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An Analysis of the Impact of Corequisite Support Classes New Placement Criteria on Community College Faculty Implementation Decision-Making

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An Analysis of the Impact of Corequisite Support Classes New Placement Criteria on Community College Faculty Implementation Decision-Making

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Education

by

Jacquelyn Sims

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ABSTRACT OF THE DISSERTATION

An Analysis of the Impact of Corequisite Support Classes New Placement Criteria on Community College Faculty Implementation Decision-Making

by

Jacquelyn Sims

Doctor of Education

University of California, Los Angeles, 2020

Professor Kimberley Gomez, Chair

In California, as in many places across the nation, a new law changes placement and remediation at community colleges. Responding to research correlating direct placement with higher retention rates, and addressing low graduation, transfer, certification and rates across the state, AB 705 both rids colleges of remedial English and math courses and requires that all students can start in a transfer level course. This study uses basic qualitative methods to closely investigate the impact of this mandate's rollout in the math department of one community college campus. Data from interviews with 13 math faculty about their opinions and perceptions around the reform was triangulated with document analysis and survey responses to generate four major categories of professors at the university and suggest directions for future research

and recommendations for departmental change. In agreement with major research of reform rollout in other states, increased and more effective professional development was a clear next step. This study also added to the existing body of research by finding differences in the experiences of adjunct and full-time faculty.

The dissertation of Jacquelyn Sims is approved.

Megan Franke

Louis Gomez

Pedro Noguera

Kimberley Gomez, Committee Chair

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2020

DEDICATION

My first dedication is to my ancestors, as “I Am Because Of Them.” While these encompass too many souls to list, in my educational journey I have drawn special inspiration from the words and works of Harriet Tubman and Frederick Douglass. These two were among the early African American pioneers who were the first to tell us that

“BLACK LIVES MATTER!!!”

My second dedication is to my deceased loved ones including my father, Lonnie Sims, and oldest brother, Jon Sims. Both of your examples on the importance of education have had a long and lasting effect on me and my purpose. May this EdD make you proud(er).

I further dedicate this doctorate to my mother, Calvina Sims, all of my 12 siblings, and my 15 nieces and nephews. Thanks for all your prayers, love, and support. May we continue to celebrate and value spirituality, education and family.

Compton is in da house!

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CHAPTER 1: INTRODUCTION

This study investigated faculty perceptions of the organizational and pedagogical changes occurring in their colleges during the implementation and evaluation of the new California state mandate, AB 705. This study also considered faculty teaching strategies for the newly required corequisites, or courses attached to and taken simultaneously with an established transfer level course. AB 705 (Irvin, 2017) mandated that college students be placed directly into transfer level English and math courses, and that colleges create corequisite courses to support students at this higher level. By allowing for additional time for prerequisite material to be reviewed and practiced, corequisites are designed to support students who would otherwise be taking remedial, non-college credit bearing courses. To engage in this inquiry, this study first explored the perceptions of faculty towards mandated policy, ensuing reform, and the impact of such reform to their respective roles. Second, the study investigated the approaches that faculty teaching corequisite courses report that they undertake to differentiate pedagogy. Lastly, this study gathered and analyzed faculty descriptions of how they evaluate the implementation of AB 705, including recommendations for ongoing evaluation.

Statement of Purpose

Community colleges face pressure from recent federal and state legislation called "the college completion agenda" aimed at increasing the number of degrees, certificates, and transfers from community colleges (California Community Colleges Chancellor's Office, 2018). The legislation is in response to decades of low rates of community college completion. Specifically, remediation and placement into non-college level English and math courses have been targeted as a central factor in why many students do not finish community colleges, with more than 60% placing into remediation (Cook, 2016). Placement in remedial classes contributes to a degree

attainment gap between students who begin with college level courses and those who are required to remediate (Booth et al., 2014). In particular, the completion of math requirements has been identified as a primary reason why students are not transferring and/or graduating from community colleges (Rodriguez et al., 2017). Students not required to remediate have immediate access to transfer level courses and take fewer courses than those who place below transfer level. Looking at both bachelor's and associate's degrees, Stewart et al. (2015) highlighted the 25% degree attainment gap between those who did not have to remediate with those who did. This startling implication points to the deep and long-term impact that practices around remediation have on student bodies.

The large number of students needing remediation has lowered completion rates for both degrees and certificates. According to Bailey et al. (2015), fewer than 40% of students complete any type of degree or certificate within six years. The cost of remediation is now being measured, and reform efforts to decrease remediation are taking form (Bettinger et al., 2013). This study investigated faculty perceptions of the processes used in implementing and evaluating AB 705, including pedagogy used in the corequisites. Specifically, it focused on the effect of the changes in the impactful math requirements.

Background of the Problem

Given the call to increase completion rates and reduce remediation, California community colleges are focusing on placement reform. Traditionally, students completed a standardized entrance exam upon enrollment to determine placement. The historical placement of students using a standardized test presented structural problems, including arbitrary cutoff scores and use of only one measure, which limited the validity of the placement (Hodara et al., 2012).

Key studies indicate that remediation is not effective because it fails to raise the outcomes of developmental students to the level of those of their college-ready peers (Bailey et al., 2013). Remediation also affects persistence. Hern (2010) explained that even if one assumed a 75% success rate in the remedial course sequence, for those starting at the lowest level, only 13% would then pass the transfer level course.

Reform efforts now call for students to be placed using their high school GPA, a measure that has a better likelihood of predicting post-secondary success than a placement test (Bailey et al., 2015; Jackson et al., 2014; Kirst, 2008; Steward et al., 2015). The use of high school GPAs also allows for direct placement into transfer level courses, thus increasing completion rates. Armed with this new surge of research, the California State Legislature passed Assembly Bill 705 to require all community colleges in the state to use multiple measures, including high school GPA, for placement (Irvin, 2017). Its goal is to maximize the probability that a student will enter and pass a transfer level English and math course within one year. The California Community College Chancellor's Office further clarified that colleges may no longer require students to remediate, and placement tests are to be discontinued altogether (Hope & Stanskas, 2018).

According to Hodara et al. (2012), such mandated placement reform alone does not create the desirable completion rates for college students. Instead, placement reform must be balanced with reform in the overall course structures, curriculum, and academic and non-academic support systems that are currently provided. Key studies have shown that student success is increased when such curriculum redesign and wrap-around services are included (Atkins & Beggs, 2017; Cook, 2016). These studies further concluded that would-be developmental math students were able to demonstrate college level math mastery with a

corequisite model and other learner-centered supports and these students had showed evidence of more timely progress towards degree attainment (Booth et al., 2014).

Under the new bill, community colleges must also create support/corequisite courses to provide just-in-time prerequisite skills review for those students who would have previously placed into remediation and are now placing into higher levels of English and math courses. AB 705 leaves it up to the individual colleges to decide on corequisite structure, design, pedagogy, and whether to mandate the corequisite or not.

As the dean of a math department at a California community college, I chose this topic so I could better assist math faculty with the implementation and evaluation of AB 705. I hoped that hearing their voices would allow me to learn how to build faculty buy-in, identify and obtain necessary resources for faculty, and provide the training needed to help faculty transition toward what many felt was a drastic mandated reform. I expected to glean new information around the experiences of faculty that could be shared with fellow stakeholders. Indeed, engaging in this inquiry allowed me to arm myself with current and relevant research and data to be able to address faculty concerns and clarify why the reform is positioned to meet the goal of improving completion rates.

Statement of Project

This study focused on one community college in California to investigate faculty perceptions of the implementation of AB 705 and corequisites, including the ensuing organizational changes, roles, responsibilities, and workflow. Working at one site, I interviewed a total of 13 faculty members and analyzed their perceptions on the decision-making processes used in the creation, structure, and evaluation of the corequisites. I reviewed the instruction and pedagogy within the corequisite courses, focusing on if and how faculty changed their approach

to teaching. I also found what other academic and non-academic supports were available to students while they were enrolled in the corequisites.

Gap This Research Fills

Implementation of AB 705 for placement and corequisites began, in California community colleges, during the fall semester 2019 (AB 705, 2018). The Chancellor's office did not provide any guidance on implementation, nor were there any sample designs for colleges to follow. While a few colleges had implemented corequisites, their approach could not be generalized. While those early adopters did advise on some best practices, they were not representative of many of the other community colleges in the state, given size and demographics (California Community College Chancellor's Office Student Success Score Card, 2018). Moreover, key studies recommend that colleges to do a self-study and customize the reform based on their individual needs (New Mexico Higher Education Department [NMHED], 2017; Sides, 2016). With only one semester of implementation, continual research is crucial to assessing AB 705's impact on completion rates, and to guide colleges in implementing the reform that fits their campus's needs and resources. Further research in this area, including this study, can contribute to developing best practices that can be generalized to other colleges throughout the state.

Research Questions

This project engaged the faculty to describe their perceptions of how their roles are impacted when such policy reform is mandated. The aim was to provide a better understanding of: (a) the decision making and reflection that led to the decisions; (b) perceptions of how it is going, so far; (c) connections that they tried to make leveraging the existing structures and

practices (or not); (d) where they plan to go next with their decision-making if anything doesn't work out.

To explore these concerns, I asked the following questions to guide this study:

1. What are faculty perceptions of the policy decision surrounding AB 705 and its impact to their function/role?
2. What, if any, is the relationship between faculty member support for AB 705 and faculty pedagogical changes?
3. How do faculty describe their changes in pedagogy when teaching a corequisite?
4. How do faculty describe and evaluate the rollout of AB 705 and what future evaluation strategies do they recommend?

Research Design

To capture the nature of the changes brought by AB 705, I used qualitative methods to gather individual perspectives from community members. Creswell (2013) holds that qualitative methods allows for a deep understanding and revelation of patterns if they exist. This study's design is what Merriam and Tisdell (2016) refer to as basic qualitative research, focusing on meaning, understanding, and process. This method suited my goal to analyze how faculty at the selected site described their differentiated pedagogy, how they used differentiated pedagogy, and their perceptions on how this affects student learning and success. I gathered and analyzed documents related to AB 705 including school websites, course outlines, and committee meeting notes and course documents. I also collected faculty interviews, which allowed me to confirm and triangulate discoveries from the document analysis.

