate degrees by providing a path to a baccalaureate for a large segment of community college students who graduate with AAS degrees (Bragg, Townsend, & Ruud, 2009; Floyd & Walker, 2009; Townsend, Bragg, & Ruud, 2008). However, to reach the goal, according to Seppanen, Bloomer, and Thompson (2005) students graduating with AAS degrees and transferring to four-year universities need to increase from current 10 percent to 30 percent of graduates transferring to four-year universities.

*Workforce Needs for Global Competitiveness.* Businesses in the United States, in order to stay competitive in the knowledge-based global economy, need access to a

college-level educated workforce (National Center on Education and the Economy, 2007; The National Center for Public Policy and Higher Education, 2008; Wagner, 2006). An important force driving the development of CCB degrees especially in the workforce area has been the increasing demand by regional employers for employees with bachelor's degrees (Jacobs & Dougherty, 2006; Jenkins, 2006; National Center on Education and the Economy, 2007). Furthermore, in many occupations, associate degrees are no longer sufficient to meet the needs of employers. Employers are requiring the bachelor's degree for entry-level positions and for career advancement (Floyd & Walker, 2009; Ignash & Kutun, 2005; Jacobs & Dougherty, 2006; Jenkins, 2006; Postsecondary Education Opportunity, 2007).

By the 1960s, workforce development had become an important part of the community college mission. Educational leaders at community colleges developed certificate and associate degree programs that addressed the workforce needs of area employers. Over the years, a strong relationship developed between community college leaders and the area employers. Almost all workforce programs offered at community colleges have representatives from area employers serving as advisory committee members (Dougherty & Kienzl, 2006; Floyd et al., 2005; Floyd & Walker, 2009; Jacobs & Dougherty, 2006; Jacobs & Kevin, 2006). In the 1990s, community college leaders continued to serve the needs of the area employers by developing baccalaureate level programs to meet the workforce needs of employers for employees with bachelor's degrees (Bragg, Townsend, & Ruud, 2009; Floyd et al., 2005; Floyd & Walker, 2009; Walker 2006; Jacobs & Dougherty, 2006).

*Rising Cost of Higher Education.* According to *Measuring Up 2008*, the overall cost of higher education has increased in all sectors of higher education in the United States (The National Center for Public Policy and Higher Education, 2008). Even though overall cost of higher education has increased in all sectors, the cost increases at community colleges have been less than the cost increases at four-year public universities (Bemmel, 2008; College Board, 2008; United States Government Accountability Office, 2007). The Government Accountability Office examined trends in higher education tuition and enrollment and reported the following important findings. Overall more students attend community colleges instead of four-year universities. The trend indicates that enrollment of minority students, especially Hispanics, has shifted from four-year universities to community colleges. According to the report, even though tuition and fees have increased in all higher education sectors, community colleges have the least amount of increase (United States Government Accountability Office, 2007). In addition, examination of data from the Integrated Postsecondary Education Data System from 1991 to 2007 on all public four-year universities indicated that even a small increase in tuition and fees have a negative impact on enrollment (Hemelt & Marcotte, 2008). The increased cost of tuition at public universities coupled with increase in undergraduate entrance requirements has placed attaining of baccalaureate degree out of reach of majority of students who attend community colleges (Cook, 2000; Dickeson, 2006; Floyd & Walker, 2009).

#### *Arguments For and Against the CCB Degree*

Advocates of CCB degrees have argued that expanding the mission of community colleges to offer the CCB degree is a natural response by community college leaders to

meet the changing needs of the communities they serve. Supporters state that community colleges have been created to meet the needs of their local population, local employers, and to prepare their citizens for work by expanding access to higher education (Cohen, 2003; Floyd et al., 2005; Floyd & Walker 2009; Garmon, 2002; Walker, 2001; Walker, 2006).

According to Walker (2005), it is in the best interest of the nation for community college leaders to expand the role of the community colleges and provide students access to baccalaureate degrees. The benefits of a CCB degree include increased geographical access to higher education, a lower cost, a responsiveness to student needs, and a responsiveness to employers needs for specialized programs (Floyd & Walker, 2009; Walker, 2001; Walker, 2005; Walker, 2006). In addition, utilizing existing facilities, faculty, and staff of a community college, has the potential of lowering the cost of baccalaureate education (Bemmel, 2008; Cook, 2000).

Students attending community colleges are older compared to students who attend four-year universities and most of them work while attending college (National Center for Education Statistics, 2006). For many of these students, leaving their community and their job in order to get a baccalaureate degree is not an option. Therefore, the CCB degree has the potential of meeting the needs of the place-bound student (Cook, 2000; Floyd & Walker, 2009). In addition, non-traditional students have a higher chance of succeeding at community colleges because of the smaller class sizes and a wider array of classes. Given the opportunity, most community college students would prefer to continue their education at a local community college to earn a higher degree (Bragg, Townsend, & Ruud, 2009; Walker, 2001).

The most common concern raised by opponents of the CCB degree is the concept of *mission creep*, in which community college leaders abandon their traditional mission and limit remedial and developmental education at their institutions (Eaton, 2005; Pedersen, 2005). Another argument made in opposition to the CCB degree is that administrators of community colleges that offer baccalaureate degrees will divert resources from two-year programs to fund their four-year degrees. In addition, opponents suggest that faced with limited funding, community college leaders eventually could stop offering remedial education in favor of baccalaureate education (Cook, 2000; Glennon, 2005; Wattenbarger, 2000).

Opponents of the CCB degree suggest that offering baccalaureate degrees will increase the cost of attending college for all students at the community college. They point out that there is a significant cost associated with receiving accreditation to offer baccalaureate degrees incurred by upgrading library holdings, equipment, and upgrading faculty credentials. There is a potential that such costs could mean higher tuition and fees across the entire community college population, which would unfairly affect non-baccalaureate-seeking students (Glennon, 2005; Pedersen, 2005).

Glennon (2005) suggested that the community college baccalaureate degree might be perceived as second rate as compared to the traditional university bachelor's degree. The argument is that the upper level education provided by community college will not be as academically rigorous as a university education (Glennon, 2005; Townsend, 2005; Wattenbarger, 2000). Therefore, it is argued that students who graduate from community colleges with a baccalaureate degree may not be as prepared as graduates from traditional universities might. Finally, most critics reach the conclusion that community college

administrators who offer baccalaureate degrees, eventually, because of the higher cost associated with the new programs will reallocate resources away from remedial and developmental education, and thus reduce access to higher education by eliminating these needed programs (Eaton, 2005; Glennon, 2005).

### *Role of Community Colleges in Baccalaureate Degree Attainment*

Since the community colleges' inception, offering a path to the bachelor's degree has been one of their main functions (Floyd & Walker 2009; Vaughan, 2006). Over the years, community college administrators have used four models to fulfill the transfer function of community colleges: articulation, university center, university extension, and community college baccalaureate (Floyd et al., 2005; Floyd & Walker, 2009). The earliest and most popular model for transfer is articulation agreements reached between universities and colleges. In this model, educational leaders of a university and a college enter into an agreement in which the university accept the credits earned by students attending the college upon transfer to the university (Floyd et al, 2005; Floyd & Walker, 2009). In recent years, the university center model has gained popularity. In this model, centers are located at the community college campuses and several universities collaborate to offer a variety of upper division programs. The university extension model is a transfer model in which access to baccalaureate programs provided by a university is offered on a campus other than the main campus of the university (Floyd et al., 2005; Floyd & Walker, 2009).

In the last decade, the community college baccalaureate degree emerged as a new model for a broad based access to bachelor's degree attainment. Leaders at some community colleges were authorized by states legislators to offer workforce

baccalaureates to address shortages in certain occupations such as teacher education, allied health, and public services (Floyd & Walker, 2009). Most community colleges that offer baccalaureate degrees have been authorized to offer applied baccalaureate degrees in the area of technology, management, business, and information technology. These baccalaureate degrees provide an opportunity for students who graduate with Associate of Applied Science (AAS) degrees a direct path to bachelor's degree attainment. Applied baccalaureate degrees represent an expanded access to baccalaureate degree attainment for a large number of adult learners who have limited opportunities after earning the two-year occupational degree (Bragg, Townsend, & Ruud, 2009; Floyd et al., 2005; Floyd & Walker, 2009).

#### *CCB Development in Texas*

In Texas, a significant factor in the development of CCB degrees was the *Closing the Gaps by 2015* Education Plan. In 2000, the State of Texas Higher Education Coordinating Board (THECB) proposed the *Closing the Gaps by 2015 educational plan*, which called for all educational leaders in Texas public universities and colleges to increase the number of students completing a bachelor's degree by 50 % by the year 2015 (Texas Higher Education Plan, 2005). The *Closing the Gaps* initiative that called on college and university administrators to increase higher education participation rates and raise the number of students earning a bachelor's degree cultivated suitable conditions for innovative solutions (Texas Higher Education Plan, 2005). Texas community colleges enroll 75% of the students entering the state's higher education system (Texas Association of Community Colleges, 2006). Because of their accessibility, affordability, and student centered environment, community colleges attract a greater proportion of

low-income and minority students in the state (Texas Association of Community Colleges, 2006). Therefore, administrators of community colleges in Texas are uniquely positioned to aid the THECB's Closing the Gaps initiative.

The *Closing the Gaps 2015* educational initiative, along with the changing needs of local employers and the lack of access to baccalaureate degrees for nontraditional students were the driving forces for the baccalaureate movement in Texas (Texas Higher Education Plan, 2005). In 2002, education leaders of several community colleges in Texas began exploring the possibility of offering baccalaureate degrees (Community College Baccalaureate Association, 2003). In 2003, Texas legislators passed Texas Senate Bill (SB) 286 during the 78<sup>th</sup> legislative session that established a pilot project and expanded the program offering authority of a limited number of community colleges to include bachelor's degrees in the applied science and applied technology field (Texas Senate Bill 286, 2003a).

SB 286 directed the THECB staff to establish a pilot project that expanded the degree granting authority of three community colleges to include applied-science and applied-technology baccalaureate degree programs. During the July 2003 meeting, the THECB staff officially selected Brazosport College, Midland College, and South Texas College to be the pilot institutions (Texas Senate Bill 286, 2003b). The pilot project was established to operate from 2003 to 2010 with the stipulation that the THECB staff would provide a progress report in January 2009 to the Governor on the pilot project's feasibility and effectiveness. In addition, the pilot project was to end in 2015, unless legislative action was taken to authorize the continuation of the pilot (Texas Senate Bill 286, 2003b).

On June 20, 2003, the Governor of Texas signed into law amendments to subchapter A, chapter 130, Texas Education Code, by adding section 130.0012 *baccalaureate degree programs*, which authorized three Texas community colleges to confer baccalaureate degrees. The law established the following provision for the educational leaders at the three community colleges:

1. Offering baccalaureate programs should not change the mission of community colleges.
2. Leaders at the three colleges should meet the requirements of Level II accreditation set by the Commission on Colleges of Southern Association of Colleges and Schools.
3. Leaders at the three colleges have authorization to offer up to five baccalaureate degrees in applied science and applied technology field.
4. Leaders at the three colleges have to demonstrate the need for the proposed degree program in their region.
5. Leaders at the three colleges have to demonstrate that new baccalaureate programs are not duplicating programs offered by the area universities.
6. Leaders at the three colleges have to demonstrate their ability to support the new programs, facilities, faculty, administration, and libraries.
7. Leaders at the three colleges must enter into articulation agreements with other senior institutions, so students may continue their education at other institutions if the pilot project ends in 2010 (Texas Senate Bill 286, 2003b)

During the Fall 2003 semester, the THECB staff established an advisory committee for the baccalaureate degree pilot project that was comprised of Coordinating

Board staff, representatives from the three pilot colleges, a chief financial officer, and representatives from five universities that offer degree programs in applied science/technology. The establishment of the advisory committee was communicated to the presidents of the three community colleges on September 16, 2003 (M. A. Hill & G. O. Brown, personal communication, September 16, 2008). The advisory committee's charge was to provide advice and recommendations for successful project implementation.

In April 2004, administrators from the three selected colleges received approval from the Texas Higher Education Coordinating Board to offer baccalaureate degrees. One of the requirements of SB 286, that authorized the pilot project, was that the educational leaders of three colleges participating in the pilot project must apply and receive Level II accreditation from the Southern Association of Colleges and Schools (SACS). In 2003, the first applications for Level II accreditation submitted to SACS by the leaders of three colleges were denied based on failure to meet certain sections of accreditation. Each college president received a letter from the Executive Director of the Commission on Colleges that explained which specific areas needed improvement. Administrators at each college spent time and resources to improve the areas that were identified by SACS and in 2004, leaders of three Texas colleges submitted their second applications for Level II accreditation to SACS. In December 2004, SACS officials granted initial accreditation to the three colleges as Level II institutions and scheduled their site visits for the Fall 2005 and the Spring 2006 Semesters.

During the following two years, the educational leaders of the three colleges transformed organizational structures of their colleges to be able to offer baccalaureate

degrees. The organizational transformation of the three colleges included an upgrade of facilities, libraries and labs, and the hiring of new faculty and administrators to support the upper level courses. In 2006, the three college site visits were conducted and the chief administrator from each college received notification of their institution's continuation of accreditation without any major recommendation from SACS.

In 2007, during the 80<sup>th</sup> Texas legislative session, legislators passed HB 2198 that removed the pilot status from the community college baccalaureate degree project and made the baccalaureate degrees offered by the three colleges permanent. The bill analysis report indicated that between 2003 and 2007, administrators of the three colleges had made substantial investments of resources to receive Level II accreditation from SACS. An administrator from each of the three colleges provided a progress report to the THECB staff indicating a successful operation of the program. Most importantly, these applied bachelor's degrees provided access to students with a technical background to pursue baccalaureate-level education (Texas Senate, 2007).

In addition, section two of HB 2198 required that the THECB staff establish the application process for community college leaders who wish to ask for the authority to offer baccalaureate degrees. Section two of HB 2198 also required that the THECB staff develop the application process by January 1, 2009. In April 2007, HB 2198 was approved by Texas legislators and signed into law by the Governor of Texas, thereby making the bachelor's programs offered by the three colleges permanent. The THECB staff established the application process for developing a community college baccalaureate degree by adopting the criteria used in developing new bachelor's and master's degree programs at universities (Texas Higher Education Coordinating Board,

2008). The timeline of the important events in the Community College Baccalaureate degree development process is presented in Appendix B.

The following is a brief history of each of the three colleges in Texas that were selected as part of the CCB pilot project. In addition, a description of each college's bachelor program, student enrollment and the number of graduates are presented.

*Brief history of Brazosport College.* Brazosport Junior College was established in 1968 to serve the Brazosport area, which includes Clute, Lake Jackson, Freeport, and the surrounding areas of West Columbia, Sweeny, Brazoria, and Angleton. In 1970, the junior college was renamed Brazosport College (Brazosport College, 2009a). The College began its operation in 1968 with 868 students and by the Fall semester, 2008 its enrollment grew to 3,887 students (Brazosport College, 2009b). In 2008, female students comprised 52% and male students comprised 48% of the student body. The student body consisted of 63% Caucasian students, 27% Hispanic students, 8% African American students, and 2% other (Brazosport College, 2009b). Brazosport College is located in Lake Jackson and serves the needs of the area business and industry by preparing a highly educated workforce. By the 1980s, the number of manufacturing establishments in the county grew to over 186 companies and collectively employed over 18,000 workers (Handbook on Texas, 2008).

*Accreditation.* Brazosport College is accredited by SACS and has authorization to grant certificate, associate's, and bachelor's degrees. In December 2003, Brazosport College administrators submitted the first application for Level II accreditation to SACS. In January 2004, Dr. Millicent Valek, President of the Brazosport College received a letter from Dr. J.T. Rogers, Executive Director of SACS notifying him that the

application for Level II accreditation had been denied due to Brazosport College's failure to comply with four areas. The four areas that needed improvement were as follows: academic and professional preparation, library and other learning resources, instructional support, and organization and administration (J. T. Rogers, personal communication, January 16, 2004). The administrators submitted the second application for Level II accreditation in September 2004, addressing each area identified as needing improvement. The second application was approved and in December 2004, SACS officials granted initial accreditation to Brazosport College as a Level II higher education institution (Brazosport College, 2008a).

*Bachelor of Applied Technology.* The Bachelor of Applied Technology in Industrial Management was developed to meet the area's petrochemical industry's need for graduates with baccalaureate level preparation for supervisory and management positions. In addition, the baccalaureate degree in Industrial Management was designed to provide employment growth opportunities for technicians with associate degrees and practical experience to advance to mid-level supervision positions (Brazosport College, 2008c).

The degree plan for the Bachelor of Applied Technology in Industrial Management includes general education and technical courses for the freshman and sophomore years. The junior and senior level courses are designed to develop supervisory and leadership skills. The degree provides access to baccalaureate degrees for students who graduate with technical associate degrees from Business Management, Operation Management, Safety Health and Environmental Management, and General Technology Management at Brazosport College. The degree plans provide multiple exits, entrance

points allowing students to achieve the skills, and certificates necessary to obtain a job prior to the completion of a four-year degree (Brazosport College, 2008c).

In the Fall semester 2005, the first cohort of 58 students enrolled in the Bachelor of Applied Technology program. The program enrollment increased to 123 students in the Fall semester 2006 and to 165 students by the Fall semester 2008. Since the Fall 2005 semester, twenty students have graduated and have earned their bachelor's degree from Brazosport College (Brazosport College Biennial Report, 2008)

*Brief history of Midland College.* Midland Junior College was initially established as part of the Permian Junior College System in 1969. Midland College was formed in 1972 when the voters of Midland and Odessa decided to create an independent college district. The Midland College service area includes the following counties: Midland, Reagan, Upton, Pecos, and Crockett. Midland College provides educational services from its main campus in Midland and eight campus extensions (Midland College, 2008a).

Midland College's enrollment has grown from 1,108 students in 1972 to 6,346 students in 2008. The student profile at Midland College indicated that 58% of students attending Midland College are female and 42% are male with the average age of students being 24 years. The ethnic background of students is 61% Caucasian, 31% Hispanic, 5% African American, and 3% other (Midland College, 2008b).

The main economic base for the Midland College service region is considered the oil and gas industry. In addition to the oil and gas industry, Midland is also considered the banking center for the region. To demonstrate the need for the bachelor's program, Midland College administrators surveyed over sixty employers in the area including gas and oil companies, government agencies, and service related businesses. The result of the

survey indicated a strong need for bachelor's level education and for a program to prepare employees for supervisory and management positions. To ensure that the program would meet the needs of the employers, the College's administrators worked closely with the Midland Chamber of Commerce Higher Education Committee to develop the bachelor's degree curriculum (Texas Higher Education Coordinating Board, 2004b).

*Accreditation.* Midland College is a member of the Commission on Colleges of the Southern Association of Colleges and Schools and is accredited to grant certificates, associate's, and bachelor's degrees. In December 2003, administrators at Midland College submitted the first application for level-two accreditation to SACS. In January 2004, Dr. David Daniel, President of Midland College, received a letter from Dr. Rogers, Executive Director of SACS, notifying him that the application for Level II accreditation had been denied and four areas at Midland College had to improve to comply with the required standards of accreditation. The four areas needing improvement were institutional purpose, academic and professional preparation, library and other learning resources, and instructional support (J. T. Rogers, personal communication, January 16, 2004). The second application for Level II accreditation was submitted in September 2004, after major efforts were undertaken to improve the areas identified by SACS officials. The resubmission was approved, and in December 2004, SACS officials granted initial accreditation to Midland College as a Level II higher education institution (Midland College, 2008a).

The Bachelor of Applied Technology in Organizational Management was developed to provide access to students who have completed their associate degrees to

bachelor's level education. The program was also designed to provide opportunities for individuals who were employed in entry-level positions to earn bachelor's degrees and enhance their chances of moving up to supervisory and managerial positions in their organizations. Upper-division major classes were designed to provide students with expanded knowledge and understanding of enterprise management including decision making, organizational design, legal and ethical issues, and human resource management. Senior-year capstone courses are designed to require students to apply their knowledge to a real business situation (Midland College, 2008c).

During the first year, 20 students enrolled in the Bachelor of Applied Technology classes at the Midland College. The following year the enrollment grew to 76 students and during the Fall 2007 semester and the Spring 2008 semester, 91 students enrolled in upper level coursework. The number of students enrolled during the Fall 2008 and the Spring 2009 semester has grown to 126 students (Midland Biennial Report, 2008). The first group of eight students graduated with baccalaureate degrees granted by Midland College in May 2007, and two students graduated in May 2008. During May 2009, 12 students graduated bringing the total number of students who graduated with a baccalaureate degree from Midland College since 2005 to 22 students (Midland College Biennial Report, 2009).

*Brief history of South Texas College.* South Texas College (STC), formerly known as South Texas Community College is the only college in Texas created by an act of the legislature. STC was created on September 1, 1993, by Texas Senate Bill 251, to provide access to higher education to over 600,000 residents of Hidalgo and Starr Counties. In 1995, a confirmation election was held to establish a taxing district and

seven districts with single-member representation for the college. Governor Ann Richards appointed key leaders from the area to serve as founding members of the Board of Trustees (South Texas College, 2008a).

South Texas College began its operation by offering 10 certificate programs to an enrollment of less than 1,000 students. By the Fall 2008 semester, STC's program offerings exceeded 90 programs with an enrollment of over 21,000 students. STC's student body is composed of approximately 94% Hispanic students, 59% being female and 41% male. The median age of a student enrolled at STC is 23 years and over 97% of STC students reside within the STC service district (National Center for Education Statistics, 2008).

According to the United States Census Bureau, both Hidalgo and Starr Counties are considered economically disadvantaged. In addition, median household incomes for families living in Hidalgo and Starr Counties are below the average for the State of Texas. In 2004, the median household income in Hidalgo County was \$26,375, and the median household income for Starr County was \$19,775. In 2000, the percentage of Hidalgo County's population age 25 and over with a bachelor's degree or higher was 12.9% and in Starr County it was 6.9%. Both counties lagged behind the overall percentage of population 25 or over with bachelor's degree or higher in the State of Texas, which was 23.2% (U.S. Census Bureau, 2008).

*Accreditation.* South Texas College is a member of the Commission on Colleges of the Southern Association of Colleges and Schools and received its initial accreditation in 2000 as a Level I institution, which enabled college administrators to award Associate of Arts, Associate of Science, and Associate of Applied Science degrees and certificates.

In 2004, STC received accreditation as a Level II institution, which expanded the authority of the college to include awarding bachelor's degrees (South Texas College, 2008b).

On January 16, 2004, South Texas College's first application to SACS requesting Level II accreditation was denied. South Texas College administrators were informed of the reasons for denial in a letter that was sent by the Executive Director of Commission on Colleges to Dr. Shirley Reed, President of South Texas College. The four areas not complying with accreditation standards and needing improvement were academic and professional preparation, library and other learning resources, instructional support, and organizational and administrative titles and terms (J. T. Rogers, personal communication, January 16, 2004).

The last item, organizational titles and terms, referred to the word "community" in the name of the College. Until 2005, community college administrators that applied for Level II accreditation had to change their name and remove the word "community" from their name to meet the requirements of the accreditation process (SACS Criteria for Accreditation, Section 6.1.1). Therefore, to comply with accreditation standards the name of the college was changed from South Texas Community College to South Texas College during the Fall 2004 semester. At the June 24, 2004, Board meeting, STC's Board of Trustees officially approved the name change to South Texas College (South Texas College, 2008c). In September 2004, STC administrators resubmitted the application for Level II accreditation after addressing each issue raised in the first application. SACS officials approved the second application and in December 2004 STC received its initial accreditation as a Level II higher education institution with

authority to grant bachelor's degrees.

*Technology Management.* South Texas College's educational leaders developed the Bachelor of Applied Technology in Technology Management by collaborating with area businesses and industries to respond to their needs for employees with a bachelor's level education and training. In addition, the program was developed to provide students graduating with two-year associate degrees access to baccalaureate level education. The program was designed to prepare and train students for supervisory and management positions. The program's upper-level courses were designed to provide students with a broad business knowledge base, including issues related to business management, finance, information technology, and manufacturing. Furthermore, the capstone course taken during the last semester would provide students with the opportunity to work on real world projects (South Texas College, 2008d).

Enrollment in the Bachelor of Applied Technology in Technology Management has increased each semester. In the Fall 2005 semester, 58 students enrolled in upper level courses, followed by 100 students in 2006, and by the Fall 2008 semester 207 students were enrolled in baccalaureate degree courses. Since the Fall 2005 semester, 122 students have graduated from the Bachelor of Applied Technology in Technology Management (South Texas College Biennial Report, 2009).

*Computer and Information Technologies.* South Texas College is the only college in Texas that has received approval from the THECB officials to offer a second applied bachelor's degree (Hook'Em Up, 2007). The application to offer a second bachelor's degree focusing on Computer and Information Technologies was developed based on the THECB standards for new bachelor's or master's degree programs and was submitted to

the THECB in February 2007. Due to the novelty of community college baccalaureate degrees in Texas, the THECB officials decided to require an additional step before reviewing the application.

The Texas Higher Education Coordinating Board staff enlisted the expertise of individuals from three different states to visit STC and evaluate the program quality. The visiting team, which included an associate dean from Colorado State University, a department chair from Nevada's Great Basin College, and a manager from Texas Instruments visited STC on September 7, 2007. The team's report to the THECB staff stated that the new bachelor's program at STC would be comparable in quality to bachelor's degrees offered by other higher education institutions in Texas. The Texas Higher Education Coordinating Board officials approved STC to offer a second bachelor's degree in Computer and Information Technologies during their October 25, 2007 meeting (Hook'Em Up, 2007). The first classes in the Bachelor of Applied Technology in Computer and Information Technologies were offered during the Spring 2008 semester, and 42 students enrolled in the inaugural class. By the Spring 2009 semester, 90 students were enrolled in upper-level coursework. As of May 2009, twenty-three students have graduated from STC with a baccalaureate in Computer and Information Technologies (South Texas College Biennial Report, 2009).

### *Transformation and Change*

During the last century, the organizational structure of community colleges has changed mainly in response to the changing needs of the communities that they were created to serve (Townsend & Dougherty, 2006; Vaughan, 2006). During the 1950s, programs offered at community colleges expanded to include technical programs and

contract training. During the 1970s, there were external forces that influenced expansion of program offerings at community colleges to include adult education and community services (Townsend & Dougherty, 2006). During the last decade, community colleges' program offerings in several states have expanded to include baccalaureate degrees (Floyd et al., 2005; Floyd & Walker, 2009; Townsend, Bragg, & Ruud, 2008). All these changes are in keeping with the original intent of the community college--to provide additional educational opportunities to the communities they serve (Floyd & Walker, 2009; Townsend & Dougherty, 2006). There are external and internal factors that influence change in community colleges such as: (a) the changing needs of students, (b) the competition from virtual and corporate colleges, and (c) the influence of changing technology (Bragg, Townsend, & Ruud, 2009; Floyd et al., 2005; Floyd & Walker, 2009). Walker (2005) identified additional factors that have begun to effect and influence change in higher education, including the increased demand for higher education, global competition, changing student populations that include older and part-time students, and the workforce requirement for baccalaureate-educated employees.

Fullan (2007) has described how change takes place in educational institutions. According to Fullan (2007), there are three phases of the change process: initiation, implementation, and continuation. The initiation phase includes the introduction of a new idea or project and ends with the adoption of the change. Educational change could be initiated as a reaction to pressures from external groups that might demand a solution to a problem or it could be an internal response to a new policy or to an identified need (Fullan, 2007). There is no limit to the amount of new ideas for change; however, only a few ideas work their way into the implementation phase and finally into practice.

The implementation phase begins when a new idea for change has successfully gone through the initiation phase and the institution has reached the decision to adopt the change. The implementation phase can take up to two to three years before the new idea is transformed into practice. According to Fullan (2007), successful implementation of a new idea will depend on four factors: need, clarity, complexity, and quality or practicality of the program. A new program initiated to meet a real need recognized by internal and external stakeholders with clear goals and objectives has a better chance of successful implementation than one without clear goals and objectives. In addition, a new program designed to address a complex problem, developed with quality as a goal, and which is practical would have a higher success during implementation. Fullan (2007) stated six important criteria for successful implementation. The six criteria were (a) organizational change, staffing, and administrative support; (b) a focus on curriculum and instruction; (c) supplies and materials; (d) scheduling and grouping; (e) monitoring of students' progress and performance; and (f) family and community support.

Finally, a new idea that has been implemented successfully has a better chance of being institutionalized. The final phase in any change process is the continuation of the new practice, where the innovation is implemented by the institution and then transformed into an institutional practice. New ideas that have become institutionalized by being embedded into the institutional budgets and policies have the highest chance of continuation. One important factor that can undermine an institutionalized change is administrative and staff turnover. Without proper orientation of the new leadership to the new program, the new program may lose its support and begin to disappear from the institutional structure (Fullan, 2007).

According to Schein (2004), most organizational transformation and change has some degree of influence on the organizational culture. Schein (2004) described a model for managed change and discussed the process of change in human systems. Schein (2004) credited the origin of change theory to Kurt Lewin (1947) whose change theory has become known as the three-stage change theory of unfreezing, changing, and refreezing model (Schein, 2004a). Schein (2004) has built on the concept and developed a comprehensive model to explain transformative organizational change. According to Schein's (2004a) comprehensive change model, initiation of any organizational change will require a person or a group to unlearn something as well as to learn something new. The following is a brief description of Schein's (2004) seven stages of change:

1. *Disconfirmation* is part of the change process involving the creation of a motivation for change. Motivation to change begins with a discussion of what is wrong with the current conditions.
2. *Survival anxiety* is the stage in which previously learned beliefs are shown to be invalid and the need for learning something new is presented. This is the stage in which individuals may become anxious about their survival in the organization.
3. *Learning anxiety* is the stage in which resistance to change and defensiveness against learning something new sets in. Progress toward change will take place if either survival anxiety is greater than learning anxiety or if the anxiety over learning something new has been reduced.
4. *Cognitive* stage will be achieved once there is sufficient dissatisfaction with the current situation and when the desire to make a change exists.

5. *Imitation and positive identification with the role model* is the stage in which the group has unlearned the old concepts and beliefs and is ready for the new learning to take place. In this stage, the leader could demonstrate a new learned practice and the group or the individual could learn the new practice by imitating the leader.
6. *Scanning and trial-and-error learning* occurs in cases when there is no clear role model to imitate the new learning from, and the individuals learn on their own through trial and error.
7. *Personal and relational* is the stage in which change becomes permanent as the new learning becomes habitual and individuals begin to develop new beliefs and new interpersonal relationships.