Research Site

This study focused on one site at a community college in California newly grappling with compliance with AB 705, called La Manzanita College. I had three selection criteria that led to choosing this site: that it offered corequisites for the first time in fall 2019, employed 30 or more full-time math faculty, and had demographics reflecting those of the state's averages. I interviewed 13 faculty at the site, identified by contacting the administrators for recommendations that involved a variety of perspectives. These choices allowed for identification of common processes from this site to the state-wide system.

Significance of the Research

This research is significant to fulfilling the completion agenda, which includes increasing the number of certificates, degrees, and transfers at California community colleges. As this research identifies processes in structuring the programmatic features of designing a corequisite that increases student success, results and findings can help community colleges implement such a requirement. With this knowledge, community colleges can build resources and programs that are specific to supporting faculty and meeting the students' needs in a post AB 705 era in the California community colleges. Though this study is focused on one site, it presents implications for further probing in the field; findings from this investigation fill an existing research gap and can help other California sites improve their offering of the new corequisites. They can also ultimately assist colleges in other geographical locations undergoing similar transitions.

CHAPTER 2: REVIEW OF THE LITERATURE

This study engages faculty on their perceptions of the rollout of a new state mandate, AB 705, which responded to the low rates of graduation, transfer, and certificate completion at California community colleges (Bailey et al., 2015). The bill rejects traditional placement practices, which require students to take remedial courses in English and math, as they significantly contribute to low completion rates. Key studies reveal that such remediation has failed at advancing students to completion of transfer level English and math courses (Atkins & Beggs, 2017; Hodara et al., 2012; RP Group, 2014). Other interventions such as acceleration and multiple measures placement have achieved less success than direct student enrollment in transferable courses with concurrent support (Hope & Stanskas, 2018).

With estimated costs of $7 billion (Smith-Jaggars et al., 2013), remediation's dismal results toward increasing completion rates give economic cause to eliminating placement into remediation. The extensive reform act allows for direct placement into transfer level English and math using students' high school courses and GPAs (Irvin, 2017). The act further requires colleges to create corequisite courses that provide just-in-time remediation, which have increased student success and completion rates in other states and pilot programs (Rodriguez et al., 2018). While California now has a mandate, there is no recommended model or set of best practices surrounding the transition. This study analyzed the faculty perceptions on the processes used toward the implementation and evaluation of the corequisites being mandated at community colleges in California.

In this literature review, I describe the research on completion rates at the community college level and examine the obstacles to improving these rates. It begins with a full detailing of the problem of completion rates at open access institutions. I then turn to two obstacles in

particular, remediation and placement, and expose their inefficiencies at improving completion rates. Then, I review two interventions, acceleration and multiple measures placement, and present data showing their achievements and shortcomings in increasing completion rates. I then discuss the requirements of AB 705 and its implications. I present an overview of various corequisite models and data on implementation of corequisites from colleges in other states and early adopters in California. I conclude with my theoretical framework on institutional and organizational change. Finally, I provide a breakdown of my project.

Obstacles to Improving Completion Rates

Educational attainment in California has been declining with each generation (Moore & Shulock, 2010). Bailey and Jaggers (2015) found that less than 40% of community college students complete the necessary coursework to achieve a degree, certificate, or transfer. This low rate is misaligned with the stated goals of community college students. Surveying 85% of community colleges across the nation, the Community College Survey of Student Engagement (2014), found that between 2004 and 2014, the percentage of students who intended to complete an associate degree grew from 79% to 84%.

Given their open access, community colleges attract a substantially large and diverse population, many of whom have goals of earning a degree or certificate. Unfortunately, many of these students never achieve their goals due to the low completion rates plaguing community college. Moore and Shulock (2010) found that six years after enrolling in a community college, 70% of degree-seeking students had not completed a certificate or degree, and had not transferred to a university. Only 11% were awarded an associate degree and 31% completed a certificate or transferred to a university. Most had dropped out, with only 15% of the non-completers still enrolled. These low percentages are quite daunting and prove that community

colleges' current practices are not working towards students' completion (California Acceleration Project, 2018). While community colleges have succeeded in providing access to higher education and upward mobility, they are failing in providing success to completion (RP Group, 2017).

Enrolling 50% of the nation's undergraduate population, community colleges' contribution to the completion agenda specified in California's Master Plan must involve a robust and efficient transfer process (Handel, 2013). When completion goals are not aligned with institutional efforts and resources, obstacles to completion result. McPhail (2011) pointed out that funding models are based on enrollment and access, and not on completion. Other obstacles include policies and procedures contrary to the completion agenda, the lack of incentives for improved outcomes, outdated pedagogical practices, and little engagement of faculty beyond academic content. Key studies identify two major obstacles to completion: remediation and placement (Bailey et al., 2018; Cafarella, 2016; Hodara et al., 2012; Hope et al., 2018; Mireles et al., 2014; Stewart et al., 2015).

Remediation No Longer Effective in Meeting the Completion Agenda

Because of declining and subpar completion rates, community colleges have revisited the completion agenda and their efforts to meet it. The focus has narrowed to placement and remediation as the major obstacle to students completing a certificate, degree, or transferring (California Acceleration Project, 2018). In 1960, the California Master plan gave access to students who lacked all the skills necessary to complete college level work. Remediation was touted as the solution to help students fill gaps in prerequisite knowledge (CCCSE, 2016; Hope et al., 2018). Colleges invested heavily in remedial education by creating courses to scaffold the foundational material, including remedial math courses as low as five levels below transfer level

(CCCSE, 2016). Decades of such practice led to dismal results. For instance, the New Mexico Higher Education Department (NMHED) found that nationally, only 11% of students enrolled in remedial courses graduate from a two-year institution in three years, and only 18% transfer to a four-year institution (with or without a degree) in four years (2017). These efforts were instituted and well-intentioned based on the available research at that time (Hope et al., 2018). Current research now shows that such remediation does not increase a student's likelihood to succeed in a transfer level course (RP Group, 2014).

To illustrate remediation's failure to improve academic growth, Bailey et al. (2013) reviewed regression discontinuity studies among virtually identical students, some of whom were and some of whom were not assigned to remediation. The analysis concluded that remediation is not effective because it fails to raise the outcomes of developmental students above those of similar college ready students. Persistence through remedial coursework is further slowed due to an attrition problem. Mireles et al. (2014), reiterated Hern's (2010) explanation that even if one assumed a 75% success rate in the remedial course sequence, for those starting at the lowest level, only 13% would pass the transfer level course. NMHED (2017) used actual student data to address the attrition implication caused by remediation. Their national study found that among students assigned three or more semesters of math remediation, roughly half were lost each semester. Consequently, by the end of the third semester, only 15% of those students who began with the first remedial course will remain to enroll in the gateway course, and only 10% will actually go on to pass the gateway course.

This lengthy progression causes many students to get stuck in the pipeline of remediation. Many lose interest because the content at first seems too easy, and students lose motivation and many end up not passing (Garcia et al., 2014). NMHED (2017) citing Rotman (2015) referred to

three categories of remedial students: never learned the material, misunderstood the material, or forgot the material. For those who forgot the material, in particular, remediation is not the solution.

Promising Interventions

Acceleration Models

To address problems with remediation, community colleges introduced reforms, including acceleration models and multiple measures placement (California Acceleration Project, 2014). Accelerated pathways reduced a four-course pathway to two courses, where overlap in course material was removed. These accelerated models focused on the specific skills necessary for college level math courses. Faculty acknowledged that liberal arts students do not need all the prerequisite skills that business and STEM track students need, and different professional pathways were also assigned their own accelerated pathways (Burdmant, 2018). For example, business and STEM students can have an accelerated pathway to prepare them for calculus, while liberal arts students can have an accelerated pathway to prepare them for statistics.

Multiple structures of the acceleration models were piloted and eventually consolidated as faculty from various colleges and institutions collaborated and created communities of practice. The California Acceleration Project (CAP) was established in 2010 as a faculty-led professional development network that supports California's 114 community colleges with their acceleration efforts. Aiming to increase the number of students who go on to complete transferable gateway courses in English and math, CAP assisted 84 colleges in implementing acceleration strategies between 2010 and 2016. Outcomes showed that acceleration students' odds of completing college-level statistics were 4.5 times greater than in traditional remediation (RP Group, 2014). Carnegie Math Pathway (2010) joined forces with community colleges and

created Statway, a set of 1-2 term offerings that are designed to meet a range of developmental and college-level student needs. Upon completion of this accelerated sequence, students once deemed as remedial were completing a college level statistics course. Statway has a 49% 1-year completion rate compared to a 15% completion rate of students who take 2-year traditional sequence (Carnegie Math Pathway, 2015).

To achieve acceleration's success at improving completion rates, colleges heavily invested in technology resources and faculty professional development (Cafarella, 2016). Acceleration uses new innovative curriculum and pedagogy and provides faculty with extensive training. Statway requires faculty to be certified in their research based prescriptive pedagogy (Carnegie, 2010). A successful accelerated curriculum includes technology resources.

Sustaining these models requires significant funding sources that colleges are not able to maintain. Challenges with acceleration include their scalability given the heavy costs and training required to teach them, impact to articulation agreements with four-year institutions, and faculty buy in (Cafarella, 2016). Hope et al. (2018) noted that placing students directly into transfer level courses would have an even larger effect on increasing students passing and completing the college level courses based on the data gained from these interventions.

Placement Reform and Multiple Measures Placement

Given the high costs involved to scale acceleration, placement directly into transfer level courses is an alternative that increases completion and throughput. A 60% rate of placement into remediation from traditional standardized placement exams necessitated the use of multiple measures placement where students' high school GPAs would be considered in placement (Community College Research Center, 2013; Kirst, 2008). In their study on college readiness,

Jackson and Kurleander (2014) discovered that high school GPA is better predictor of college readiness than existing college readiness outcomes.