During the last decade, one major educational change has been the transformation of community colleges from associate degree to baccalaureate degree granting institutions. Legislators in some states have amended their states' educational codes to expand the degree granting authority of community colleges to include baccalaureate degrees (Floyd, 2005). As of 2008, legislators in 18 states (Appendix A) had authorized community colleges to confer bachelor's degrees (Bragg, Townsend, & Ruud, 2009; Community College Baccalaureate Association, 2009; Townsend, Bragg, & Ruud, 2008 Community College Baccalaureate Association, 2008).

*Change theory.* Theories advanced by Fullan (2007), regarding implementation of educational change, and Schein (2004), regarding effect of the organizational change on the organizational culture, will be utilized to explain the organizational transformation in the three colleges in Texas. Administrators of the three colleges have followed the three

phases of change as described by Fullan (2007): initiation, implementation, and continuation. The initiation stage was launched when the educational leaders of the three colleges began discussing the idea of offering bachelor's degrees and began exploring the steps they had to take to offer baccalaureate programs. The community and regional discussion regarding the need for more bachelor-level educated workforce accelerated the initiation stage. Activities in this stage included the legislators' actions to change the educational code and the submission of applications to the THECB and SACS by administrators of the three colleges. The implementation phase took place when administrators of the three colleges began offering the bachelor's degree program at their respective colleges. The continuation stage is ongoing, as this stage may take several years before the bachelor's programs become an inherent part of the colleges' program offerings (Schein, 2004).

#### *Prior Research and Need for Further Research*

Although there is a significant body of research available about the history of community colleges, little research exists regarding the factors that may contribute to the development of the Community College Baccalaureate (CCB) movement. During the literature review the following three research studies were identified that focused on factors that impacted the transformation of community colleges from associate degree to baccalaureate degree granting institutions. The first study was conducted by McKee (2001) and it focused on the issues surrounding the development of the baccalaureate degree at Westark College. The second study by Burrows (2002) focused on the transformation of St. Petersburg Junior College to St. Petersburg College. The last

research was conducted by Petry (2006) and it centered on the transformation of five Florida community colleges from associate to baccalaureate degree granting institutions.

The purpose of McKee's (2001) study was to describe the development of a three-year Manufacturing Technology baccalaureate degree at Westark College in Arkansas. The degree was developed as a response to demands by the manufacturing industry in Arkansas and became effective in 1998. The study focused on three areas: promotion of the idea that community colleges should expand their mission to offer bachelor's degrees, the unique design of the degree that was based on the demonstration of competencies by students, and an innovative approach to program design that integrated general education with a competency-based curriculum (McKee, 2001).

McKee (2001) used a descriptive and case study method to describe the development of the baccalaureate degree at Westark College. McKee (2001) collected data by conducting seven interviews. Interview participants included one college administrator, one instructor, one student, one employer, one accreditation agency representative, and one state legislator (McKee, 2001). The interviews were transcribed and then analyzed for common themes. The results of the data analyses led to the identification of themes and assumptions that helped to describe the development of the baccalaureate degree program at Westark College. McKee (2001) reported that the synthesis of data collected through interviews pointed to three themes. The results of the study indicated that the baccalaureate degree was developed to meet the area's manufacturing industry training needs.

The strength of McKee's (2001) research was the use of a qualitative approach to describe the factors that surrounded the development of a baccalaureate degree in the

State of Arkansas. The weakness of the study was that the study's findings related only to Arkansas and might not be applicable to other states in the United States. Another weakness of the research was that the researcher interviewed a very small group of individuals and there was only one person from each participant category. In addition, there was a potential for personal bias, as the researcher was employed by Central Oregon Community College and was involved with their unsuccessful effort to gain authorization from the Oregon legislature to offer baccalaureate degrees.

In contrast to McKee (2001), who used a small number of interviews, Burrows (2002) conducted interviews with a larger group and focused on St. Petersburg Junior College's transformation into St. Petersburg College. The two main purposes of Burrows's (2002) study were (a) to describe the political strategies involved in the creation and implementation of legislation allowing community colleges to offer baccalaureate programs in Florida, and (b) to understand the perspectives of key leaders of the Florida community college system regarding the vertical extension of the community college mission. Burrows (2002) used two different research methodologies, descriptive and case study, to examine the baccalaureate movement in Florida. Burrows (2002) conducted 11 individual interviews with college executives and policy makers to gain an understanding of perspectives regarding the community college baccalaureate movement in Florida. In addition, she gathered historical information about St. Petersburg College to determine the political strategies that led to the development and implementation of the community college baccalaureate degrees in Florida. Burrows (2002) concluded that the main driving forces of the baccalaureate movement among community colleges in Florida were access to upper division education, availability of

resources, collaboration with partnering universities, responsiveness to workforce needs, and whether or not offering baccalaureate degrees fit within the traditional mission of the community college.

The strength of Burrows' (2002) research was the use of a qualitative approach to develop an in-depth understanding of the community college baccalaureate movement in Florida and to describe the conversion of St. Petersburg College from a two-year to a four-year college. The geographic confines of the dissertation was one the weaknesses of this empirical research (Burrows, 2002). The findings of the study is limited to the State of Florida. Another weakness of the research was the small number of key leaders that the researcher was able to interview for the dissertation (Burrows, 2002).

Compared to McKee (2001) and Burrows (2002), who each studied one college's transformation, Petry (2006) focused on the perspectives of key leaders involved in the transformation of five community colleges to baccalaureate granting institutions in Florida. Petry used a mixed-methods research methodology and incorporated both qualitative and quantitative approaches to examine the research questions. Petry's (2006) research questions were (a) what major factors precipitated the transformation of five colleges, (b) what critical decisions had to be made for the transformation to occur, and (c) how did the mission of the college change as a result of the transformation. A mixed-method strategy is a new approach to research in which the researchers gather numeric information by using survey instruments or other quantitative methods and collect textual information by conducting interviews or through other qualitative methods. The textual responses provide the researcher with rich information that may help explain the qualitative results. This strategy provides the researcher with in-depth understanding of

the research question by providing the opportunity to collect both quantitative (numeric) and qualitative (textual) data and then by triangulating the numeric data with the results of qualitative research (Creswell, 2003).

In the research, Petry (2006) collected qualitative data by interviewing 16 executives from the five colleges who had been directly involved in the creation and development of the baccalaureate degree to identify their perspectives about the transformation of their two-year colleges into baccalaureate granting institutions. In addition, the researcher sent a survey questionnaire to 38 individuals involved in the development and implementation of the baccalaureate degree at the five colleges in Florida. The results of the research indicated that access to upper level education and meeting the needs of the area industry for a skilled workforce were the two main reasons for the development of baccalaureate degrees in the five colleges in Florida (Petry, 2006).

Petry's (2006) research was a well-designed study. The major strengths of the study's design included using a mixed-methods approach to collect both textual data via individual interviews and numeric data via a survey instrument. In addition, Petry established the reliability of the interview questions and survey instrument by conducting a thorough literature review, and then conducted a pilot study to establish the reliability of the survey instrument. After analyzing the results of the pilot study, Petry (2006) removed several survey questions to increase the instrument's degree of reliability. The survey instrument was finalized with 45 questions (Cronbach's alpha reliability rating of .852), and it was used to survey 38 experts from the five Florida colleges. One weakness in Petry's (2006) study was the lack of power analysis to ensure that the sample size for the survey was appropriate. Another weakness was the small number of survey

participants in the study. While Burrows' (2002) research focused on one community college, Petry (2006) studied five community colleges in Florida. The number of colleges studied by Petry (2006) afforded the research stronger transferability of results.

As the field of the CCB matures, further research will be necessary to study its results. Floyd et al. (2005) stated, "At the national level, researchers and policy makers should study the phenomenon to see what factors facilitate or inhibit the development of the CCB as a degree option in community colleges" (p. 186). Further research regarding the CCB is essential to evaluate and understand community college baccalaureate degrees. The current study could add to the body of knowledge regarding organizational transformation of two-year colleges from associate to baccalaureate granting institutions. This dissertation may help to fill the gap in knowledge about community college baccalaureate degree development by providing actual data about the perspectives of administrators and faculty at the three Texas colleges regarding Community College Baccalaureate degrees. The results of this study might provide information to community college leaders interested in developing a baccalaureate program. Furthermore, this study may contribute to the establishment of successful strategies for the development of such degrees.

### *Summary*

Over the last century, the organizational structures of community colleges have changed mainly in response to the changing needs of the communities that they were created to serve (Townsend & Dougherty, 2006; Floyd et al., 2005; Vaughan, 2006). During the 1950s, programs offered at community colleges expanded to include technical programs and contract training. During the 1970s, external forces influenced the

expansion of program offerings at community colleges to include adult education and community services (Townsend & Dougherty, 2006; Floyd & Walker, 2009). Most recently, community colleges' program offerings in several states have expanded to include baccalaureate degrees (Bragg, Townsend, & Ruud, 2009; Floyd & Walker, 2009; Townsend, Bragg, & Ruud, 2008). All these changes are in line with the original intent of the community college - to provide additional educational opportunities to the communities they serve (Townsend & Dougherty, 2006; Vaughan, 2006; Walker, 2005). Forces that created the need for the latest expansion of the community college mission came from the changing needs and expectations of students, the globalization of workforce, new competition, and enhanced technology (Hunt, 2006; Floyd & Walker, 2009; Reindl, 2007; Walker, 2006).

In the United States, the community college baccalaureate movement began in the early 1970s. Leaders at some community colleges began to ask for authority from their state legislators to offer specialized baccalaureate degrees (Floyd et al., 2005; Floyd & Walker 2009). In Texas, a significant factor in development of CCB degrees might have been the *Closing the Gaps by 2015* education plan which called on educational leaders in all Texas public universities and colleges to increase the number of students completing a bachelor's degree by 50% by the year 2015 (Texas Higher Education Plan, 2005).

Advocates of the CCB degrees have argued that expanding the mission of community colleges to offer the CCB degree is a natural response by the leaders of community colleges to meet the changing needs of the communities they serve (Floyd & Walker 2009; Walker, 2005). The main concern raised by the opponents of the CCB degree is regarding *mission creep*. They state that leaders in community colleges will

abandon their traditional mission and limit remedial and developmental education (Eaton, 2005; Pedersen, 2005; Townsend, 2005). Another argument made in opposition to the CCB degree is that leaders within community colleges that offer baccalaureate degrees will divert resources from two-year programs to fund their four-year degrees (Cook, 2000; Glennon, 2005).

Further research in the field of the CCB is essential to evaluate and understand community college baccalaureate degrees and their effects on community colleges and other higher education institutions. This dissertation could help to fill the gap in knowledge about community college baccalaureate degree development by providing actual data about the perspectives of administrators and faculty at the three Texas colleges regarding factors that might have contributed to the development of CCB degrees in Texas.

### CHAPTER 3: RESEARCH METHOD

This chapter provides an overview of the research design and the methodology used in this research study. The chapter begins with a restatement of the research problem, research questions, and hypotheses. The next section includes descriptions of research participants and the survey instrument. After which, the operational definitions of study variables are presented. Chapter 3 concludes with a description of statistical procedures used to analyze collected data and a review of the limitations and ethical considerations for this study.

The purpose of using a quantitative correlational study was to examine the perspectives of administrators and faculty regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to the development of Community College Baccalaureate (CCB) degrees in Texas. It was hypothesized that the four variables of student need, workforce need, college relations, and college mission were linearly and positively correlated. Correlation coefficients were computed among the four variables to determine whether associations existed among all four variables or only among certain variables. The following research questions and hypotheses guided this study:

RQ 1: To what extent, if any, is perceived student need for a baccalaureate degree correlated to workforce need, college mission, and university relations?

H<sub>10</sub>: Perceived student need for a baccalaureate degree is not correlated to workforce need, college mission, and university relations.

H<sub>11</sub>: Perceived student need for a baccalaureate degree is correlated to workforce need, college mission, and university relations.

RQ 2: To what extent, if any, is perceived workforce need for employees with a bachelor's degree correlated to student need, college mission, and college relations?

H2<sub>0</sub>: Perceived workforce need for employees with a bachelor's degree is not correlated to student need, college mission, and college relations.

H2<sub>1</sub>: Perceived workforce need for employees with a bachelor's degree is correlated to student need, college mission, and college relations.

RQ 3: To what extent, if any, are perceived college relations with area universities correlated to student need, workforce need, and college mission?

H3<sub>0</sub>: Perceived college relations with area universities are not correlated to student need, workforce need, and college mission.

H3<sub>1</sub>: Perceived college relations with area universities are correlated to student need, workforce need, and college mission.

RQ 4: To what extent, if any, is perceived expansion of a college's mission correlated to student need, workforce need, and college relations?

H4<sub>0</sub>: Perceived expansion of a college's mission is not correlated to student need, workforce need, and college relations.

H4<sub>1</sub>: Perceived expansion of a college's mission is correlated to student need, workforce need, and college relations.

RQ5. What are the differences, if any, in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas?

H5<sub>0</sub>: There are no differences in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas.

H5<sub>1</sub>. There are differences in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas.

RQ6. What are the differences, if any, in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions?

H6<sub>0</sub>. There are no differences in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions.

H6<sub>1</sub>. There are differences in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions.

### *Research Methods and Design*

According to Creswell (2003), the selection of a research design is influenced by the research problem. The purpose of the study was to examine administrators and faculty perspectives in the three colleges in Texas, regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to development of CCB degrees in Texas. It was hypothesized that variables (factors) of student need, workforce need, college relations, and college mission correlated linearly and positively. Correlation coefficients were computed among the four variables to determine possible correlations between all possible pairs of variables.

Given the purpose of this research, a quantitative correlational design was best suited for this dissertation because the intention of the study was not to prove causal

relationships, but rather to examine possible correlation among variables (Trochim, 2006; Creswell, 2003).

A quantitative approach was used to collect data regarding each variable (Neuman, 2006). To assess possible correlations among variables, the correlation coefficients were calculated to determine the extent or strength of the correlation between two variables. The correlation coefficient is a single number that indicates the magnitude (strong, moderate, weak) and the direction (positive or negative) of relationship between two variables (Trochim, 2006; Zikmund, 2003).

Using a survey method was also appropriate for this study as it provided the quantitative means to objectively test research questions and hypotheses (Trochim, 2006). In addition, survey methodology is one of the most effective techniques available for the study of attributes, values, beliefs, and motives of a designated population (Crozby, 2004). Given that participants for the study were from three different colleges in Texas, a Web-based survey provided a fast and cost effective way to collect the quantitative data for this study (Neuman, 2006).

### *Participants*

The population for the study was from Brazosport College, Midland College, and South Texas College. Presidents, vice presidents, directors, deans, department chairs, and faculty comprised the study's population. The target population for the study was 814 individuals (Brazosport College, 114; Midland College, 192; and South Texas College, 508). Using G\* Power (Faul et al., 2007) software, an *a priori* power analysis was conducted to determine the appropriate sample size that would have the necessary power to detect an effect if an effect exists (Cohen, 1992). An effect size is defined as the size of

the effect in the population worth detecting. For correlational analyses the magnitude of effect size has been set as a small effect if the number is .1 or smaller, a medium effect if the number is between .2 to .3, and a large effect if the number is .5 or higher. For ANOVA tests the effect size is set as a small effect if the number is .1 or smaller, a medium effect if the number is between .1 and .25, and large effect if the number is .4 or higher (Cohen, 1992). The results of the power analysis indicated that a minimum sample size of 159 from all three colleges would have the power of .801 to detect a medium effect with an  $\alpha = .05$  for conducting correlational analyses and power of .805 for conducting ANOVA tests. Statistical power of .8 or larger is an acceptable power level for this study (Cohen, 1992).

The sample size for the study was calculated to be 530 individuals from three colleges. According to studies in the literature, response rate from an e-mail survey could range between 25% and 30% (Kittleston, 1997). In order to achieve an adequate sample size, a 30% response rate was used to attain a 530 total sample size. A stratified sample design was used to randomly select a proportional number of cases from each college. Table 1 indicates the target population and the stratified sample size from each college based on a sample size of 530 individuals from three colleges.

Table 1

*Target Population and Stratified Sample*

College	Target population N	Target population %	Sample size from each college
Brazosport	114	14%	75
Midland	192	24%	127
South Texas	508	62%	328
Total	814	100%	530

*Materials / Instruments*

The instrument for the study was a 6-point Likert-type scale Web-based survey questionnaire. Respondents' responses begin to lose meaning and are less than distinctive on scales that have more than 7- points (Hair, Bush, & Ortinau, 2003). In addition, the study used a 6-point scale because such a scale minimizes the tendency of respondents to select the middle response (Trochim, 2006).

The questions for the survey instrument were adapted from Petry (2006). Petry has granted permission to adapt and utilize the survey questionnaire used in Florida for this study in Texas (Appendix C). Petry (2006) established the reliability of the instruments through a thorough review of the literature. In addition, experts who were knowledgeable about the subject matter had validated the content of the questions. Finally, the questionnaire was pilot tested to establish a measure of reliability (Cronbach's alpha reliability rating of .852) for the survey instrument (Petry, 2006).

*Piloting the Survey Instrument.* The following actions were taken to ensure the instrument developed by Petry (2006) and used in Florida could be valid and reliable in Texas. To establish validity of the instrument, a group of individuals who were knowledgeable about the subject reviewed the survey questions for content validity. Furthermore, the survey questionnaire was pilot tested to assess the reliability of the overall survey instrument and the reliability of each set of questions as they relate to each research question. The pilot group consisted of 25 individuals from South Texas College and included deans, department chairs, assistant chairs, administrator, and faculty. A Cronbach's alpha statistical test was used to calculate the coefficient of reliability on each survey question and the set of survey questions representing each research factor. Based on the results of the item analysis conducted on each survey question and the set of questions representing the research factor, several questions were removed to reach an acceptable degree of reliability. The final survey instrument (Appendix D) had a Cronbach's alpha reliability of .703 ( $N = 20$ ). Cronbach's alpha ratings of greater than .70 are considered to be acceptable in most social science research studies (Green & Salkind, 2007). Table 2 lists the research factors, the scale developed from survey questions, and the Cronbach's alpha scores for each scale ranging from .70 - .80; therefore, each scale score demonstrated acceptable reliability.

Table 2

*Cronbach's Alpha for Scale Reliability*

Research Factors	Scale Survey Questions	Cronbach's Alpha N = 20
Student need for baccalaureate degree	1, 4, 5, 6, 8	.766
Workforce need for employees with a bachelor's degree	2, 7, 9, 14, 20	.724
College relations with area universities	3, 16, 17, 18, 19	.709
Expansion of a college's mission	10, 11, 12, 13, 15	.804

The survey instrument (Appendix D) was used to collect quantitative data via a web-based survey questionnaire. The Web-based survey was composed of two parts. Part I was the survey questionnaire (Appendix D) with 20 structured questions. Survey participants responded to survey questions using a Likert-type scale with six response choices. The 6-point Likert-type scale provided an even number of response choices with no natural middle value; therefore, this scale forced respondents to select a response that indicated their level of agreement or disagreement with the provided choices (Trochim, 2006). Survey participants responded to the survey questions using the following categories: 1 = *strongly agree*, 2 = *agree*, 3 = *somewhat agree*, 4 = *somewhat disagree*, 5 = *disagree*, and 6 = *strongly disagree*. Part II (Appendix E) was designed to collect demographic information regarding individual participants. Participants were asked to respond to six demographic questions. The demographic questions provided data related

to (a) college name, (b) gender, (c) type of position, (d) educational level, (e) years of community college experience, (f) and years of experience at the current college.

The population for the dissertation was from Brazosport College, Midland College, and South Texas College. Participants included college presidents, vice presidents, directors, deans, department chairs, and faculty. The target population for this study was 814 individuals (Brazosport College, 114; Midland College, 192; and South Texas College, 508). The complete list of target population was provided to the researcher by the office of the Vice President for Academic Affairs from each college. A stratified sample design was used to randomly select a proportional number of cases from each college. The sample size of 530 included 75 possible participants from Brazosport College, 127 from Midland College, and 328 from South Teas College, and the survey questionnaire was disseminated electronically. The following steps outline how the Web-based survey was administered:

1. An advocate from each college sent an email to the target population and notified them that they would receive an invitation to participate in a survey. Then, the advocate introduced the researcher and encouraged the target population to participate in the survey.
2. Following the email from the advocate, the participants for this study received an e-mail from the researcher inviting them to participate in the study (Appendix F). The letter explained the purpose of the research, the time required to complete the survey, and the measures that would be taken to protect the privacy of all participants.

3. The recipients of the letter of intent were asked to participate in the study by submitting the electronic *Informed Consent Form* (Appendix G).
4. The participants who submitted the *Informed Consent Form* received access to proceed to the next section and access the survey.
5. Participants who began the electronic survey received instructions on how to navigate the web-based survey. Necessary safeguards were integrated into the survey to prevent involuntary skipping of questions and for providing multiple responses to individual questions.
6. At the end of the survey, participants were asked to click on a *submit* button to finalize the survey. This action uploaded the participant's answers to the on-line database and prompted an automatic acknowledgement that the participant had completed the survey.
7. The survey was available for three weeks. Two follow-up e-mails were sent to all participants reminding them to complete the survey, and a final notification email was sent informing participants that the survey would be closed on a certain date.

The survey was accessible for three weeks during April and May 2009. The first follow-up email was sent during the first week, followed by the second follow-up email during the second week. A final notification email was sent during the last week to inform the participants that the survey would be closed as of a certain date.

#### *Operational Definition of Variables*

The focus of this study was to examine administrators and faculty's perspectives regarding factors such as student need, workforce need, college relations with area

universities, and expansion of a college's mission that may have contributed to the development of CCB degrees in Texas. The four factors examined in this study represent the four study variables of student need, workforce need, college relations, and college mission. These four variables were each operationalized as responses to one or more questions on the survey.

*Student Need.* The variable of student need ( $X_1$ ) for CCB degree was measured by several survey questions (1, 4, 5, 6, and 8). Student need was operationally defined as responses selected by respondents to the survey questions. The value for this variable was calculated by averaging the response values to the set of survey questions corresponding to this variable.

*Workforce Need.* The variable of workforce need ( $X_2$ ) for employees with bachelor's degree was measured by several survey questions (2, 7, 9, 14, and 20). Workforce need was operationally defined as responses selected by the respondents to the survey questions. The value for this variable was calculated by averaging the response values to the set of survey questions corresponding to this independent variable.

*College Relations.* The variable of college relations ( $X_3$ ) with area universities was measured by several survey questions (3, 16, 17, 18, and 19). College relations was operationally defined as responses selected by the respondents to the survey questions. The value for this variable was calculated by averaging the response values to the set of survey questions corresponding to this variable.

*College Mission.* The variable of college mission ( $X_4$ ) and expansion of a college's mission to offer baccalaureate degrees was measured by several survey questions (10, 11, 12, 13, and 15). College mission was operationally defined as

responses selected by the respondents to the survey questions. The value for this variable was calculated by averaging the response values to the set of survey questions corresponding to this variable.

As with any study, covariate variables may affect the outcomes of statistical procedures and the resulting conclusions. Possible covariate variables were identified by asking participants to complete a demographic information section on the survey (Appendix E) including gender, college position, and educational attainment.

Data were collected about each research question using an ordinal measure. However, according to Neuman (2006), when a construct has multiple indicators, researchers have developed a single measure for the construct by adding multiple indicators. Multiple indicators usually are measured on an ordinal level; however, the final combined single measure for the construct is a ratio scale. In the study, each variable was measured by multiple survey questions; therefore, by averaging the responses on the set of survey questions, a single ratio score was calculated for each of the variables. Table 3 lists four variables (factors), the scale developed using several survey questions, and the measurement scale.

Table 3

*Variables and Measurement Scale*

Factor Variable	Scale Survey Questions	Measurement Scale
Student Need	1, 4, 5, 6, 8	Ratio
Workforce Need	2, 7, 9, 14, 20	Ratio
College Relations	3, 16, 17, 18, 19	Ratio
College Mission	10, 11, 12, 13, 15	Ratio

*Data Collection, Processing, and Analysis*

Data were collected using a Web-based survey hosted on South Texas College's Distance Education server with a software program called *STC LimeSurvey*. To ensure confidentiality, collected survey data were stored electronically in a secure database. The data were then downloaded onto a personal computer as an Excel file and then uploaded for statistical analyses into the *Statistical Package for Social Sciences (SPSS) 14.0 for windows*.

Collected data were coded and descriptive statistics were completed. Descriptive statistical analyses were conducted to explain the basic characteristics of collected data by categorizing and summarizing information about the variables (Trochim, 2006). Statistical procedures used in this research study included *a priori* and *pos-hoc* power analyses to test the power of the sample size. A Cronbach's alpha was conducted to test the reliability of the survey instrument. One-sample *t*-tests were computed to determine

statistical significance of mean scores between variables and a neutral score. Pearson correlations were conducted to determine statistically significant correlations between variables. In addition, overall one-way analyses of variance tests were conducted to determine statistical significant differences among means of several groups.

Hypotheses for research questions one through four were tested by using Pearson's correlation analyses. To test the hypotheses for research question five and six, a set of ANOVAs was conducted to compare means on calculated scale variables. For this study, the statistical procedures were performed using a significance level of  $\alpha = .05$  which corresponds to a 95% confidence level. Therefore, in this study the null hypothesis was rejected at a 95% confidence level.

#### *Methodological Assumption, Limitations, and Delimitations*

The study was conducted based on several assumptions. It was assumed that individuals who participated in the survey comprehended the questions asked in the survey instrument. By pilot testing the survey instrument, it was possible to increase the content validity of the instruments. In addition, it was also assumed that participants responded to the questions honestly. Therefore, it was important to inform participants through the letter of intent (Appendix F) and the informed consent form (Appendix G) that their participation was voluntary and, more importantly, that their privacy would be protected.

The following issues could limit the results of this study. A limitation of this study's methodology was its inability to determine causation; it could only determine correlations between variables. Another possible limitation was that data were collected via a Web-based survey. Even though a Web-based survey instrument is fast,

inexpensive, and flexible to administer, it could contribute to a decreased response rate for this study (Newman, 2006). Participants who were invited to participate self-selected to participate and they needed to access the survey on-line. Using an on-line instrument to collect data had the potential of preventing some individuals from participating in the survey due to lack of computer access (Neuman, 2006). However, in the study, the participants were college presidents, vice presidents, directors, deans, department chairs, and faculty from Brazosport College, Midland College and South Texas College, and therefore, all were likely to have access to computers. Another limitation was related to the study's covariate variables. Because covariate variables were collected in categorical and, nominal levels, these variables could not be analyzed through parametric testing to determine their possible influence on the survey results. Finally, the study was intended to be representative of a stratified random sampling of administrators and faculty at the three colleges in Texas. The participants of the study might not be regarded as representative of all administrators and faculty at the 50 community colleges in Texas. Therefore, the generalizability of this study is limited to only other institutions with similar characteristics and in similar geographic areas.

According to Creswell (2003), delimitations in a study are used to place boundaries and narrow the scope of a study. This quantitative study had several delimitations. The study's focus was to examine the perspectives of individuals from three community colleges in Texas regarding the factors that could have contributed to the development of baccalaureate degrees from 2003 to 2009. Therefore, data collected for the study and participants selected for the survey were from Brazosport College, Midland College, and South Texas College. The participants for the study's sample were

restricted to college presidents, vice presidents, administrators, deans, directors, department chairs, and faculty members.

### *Ethical Assurances*

Prior to any data collection, Institutional Review Board approval was obtained from all participating institutions. The participants (human subjects) for the proposed study received a letter inviting them to participate in this study (Appendix F). Participants received information about the purpose of the research and how the results of the research would be used in the future. Only those participants who agreed to the consent form participated in this study (Appendix G). Moreover, all necessary measures were undertaken to protect the privacy of all human subjects. In addition, this study was designed to comply with the standards for conducting research with human participants (National Institute of Health, 2004), including all Institutional Review Board requirements and policies of Northcentral University.

### *Summary*

Given the purpose of the research, a quantitative correlational design was best suited for this study because the intention of the study was not to prove causal relationships, but rather to examine possible correlation between variables (Trochim, 2006; Creswell, 2003). A Web-based survey instrument was used to survey administrators and faculty from Brazosport College, Midland College, and South Texas College. The variables for the study were the perspectives of administrators and faculty regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission.

The sample size for the study was calculated to be composed of 530 individuals from all three colleges. A stratified sample design was used to randomly select proportional number of cases from each college. The study was conducted based on several assumptions. It was assumed that individuals who completed the survey comprehended the questions listed in the survey instrument and responded to the questions honestly. To increase content validity and avoid response bias, the survey questionnaire was pilot-tested (Zikmund, 2003). Using a Web-based instrument to collect data had the potential of preventing some individuals from participating in the survey due to lack of access to computers (Newman, 2006). Finally, the generalizability of the study is limited only to other institutions with similar characteristics and in similar geographic areas. Nevertheless, despite these limitations, it would be possible to draw important inferences by analyzing the collected data using various statistical tests.

## CHAPTER 4: FINDINGS

The findings for the quantitative correlational study are presented in this chapter. The chapter begins with information regarding survey participation and descriptive statistics of data collected through the Web-based survey. Results of statistical analyses conducted on research questions and hypotheses are provided next. Finally, this chapter concludes with evaluation of research findings.

The purpose of the study was to examine administrator and faculty perspectives regarding factors such as student need for baccalaureate degree, workforce need for employees with bachelor's degree, college relations with area universities, and expansion of a college's mission that may have contributed to development of community college baccalaureate degrees in Texas. The intent of this study was not to prove what factors caused the development of community college baccalaureate degrees in Texas, but to examine possible correlations, if any, between variables identified for this study.

### *Results*

The study was conducted by surveying administrators and faculty from Brazosport College, Midland College, and South Texas College. Lists of administrators and faculty obtained from Brazosport College, Midland College, and South Texas College indicated that the total population for this study was 814 individuals (Brazosport College, 114; Midland College, 192; and South Texas College, 508). Using G\* Power (Faul, et al., 2007) software, an *a priori* power analysis was conducted to determine the appropriate sample size that would have the necessary power to detect an effect if an effect exists (Cohen, 1992). The results of the power analysis indicated that a minimum sample size of 159 from three colleges would have sufficient power to detect a medium

effect with an alpha level of .05(Cohen, 1992). To achieve the adequate minimum sample of 159 individuals, assuming a response rate of 30%, the sampling size for the study was calculated to be 530 individuals. According to studies in the literature, response rate from an e-mail survey could range between 25% and 30% (Kittleson, 1997). A stratified sample design was used to randomly select proportional number of cases from each college. The survey was distributed electronically to randomly selected administrators and faculty in the three colleges. Participants received an invitation to participate, an informed consent form, two reminder emails, and a final email that indicated the last day that participants could access the survey.