Through the use of multiple measures, more students have gained access to and completed transfer level courses (Ngo et al., 2013). In 2013, Davidson Community College in North Carolina piloted multiple measures with 667 students. Overall results from the two-year study showed that students placed using high school transcript data succeeded in their gateway courses (earned a grade of C or better) at 76% percent compared to a 59% success rate of the students using other placement methods (CCCSE, 2016). For the math gateway course, the success rate of those placed with multiple measures was 65% compared to 48% for the other students with a different placement. With the success gained through use of multiple measures assessments, more schools adopted this placement method. In a national survey, Rodriguez et al. (2017) found that between 2011 and 2016, the number of two-year colleges using multiple measures more than doubled in both math (from 27% to 57%) and reading/writing (from 19% to 51%) (Zachry et al., 2018).

In addition to increasing access to and completion of transfer level courses, using multiple measures also decreases the degree attainment gap between students who begin with college level courses and those required to remediate (Booth et al., 2014). Stewart et al. (2015) highlighted the 25% degree attainment gap between those placed in remediation and their peers placed in college-level courses. Using multiple measures allows more students to enter college at higher levels, and to graduate faster by no longer taking extra remedial courses not counting towards graduation. This placement reform also encourages students' confidence that what they did in high school mattered (Kirst, 2008).

Multiple measures affect students beyond the classroom and completion process. There is a financial benefit especially for those students receiving financial aid (NMDHE, 2017). With less remediation, they can focus on those courses that count towards graduation and their federal successful academic progress. Under the traditional remediation placement, these students risked taking extra courses resulting in less financial assistance and impacting their ability to afford college.

Multiple measures succeeded in providing access to transfer level courses for more students than other reform strategies including acceleration and standardized testing (Hetts, 2017). CalPASSPlus (2018) indicated that when placed directly into transfer level courses through multiple measures, students had a 40% success rate compared to a 26% success rate of those placed using the traditional placement test. However, multiple measures do not have the same impact when students are placed below transfer level. Students placed with the standardized traditional assessment test had a 5% higher success rate than those placed using multiple measures. Implementation of multiple measures for placement directly into transfer level courses only is an optimal solution.

Full-scale implementation of multiple measures poses challenges including manual processes and costs. Few data sharing platforms exist between colleges and high schools. Though CalPASSPlus (2018) provides a data sharing platform among K-12 and higher education institutions where GPAs may be verified, not all districts participate. Verification of students' high school GPAs then becomes a manual and tedious process (Kirst, 2008). Students must bear the responsibility of providing their own copies of their transcripts to the college (Ngo et al., 2013). Counselors must review individual transcripts, compare them with the placement criteria,

and then make the determination of which courses the students may take. Colleges would need more resources including more counselors to accommodate such practices on a larger scale.

Placement Directly Into Transfer Level Has The Biggest Impact

Acceleration and multiple measures placement showed significant gains in student access to and completion of transfer level math courses (Rodriguez et al., 2018). These interventions, however, were never mainstream. For many schools, they served as pilots for a small number of students. These interventions' greatest success toward increased throughput occurred when students were placed directly into transfer level courses (CalPASSPlus, 2018). Logue et al. (2014) explained that remedial students can pass college-level statistics more easily than remedial algebra because the statistics is less abstract and uses everyday examples. Jaggers et al. (2015) recommend full-scale placement of all students into transfer level courses. The researchers do acknowledge that while most students did take the prerequisite courses in high school, some will need additional support such as tutoring or other review to meet the expectations to be successful in the college level course.

Corequisites Support Transfer Level Placement

Placement directly into transfer level courses has now been identified as the strategy to improve completion rates on a larger scale (Hope et al., 2018). Corequisites, courses taken simultaneously with a transfer level course, have been used to provide the additional support needed by some students with this placement. Corequisites allow for just in time prerequisite review and other support needed for successful completion of the transfer level course. While there are several models of corequisites, key studies highlight three common types: blended remediation, built-in remediation, and parallel remediation (Daugherty et al., 2018).

The blended remediation model known as Accelerated Learning Program Model (ALP) is the most widely used. Originally created and piloted at the Community College of Baltimore County (Adams et al., 2009), ALP comingles underprepared/remedial students with prepared/college ready students in a transfer level course. The underprepared students further take an extra lab or other courses for support immediately before or after the transfer level course meets with the same instructor to review prerequisite material. The comingling of college ready students with underprepared student is intentional in this model as the more advanced students often serve as role models (Daugherty et al., 2018). This pairing also allows the less advanced students to be fully integrated in the college level course, avoiding the sometimes stigmatizing and often demoralizing effects that often come when underprepared students are segregated to remedial courses (Adams et al., 2009). Using the same instructor allows for alignment between material taught in the corequisite and the transfer level course. Instructors are compensated for the additional time spent teaching the corequisite.

This model of comingling college ready students with underprepared students was successful at Baltimore Community College and University of Central Missouri. Within the first four semesters of offering the ALP model, Baltimore Community College doubled the number of remedial students who succeeded in passing their college level course, cut the attrition rate for these students in half, allowed them to accomplish this in half the time, and did it all at slightly less cost per successful student than traditional remedial courses (Cho et al., 2012). Atkins and Beggs (2017) studied students at the University of Central Missouri, who traditionally placed into developmental math, but were allowed to enroll in a higher-level gatekeeper math course along with a mandatory corequisite. The conclusion of the study indicated that those would-be

developmental math students were able to demonstrate college level math mastery with the corequisite model and had a faster progress towards degree attainment.

Many early studies on direct transfer placement and corequisites involve pilots and often specialized groups of students. Logue et al. (2016) argued that there could have been uncontrolled, unmeasured differences in some variables across the groups of students exposed to different treatments especially if students were not randomly assigned. By using randomized control trials, they achieved scientific confirmation that direct transfer placement and corequisites have a greater impact on completion rates than the traditional remedial models. Their findings showed that statistics students had a 16% higher success rate than students assigned to elementary algebra. They concluded that remediation is not necessary to pass college level statistics and placing students directly into college level courses increases student success.

Alternatives to the blended remediation/ALP Corequisite design include built-in remediation and parallel remediation. In Built-In Remediation Corequisites, remediation happens during the transfer level course. More time is added to the transfer level course that allows for the instructor to review prerequisite material as the need comes up with the college level material (NMDHE, 2017). For the Parallel Remediation Co-requisites, students take both a remedial course and a college level course at the same time. Colleges using these types of corequisites are seeing greater success at completing transfer level math than those still using traditional placement (Cho et al., 2012).

While many studies on corequisites showcase the outcomes of the students, Daugherty et al. (2018) identified challenges with implementation. These challenges include limited buy-in among faculty, advisers, and students; issues with scheduling and advising logistics; limited

preparation and support for model design and instruction; and rapid speed of and uncertainty around state policymaking.

Strategies to address these challenges included recommendations to: encourage a culture of flexibility and innovation; garner strong support from leadership and faculty champions; convene an advisory board that includes key stakeholders such as advising, registrar, and IT departments; and identify funding to support design and implementation.

In implementing corequisites, colleges are reminded that there is no one size fits all approach (CCCSE, 2016; NMHED, 2017). Recommendations include for colleges to assess their student demographics and college resources and adjust their approach to fit the needs of their institutions. Northwest-Shoals Community College were forced to adjust their plans when implementing the ALP Model on their campus (Sides, 2016). After dismal results within the first year of implementation, they sent representatives directly to the creators of ALP to be trained, made specific changes to the target population, structure, and scheduling, as well as faculty course loads and salary. By their third year of implementation, there was a 25% margin of success for students participating in ALP compared to eligible students that did not participate. Retention for the ALP students was also higher.

Early Adopters of Corequisites in California

Given the use of corequisites in other states, some community colleges in California began piloting corequisites. Cuyamaca College was an early adopter to direct placement into transfer level math courses (Marshall & Krajewski, 2017). Traditional placement in Fall 2015 resulted in a pass rate of only 24% of students taking transfer level math classes. However, in Fall 2016, direct placement into transfer level math courses (with and without corequisite support) led to a 62% pass rate in the business/STEM transfer math course, and an 84% success

rate in statistics. While no significant difference surfaced between the success rates of those taking the corequisite support and those that did not, the study confirmed that direct placement into transfer level along with corequisites boosts higher completion rates. With just 6,300 students and having 46% white students, Cuyamaca College is one of the smaller community colleges in the state, and its demographics are not reflective of the state's averages (Success Scorecard, 2018).

In addition to Cuyamaca, Los Medanos, College of the Canyons, and Siskiyous piloted direct transfer placement and corequisites. Regression analysis for these four colleges showed that as direct transfer placement increased, so did throughput (Cuellar Mejia et al., 2018). The results from these early adopters in California provided the state legislature with data that prompted a response.

AB 705: Scalability and Momentum

In recent years, lawmakers and scholars have questioned if access without success can be considered access at all (Bahr & Gross, 2016; RP Group, 2017; Shulock & Moore, 2007). Given the data on what best increases completion and decreases costs, legislators acted by mandating scalable reform (CCCSE, 2016). The sense of urgency to assist students in achieving success given the open access at the community colleges led stakeholders to establish AB 705 as a state mandate (Rodriguez et al., 2018). This mandate practically eliminates remediation and standardized testing for placement. AB 705 dictates that placement now be based on high school GPA, with the majority of students be placed directly into transfer level courses.

With support a vital resource for student success, AB 705 further mandates that community colleges create support/corequisite courses. These courses are meant to provide just-in-time prerequisite skills for those students who would have previously placed into remediation

and are now placing into higher levels of English and math courses. Current research shows no significant difference between the success rates of those taking the corequisite support and those that did not (Marshall & Krajewski, 2017). These studies were done at smaller colleges whose demographics were not reflective of the average community colleges in the state. AB 705 gives flexibility to individual colleges on how to structure the corequisites. Some options include mandating that students take a corequisite based on their GPA and offering corequisites as electives. The bill did, however, state that as of fall, 2019, all community colleges in California must implement this reform (Rodriguez et al., 2018).

Faculty Perspectives, Concerns, and Recommendations

Faculty Buy-In

Implementation of reform implies that institutions and even faculty must amend their practices. If the current practices were meeting the desired outcomes, the reform would not be necessary. However, with no one size fits all model, before full implementation of such reform, institutions are advised to pilot the reform and customize it to their specific needs and available resources (Sides, 2016). Cafarella (2016) referred to this type of intentional piloting as a cultural audit, stating: "Specifically, a cultural audit studies both the espoused and underlying beliefs and values within an organization. A cultural audit can give a better indication as to whether a suggested practice is a proper fit for a group of developmental math instructors and their students" (p. 24). When conducting a cultural audit, NMHED (2017) stresses the importance of surveying faculty and building faculty buy-in and participation.