#### *Response Rate*

The study was conducted during a three-week period during April and May of 2009. The sample size for the survey was 530. The survey was successfully distributed to 521 participants (nine were undeliverable), and 373 surveys were returned for an overall response rate of 71.6%. The adjusted response rate was 69% because out of 373 returned surveys 361 surveys, were complete, and the rest (12 surveys) were determined to be incomplete and unusable. There is no agreed upon response rate for electronic surveys; electronic survey response rate can range from 20% to 80% depending on the nature of the organization that is conducting the survey and the targeted population (Fowler, 2009). According to Fowler (2009), for an academic institution surveying an adult population a response rate of 70% is considered a high response rate. Several factors contributed to the high response rate for this research. Before the surveys were distributed to Brazosport College and Midland College, an advocate from each College sent an email to the target population and introduced the researcher, informed participants that they would receive a

survey from the researcher, and encouraged them to participate in the research study. Other factors that contributed to an increased response rate are related to reminder emails and a final notification email. The first reminder email was sent during the first week, followed by the second reminder email sent during the second week. The final notification email was sent during the last week, informing participants as to the last day the survey would be accessible. After each email, the number of individuals who completed the survey increased, indicating that the emails played an important role in reminding the participants to complete the survey. Table 4 indicates the status of surveys distributed electronically.

Table 4

*Status of Distributed Surveys*

Status	n	%
Undeliverable	9	2.0%
Not returned	150	28%
Returned but incomplete	12	2.0%
Returned and complete	361	68%
Total	530	100%

The overall non-adjusted response rate for the research was 71.6%. This rate was calculated by dividing the number of returned surveys of 373 (361 returned and complete surveys plus 12 returned but incomplete surveys) by the number of surveys successfully distributed electronically 521 (530 total distributed surveys less the 9 undeliverable

surveys). The adjusted response rate was calculated by dividing 361 (returned and complete surveys) with 521 (the number of successful surveys distributed electronically) for an adjusted response rate of 69%. The response rate for Brazosport College was 100%. All 75 participants randomly selected to participate in the survey completed the survey. Midland College had a 74% response rate. Sample size for Midland College was 127 participants and 94 participants completed the surveys. Finally, South Texas College had a response rate of 58%, out of 328 randomly selected participants, 191 participants completed the survey. Table 5 indicates the response rate by college.

Table 5

*Response Rate by College*

College	Actual Response	Expected Response	Percentage %
Brazosport	75	75	100%
Midland	94	127	74%
South Texas	191	328	58%
Missing Value	1		0.003%
Total	361	530	68%

The 361 returned surveys exceeded the minimum required sample size of 159 for the study. However, to test the statistical power of the study, using G\* Power 3.0.8 (Faul et al., 2007) a *post-hoc* power analysis was conducted to determine the power of the statistical test for the actual sample size of 361 (Faul et al., 2007). The results of the *post-hoc* power analysis indicated that the sample size of 361 has statistical power of .986 to

detect a medium effect for correlational analyses and power of .992 to detect a medium effect for ANOVA tests. The results indicated that actual sample size of 361 was more than adequate and has the necessary power for statistical analysis for the study (Cohen, 1992).

Demographic information was collected via the survey instrument. Participants provided demographic information by completing part II of the survey (Appendix E). Participants were asked to respond to six demographic questions. The demographic questions provided data relating to (a) college name, (b) gender, (c) type of position, (d) educational level, (e) years of community college experience, and (f) years of experience at the current college. The results regarding participant's gender indicated that out of 361 individuals who participated in this survey 177 were female (49%) and 174 were male (48.2%) with 10 (2.8%) participants not completing this question (Table 6).

Table 6

*Gender of Survey Participants*

Gender	Frequency	%
Female	177	49.0
Male	174	48.2
Missing Value	10	2.8
Total	361	100.0

Frequency tests regarding college position indicated that 241 (66.8%) responded were faculty. Forty-five (12.5%) participants were administrators. The rest of the

positions selected by participants were as follows: 33 (9.1%) participants were department chairs, 12 (3.3%) individuals were division deans, eight (2.2%) participants were vice presidents, and 2 (0.6%) participants were college presidents. There were 13 individuals who selected *other* as their college position and seven who did not complete this question on the survey (Table 7).

Table 7

*College Position of Survey Participants*

College Position	Frequency	%
Faculty	241	66.8
Department Chair	33	9.1
Division Dean	12	3.3
Administrator	45	12.5
Vice President	8	2.2
President	2	0.6
Other	13	3.6
Total	354	98.1
Missing value	7	1.9
Total	361	100.0

Information collected regarding the educational level of survey participants indicated that 33 (9.4%) participants had associate's degrees and 35 (9.7%) participants had a bachelor's degree as their highest degree earned. The largest group of participants

219 (60.7%) had a master's degree followed by 64 (17.7%) participants who had a doctorate degree as their highest degree earned. Nine (2.5%) participants did not complete this question (Table 8).

Table 8

*Educational Level of Survey Participants*

Educational level	Frequency	%
Associate's	34	9.4
Bachelor's	35	9.7
Master's	219	60.7
Doctorate	64	17.7
Total	352	97.5
Missing Value	9	2.5
Total	361	100.0

Data collected regarding the number of years working in any community college indicated that 85 (23.5%) participants had less than five years experience working in a community college setting. The largest group of participants, 99 (27.4%) individuals, had less than 10 years and more than 6 years work experience. Participants with more than 11 years and less than 15 years consisted of 81 (22.4%) individuals. Thirty-six (10%) participants had over 16 years and less than 20 years of work experience. Fifteen (4%) participants had over 21 years of experience and less than 25 years. Finally, 38 (10.5%)

participants had over 25 years of work experience in a community college setting. There were 7 (1.9) participants who did not provide a response to this question (Table 9).

Table 9

*Years of Experience in Community College*

Years in Community College	Frequency	%
0 - 5	85	23.5
6 - 10	99	27.4
11 - 15	81	22.4
16 - 20	36	10.0
21- 25	15	4.2
Over 25	38	10.5
Total	354	98.1
Missing Values	7	1.9
Total	361	100.0

The survey respondents were also asked about the number of years of experience at their current community college. The results for number of years working at their current college indicated that the largest group of participants 111 (30.7%) had less than five years of experience working at their current college. Participants with more than six years but less than 10 years constituted 100 (27.7%) participants. Individuals with more than 11 years and less than 15 years comprised 80 (22.2%) participants. Participants with over 16 years and less than 20 years work experience were 28 (7.8%) individuals. Eight

(2.2%) participants had over 21 years of experience and less than 25 years working at their current college. Finally, 27 participants (7.5%) had over 25 years of work experience at their current college. There were 7 (1.9) missing values. Table 10 lists frequency and percentage of number of years at this college.

Table 10

*Years of Experience at This College*

Years at their current College	Frequency	Percentage %
0 - 5	111	30.7
6 - 10	100	27.7
11 - 15	80	22.2
16 - 20	28	7.8
21- 25	8	2.2
Over 25	27	7.5
Total	354	98.1
Missing Values	7	1.9
Total	361	100.0

*Scale for Variables*

In the study, variables were measured by multiple survey questions. According to Neuman (2006), when a construct has multiple indicators, researchers have developed a single measure (scale) for the construct by adding multiple indicators. Data for each

survey question were collected in an ordinal level; however, the final combined single measure (scale) for each variable was at a ratio level. By averaging the responses on the set of survey questions related to each variable, a single ratio score was calculated for each variable. Table 11 lists research factors (variables) and the scale that was developed to measure each variable.

Table 11

*Research Variables and Scale*

Factor Variable	Scale Survey Questions
Student Need	1, 4, 5, 6, 8
Workforce Need	2, 7, 9, 14, 20
College Relations	3, 16, 17, 18, 19
College Mission	10, 11, 12, 13, 15

The final analysis conducted to describe the survey participants data was a one-sample *t*-test. This test was conducted on each scale representing the research variables to determine whether each mean was significantly different from a critical *t* value calculated to be 3.5. The critical *t* value of 3.5 was established by the researcher and represented the calculated mid-point of the Likert scale used by survey participants to respond to the survey questions. Participants responded using the following values: 1 = *strongly agree*, 2 = *agree*, 3 = *somewhat agree*, 4 = *somewhat disagree*, 5 = *disagree*, and 6 = *strongly disagree*. The neutral value was calculated to be 3.5, because it was the mid-point between the two categories of somewhat agree = 3 and somewhat disagree = 4. Therefore

any number less than 3.5 would be considered a positive response or in agreement with the survey statement. Any number greater than 3.5 would be a negative response or not in agreement with the survey statement. The results of the one-sample  $t$  test indicated that sample means for each scale representing a research variables were significantly different from the critical  $t$  value of 3.5 (Table 12).

Table 12

*One-sample t-Test – Research Variables*

Test Value = 3.5				
Scale	Mean	df	t	Sig
Student Need	2.24*	360	-24.871	.000
Workforce Need	2.05*	360	-33.161	.000
College Relations	2.96*	358	-10.550	.000
College Mission	2.53*	360	-23.897	.000

*Note.* \* The mean difference is significant at the 0.05 level.

The sample mean of all four factors were significantly different from the established neutral value of 3.5 with a  $p$  value of less than .05. The scale for workforce need had the smallest mean ( $M=2.05$ ) followed by the scale for student need ( $M = 2.24$ ), which indicates that survey participants' perceived workforce need and student need having greater influence in development of CCB degrees in Texas. The results of this test support the assertion that faculty and administrators in three colleges perceive (strongly agree, agree, somewhat agree) all four factors had an influence on the development of CCB degrees in Texas.

*Research Question One through Four*

The intent of the study was to examine administrator and faculty perspectives regarding factors that may have contributed to the development of community college baccalaureate degrees in Texas. It was hypothesized that factors such as student need, workforce need, college relations, and college mission were linearly and positively correlated. To test the hypotheses for research questions one through four, a correlation coefficient was calculated for all possible pairs of the four variables to determine whether or not there was statistically significant correlation between variables. A correlation coefficient is a statistical measure that describes association between two variables (Zikmund, 2003). A correlation coefficient  $r$  can range between +1.0 to -1.0. The value of the correlation coefficient indicates both direction and the magnitude of the association between two variables. For example, a coefficient of correlation  $r = .1$  is considered to be a weak correlation,  $r = .3$  is considered a moderate correlation, and  $r = .5$  is considered to be a strong correlation (Zikmund, 2003). Using the Bonferroni approach to control for Type I errors across the six correlations, a  $p$  value of less than .008 ( $.05/6 = .008$ ) was required for significance. Table 13 provides the summary of correlation analyses of four factors.

Table 13

*Correlation Analyses*

Independent Variables Factor	Student Need	Workforce Need	College Relations	College Mission
Student Need (RQ1)				
Pearson Correlation	1	.821**	.104*	.344**
Sig. (2-tailed)		.000	.048	.000
N	361	361	361	361
Workforce Need (RQ2)				
Pearson Correlation	.821**	1	.122*	.298**
Sig. (2-tailed)	.000		.020	.000
N	361	361	361	361
College Relations (RQ3)				
Pearson Correlation	.104*	.122*	1	.392**
Sig. (2-tailed)	.048	.020		.000
N	359	359	359	359
College Mission (RQ4)				
Pearson Correlation	.344**	.298**	.392**	1
Sig. (2-tailed)	.000	.000	.000	
N	361	361	361	361

*Note.* \* Correlation is significant at the 0.05 level

*Note.* \*\* Correlation is significant at the 0.008 level (2-tailed).

Correlation coefficients were computed among the four variables. The results of the Pearson's correlation analyses conducted on six correlations produced four

statistically significant correlations among variables at the  $p = .008$  level. The strongest positive linear correlation was between student need and workforce need with a correlation coefficient of  $r = .82$ . The following two correlations were considered to be positive and linear but moderately correlated, beginning with college mission and college relations with a correlation coefficient of  $r = .39$  and followed by student need and college mission with correlation coefficient of  $r = .34$ . Finally, there was a correlation between workforce need and college mission with correlation coefficient of  $r = .30$ . The result of the correlation analyses indicated that there were no statistically significant correlations between college relations and student need, nor between college relations and workforce need.

#### *Research Question Five*

To test hypothesis for research question five, one-way analyses of variance were conducted to evaluate differences, if any, in factors among three colleges in Texas. Three of the four ANOVAs were significant at the .05 level. The first ANOVA evaluated the factor of student need among three colleges in Texas. The ANOVA was significant,  $F(2, 357) = 4.57, p = .011$ . Results of pairwise comparisons indicated that there was a significant difference in the means between Midland College ( $M = 2.48$ ) and South Texas College ( $M = 2.12$ ). South Texas College faculty and administrators perceived student need significantly more important to the development of the baccalaureate degree in South Texas College than faculty and administrators at Midland College. Table 14 presents the results of analyses including the means and standard deviations, the homogeneity-of-variance test, and the one-way ANOVA  $F$  test, and Post Hoc test for multiple comparisons.

Table 14

*Descriptive Statistics - Student Need*

College	N	Mean	SD
Brazosport	75	2.25	.9458
Midland	94	2.48	.9998
South Texas College	191	2.12	.9325
Total	360	2.24	.9627

## Test of Homogeneity of Variance

Levene statistic	df1	df2	Sig.
1.188	2	357	.306

## ANOVA

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Between groups	8.311	2	4.156	4.574	.011
Within group	324.363	357	.909		
Total	332.674	359			

## Post Hoc Tests - Bonferroni Test

(1) College	(J) College	Mean Difference (1-J)	SE	Sig.
Brazosport	Midland	-.23804	.14758	.323
	South Texas	.12514	.12989	1.000
Midland	Brazosport	.23804	.14758	.323
	South Texas	.36319*	.12009	.008
South Texas	Brazosport	-.12514	.12989	.1000
	Midland	-.36319*	.12009	.008

\* The mean difference is significant at the .05 level.

The second ANOVA evaluating workforce need among the three colleges in Texas was also significant, at  $F(2,357) = 4.93$ , with  $p = .008$ . Follow-up tests of pairwise comparisons indicated that there was a significant difference in the means between Midland College and South Texas College. The mean score of 1.95 for South Texas College indicates that faculty and administrators at South Texas College perceived workforce need as having a greater influence on the development of CCB degrees as compared to the Midland College's with a mean score of 2.27. Table 15 lists the means and standard deviations, the homogeneity-of-variance test, and the one-way ANOVA  $F$  test, and Post Hoc test for multiple comparisons.

Table 15

*Descriptive Statistics - Workforce Need*

College	N	Mean	SD
Brazosport	75	2.02	.8738
Midland	94	2.27	.8494
South Texas College	191	1.95	.7897
Total	360	2.05	.8324

## Test of Homogeneity of Variance

Levene statistic	df1	df2	Sig.
.139	2	357	.870

## ANOVA

Source	SS	df	MS	F	Sig.
Between groups	6.676	2	3.338	4.923	.008
Within group	242.081	357	.678		
Total	248.757	359			

## Post Hoc Tests - Bonferroni Test

(1) College	(J) College	Mean Difference (1-J)	SE	Sig.
Brazosport	Midland	-.24967	.12750	.153
	South Texas	.07434	.11221	1.000
Midland	Brazosport	.24967	.12750	.323
	South Texas	.32401*	.10375	.006
South Texas	Brazosport	-.07434	.11221	1.000
	Midland	-.32401*	.10375	.006

\* The mean difference is significant at the .05 level.