With mounting pressure from legislators, school administrators are skipping the consultation with faculty, imposing the reform, and mandating that faculty figure it out since the reform has worked at other institutions (Mangan, 2014). In other cases, school administrators are

only consulting with interested faculty, those who have already accepted and support the reform (NMHED, 2017). In his qualitative study that explored developmental math faculty viewpoints regarding acceleration practices in developmental mathematics, Cafarella (2016) found that when the new initiatives were faculty driven and not mandated from the top down, the implementation was more seamless and morale was higher. When College of Siskyous shortened their math pathways and implemented corequisites, it was noted that "A focus on student success and trust between administrators and new faculty leaders in math were central to the college's success" (Olga et al., 2018). Results of an implementation survey conducted by CAP shows math departments are divided on reform similar to AB 705. This is described as a crisis of ownership and sustainability of such innovation may not be able to survive without the support of department faculty (RP Group, 2014).

Unprepared Students

Affecting faculty buy-in are huge concerns on the preparedness of students for the higher-level math courses. Faculty who teach developmental math courses have experience with developmental students and know how to fill in the gaps. STEM faculty, however, worry that this reform will be detrimental to those students who lack the foundational skills (NMHED, 2017). "People have to understand that math is linear. If you don't know how to add or subtract, you can't do order of operations and word problems" (Cafarella, 2016, p. 18).

Early assessment of students' skills further contributes to faculty concerns on student preparedness levels. However, faculty use their own in-class assessments once the student has already been placed. In their study on unprepared students, the CCCSE (2016) found that 70% of developmental math faculty use early in-class assessments to evaluate a student's preparedness level. For faculty who teach college level only math courses, the percentage drops to 54%. It is

also rare that a faculty member will recommend that a student switch to a different math course. Instead, faculty recommend additional resources such as tutoring to the student.

The concerns for preparedness have some scholars recommending that faculty take more of a pivotal role in the original placement of students (NMHED, 2017). Additional faculty concerns include that students' individual learning styles are considered during placement and to make sure students have choices should they wish to take a developmental math course (Sides, 2016).

Pedagogy for Developmental Education Reform

To address the concerns over placement and preparedness, proponents of developmental acceleration reform recommend changes to pedagogy and teaching habits (Hodara et al., 2012). When interviewed by CCCSE (2016), 34% of faculty said they change their pedagogy or approach when asked the question, "Which of the following, if any, is your most common action based on results of your in-class assessment if a student is underprepared?" Critical thinking, higher levels of challenge, contextualization, and assignments and assessments that mimic what has traditionally been done in the higher-level math courses should continue (RP Group, 2014). Additionally, more intentional support including affective issues, classroom strategies, building a growth mindset, just in time remediation, and intrusive advising are further recommended. "Instead of simply repackaging the same content into a shorter timeframe, curricular redesign asks faculty to reconsider both content and pedagogy in developmental courses (e.g. increasing their emphasis on quantitative reasoning and decreasing emphasis on algebra for students in non QSTEM paths)" (RP Group, 2014). Faculty who have implemented such reform also expressed that alternative instructional strategies allowed form more interaction between students and faculty (Booth et al., 2016).

Culturally Responsive Pedagogy

Students of color have disproportionally been relegated to remediation and their access to higher-level math courses blocked by placement exams (RP Group, 2014). Students of color have not performed well with the traditional teaching approaches and assessments of mathematics (Mayfield & Garrison-Wade, 2015). In their longitudinal study of 150 STEM faculty and 15,000 students, researchers found that STEM faculty who believe ability is fixed had twice as large racial achievement gaps compared to more growth minded faculty (Canning et al., 2019). The use of cultural responsive pedagogy, CRP, has been widely considered as a promising approach to improve student learning for various cultural groups in mathematics (Timmons-Brown & Warner, 2016). Ladson-Billings (1995) introduced CRP, explaining that students of color would be more engaged if the lessons were student-centered and created with their own cultural context, reality, and experiences included. One must engage the student and enter their social spaces to get a better understanding of what matters to them and then include this in the math lesson (Rubel, 2017). CRP takes on more of a community approach to learning including collaborative learning and group work.

Extensive Training

Changing one's pedagogy and employing more specific teaching strategies requires training for faculty when implementing reform. The success of the early adopters of the acceleration and multiple measures pilots in California was based on extensive training and collaboration among educators and coordination through the California Acceleration Project, CAP (RP Group, 2014). Booth et al. (2016) also found that focused professional development for the developmental education instructors and administrators is useful in learning to deal with specific student problems. In their study on early adopters of AB 705 in California, Rodriguez et

al. (2018) found that success rates remained stable while throughput increased significantly, and research that is more rigorous is needed to track the long-term impact. The faculty expressed how the corequisite provided extra time to do the just in time remediation and facilitated more group-based learning. They also expressed concern about the top-down approach of AB 705. Yet faculty felt believing in student capacity is the key to making such reform meet the desired outcomes. “A faculty member reflected on this by stating that there is a profound difference between telling a student ‘you tested one level below transfer’… that means ‘you’re not good enough … you’re not ready,’ versus ‘you might have tested one-level below … but there’s an option that allows you to go straight into the transfer-level course [with support]’—and here the message is ‘you can do it … we know you can do it” (Rodriguez et al., 2018).

Conceptual Framework

Reform was the focus of this study, which is framed by organizational change theory. I examined the implementation of substantive reform in placement practices for English and math at a California community college. This reform eliminates placement tests and mandated remediation, and allows for direct placement into transfer level courses along with a support course known as a corequisite. Organizational change theory describes the effectiveness with which organizations are able to modify their strategies, processes, and structures (Hussain et al., 2016). Alase (2017) adds that change just does not occur automatically; it results when there are organizational problems that need to be fixed. Applying this framework to my study, community colleges are the organizations, while low completion rates are the current problem.

Placement and remediation have exacerbated this problem for over 30 years. Decades of low and decreasing completion rates have caused community colleges to diverge from their core mission (RP Group, 2014). Organizational theory posits that divergence in organizations occurs

from a misalignment between structure and environmental demands (Alase, 2017). To combat divergence, episodic change is used to redirect organizations from the dominant institutionalized template (D'Aunno et al., 2000, as quoted by Battilana, 2007). Episodic change, also referred to as revolutionary change, is infrequent yet intentional occurring at times when drastic change is the only option to get the organization to change. After 30 years of placement and remediation's failure to improve completion rates, AB 705 serves as the episodic and revolutionary change to bring community colleges closer to its stated purpose of providing a pathway for students to earn a degree, certificate or transfer (Irvin, 2017).

My conceptual framework drew on organizational change theory because change is the essence of AB 705: change in placement, prerequisites, teaching, pathway, guidance, and support. AB 705 will test community colleges' ability to implement all these changes after years of not meeting the completion needs of students.

Summary

Beginning in the fall of 2019, community colleges throughout the state of California implemented AB 705. While no specific guidance from the Chancellor's office was given, colleges had full range on creation/development of corequisites. Some groups offered toolkits on best practices learned from early adopters within California and from other states who had gone through similar legislation and reform (CAP, 2018; Rodriguez et al., 2017). Research on math remediation in particular revealed the need for multiple pathways, as some students in liberal arts departments had no need for calculus, and performed better in statistics, which was also more relevant to their coursework. The literature makes clear the need for faculty buy-in and indicates the importance of culturally relevant pedagogy for students of color in the community college system. This study interviewing faculty at one California community college uses organizational

change theory as a lens to observe the strategies, processes, and structures of AB 705's implementation at one campus. My focus on faculty perceptions and experiences extends the understanding of how organizations respond to policy mandates.

CHAPTER 3: METHODOLOGY

Introduction

This study investigated faculty perceptions on the implementation of AB 705 including their support of this mandate, the effect on their pedagogy, and recommendations for evaluation. AB 705 was enacted due to years of inefficient and unnecessary placement practices that led to failure in remediation as a solution for students with low scores (Bailey et al., 2015). Interventions including acceleration and multiple measures placement produced lower completion gains than when students enrolled directly in transferable courses with concurrent support (Hope & Stanskas, 2018). AB 705 eliminates this system of placement into remediation and instead mandates direct placement into transfer level English and math using students' high school courses and GPAs (Irvin, 2017). This state bill further stipulates that community colleges must create and offer corequisite support courses. As no recommended model or best practices were provided, this study engaged faculty on their perceptions of the rollout of the mandate at one campus, its impact to their role and pedagogy, and recommendations for ongoing evaluation. Such an investigative study can also influence practices nationwide as mandates surface. This research sought to provide a guide on implementation strategies.

Research Design and Rationale

This study examined faculty accounts on the implementation of new reform for California community colleges, AB 705 including the processes and procedures that were used to implement and evaluate new placement criteria and corequisite support courses. It also analyzed new pedagogy implemented by faculty for corequisite support courses. The study used a qualitative design because interviews and documents were necessary to capture the rationale for using certain pedagogies and processes towards implementation of AB 705, including corequisite

support classes. Qualitative methods also allowed for an investigation of faculty reflections on the policy decisions that framed AB 705, their buy-in of this reform, and pedagogical reform for the corequisites. While such an in-depth inquiry is usually associated with a case study approach (Creswell, 2018), case studies are also bounded by time and activity. Lacking recommended best practices, the design, structure, and pedagogy for the corequisite courses have no boundaries as community colleges are using varied approaches to meeting the mandate. To explore these open processes that were implemented during the fall of 2019, I used what Merriam and Tisdell (2016) refer to as basic qualitative research, focusing on meaning, understanding, and process. Qualitative methods allowed me to create the knowledge from the stakeholders' perspective to better understand and explain why they did what they did. Because community colleges are varied in terms of their size, demographics, geography, and resources, there is no one-size-fits-all model. A deep investigation chronicling the details of implementation and evaluation as reported by faculty requires qualitative study and analysis because of their open-ended approaches (Creswell, 2014).

Site

My site selection was a California community college called La Manzanita College (LMC). While some colleges had already begun offering corequisites in advance of the mandate's deadline to implement, and others were only making modifications to their remedial courses, I chose to work with a college that offered corequisites for the first time in fall 2019. I hoped to unveil initial knowledge and understanding of processes as sites begin to implement AB 705. Those implementing in fall 2019 had current knowledge and could better describe more details that were relevant. For the early adopters who had already implemented, it was a

possibility they would leave out processes that they had already revised and improved. This selection criterion provided me with more thorough reflection and explanation.

I selected LMC because it has demographics resembling those of the state in terms of race, class, and gender. The site also had at least 30 full-time math faculty which allowed for diversity in perceptions towards their view and support of AB 705, as well as their likelihood to differentiate their pedagogy to help students be more successful. The site selection was also based on being located within 50 miles of the researcher's work address.

Population

Implementing AB 705 involved offices that included academic affairs, student services, administrative services, and information technology. Administrators, staff, and faculty were among the stakeholders collaborating on the rollout of AB 705 reform, including corequisite courses. I opted to focus on the faculty perspective of the implementation and evaluation. To that end, my sample included interviews with 13 math faculty, some full-time and some adjunct, who were teaching a corequisite course for the first time during fall 2019. This number of participants allowed for a variety of reflections on their support of the reform, their knowledge of the background of the reform, their propensity to change their pedagogy, and their opinions on the implementation and on-going evaluation. A qualitative survey and implementation activity were also used for this study and involved a larger portion of the math department, including responses from 80+ math faculty.

Access

At the time of this study, I was employed full-time at the site used in this study. I was serving in the role of dean of mathematical sciences. Because of my supervisory role with the faculty, I did not participate in the recruitment or interviewing of the faculty. Access to faculty

was established through the colleges IRB office. They allowed for emails to be sent to faculty recruiting them for this study. Faculty were further incentivized to participate by the offer of gift cards. To complete the interviews within a designated time of initial implementation and to allow for anonymity of the faculty members' comments, a substitute interviewer conducted the interviews.

Data Collection Methods

Document Analysis

A review of documents included, but was not limited to, websites, institutional research pages, course outlines, and surveys (See Appendices C-I). This review allowed for an understanding of the school's placement strategy, corequisite setup, information flow/dissemination, and faculty responses to surveys. Within the school website, I looked for details regarding how faculty participated in the implementation strategy of AB 705. From the course outlines of records, I identified how the school structured their new co-requisite courses, and how these courses support the new placement directly into transfer level courses and what is the content in these courses. I reviewed minutes and notes from committee meetings where implementation of this new reform was discussed. I analyzed these materials to understand, from these notes what the original plans were, who participated, and how the implementation plan evolved and was executed.

Document analysis also served as a guide in preparing specific interview questions based on information learned from reviewing the documents. For example, learning from the survey that a significant percentage of faculty changed their pedagogy, I developed an interview question that specifically asked faculty to elaborate on the changes they made to their pedagogy. Another example includes discovering from emails that faculty were continuously emailed with

details of the reform and even offered paid opportunities to prepare for the reform. I then used this information from the document analysis to ask faculty if they took advantage of this information and opportunities, and why or why not.

Interviews

I set out to learn math faculty views about AB 705 by following an interview protocol. I specifically focused on their understanding and buy-in of the reform with probing questions (NMHED, 2017). Faculty were asked about their original support of the reform and if that support changed once AB 705 was implemented. Paramount to this study was if and how faculty changed their pedagogy and what pedagogy they considered appropriate for such reform (Hodara et al., 2012). I included questions regarding pedagogy used in the corequisites and what professional development activities they used and implemented (RP Group, 2014). In addition to how they presented the math concepts, faculty were further engaged on the structure of the classroom environment and their perceptions of student readiness (Booth et al., 2014; Center for Community College Student Engagement, 2016). Recommendations on the evaluation of the implementation were also sought in interviews with faculty participants. Relevant questions allowed faculty to advise on what worked well with the implementation and what could be improved (Carafella, 2016).

Constrained by the COVID-19 global pandemic, video face-to-face interviews were used for data collection with a set interview protocol (See Appendix A). Given the circumstances of social distancing, this was the optimal alternate format to allow for direct engagement and the opportunity to ask for clarification or follow up. The audio portion of the video interview was recorded with the permission of each interviewee. Personal identifiers were removed and voices were dubbed before I was given access to the recordings and transcriptions. I then listened to the

recordings while editing and correcting the transcriptions. This process allowed me to feel more engaged in the interviews despite not having conducted the interviews myself. Member checks were also conducted to verify the accuracy of the transcriptions. All interviewees were sent a copy of their transcription and given the chance to make corrections and clarifications.

Surveys

As part of my site's own evaluation of the implementation of AB 705, faculty surveys were conducted online (See Appendix E). During department meetings, faculty also participated in activities assessing their views on the reform and implementation (See Appendix B). I used the results from these documents to inform this study as well as to gather preliminary data on faculty perceptions and recommendations.

There was also an optional second survey completed by about two-thirds of those interviewed (See Appendix D). This optional survey did ask faculty to divulge personal identifiers including tenure status, years of experience, current course subjects, and preferred style of pedagogy. The purpose of the survey was to provide supplemental information that could potentially expand my understanding of trends and patterns in the interviews and surveys, if they occurred (See Appendix D, E).

Data Analysis Methods

To analyze the findings from the responses to the interview questions, I first reviewed interview responses as they related to each question. I then noticed patterns among one's support of the reform and their knowledge of the background of the reform and likelihood that they changed their pedagogy. From there, I created subgroups based on one support, and identified themes within these groups. I also looked for relationships between the themes. This process informed the findings corresponding to the first two research questions.

To address the remaining research questions, I continued to search for themes while I bucketed the data into categories and coded them further into subcategories (Bazeley, 2009). While I repeated this process, I compared faculty responses regarding how they differentiated their pedagogy, including non-traditional teaching methods such as incorporating study skills within the math concepts. I discovered emergent themes tied to faculty perceptions towards styles of pedagogy necessary for this reform and for the corequisites, and identified quotes that supported each of the conclusions I made (Rodriguez et al., 2017).

I also created four analytic memos aiming to directly answer each research question (Satterlund, 2012). The first analytic memo included a summary of the faculty's understanding of the policy decision leading up to AB 705. I sought to learn how much detail the faculty knew about the reasons for AB 705 becoming a law. While creating this memo, I found that some faculty were more knowledgeable than others. The second analytic memo addressed the faculty support of the reform. The literature warned of the importance of faculty buy-in when implementing reform (RP Group, 2014). It was within this analytic memo where I discovered the relationship between support of the reform and if one changed their pedagogy. The third explored the specific pedagogies that faculty used within the corequisites. This would allow for resources on best practices. I was able to identify common practices among some of the faculty interviewed. The last analytic memo focused on the faculty's evaluation of the rollout and all of their recommendations moving forward.

In addition to using the responses from the interviews, document analysis including emails and faculty surveys provided an opportunity to triangulate the different sources of data, and supplemented perspectives gained from my analytic memos. Document analysis contributed to my overall analysis as it forced me to cipher through all the data to look for evidence to

explain some of the contradictions that arose. For example, some faculty interviewed expressed that they were not given enough information leading up to this reform and that they felt caught by surprise. However, a review of emails show that faculty were continuously sent emails on the local decisions towards implementation as well as updates from the Chancellor's office. With further inquiry, I learned that the faculty with such complaints about not getting the information were mainly adjunct faculty. Given the schedules of adjunct faculty and that many of them teach at numerous schools, they may not always have the time to review all the emails they receive from each school. This overall approach of using interview responses and document analysis in this way assisted in clarifying more of the findings within this study.

I used the four analytic memos to guide my overall findings. By connecting my organizing principle of faculty perceptions on institutional change/reform with the literature, the context and the story of the study became apparent. I was not only able to answer my research questions; I discovered other findings, implications, and recommendations that are discussed in later chapters of this study.

Ethical Issues, Credibility, and Role Management

This study was conducted at a site where I was dean of the math department. I served as supervisor of the faculty interviewed. Two major ethical concerns with such a setup included if faculty would feel coerced to participate and whether they would be honest with their responses if I would have been the interviewer. Some may have feared retaliation and discipline from me should they mention things that I did not agree with or that was negative towards me.

A substitute interviewer was used to counter some of these concerns. In the recruitment letter, it was explained that these interviews were being conducted for a UCLA study in which I

was a researcher. Moreover, participants were informed that personal identifiers would be removed and voices dubbed before I had access to the interview recordings and transcriptions.

As dean, I was also involved in implementing AB 705 and the corequisite curriculum at this site. Another ethical concern included if I would make assumptions and comparisons based on my experiences and perceptions. While this could have posed a challenge, my findings are supported from the recordings and transcriptions, and further triangulated by the document analysis. Thus, the data can confirm the precise responses were from those being interviewed.

Caution was also taken to resist finding some generalizability. Because this study is limited to just one site, it cannot be representative of all community colleges implementing this new legislation. The lessons learned and challenges encountered may be used by other community colleges to inform their own processes without a claim of generalizability.

Summary

Because the driving question in this study was about faculty perceptions of the rollout of a new mandate, this study used a basic qualitative method, with primary data sources being interviews, documents, and surveys. The study took place at one site, a California community college, and the survey involved over 80 responses, while 13 faculty were interviewed. The analysis of documents, interview transcriptions, and survey results together addressed faculty perceptions of the policy decision, pedagogical changes, and rollout. This system of research design, data collection, and data analysis allowed for direct investigation of the four research questions in this study.

CHAPTER 4: FINDINGS

Background

California's 2017 Assembly Bill 705 aimed to ameliorate low graduation, transfer, and completion rates in the state's community colleges by eliminating mandated remediation and mandating corequisite courses to be taken simultaneously with transfer level English and math courses. AB 705's goal is to give community college students additional support and create higher probability for their graduation, certification, and transfer. This study uncovered math faculty perceptions on the impetus and implementation of AB 705 at one such community college in the process of implementing the mandate. Faculty support toward this bill, its impact on their role and pedagogy, and their ideas for future evaluation were investigated and analyzed. In addition, faculty were engaged on their recommendations on the continual evaluation of the implementation of AB 705 for this study.