A third ANOVA evaluating college mission among three colleges in Texas was significant, at  $F(2, 357) = 8.41$ , with  $p = .000$ . Follow-up tests were conducted to evaluate pairwise differences among the means. Results of pairwise comparisons indicated that there was a significant difference in the means between Midland College and South Texas College, and Brazosport College and South Texas College. The mean score for South Texas College ( $M = 2.38$ ) indicated that more faculty and administrators at South Texas College perceived expansion of a college's mission as having a greater influence on the development of CCB degrees compared to the administrators and faculty at Midland College ( $M = 2.64$ ) and at Brazosport College ( $M = 2.77$ ). Table 16 presents the descriptive statistics including the means and standard deviations, the homogeneity-of-variance test, and the one-way ANOVA  $F$  test, and Post Hoc test for multiple comparisons.

Table 16

*Descriptive Statistics - College Mission*

College	N	Mean	SD
Brazosport	75	2.77	.7776
Midland	94	2.64	.6924
South Texas College	191	2.38	.7798
Total	360	2.53	.7726

## Test of Homogeneity of Variance

Levene statistic	df1	df2	Sig.
.251	2	357	.778

## ANOVA

Source	SS	df	MS	F	Sig.
Between groups	9.641	2	4.820	8.408	.000
Within group	204.674	357	.573		
Total	214.315	359			

## Post Hoc Tests - Bonferroni Test

(1) College	(J) College	Mean Difference (1-J)	SE	Sig.
Brazosport	Midland	-.12332	.11723	.881
	South Texas	.38552*	.10318	.001
Midland	Brazosport	.12332	.11723	.881
	South Texas	.26221*	.09540	.019
South Texas	Brazosport	-.38552*	.10318	.001
	Midland	-.26221*	.09540	.019

\* The mean difference is significant at the .05 level.

The last ANOVA evaluating college relations among three colleges in Texas was not significant,  $F(2,355) = 1.83$ ,  $p = .162$ . This result indicated that faculty and administrators in three colleges did not differ in how they view college relations with area universities as a factor that influenced the development of CCB degrees in Texas (Table 17).

Table 17

*Descriptive Statistics - College Relations*

College	N	Mean	SD
Brazosport	74	3.14	.8851
Midland	94	2.98	.8879
South Texas College	190	2.89	1.0110
Total	358	2.97	.9619

## Test of Homogeneity of Variance

Levene statistic	df1	df2	Sig.
1.651	2	355	.193

## ANOVA

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Between groups	3.371	2	1.685	1.830	.162
Within group	3326.978	355	.921		
Total	330.349	357			

## Post Hoc Tests - Bonferroni Test

(1) College	(J) College	Mean Difference (1-J)	SE	Sig.
Brazosport	Midland	-.16684	.14915	.792
	South Texas	.25107	.13151	.171
Midland	Brazosport	.16684	.14915	.792
	South Texas	.08423	.12102	1.000
South Texas	Brazosport	-.25107	.13151	.171
	Midland	-.08423	.12102	1.000

\* The mean difference is significant at the .05 level.

*Research Question Six*

To test the hypothesis for research question six, one-way analyses of variance were conducted to evaluate differences, if any, between research factors (student need, workforce need, college relations, college mission) and participants' college position (faculty, chair, dean, administrator, vice president, president, other) at the three colleges in Texas. Results of the ANOVAs indicated that there was a significant difference between groups on the factor of College mission. The test for between groups and within groups indicated that ANOVA was significant at  $F(6, 347) = 2.76$ , with  $p = .012$ . Results of pairwise comparisons indicated that there was a significant difference in the means between faculty and administrators regarding the college mission as a contributing factor to the development of the CCB degrees in Texas. Faculty regarded expansion of a college's mission as more important ( $M = 2.45$ ) than administrators ( $M = 2.84$ ). Table 18

provides results of descriptive statistics, the one-way ANOVA *F* test, and *post hoc* test for multiple comparisons.

Table 18

*Descriptive Statistics - College Mission*

College Position	N	Mean	SD
Faculty	241	2.45	.7284
Administrator	45	2.84	.8972

## ANOVA

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Between groups	9599	6	1.600	2.763	.012
Within group	200.881	347	.579		
Total	210.480	353			

## Post Hoc Tests - Bonferroni Test

(1) College Position	(J) College Position	Mean Difference (1-J)	SE	Sig.
Faculty	Chair	.04614	.14123	1.000
	Dean	.45750	.22504	.899
	Administrator	.38473*	.12356	.042
	Vice President	.40542	.27343	1.000
	President	.84917	.54024	1.000
	Other	.17994	.21664	1.000

\* The mean difference is significant at the .05 level.

### *Summary of Findings*

Administrator and faculty perspectives from the three colleges in Texas regarding the factors such as student need, workforce need, college relations, and college mission that may have contributed to the development of Community College Baccalaureate degrees were collected using a web-based survey. The internal reliability of the survey instrument was assessed by conducting the Cronbach's alpha test on pilot implementation. The survey instrument was determined to have an overall Cronbach's alpha reliability of .703 ( $N = 20$ ). Cronbach's alpha ratings of greater than .70 are considered to be acceptable in most social science research studies (Green & Salkind, 2007).

The overall response rate of 71.6% exceeded the acceptable response rate for academic institutions (Fowler, 2009). To test the statistical power for the actual sample size, a *post hoc* power analysis using G\* Power 3.0.8 (Faul, et al., 2007) was conducted. The results indicated that a sample size of 361 had statistical power of .986 to detect a medium effect for correlational analyses and power of .992 to detect medium effect for ANOVA tests at  $\alpha = .05$ . Statistical power of .9 or higher is an acceptable power level for this study (Cohen, 1992).

The demographic information collected provided helpful information regarding survey participants. Participants were asked to respond to six demographic questions. The demographic questions provided data relating to (a) college name, (b) gender, (c) type of position, (d) educational level, (e) years of community college experience, and (f) years of experience at the current college. The frequency and percentages of data collected on each demographic question are summarized in tables 6,7,8,9, and 10.

To further describe survey participants data a one sample  $t$ -test for equality of means was conducted for four research factors of student need, workforce need, college relations, and college mission. The observed  $t$ -values were compared to a critical  $t$ -value calculated to be 3.5. The sample mean of all four factors were determined to be significantly different from 3.5 with a  $p$  value of less than 0.05. The results supported the literature review research, where faculty and administrators at the three colleges perceive (strongly agree, agree, somewhat agree) that all four factors had an influence on the development of CCB degrees. In addition, survey participants perceived workforce need ( $M = 2.05$ ), followed by student need ( $M = 2.24$ ), as factors that had greater influence than the other two factors in development of CCB degrees in Texas.

To address research questions one through four, a Pearson's correlation coefficient was computed to determine whether there were any correlations among the four research factors: student need, workforce need, college relations, and college mission. Results of this statistical procedure indicated four statistically significant associations between research factors. The first comparison between student need and workforce need indicated a statistically significant correlation with a correlation coefficient of  $r(359) = .82, p < .008$ . A second, significant correlation was identified between student need and college mission with a correlation coefficient of  $r(359) = .34, p < .008$ . The third statistically significant association was between workforce need and college mission with a correlation coefficient of  $r(359) = .30, p < .008$ . Finally, the comparison between college mission and college relations also produced a statistically significant association with a correlation coefficient of  $r(357) = .39, p < .008$ .

To test the hypothesis for research question five, one-way ANOVA procedures were conducted. The research question five focused on whether there were any differences in factors involved in the development of the baccalaureate among three community colleges. Results of the tests indicated that perspectives of survey participants regarding student need was statistically significant  $F(2, 357) = 4.58, p = .011$  between South Texas College and Midland College. The same two colleges also had a statistically significant difference regarding workforce need,  $F(2, 357) = 4.92, p = .008$ . The final significant association was related to college mission. Follow-up tests indicated that the overall ANOVA was significant,  $F(2, 357) = 8.41, p = .000$ .

Finally, to address research question six another set of ANOVAs were conducted to evaluate the effect of respondents' college position on factors that may have contributed to the development of CCB degrees in Texas. Results of the analyses indicated that there were no statistically significant differences regarding factors of student need, workforce need, and college relations by participants' college position at the three colleges. The only significant difference was determined to be regarding college mission factor, and that difference was identified as being between faculty and administrators at the three colleges at  $F(6, 347) = 2.76, p = .012$ .

### *Evaluations of Findings*

The purpose of this study was to examine administrator and faculty perspectives from three community colleges regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to the development of CCB degrees in Texas. The research sought to determine if correlations exist among the four variables of student need, workforce need,

college relations and college mission. The study intended to examine whether associations existed among all four factors or only among certain factors.

Research question number one was designed to assess whether perceived student need for baccalaureate degree correlated to workforce needs, college mission, and university relations. A Pearson correlation coefficient indicated two statistically significant correlations. The strongest linear and positive correlation was between student need and workforce need with a correlation coefficient of  $r(359) = .82$  which was statistically significant at the  $p = .008$  level. The second moderate correlation was between student need and college mission with a correlation coefficient of  $r(359) = .34$  and was statistically significant at the  $p = .008$  level. The comparison of student need with college relations did not produce statistically significant correlation. Based on the results of the correlation analyses, it was determined that there were correlations between variables, and therefore, the null hypothesis was rejected in favor of the alternative hypothesis. Results of this research imply that there is strong correlation between student need for a baccalaureate degree and workforce need for employees with bachelor's degree and development of CCB degrees in Texas. The results support prior research conducted in Florida by Petry (2006) and Burrows (2002). In both research studies, the findings indicated that students' need for access to baccalaureate degrees and industry need for a workforce with bachelor's degrees contributed to the development of CCB degrees in Florida.

Research question two related to possible correlation between workforce need and the other factors in development of CCB degrees. A Pearson correlation coefficient was computed for each correlation. The results indicated two statistically significant

correlations. The strongest correlation was the same as research question one between student need and work force need, with a correlation coefficient of  $r(359) = .82$ , which was statistically significant at the  $p = .008$  level. The second moderate correlation between workforce need and college mission with a correlation coefficient of  $r(359) = .30$ , which was statistically significant at the  $p = .008$  level. Based on the result of the correlation analyses, the null hypothesis for research question two was rejected in favor of the alternative hypothesis. Results of this research imply that there are strong correlations between workforce needs for employees with a bachelor's degree and expansion of a college's mission to meet those needs. This finding supports prior research conducted by McKee (2001) which identified expansion of community college mission as an important factor in the development of CCB degrees in Arkansas. Findings of this research provide a similar proposition regarding expansion of a college's mission as an important factor in development of CCB degrees in Texas.

Research question three was designed to test possible correlations between college relations with other factors in the development of the CCB degrees in Texas. A Pearson correlation coefficient computed to test the hypothesis produced a statistically significant correlation between college relations and college mission. The correlation coefficient was  $r(357) = .39$  which was statistically significant at the  $p = .008$  level. The comparisons between college relations and student need and between college relations and workforce need did not produce statistically significant results. However, based on the results that there is one statistically significant correlation between college relations and college mission, the null hypothesis for this question was rejected in favor of the alternative hypothesis. This finding supports Floyd et al.'s (2005) research that

community college's relations with their area universities has been an important factor in the development of CCB degrees in the United States.

Research question four related to college mission and possible correlation with other factors such as student need, workforce need, and college relations. A Pearson correlation coefficient was computed for each possible correlation. Results indicated that there were three statistically significant correlations. The first one was between college mission and student need with a correlation coefficient of  $r(359) = .34$  statistically significant at the  $p = .008$  level. The second significant correlation was between college mission and workforce need, with a correlation coefficient of  $r(359) = .30$ , which was statistically significant at the  $p = .008$  level. Finally, there was a significant correlation between college mission and college relations with a correlation coefficient of  $r(357) = .39$  statistically significant at the  $p = .008$  level. Based on the results of the correlational analyses, the null hypothesis for research question four was rejected in favor of the alternative hypothesis.

Research question five was designed to evaluate whether there were any differences among three colleges regarding the four factors as they related to the development of CCB degrees in Texas. To test the hypothesis for this research question, one-way analyses of variance were conducted to evaluate differences regarding research factors among three colleges in Texas. Results indicated that three out of four ANOVAs were significant at the .008 level. The first ANOVA evaluating student need among three colleges in Texas was significant, at  $F(2, 357) = 4.57$ , with  $p = .011$ . Follow-up tests of pairwise comparisons indicated that the difference was between Midland College and South Texas College. The second ANOVA evaluating workforce need among the three

colleges in Texas was also significant, at  $F(2,357) = 4.93$ , with  $p = .008$ . Follow-up tests of pairwise comparisons indicated that the difference was between Midland College and South Texas College. The third ANOVA evaluating college mission among three colleges, in Texas was significant, at  $F(2, 357) = 8.41$ ,  $p = .000$ . Follow-up tests of pairwise comparisons indicated that there was difference between South Texas College and Midland College, and South Texas College and Brazosport College. Result of the last ANOVA evaluating college relations among three colleges indicated that there was no statistically significant difference,  $F(2,355) = 1.83$ ,  $p = .162$ , among the three colleges regarding college relations. The null hypothesis for research question five was rejected in favor of the alternative hypothesis based on the determination that there were three statistically significant differences in factors among the three colleges.

Finally, research question six was designed to evaluate the effect of respondents' college position on factors that may have contributed to the development of CCB degrees in Texas. To test the hypothesis for this research question a set of ANOVAs was conducted. Results indicated that there was one statistically significant difference in college mission and participants' college position, at  $F(6, 347) = 2.76$ ,  $p = .012$ . The statistically significant difference was between perspectives of faculty and perspectives of administrators regarding the importance of college mission as a factor in development of CCB degrees in Texas. There were no statistically significant differences regarding factors of student need, workforce need, and college relations by participants' college position at the three colleges. Based on the results that there was at least one statistically significant difference in factors and college position, the null hypothesis for this research question was rejected in favor of the alternative hypothesis.

This research study has contributed to the field of inquiry about CCB degrees by providing actual data regarding factors contributing to the development of CCB degrees at three colleges in Texas. The focus of the study was unique as it examined the development of CCB degrees in the State of Texas. There is prior research in the area of CCB degrees; however, no study existed regarding the development of CCB degrees in Texas. In addition, the findings of the study support the framework of educational change theory advanced by Fullan (2007), especially the concept of how educational change can take place in response to pressure from external or internal stakeholders. Pressures exerted by stakeholders such as students and employers could have contributed to the development of CCB degrees in Texas. As the results of this research indicate, student need for baccalaureate degrees and workforce need for employees with bachelor's degrees had the strongest statistically significant correlation that may have contributed to the development of CCB degrees in Texas.

### *Summary*

Data were collected by surveying 530 administrators and faculty from three colleges in Texas using a web-based survey. The overall response rate for the survey was 71.6%. Descriptive statistical analyses were conducted to explain the basic characteristics of the results collected. For this study, tests were performed using a .05 significance level, which corresponds to a 95% confidence level. Hypotheses for research questions one through four were tested using Pearson's correlation analyses. Based on the results of the correlation analyses, null hypotheses for all four research questions were rejected in favor of the alternative hypotheses. To test hypotheses for research question five and six, a set of ANOVAs was calculated to compare means on calculated scale variables. Based

on the results of the ANOVA, null hypotheses for research questions five and six were both rejected in favor of the alternative hypotheses. The findings of the research indicated that all four research factors, student need for a baccalaureate degree, workforce need for employees with bachelor's degrees, college relations with area universities, and expansion of a college's mission to offer baccalaureate programs are correlated positively. Findings of this research were supported by findings of prior research conducted by Petry (2006), Burrows (2002), and McKee (2001).