Overview of Findings

Among the findings, I discovered that faculty were knowledgeable about the policy decision surrounding AB 705. The majority also felt that AB 705 did have an impact on their role including their pedagogy. To my surprise, I learned that faculty not in support of the reform reported changing their pedagogy more extensively than those who were in support of the reform. Key changes in pedagogy included the use of group work, affective domain activities, and review of the basics given the additional time provided by the corequisites (RP Group, 2014). While faculty expressed generally positive views about the initial rollout of AB 705, they also had several concerns and offered various recommendations on further evaluation. Professional development for faculty specific to teaching under this new reform was by far the

most popular recommendation from participants, confirming available research (Rodriguez et al., 2018). These findings will be discussed in the remainder of the chapter.

For this qualitative and investigative study, 13 math faculty were interviewed. Participants were recruited based on whether they had taught a corequisite course at La Manzanita College (LMC) during the fall 2019 semester. This sample includes both full-time and adjunct faculty, those with and without tenure, and those with teaching experience ranging between 2 and 25 years. Approximately two-thirds of the participants interviewed also completed a pre-interview survey which provided more demographic details of their background (See Appendix E).

I also conducted a document analysis of meeting notes, emails, and surveys (See Appendix C, D, F, G, H, I). I conducted a survey that included responses from 80+ math faculty members. This survey was more qualitative in nature and the responses contributed to some of themes within the findings. I was able to triangulate the document content, the interview transcriptions, and the survey data to address the four research questions. Using multiple sources of data in some cases provided me with a more nuanced perspective on the rollout of AB 705 than the responses from the interviews alone.

Research Questions

My research questions centered around inquiry into math faculty perceptions of the impetus and implementation of AB 705, and the bill's impact on their roles and pedagogy. I asked:

1. What are faculty perceptions of the policy decision surrounding AB 705 and its impact to their function/role?

2. What, if any, is the relationship between faculty member support for AB 705 and faculty pedagogical changes?
3. How do faculty describe their changes in pedagogy when teaching a corequisite?
4. How do faculty describe and evaluate the rollout of AB 705 and what future evaluation strategies do they recommend?

To investigate faculty perceptions of AB 705 including their knowledge of the policy decision surrounding AB 705 (RQ 1), its impact on faculty roles (RQ 1) and its impact on their pedagogy (RQ 2 and 3), I categorized my findings based on participants' level of support towards AB 705. It was evident that this support affected their views on the aforementioned topics. For the evaluation of the rollout of AB 705 (RQ 4) and recommendations for continual evaluation (RQ 4), there was more agreement beyond participants' general support of the reform. These findings include data from responses from all those interviewed along with data from the faculty survey.

Demographics of Interviewees

To give a clearer background on all findings, I will share exemplifying quotes from faculty interviewed. In some cases, I did not have information beyond whether they are adjunct or full-time as not all participants completed the optional pre-interview survey (See Table 1). In these cases, length of service and tenure status are not included.

Table 1

Participant Demographics

Interview Number	Over the course of your teaching career, how long have you taught math?	More specifically, how long have you taught math at La Manzanita College?	Are you a full time or adjunct faculty member?	What is your tenure status?
Charlie	15 years	13 years	Full time faculty	Tenure
Danny	10 years	2.5 years	Full time faculty	Tenure Track
Erin	21 years	13 years	Adjunct Faculty	
Franky	22 years	20 years	Full time faculty	Tenure
Griffin	13 years	10 years	Full time faculty	Tenure
Hayden	12	6	Adjunct Faculty	
Jordan	~20 years	6.5 years	Adjunct Faculty	
Khai	22 Years	17 years	Full time faculty	Tenure

Note. Participant tenure status is only included where interviewees volunteered that information.

Reform Support

Faculty in Support of the Reform: The Vested With Skin in the Game and the Emotionally Supportive

I initially thought that those faculty who supported AB 705 would change their pedagogy when teaching the corequisite as Cafarella (2016) explained how the lack of faculty buy-in can cause challenges to such reform implementation. Since AB 705 requires major reform, I assumed that those who support such initiatives would be the main ones changing what they did in the classroom. In the literature review, Hodara et al. (2012) explained that such mandated placement reform alone will not create the desirable completion rates for college students. Researchers

suggested that placement reform be balanced with reform in the overall course structures, curriculum, and academic and non-academic support systems that are currently provided. My research, however, showed a different connection between faculty being supportive of the reform (AB 705) and changing their pedagogy.

> *"Yeah, no, I don't change my strategies at all. I mean, good teaching is good teaching, you know, right across the board and they apply to students who are in like the most advanced math courses or like calculus as well as those students that were placed in lower levels courses. And so students across the board need to be affirmed and they need validation, they need to have a sense that they belong in a course, whether they're in a corequisite course or non-corequisite course. So I don't change my strategy that way. Group work and active learning has been shown to be one of the best effective strategies for instruction and for learning." —Professor Angel, full-time faculty member*

Responses like this from Professor Angel were characteristic of those who supported AB 705 yet did not change their pedagogy. Just under half of the faculty interviewed expressed their support of AB 705 and they were all full-time faculty. However, their expressions of support were not uniform. To understand the groups more fully, I divided the subset of faculty who expressed support for AB 705 into two groups because while all agreed on their support of AB 705, I noticed one set differed on knowledge of policy decision leading up to AB 705, and the impact on their role and pedagogical changes caused by AB 705.

Table 2

Two Groups of AB 705 Supporters

Interview	Support AB705	Change Pedagogy	Impact on Role	Group Work	Unprepared	Affective Domain	Understood Background	Years teaching math?	How long taught math at LMC?	Full time or adjunct?	Tenure Status
Angel	Yes	no	not really	Yes	No	Yes	Very Knowledeable			Fulltime faculty	
Khai	yes	no	not really	yes	no	yes	Very Knowledeable	22 Years	17 years	Full time faculty	Tenure
Morgan	yes	no	not really	yes	no	yes	Very Knowledeable			Full time faculty	
Franky	yes	yes	yes	yes	yes	yes	Knowledgeable	20 years since January 2000	20 years since January 2000	Full time faculty	Tenure
Griffin	yes	yes	yes	yes	yes	no	Knowledgeable	13 years	10 years	Full time faculty	

Note. Purple and yellow backgrounds indicate two groups of participants supportive of reform.

I found common responses among Professors Angel, Khai, and Morgan regarding their support of AB 705, their knowledge of the policy decision surrounding it, and its impact on their role and pedagogy. While also supporting AB 705, Professors Griffin, and Franky had common responses that differed from Professors Angel, Khai, and Morgan on the policy decision and impact on role and pedagogy. The similarities and differences between and within these participant groups will be described in further detail below.

Professors Franky, Griffin, and Khai completed the pre-interview survey which included demographic and descriptive questions. Professor Khai is a tenured full-time faculty member with more than 20 years of teaching experience, and describes his or her teaching style/pedagogy as collaborative. Both Professors Franky and Griffin are also full-time tenured faculty members, with 20 years and 13 years of teaching, respectively. Professor Franky's teaching style is primarily lecture-based, while Professor Griffin explains they use lecture, collaboration, and flipped pedagogy. Based on document analysis including emails and some of their interview responses, I concluded that both Professors Angel and Professor Morgan were also at least full-time faculty members. They both discussed their involvement with some of the interventions at LMC prior to AB 705 and their participation in creating the corequisites. My research showed that only full-time faculty had such involvement.

The Vested With Skin in the Game

Professors Angel, Khai, and Morgan expressed strong support of AB 705. They referenced their involvement in the creation of interventions at LMC prior to AB 705 and their political involvement through their affiliation with California Acceleration Project (CAP) and other efforts. They also referenced equity and access, especially for students of color. Their

responses were very detailed and would often include statistics and data from other research sources. I likened these three to being very vested and feeling as though they have "skin in the game" because of all of their efforts leading up to AB 705. The literature review confirms that one's involvement with CAP includes extensive training and faculty professional development (RP Group, 2014). Reform such as AB 705 is one of CAP's main goals.

On their support of AB 705, this group expressed investment in the legislation and the issues it addresses:

> *"So being a part of CAP, California Acceleration Project, I knew that there was a push to create this legislation. And so I was following that legislation as it went through the committees for approvals, I mean like the, the statewide legislation, they were all passing this thing without anyone voting against it. And we were just on our hands on just waiting day by day for the final vote and it passed. I am very happy. That it has come to pass." —Professor Angel, full-time faculty member*

> *"So the idea that we would increase the number of students who actually can fulfill the idea of getting a four-year college degree simply by putting them in the course and understanding that the first time through is not going to work for everybody. But a couple of times, through you'll get the idea and see what's going on and that we could enhance what we're doing by providing just in time workshops or the support classes or whatever it is that we thought would be most helpful. I was all for it." —Professor Khai, full-time tenured faculty member, 22 years*

> *"So to me, AB 705 is really about taking away this bias against community college students, which in very real terms is a bias against students of color and students of low economic you know, socioeconomic status. So, it really was a way of blocking access. And so it was a matter of justice and Oh, so that's why I think it happened." —Professor Morgan, full-time faculty member*

All three discussed the barriers that community college students are likely to face, and named multiple structural and material problems. I deemed an interviewee as being knowledgeable if they described the basic background of the rationale for AB 705 including remediation and placement exams not being effective in increasing completion rates. For those identified as being very knowledgeable, their description of the rationale exceeded the basics and included more history, statistics, and specifics on what lead to and from the mandate. Given

these definitions, all three participants who were in the category of "Vested With Skin In The Game" were also very knowledgeable about the policy decision surrounding AB 705. They mentioned their participation in the political process of AB 705 becoming a law, specific statistics on success and completion rates, equity issues, just-in-time remediation offered through the corequisites and the new placement with HSGPAs.

On their knowledge of the policy decision surrounding AB 705, these participants explained the process:

> *"And so, and that's why a number of people petitioned some legislators to a) do away with placement by standardized test and instead prioritize the high school GPA as a metric for placement. The high school GPA has time and time within the past three years been shown to be a much stronger predictor of success than our standardized placement test. So AB 705 was written in a manner to revise the placement test but also to require access to transfer level courses. So students wouldn't be required to take remediation." —Professor Angel, full-time faculty member*

> *"And so there was a group of students, a group of instructors who were pushing to have placement changed fundamentally in some way and actually meet the title five regulations that said you'd have to use multiple measures for placement." —Professor Khai, full-time tenured faculty member, 22 years*

> *"Our throughput rate was miserable. So, AB 705 did not happen until there was real strong evidence across the nation that you could rethink how we do remediation. When we started thinking about these ideas of coreqs, when we started thinking about just letting people into transfer with a high level of support and we saw evidence around the country that it was working. I think when they saw that not only is there a problem, but there's also a potential solution. That's when AB 705 when you could really convince legislators to do this." —Professor Morgan, full-time faculty member*

All three felt AB 705 did not really impact their role nor their pedagogy and they were the only faculty to have expressed such. These respondents detailed their pedagogy as student centered with active learning. They described how they use affective domain/metacognitive activities and group work. They acknowledged that students are now entering their college/transfer level math courses with varying skills including some not being fully prepared. However, they spoke with passion regarding their pedagogy and found it to be their responsibility to help the students get

caught up including incorporating the college survival skills (Rodriguez et al., 2018). These three appear to be similar in their thinking based on all having worked closely with one another as each talked about their involvement in the creation and teaching of accelerated courses at LMC, and all are full-time faculty with 15+ years at LMC and may have less motivation for rewriting curricula. Given Professors Angel, Khai, and Morgan's participation with CAP, I concluded that they did not feel the need to change their pedagogy as they were already teaching with the emphasis and resources that AB 705 would bring (RP Group, 2014).

On AB 705's impact on their role and pedagogy, the Vested With Skin in the Game discussed contextualizing content for their students beyond AB 705:

> *"I mean, the way I would answer that is that AB 705, what for me was not playing a major role in my improvement in my teaching. The main curricular development that I was doing is trying to bring the curriculum at home to the students in more authentic ways. And so contextualizing what we do in that class in a way that really involves the student's identities and the communities that they belong to and which leverages their existing strengths. That's been my focus and that's kind of AB 705 independent." —Professor Morgan, full-time faculty member*

> *"The biggest barrier that I see is not mathematical knowledge. What's going on for most people is a complete lack of sophistication in terms of college level efficacy. So the idea that they have to do their homework, the idea that they have to keep up, that they have to come to class, those are the bigger things that I see in the students who have been accelerated into the transfer level classes. That's usually what they learn in the swirl of developmental classes. And that's the biggest difference that I've seen, that I have to emphasize that more in all my classes than I did in the transfer level classes before because they would have come understanding that." —Professor Khai, full-time tenured faculty member, 22 years*

These responses indicate an understanding of students as whole beings with particular and evolving needs. Both professors indicated an interest in connecting with students and helping to leverage those connections into the academic dimension.

The Emotionally Supportive

While Professors Franky and Griffin also expressed support for AB 705, their responses towards their support were not nearly as thorough, politically supported, or data-driven as those from Professors Angel, Khai, and Morgan. The responses from Professors Franky and Griffin included more feelings about why they supported the measure.

On their support of AB 705, this group spoke positively about the law:

> *"I was actually supportive of it And it's just been so ingrained in us that students have to start at a remedial level. And I've always been uncomfortable with that only because of the high school I, I feel like, why do we have to repeat the high school courses." —Professor Franky, full-time tenured faculty member, 22 years*

> *"Yes. I was really supportive of it because if a student feels that, okay, I can do it, it should be given to them because I'm, I didn't like the placement test. A lot of times students are placed wrong. So that gives a lot of problems because students are frustrated. They think I know all this stuff and they don't study. So, and then again, guess what, they will fail because they didn't do the homework and et cetera, et cetera. But I really, I support AB 705 really helped." —Professor Griffin, full-time tenured faculty member, 13 years*

Professors Franky and Griffin fell into the knowledgeable category versus being very knowledgeable about the policy decision leading up to AB 705. I found their understanding of why the policy was enacted to be very basic and general.

On their knowledge of the policy decision surrounding AB 705, the interviewees in this group had a very general sense of what the goals of AB 705 were:

> *"Success rates for students starting in the remedial courses were not meeting the college's goals for transfer and graduation." —Professor Franky, full-time tenured faculty member, 22 years*

> *"AB 705 helps bridge the gap to help them succeed." —Professor Griffin, full-time tenured faculty member, 13 years*

According to the RP Group (2014), faculty will need to take ownership of such reform in order for it to be sustained. Professors Franky and Griffin described, in essence, a willingness to go along with the flow. They indicated an intention to help students and provide a lot of support

to students, but they do not appear to be driven by politics, research, and data. Professors Franky and Griffin both expressed that AB 705 had an impact on their role and pedagogy. Instituting more group work and using the extra time allotted in the corequisites to review the basics were some of the changes they both made. In their study reviewing early implementation of AB 705, Rodriquez et al. (2018) found that other faculty made similar adjustments in their pedagogy. Professor Franky went further and implemented more college survival skills and affective domain activities. Unlike "The Vested With Skin in the Game," the "Emotionally Supportive" did highlight the student's unpreparedness being an issue. Faculty interviewed by NMHED (2017) explained that their concern for students being underprepared, hampered their buy-in. Professors Franky and Professor Griffin did not let that stop them from supporting AB 705.

On AB 705's impact on their role and pedagogy, the Emotionally Supportive tended to be open to change:

> *"Yes, it has impacted how I teach in a way. While I had always taught in a supportive remedial kind of way, I am now teaching more of the college survival skills, how to study how to prepare for test." —Professor Franky, full-time tenured faculty member, 22 years*

> *"The one change that the AB 705 has now prompt, I have to think more and more about students not being prepared to take a college level class." —Professor Franky, full-time tenured faculty member, 22 years*

> *"I just went with an open mind. So I didn't really plan much to how to support, but I was able to support them along the way as how they wanted." —Professor Griffin, full-time tenured faculty member, 13 years*

As I reflected on these two groups, and the differences that I found in their perspectives on this issue, I noticed that the major divergence was in commitment and ownership of the reform. While both groups entered the semester of implementation, fall 2019, with similar support of the reform, the changes that the Emotionally Supportive made to their pedagogy brought them closer

to a teaching philosophy already exhibited by the Vested with Skin in the Game, who had been involved with the law over a longer period of time.

Faculty Neutral or On The Fence About Their Support of AB 705: The Curious and Suspicious

While the first group spoke of supporting AB 705 unequivocally, the next group of faculty had a different view on AB 705 and expressed ambivalence; they were on the fence, or neutral, about their support of the reform. Yet these participants who expressed neutrality toward AB 705 did change their pedagogy, like the Emotionally Supportive group (and unlike the Vested With Skin in the Game group).

Table 3

Two Groups of Pedagogy Changers

Interview	Support AB705	Change Pedagogy	Impact on Role	Group Work	Unprepared	Affective Domain	Understood Background	Years teaching math?	How long taught math at LMC?	Full time or adjunct?	Tenure status?
Franky	yes	yes	yes	yes	yes	yes	Knowledgeable	20 years since January 2000	20 years since January 2000	Full time faculty	Tenure
Griffin	yes	yes	yes	yes	yes	no	Knowledgeable	13 years	10 years	Full time faculty	Tenure
Charlie	Middle	yes	yes	yes	no	yes	Very Knowledeable	15 years	13 years	Full time faculty	Tenure
Danny	Middle	yes	yes	yes	no	yes	Very Knowledeable	1o years	2.5 years	Full time faculty	Tenure Track
Hayden	Middle	yes	yes	no	no	no	Very Knowledeable	12	6	Adjunct Faculty	
Leslie	middle	yes	yes	yes	yes	no	Very Knowledeable			Fulltime faculty	

Note. Purple and green backgrounds indicate the supportive and neutral groups, each reporting a change in pedagogy, their roles, and group work in their classes.

I was able to learn more about the three out of the four interviewees who expressed being in the middle regarding their support of AB 705. They had completed the pre-interview survey. From this demographic survey, I learned that Professor Hayden is an adjunct faculty member, and that Professors Charlie and Professor Danny are full-time faculty. I was able to conclude that Professor Leslie was also a full-time faculty member per their interview and mentioning office

hours and voting for the corequisite features. Based on my research, only full-time faculty are required to hold office hours, and only full-time faculty members were allowed to vote for the corequisite curriculum. Professors Charlie, Danny, and Hayden have 13, 2.5, and 6 years of teaching experience respectfully. With an average experience of less than 10 years, and none mentioned participating in the piloting of the accelerated courses, this group did not have as much exposure to such reform as some faculty in the previously labeled groups. This likely contributed to their ambivalent or neutral attitudes toward AB 705.

The Curious and Suspicious

I found these respondents to be curious about the reform but simultaneously suspicious. They described their support of AB 705 as being "neutral," "on the fence," or "not quite sure." They reported being open to new ideas and new reform; however, their concerns included could such a thing work if the students are not prepared. Faculty interviewed by NMHED (2017) expressed similar concerns. On their support of AB 705, this group indicated an openness as well as a lack of confidence.

> *"Didn't know what it would mean. I teach a lot of students who lack essential skills and essential college skills. Wonder how such students could be expected to pass a transfer level class." —Professor Charlie, full-time tenured faculty member, 15 years*

> *"And so I think trying new things is, is definitely I think a plus, but then we also have to kind of be realistic and say, okay, well if a student is not well-prepared or how do, how do we best gauge whether a student is well prepared?" —Professor Leslie, full-time faculty member*

I was a bit perplexed as to why this group identified as being neutral or on the fence about supporting AB 705 because they were all very knowledgeable about the policy decision leading up to the legislation. I found them to be just as knowledgeable as those identified as "Vested with Skin in the Game." The "Curious and Suspicious" knew specifics statistics regarding the reform, they quoted the introduction to AB 705 almost verbatim, and they had an

awareness of how this would help students more efficiently complete their math course and achieve their graduation and transfer goals. Based on their responses, they may not completely support the reform until there was data of its success.