## CHAPTER 5: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS

For businesses in the United States to remain competitive in the global economy, they need access to a college-level educated workforce. However, educational leaders in American colleges and universities are not producing a sufficient number of college graduates for the United States businesses to stay competitive with other industrialized nations in the global marketplace (Reindl, 2007, Wagner, 2006). In 1998, the United States ranked first in the percentage of its population aged 25 to 34 with college degrees, however, as of 2008; the United States had dropped to 10th place among industrialized nations (Postsecondary Education Opportunity, 2007; The National Center for Public Policy and Higher Education, 2008). Researchers at the National Center for Higher Education Management Systems estimated that the degree gap, the difference between the number of bachelor's and associate's degrees attained by Americans and that of other industrialized nations, could reach 15.6 million by 2025 (Reindl, 2007). To close this degree gap, legislators in some states have expanded the degree granting authority of community colleges to include baccalaureate degrees. However, educational leaders in community colleges that are exploring the option to offer baccalaureate degrees lack information regarding CCB degrees. There is little research in the area of factors that influence development of community college baccalaureate degrees that could guide educational leaders in other community colleges who are planning to expand their program offerings to include bachelor's degrees (Floyd et al., 2005).

The purpose of the study was to examine the perspectives of administrators and faculty, in three colleges in Texas, regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that

may have contributed to the development of CCB degrees in Texas. Using a Web-based survey, data were collected by surveying 530 administrator and faculty from three colleges in Texas. Prior to any data collection, Institutional Review Board approval was obtained from all participating institutions.

One of the limitations of this study's methodology was its inability to determine causation; it could only determine correlations between variables. Another possible limitation was that data were collected via a Web-based survey. Participants who were invited to participate self-selected to participate and they needed to access the survey online. However, in this study, the participants were college presidents, vice presidents, directors, deans, department chairs, and faculty from Brazosport College, Midland College and South Texas College, and therefore, all were likely to have access to computers. The study was intended to be representative of a random sampling of administrators and faculty only from the three colleges in Texas. The participants of the study might not be regarded as representative of all administrators and faculty at all the 50 community colleges in Texas. Therefore, the generalizability of this study is limited to only other institutions with similar characteristics and in similar geographic areas.

In this chapter, a discussion of each research question is provided. Conclusions regarding the results of the study are presented including a determination about whether findings of this study support or contradict previous studies. Finally, recommendations are given concerning how the results of the research could be used by educational leaders at community colleges, as well as suggestions for future research in the area of community college baccalaureate degrees.

### *Implications*

The findings of the study support the framework of educational change theory advanced by Fullan (2007), especially the concept of how educational change can take place in response to pressure from external or internal stakeholders. Pressures exerted by stakeholders such as students and employers could have contributed to the development of CCB degrees in Texas. As the results of this research indicate, student need for baccalaureate degrees and workforce need for employees with bachelor's degrees had the most influence on development of CCB degrees in Texas.

Results of the research also support the framework of organizational change theory, which stated that introduction of any organizational change will have an influence on organizational culture (Schein, 2004). The educational leaders at three colleges successfully transformed the organizational structures of their colleges from associate to baccalaureate degree granting institutions. To facilitate the effect on organizational culture, educational leaders at each college established a clear vision for the change and the specific problem that it was developed to solve, which was to serve the needs of students and employers in their area.

In the study, the variables included student need for baccalaureate degree, workforce need for employees with bachelor's degrees, college relations with area universities, and expansion of a college's mission. It was hypothesized that variables (factors) of student need, workforce need, college relation, and college mission were linearly and positively correlated. A quantitative correlational design was used to examine possible correlation between variables. The following research questions guided this study:

RQ 1: To what extent, if any, is perceived student need for a baccalaureate degree correlated to workforce need, college mission, and university relations?

RQ 2: To what extent, if any, is perceived workforce need for employees with a bachelor's degree correlated to student need, college mission, and college relations?

RQ 3: To what extent, if any, are perceived college relations with area universities correlated to student need, workforce need, and college mission?

RQ 4: To what extent, if any, is perceived expansion of a college's mission correlated to student need, workforce need, and college relations?

RQ5. What are the differences, if any, in perceived factors such as student need, workforce need, college mission, and college relations among three community colleges in Texas?

RQ6. What are the differences, if any, in perceived factors such as student need, workforce need, college mission, and college relations among personnel in different college positions?

The first research question examined if a correlation existed between perceived student need for a baccalaureate degree and workforce need, college relations, and college mission. The results of Pearson Correlation tests indicated two statistically significant correlations. The strongest correlation was between student need and workforce need ( $r(359) = .82, p < .008$ ) followed by a moderate correlation between student need and college mission ( $r(359) = .34, p < .008$ ). Findings of the research support prior research conducted in Florida by Petry (2006) and Burrows (2002). The findings in both research studies indicated that student need for access to a baccalaureate degree, employers need for workforce with bachelor's degree, and expansion of college mission

contributed to the development of CCB degrees in Florida. In this study, the strong correlation between student need and workforce need could be attributed to the development of Bachelor of Applied Technology (BAT) degrees by college leaders at the three community colleges in Texas in response to the regional business and industry's need for specialized bachelor's degrees in the workforce area.

Findings for the research follows existing literature that indicate student need to baccalaureate degree access and employers' need for employees with bachelor's degrees are two important factors for the development of CCB degrees by community colleges (American Association of Community Colleges, 2004; Bragg, Townsend, & Ruud, 2009; Floyd et al., 2005; Floyd & Walker, 2009; Townsend, Bragg, & Ruud, 2008).

The second research question examined if a correlation existed between perceived workforce need for employees with a bachelor's degree with the other three variables of student need, college relations, and college mission. The results of Pearson Correlation test indicated two statistically significant correlations. As discussed earlier, there was a strong correlation between workforce need and student need ( $r(359) = .82, p < .008$ ) and a moderate correlation between workforce need and college mission ( $r(359) = .30, p < .008$ ). Findings of this research support prior research conducted by McKee (2001), which identified expansion of community college mission as an important factor in development of CCB degrees in Arkansas. In addition, findings of all three studies conducted in the area of CCB indicated that employers' need for a workforce with bachelor's degrees contributed to the development of CCB degrees (Burrows, 2002; McKee, 2001; Petry, 2006). The findings of the research is in line with existing literature that indicated expansion of a college mission is a natural response by community college

leaders to meet the changing needs of the communities that they serve (Cohen, 2003, Floyd et al., 2005, Floyd & Walker, 2009; Garmen, 2002; Walker, 2001; Walker, 2006).

The goal of the third research question was to examine if a correlation existed between college relations and other three variables of student need, workforce need, and college mission. The results of Pearson Correlation tests indicated one statistically significant correlation between college relations and college mission ( $r(357) = .39, p < .008$ ). This finding is supported by the results of a national survey conducted by American Association of Community Colleges and State Colleges and Universities in 2003. According to this survey, one of the main obstacles to baccalaureate degree attainment was relations between community colleges and the neighboring senior four-year universities. The results support the findings of the research that college relations may have contributed to the development of CCB degrees in Texas. Findings of the research conducted by Burrows (2002) indicated that one of the driving forces for the development of CCB degree in Arkansas was the college relations with collaborating universities.

The fourth research question examined if a correlation existed between college mission and other three variables of student need, workforce need, and college relations. The results of Pearson Correlation tests indicated three statistically significant correlations. The first correlation was between college mission and student need ( $r(359) = .34, p < .008$ ). The second correlation was between college mission and workforce need ( $r(359) = .30, p < .008$ ). Finally, there was a significant correlation between college mission and college relations ( $r(357) = .39, p < .008$ ). Findings of this study support prior research conducted by McKee (2001) in Arkansas and Burrows (2002) in Florida. Both

research's results indicated that expansion of college mission was a factor in the development of CCB degrees. Findings of this research conducted in Texas provide external validity to the prior research conducted in Florida and Arkansas. The results of the research follows existing literature regarding the expansion of college mission as a factor in the development of CCB degrees by community college leaders (American Association of Community Colleges, 2004; Floyd et al., 2005; Floyd & Walker, 2009; Walker, 2001, Walker, 2006).

Research question number five examined if there were any differences among three colleges regarding four factors as related to the development of CCB degrees in Texas. Results of one-way analyses of variance indicated that there were three statistically significant differences. The first two differences were related to factors of student need and workforce need among three colleges. Follow-up tests indicated that the difference was between Midland College and South Texas College. Faculty and administrators from South Texas College perceived student need ( $M = 2.12$ ) and workforce need ( $M = 1.95$ ) to have had a greater influence on development of CCB degree compared to faculty and administrators from Midland College that regarded student need ( $M = 2.48$ ) and workforce need ( $M = 2.27$ ) to have had less influence. There was also a significant difference regarding college mission among the three colleges. Follow-up tests conducted to evaluate pairwise differences among the means indicated that there was a significant difference in the means between Midland College and South Texas College and between Brazosport College and South Texas College. The findings indicated that more faculty and administrators at South Texas College ( $M = 2.38$ ) perceive expansion of a college's mission as having greater influence on the development of CCB

degrees than the faculty and administrators at Brazosport College ( $M=2.77$ ) and Midland College ( $M = 2.64$ ).

The final research question examined if there were any differences between research factors (student need, workforce need, college relations, college mission) and participants' college position (faculty, chair, dean, administrator, vice president, president, other). The results indicated that there was one statistically significant difference in the means between faculty ( $M = 2.45$ ) and administrators ( $M = 2.84$ ). Faculty at the three colleges regarded expansion of a college's mission as having greater influence on the development of CCB degrees than administrators have at the three colleges.

### *Recommendations*

This research study has contributed to the literature and body of knowledge about CCB degrees by providing actual data regarding factors contributing to the development of CCB degrees at three colleges in Texas. The focus of the study was unique as it examined the development of the CCB degrees in the State of Texas. There is prior research in the area of CCB degrees; however, no study existed regarding the development of CCB degrees in Texas. The research builds on the current body of knowledge regarding CCB degree and the theories of educational and organizational change to provide a foundation from which further studies could be developed to examine other factors that could effect the development of CCB degrees. The following recommendations have been developed based on results of this study's findings.

*Recommendation for practice.* The research provides actual data regarding the development of CCB degrees in Texas. Detailed information regarding the process,

activities, and timeline that leaders in three colleges had to follow to bring about the organizational change in their colleges is provided in Appendix A. This information can guide educational leaders as they assess the process that would be necessary to transform their colleges from associate to baccalaureate degree granting institutions. Findings of the research indicated that there is a strong correlation between student need for baccalaureate degrees and workforce need for employees with bachelor's degrees. These two factors, as perceived by respondents, had the most influence on development of CCB degrees in three colleges in Texas. Therefore, the practical recommendation for leaders at community colleges exploring a CCB degree option would be that they assess student need for baccalaureate degrees and employers need for employees with bachelor's degrees in their area before starting the process.

Floyd et al. (2005) stated, "At the national level, researchers and policy makers should study this phenomenon to see what factors facilitated or inhibited the development of the community college baccalaureate as a degree option in community colleges" (p. 186). Based on the findings of the study the factors that facilitated the development of CCB degrees in Texas include:

1. Passage of SB 286 by Texas legislators, which expanded the degree granting authority of three community colleges in Texas (Texas Senate Bill, 2003b).
2. Assessment and demonstration of student need for baccalaureate degrees in the service area (THECB, 2008)
3. Assessment and demonstration of employers need for employees with bachelor's degrees in the service area (THECB, 2008)

4. Development of bachelor's degrees that were not offered by neighboring universities (Texas Education Code, 130.0012)
5. Achievement of accreditation as Level II higher education institution (SACS, 2008)
6. Support of area legislators and their willingness to advocate for CCB option on behalf of the community colleges (Texas Senate Bill, 2003b)

*Recommendation for future research.* Further research is needed in the area of Community College Baccalaureate (CCB) degrees.

- 1) Research is needed to compare students graduating with CCB degrees to students graduating from traditional universities in terms of transferring to more advanced degrees and career opportunities.
- 2) Findings of the study indicated that there was a difference between perception of faculty and administrators regarding the expansion of a college's mission and the development of CCB degrees. Further qualitative research is needed to study the rationale for the differences in perceptions between faculty and administrators regarding the expansion of a college's mission and its relation to the development of CCB degrees.
- 3) The most important rationale for development of the CCB degree has been to improve access to baccalaureate degrees and thereby meet the needs of businesses for a college-level educated workforce. Therefore, research is needed to study the effect of CCB degrees on the percentage of baccalaureate degree completion rates in states that offer such degrees.

- 4) In addition, the current study should be replicated in other states that offer CCB degrees to examine whether the findings of the research conducted in Texas would be similar in other states.

### *Conclusions*

The purpose of the study was to examine administrators and faculty perspectives, regarding factors such as student need, workforce need, college relations with area universities, and expansion of a college's mission that may have contributed to the development of CCB degrees in Texas. Findings of the quantitative study indicated that faculty and administrators from the three colleges perceived all four factors (student need, workforce need, college relations, and college mission) have influenced the development of CCB degrees in the three colleges in Texas. Most importantly, the findings indicated that the strongest correlation was between student need and workforce need. Because student need and workforce need have been determined through research and literature to be key factors that contribute to the development of the CCB degree, it is recommended that educational leaders who are exploring this option assess student need for baccalaureate degree and employers need for employees with bachelor's degrees in their area before starting the process.

Further analyses, conducted to examine if there were any differences among the three colleges regarding the four factors revealed that there were three statistically significant differences among colleges regarding factors of student need, workforce need, and college mission. Even though there are some differences among colleges regarding the importance of each factor, all faculty and administrators from the three colleges perceived all four factors as having influenced the development of CCB degrees in the

three colleges in Texas. This is a key finding, as it provides generalizability for the results of this study among three colleges in Texas.

Examination of research factors (student need, workforce need, college relations, college mission) and participants' college position (faculty, chair, dean, administrator, vice president, president, other) indicated one statistically significant difference in the means between faculty and administrators. Faculty at the three colleges regarded expansion of a college's mission as having greater influence on the development of CCB degrees than did the administrators from the three colleges. Further qualitative research is needed to study the rationale for the differences in perceptions between faculty and administrators regarding the expansion of a college's mission and the development of CCB degrees.

The findings of the study support the conclusions of prior research in the area of factors that contribute to the development of a community college baccalaureate degrees. McKee (2001) identified workforce needs for employees with baccalaureate degrees as the major theme for development of baccalaureate degree at Westark College in Arkansas. In addition, the research conducted by Burrows (2002) identified both student need for upper-division courses and responsiveness to workforce needs as the two major reasons for the baccalaureate movement in Florida. Finally, the result of Petry's (2006) study concluded that access to upper-level education and meeting the needs of the industry for a skilled workforce were the two key factors that contributed to the development of baccalaureate degrees in the five colleges in Florida. Furthermore, findings of this study are aligned with results of several national research initiatives regarding expansion of access to baccalaureate degrees as result of student demand for

higher education and workforce need for employees with a bachelor's level education (American Association of Community College, 2004; Bragg, Townsend & Rudd, 2009; Townsend, Bragg, & Rudd, 2008).

The study has contributed to the literature and body of knowledge about community college baccalaureate degrees by providing actual data regarding development of the CCB degrees in the State of Texas. This dissertation provides educational leaders, who are exploring the CCB option, practical information regarding factors that facilitated the development of CCB degrees in the three colleges in Texas. Finally, the intent of the research was to expand on Petry's (2006) research and to examine whether assumptions regarding the critical factors that contributed to the development of CCB degrees in Florida would be relevant in Texas. Findings of this research indicated that there was a statistically significant correlation between student need and workforce need and the development of CCB degrees in Texas. This result supports prior research conducted in Florida. In addition, this finding is significant, as it provides generalizability and external validity to this study.

There is need for further research to compare students graduating with CCB degrees with students who graduate from traditional universities in terms of transfer to more advanced degrees and career opportunities. This study examined four specific factors that may have contributed to the development of CCB degrees in Texas. Additional research could be conducted to examine covariant factors, such as gender, age, college position, and education achievement that may contribute or influence the development of CCB degrees. Finally, further research should be conducted to study the

effect of CCB degrees on the percentage of baccalaureate degree completion rates in states that offer such degrees.

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## APPENDICES

## Appendix A:

## List of States with CCB Degrees

States that have authorized community colleges to offer baccalaureate degrees

No.	Year	State	College	Degrees Offered	Comment
1	1970	New York	Fashion Institute Technology	21 baccalaureate degree 16 Associate's degree 5 Master's degree	
2	1993	Vermont	Vermont Technical College	BA – General Education BS – Architectural Engineering Technology BS – Business Technology & Management BS – Computer Engineering Technology BS – Electromechanical Engineering Tech BS – Information Technology BS – Software Technology	
3	1993	West Virginia	West Virginia University at Parkersburg	BA – Elementary Education BS – Business Administration BAT – Technology BAS – Business Administration	
4	1993	Utah	<ul style="list-style-type: none"> <li>• Dixie State College</li> <li>• Utah Valley State College</li> </ul>		Changed to traditional university
5	1996	Ohio	<ul style="list-style-type: none"> <li>• Miami University Middletown</li> <li>• Miami University Hamilton</li> </ul>	BS – Electro-Mechanical Engineering Tech BS - Mechanical Engineering Technology	
6	1997	Arkansas	Westark College, now University of Arkansas at Fort Smith		Changed to traditional university

7	1998	Georgia	Dalton College, now Dalton State College		Changed to traditional university
8	1999	Nevada	Great Basin College	BA – Integrative & Professional Studies BS – Elementary Education BS – Nursing (under development) BAS – Land Surveying/Geometrics BAS – Instrumentation BSW – Social Work	
9	2001	Florida	<ul style="list-style-type: none"> <li>• Broward</li> <li>• Chipola</li> <li>• Daytona Beach</li> <li>• Edison</li> <li>• Florida Community College at Jacksonville</li> <li>• Indian River</li> <li>• Miami Dade</li> <li>• Northwest Florida State</li> <li>• Palm Beach</li> <li>• St. Petersburg</li> <li>• Polk</li> </ul>	BS – Elementary & Secondary Education BS – Exceptional Student Education BS – Middle School Science & Math BS – Middle Grades Science BS – Nursing BS – Secondary Biology BS - Secondary Mathematics Education BS – Secondary Science Educ& Physics BS – Secondary Education Earth Sciences BAS – Banking BAS – Dental Hygiene BAS – Fire Science Management BAS – Interdisciplinary Health an Human Studies BAS – International Business BAS – Management & Organizational Leadership BAS – Orthotics & Prosthetics BAS – Organizational Management BAS – Public Administration BAS – Project & Acquisitions Management BAS – Public Safety Management BAS – Paralegal Studies BAS – Supervision and Management BAS – Technology Management BAS – Veterinary Technology	
10	2001	Louisiana		Changed to Traditional University	Changed to traditional university
11	2003	Texas	<ul style="list-style-type: none"> <li>• Brazosport College</li> <li>• Midland College</li> <li>• South Texas College</li> </ul>	BAT – Technology Management BAT– Information and Computer Technologies	

12	2003	Idaho	No community college at this time are offering baccalaureate degrees		Community colleges have authorization to offer baccalaureate degrees
13	2004	Hawaii	Maui Community College	BAS - Applied Business & Information Technology	
14	2004	Indiana	Vincennes University	BA & BS – Secondary Mathematics BS – Health Care Management BS – Homeland Security & Public Safety BS – Nursing BS – Secondary Science BS – Technology	
15	2004	New Mexico	<ul style="list-style-type: none"> <li>• Northern New Mexico College</li> <li>• Santa Fe Community College</li> </ul>	BA – Bilingual Education BA – Elementary Education BA – Early Childhood Education BA – Secondary Education BA – Special Education BAS – Health Services Administration BAS – Clinical Laboratory Sciences	
16	2005	Washington	<ul style="list-style-type: none"> <li>• Bellevue Community College</li> <li>• Peninsula College</li> <li>• Olympic college</li> <li>• South Seattle Community College</li> </ul>	BSN – Nursing BAS – Management BAS – Radiologic & Imaging Sciences BAS – Hospitality Management	
17	2006	North Dakota	Bismarck State College	BS- Energy Management	
18	2007	Oklahoma	Lower-division branch campuses of Oklahoma State University	BT- Emergency Responder Administration	

2008			<p>States that have introduced legislation and or Taskforces to study the feasibility of authorizing community colleges to offer baccalaureate degrees</p> <ul style="list-style-type: none"> <li>• Illinois</li> <li>• Michigan</li> <li>• Oregon</li> <li>• Rhode Island</li> <li>• Wisconsin</li> </ul>	
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The following sources were used to develop this list:

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Appendix B:  
Timeline of Events

Timeline of important dates and events in Community College Baccalaureate degree development process in Texas:

1. August 2003 - Texas Senate Bill 286 created the pilot project (78<sup>th</sup> Texas legislature session). This bill expanded the degree granting authority of three community colleges to include bachelor of applied science or technology field degrees.
2. September 2003 - administrators of three colleges submitted their first application to SACS seeking Level II accreditation.
3. December 2003 - SACS denied the first application submitted by each college.
4. February 2004 – administrators of three colleges submitted their applications to offer Bachelor of Applied Technology (BAT) degrees to the THECB.
5. April 2004 - the THECB staff approved BAT degrees for three colleges (pending approval by SACS).
6. September 2004 – administrators of three colleges submit the second application to SACS seeking Level II accreditation.
7. December 2004 – leaders at three colleges were notified that their colleges received initial accreditation as Level II institutions and approval from SACS to offer BAT in Technology Management.
8. Fall semester 2005 - the first group of students enrolled in the Technology Management program in each College.

9. Fall semester 2005 and spring semester 2006 - SACS conducted site visits of the three colleges.
10. June - December 2006 - SACS approved the continuation of Level II accreditation for the three colleges.
11. September 2006 - the THECB approved \$1,000,000 start-up funds for each of the three colleges.
12. April 2007 - Texas House Bill 2198 removed the pilot status from the three community colleges and permanently authorized the three colleges to offer the Bachelor of Applied Technology program.
13. April 2007 - Texas House Bill 2198 required the THECB staff to establish an application process for community college baccalaureate degrees by January 1, 2009.
14. May 2007 - the first group of students graduated with Bachelor of Applied Technology degrees in Technology Management granted by the three community colleges.
15. August 2007 - the THECB staff approved a final supplemental appropriation of \$200,000 for each of the three colleges.
16. October 2007 - the THECB staff adopted the same criteria used for new bachelor's and master's programs at universities for developing new bachelor's programs at community colleges.
17. October 2007 - the THECB staff approved the second bachelor's degree in Computer and Information Technologies to be offered by South Texas College.

## Appendix C:

## Permission to Use Survey Instrument

Dear Anahid,

I certainly do support your study and give my permission to use whatever elements of my survey and/or interview questions you need. I wish you the very best in completing your dissertation and would love to hear about your results.

Best to you!

Dr. Debra Petry

Okaloosa Walton College

**From:** Anahid Petrosian

**To:** debpetry@cox.net

**Cc:** Anahid Petrosian

**Sent:** Sunday, January 27, 2008 12:40 PM

**Subject:** Permission to use survey instrument

Dear Dr. Petry:

My name is Anahid Petrosian and I am a doctoral student at Northcentral University. I am pursuing my doctorate degree in the field of Business Administration with a specialization in Management. I have read your dissertation, "the transformation of five Florida community colleges: Converting to baccalaureate degree producing programs," was inspired by the findings, and decided to conduct a similar study in Texas. In 2005, State of Texas gave three community colleges permission to offer baccalaureate degree. South Texas College, where I work, was one of the three colleges in Texas that received permission to offer baccalaureate degrees. My dissertation topic is "Expanding Access to Bachelor's Degrees: Transformation of three community colleges in Texas." I will be examining the organizational transformation of the three community colleges in Texas from associate to baccalaureate granting institutions. The intent of the proposed dissertation is to expand on your research and examine whether the assumptions regarding critical factors that led to the transformation of five community colleges in Florida would be the same in Texas.

As you see, I would be using your dissertation as a reference, and the survey questionnaire and interview questions used in your dissertation as the foundation for my survey and interview questions. However, I do plan to revise and expand the instruments to fit the needs of my dissertation.

Therefore, I am writing to ask for your permission to use survey instrument as a foundation for development of my dissertation instrument. I believe that findings of my dissertation study in Texas would provide additional support to the Community College Baccalaureates movement in the United States. Please do not hesitate to contact me, if you need additional information.

Best regards,

Anahid Petrosian NCU Doctoral Student

Anahid@southtexascollege.edu.

## Appendix D:

## Survey Questionnaire

*Scale: 1= strongly agree, 2= agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6= strongly Disagree*

## Survey Questions:

- 1 The need for the community college baccalaureate program(s) is high.

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- 2 Local workforce need assessments are essential before initiating new baccalaureate programs.

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- 3 Articulation issues with area universities led to the need for community college baccalaureate programs.

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- 4 The need for community college baccalaureate programs was driven by student demand.

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- 5 Program enrollments exceeded expected student enrollment.

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- 6 Student needs assessments are essential before initiating new baccalaureate programs.

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- 7 Workforce demand for graduates in the baccalaureate program(s) led to the development of community college baccalaureate programs.

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- 8 The issue of student access to baccalaureate degrees led to the implementation of these new programs.

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- 9 The baccalaureate program(s) will contribute significantly to meeting workforce needs within the service area.

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- 10 The baccalaureate program(s) required a significant change in the community college's mission statement.

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- 11 Responding to the need for baccalaureate programs has expanded the mission of the college.

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- 12 Community colleges are moving from a comprehensive mission to one that focuses on a specific need.

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- 13 The baccalaureate program(s) represent an organizational change for community colleges.

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- 14 The baccalaureate program(s) will significantly reduce the gap between supply and demand for baccalaureate graduates within the service areas.

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- 15 The baccalaureate program(s) did not eliminate any associate degrees as a result of their implementation.

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- 16 The baccalaureate program(s) did not have an adverse effect on established programs in neighboring universities.

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- 17 New baccalaureate programs should not duplicate existing programs offered by other universities within commuting distance.

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- 18 New distance learning programs should not duplicate existing programs offered by other universities within commuting distance.

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- 19 Community colleges should consider joint baccalaureate programs with neighboring universities before offering independent baccalaureate degrees.

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- 20 The Texas Higher Education Coordinating Board should allow for development of programs by community colleges in response to unique service area needs.

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## Appendix E:

## Demographic Information

Covariate Variables	Scale	Measurement
College Name	1 = Brazosport 2 = Midland 3 = South Texas	Nominal
Gender	1 = Female 2 = Male	Nominal
College position	1 = Faculty 2 = Department chair 3 = Division Dean 4 = Administrator 5 = Vice President 6 = President 7 = Other	Nominal
Highest educational level	1 = Associate's 2 = Bachelor's 3 = Master's 4 = Doctorate	Nominal
Number of years involved at community college level	1 = 0-5 year 2 = 6 – 10 years 3 = 11 – 15 years 4 = 16 – 20 years 5 = 21 – 25 6 = over 25	Ordinal
Number of years involved at this college	1 = 0-5 year 2 = 6 – 10 years 3 = 11 – 15 years 4 = 16 – 20 years 5 = 21 – 25 6 = over 25	Ordinal

## Appendix F:

### Invitation to Participate

Dear Participant:

I am a doctoral candidate at Northcentral University, working toward completion of my dissertation entitled, “Examining Administrator and Faculty Perspectives Regarding Community College Baccalaureate Degrees in Texas.” The purpose of this study is to examine the perspectives of administrators and faculty from Brazosport College, Midland College, and South Texas College regarding regional factors that may have contributed to the development of the community college baccalaureate degrees in Texas.

If you decide to participate, you will be asked to complete a web-based survey developed to examine the perspectives of key leaders at the three colleges. The survey will take about 10 minutes to complete. Your participation is voluntary and there is no penalty if you do not participate. The electronic survey begins with an Informed Consent Form, which is followed by the electronic survey instrument. Completing the survey constitutes agreement with the informed consent.

Data collected in this study will be treated with confidentiality. Demographic data will be coded to protect personal information. All measures will be taken to protect your privacy. The results of this study would be published as group data only. Survey participants who are interested to receive the results of this study can submit their request via an email, and I would be glad to forward the results as soon as the study is completed. Participation by Brazosport College, Midland College, and South Texas College in this study is not an endorsement of this study or its future conclusions.

Currently, I am employed at South Texas College. If you have any questions or concerns about completing the questionnaire or about this study, you can contact me at (956) 872-6790 or at [Anahid@southtexascollege.edu](mailto:Anahid@southtexascollege.edu). If you have additional questions about my research project, you can contact my doctoral dissertation chair, Dr. Arthur Tyler, at (916) 548-4281 or by e-mail [at Tyler@ncu.edu](mailto:at Tyler@ncu.edu).

Best regards,

Anahid Petrosian,  
NCU doctoral student  
Tel: (956) 872-6790  
E-mail: [anahid@southtexascollege.edu](mailto:anahid@southtexascollege.edu)

## Appendix G:

### Informed Consent Form

#### Examining Administrator and Faculty Perspectives Regarding Community College Baccalaureate Degrees in Texas

*Purpose.* You are invited to participate in a research study being conducted for a dissertation at Northcentral University in Prescott, Arizona. The purpose of this study is to examine the perspectives of administrators and faculty from Brazosport College, Midland College, and South Texas College regarding regional factors that may have contributed to the development of the community college baccalaureate degrees in Texas.

*Participation requirements.* You will be asked to complete a web-based questionnaire about your perspectives about the baccalaureate program at your institution and several demographic questions. It will take approximately 10 minutes to complete the survey.

*Potential Risk/Discomfort.* There is no personal risk or discomfort directly involved with this study, however, you may withdraw at any time and stop completing the survey without fear of any repercussion.

*Potential benefit.* There is no direct benefit to you of participating in this research. No incentives are offered. However, the results of this study may provide information to educational leaders in community colleges interested in developing baccalaureate programs.

*Anonymity.* This survey is anonymous. Personal data and IP addresses will not be collected. All measures will be taken to protect your privacy. The results of this study would be published as group data only.

*Right to withdraw.* You have the right to withdraw from this study at any time without penalty. Also, you omit any questions that you may not want to answer them.

*Research personnel.* If you have any questions or concerns about completing the questionnaire or about this study, you can contact me at (956) 872-6790 or at Anahid@southtexascollege.edu, or by contacting Dr. Brenda Cole, Director of the Research and Analytical Services at South Texas College (956) 872-5577. If you have questions about my research project, you can contact my doctoral dissertation chair, Dr. Arthur Tyler, at (916) 548-4281 or by e-mail atyler@ncu.edu .

*Agreement to participate:* Submission of this electronic survey constitutes agreement to participate in this study. By completing this survey you certify that you have read and fully understand the information provided and agree to participate in the research described herein.

Click on the link below to begin the survey. Thank you.