On their knowledge of the policy decision surrounding AB 705, participants expressed detailed knowledge:

> *"And so then my understanding is that with AB 705 the goal is to encouraged students with the right support to start in a college level class and succeed within their first year of enrollment at the college with the services and support that we can offer." —Professor Leslie, full-time faculty member*

> *"I was, I was involved since the beginning of AB 705 because I like to learn new things. So it occurs because a lot of students, they would take about two years to complete the math sequences. If somebody enroll in math 12 which is arithmetic, the probability that they make it to transfer level by the end of two years, it's about 5%. So then once AB 705 came in, I want to learn more of their procedure, what's going on and how it works. So AB 705, this is my understanding of AB 705 maybe AB 705, they want a student. Okay. Majority of the students to finish the math by the first year or within one year." —Professor Hayden, adjunct faculty member, 12 years*

All of the "Curious and Suspicious" described their pedagogy as being collaborative, including group work. Professors Charlie and Danny also included they sometimes use lecture-based pedagogy, and Professors Charlie and Hayden shared they use a flipped classroom on occasion. Such pedagogy was also used by those described as "Vested with Skin In the Game," but unlike that group, the "Curious and Suspicious" further stated that they had changed their pedagogy for teaching the corequisite. They mentioned that they had to become more flexible in this process, including by extending deadline and allowing for open note exams and group quizzes. For those who had a non-corequisite course and a corequisite course they described the corequisite students as less independent, needing more time with the instructor, and needing more of the basics covered in detail. Such pedagogy is supported by CAP and was used by early adopters of AB 705 (Rodriguez et al., 2018).

On AB 705's impact on their role and pedagogy, this group indicated changes in their teaching plans and execution:

> *"I think how I've changed because at AB 705 is how I'm like presenting the material. Prior to AB 705, I assumed that students had specific prerequisite skills. Now, I'm more explicit about what is being covered." —Professor Charlie, full-time tenured faculty member, 15 years*

> *"I created a learning environment that fits students' learning including group work and less lecture." —Professor Danny, full-time tenured track faculty member, 10 years*

Faculty Not in Support Of AB 705: The Naysayers

The Curious and Suspicious had many items in common with whom I will call the Naysayers. The Naysayers are those who were not in support of AB 705 at all and wanted it to stop immediately.

Table 4

Two Groups Changing Pedagogy and Using Affective Domain Activities

Interview	Support AB705	Change Pedagogy	Impact on Role	Group Work	Affective Domain	Unprepared	Understood Background	Years teaching math?	How long taught math at LMC?	Full time or adjunct?	Tenure status?
Charlie	Middle	yes	yes	yes	yes	no	Very Knowledeable	15 years	13 years	Full time faculty	Tenure
Danny	Middle	yes	yes	yes	yes	no	Very Knowledeable	1o years	2.5 years	Full time faculty	Tenure Track
Hayden	Middle	yes	yes	no	no	no	Very Knowledeable	12	6	Adjunct Faculty	
Leslie	middle	yes	yes	yes	no	yes	Very Knowledeable			Fulltime faculty	
Bobby	No	yes	yes	yes	No	Yes	Knowledgeable			Fulltime faculty	
Erin	No	yes	maybe	no	no	yes	Knowledgeable	21 years	13 years	Adjunct Faculty	
Iris	Middle to no	yes	yes	no	no	yes	Very Knowledeable			Adjunct Faculty	
Jordan	no	yes	yes	yes	no	yes	Gets the jist	~20 years	6.5 years	Adjunct Faculty	

Note. The green and gray backgrounds indicate participants with ambivalent and negative attitudes, respectively.

The Curious and Suspicious and the Naysayers shared similar views on AB 705's impact on their role, change of pedagogy, the use of affective domain activities, and group work. Of the

13 math faculty interviewed, about a third was not in support of AB 705. Only two of the Naysayers completed the demographic pre-interview survey. From that survey, the two were identified as adjunct faculty, each with 20 years of teaching experience. Professor Erin described their pedagogy as collaborative and flipped classroom, whereas Professor Jordan included they use a lecture base for their pedagogy. I was able to conclude that Professor Bobby is a full-time faculty member based on their responses relating to voting for the corequisite curriculum. My research shows that only full-time faculty were allowed to vote on curriculum. I was further able to conclude that Professor Iris is an adjunct faculty member as this was mentioned in their interview. So among the Naysayers, all are adjunct faculty except for one full-time faculty member. While the literature review does not distinguish between adjunct and full-time faculty perspectives, document analysis shows that more adjunct faculty teach the developmental courses, and more full-time faculty teach the STEM and transfer level courses. AB 705 has the biggest impact on developmental courses and thus on adjunct faculty.

The Naysayers were vehemently against AB 705, expressing passionate responses as to why. Overall, they saw the mandate as a way to simply allow students to skip through various levels of math so that the students could graduate or complete quickly. They felt it best to stay with the previous system of placement tests and traditional remediation. NMHED (2017) explained that only interested faculty were consulted in creating reform similar to AB 705.

On their support of AB 705, this group demonstrated a negative, sometimes "violent" outlook:

> *"Well, I used to be against it and now I'm very much against it. So if you want to look at that way, I was a little hesitant and now I'm violently against it." —Professor Bobby, full-time faculty member*

“I didn’t support it because people don’t want to spend more time in college. They want to finish fast. One needs guidance, so impression was no, this is not going to work for the majority of the students.” —Professor Erin, adjunct faculty member, 21 years

“Now it's happening in college. Where they want us to push people through is kind of my opinion of it now. And I am not a fan at all.” —Professor Jordan, adjunct faculty member, 20 years

“Yeah, and the fact that I didn't know much about it, that's my own fault as well. But no, I was not impressed. And how to recover from it. That's another good question. I mean, either scratch it completely, which obviously can't happen.” —Professor Jordan, adjunct faculty member, 20 years

The Naysayers had a keen understanding of the rationale for the reform. I found this surprising, because they were so resistant of the reform even though they understood the need for it. They each acknowledged that what was currently being done was not working in terms of students completing, graduating, and transferring. They knew specific details regarding the placement test not properly placing students, and students getting stuck in the remediation pipeline. The Naysayers also recommended alternative placement strategies different from what AB 705 was now using. Booth et al. (2016) also recommended that faculty be more involved in the placement of students.

On their knowledge of the policy decision surrounding AB 705, the Naysayers indicated awareness that the previous placement strategy had not been effective:

“Math was the bottleneck on student completion. So if remove the bottleneck, numbers and rates will improve.” —Professor Bobby, full-time faculty member

“Placement test only worked for those who remembered their math, those who forgot would get placed and have to go thru the pipeline and we would lose them.” —Professor Iris, adjunct faculty member

“So what we were doing was not working. So therefore we should to this we should let the students decide and use the high school grades to enroll them in the different courses so that they can transfer in a short period of time in a year or two.” —Professor Erin, adjunct faculty member, 21 years

All of the Naysayers felt that the students were extremely unprepared for the transfer level course, and that they had no choice but to adjust their pedagogy. According to Cafarella (2016), faculty who had no buy-in were never forced to teach under the reform as it had not been mandated for full implementation. AB 705 forced the Naysayers from LMC to participate in the reform and they felt that they had to change what is done in a traditional math course where lecture is mainly the method of instruction, and implemented more classroom activities, drills, and quizzes. They also used the extra hour to cover the basics and had to rearrange order of topics. RP Group (2014) recommended pedagogical changes that were more about engagement and contextualization versus algebra review for a calculus track. Results from a survey of 80+ math faculty members from LMC showed 60% reported having reservations about AB 705, and 72% reported that they changed their pedagogy when teaching the corequisite.

On AB 705's impact on their role and pedagogy, these professors recalled changing their pedagogy:

> *"Yes. so yes, but not necessarily intentionally. I would say in my experience I've had to adjust to my students in ways that I didn't necessarily want to but it's just sort of the reality of where we're at." —Professor Bobby, full-time faculty member*

> "*Before AB 705, assumed the student was ready for the course, and did traditional teaching. Lecture, intro a topic, give an example, then a practice, check quickly individual students, and repeat. After AB 705, there is a mindset that the students are not prepared, so you slow down your pace." —Professor Erin, adjunct faculty member, 21 years*

Results from a faculty survey administered to over 80 math faculty members, also show that prior to fall 2019, 41% had used affective domain activities in their classes. This percentage increased to 55% during fall, 2019, once AB 705 had been implemented. Affective domain, classroom activities, and non-curricular support for students were highly recommended by faculty who were early adopters of the reform (Rodriguez et al., 2018). Though half of the

Naysayers were participating in group work in their classes, none of them were using affective domain activities.

In using group work, there was consensus among faculty that this included allowing students to work collaboratively or together on assessments ranging from classroom activities, homework, and even group quizzes and exams (CAP, 2020). Affective domain activities include helping students tap into their feelings and motivation (Hodara et al., 2012). Faculty also lumped other non-math skills in with this affective domain arena including study skills, time management, and general college survival skills. While most faculty agreed that such skills were necessary for student success, there were varying opinions on who was to teach and where were students going to learn these skills, with the Naysayers least likely to include these strategies in their classes.

Summary and Trends Based on *Level of Support* of the Reform

Above I presented an analysis based on a faculty member's support of the reform and matched the evidence of "support for the reform" with their feelings on other components of the research questions. In this section, I provide a snapshot and summary of some trends among the faculty responses visible in Table 5 in terms of support for reform, experience, and changes in pedagogy.

Table 5

All Participants

Interview	Support AB705		Change Pedagogy	Impact on Role	Group Work	Unprepared	Affective Domain	Understood Background	Years teaching math?	How long taught math at LMC?	Full time or adjunct?
Angel	Yes	Vested With Skin In The	no	not really	Yes	No	Yes	Very Knowledeable			Fulltime faculty
Khai	yes		no	not really	yes	no	yes	Very Knowledeable	22 Years	17 years	Full time faculty
Morgan	yes		no	not really	yes	no	yes	Very Knowledeable			Full time faculty
Franky	yes	Emotionally Supportive	yes	yes	yes	yes	yes	Knowledgeable	20 years since January 2000	20 years since January 2000	Full time faculty
Griffin	yes		yes	yes	yes	yes	no	Knowledgeable	13 years	10 years	Full time faculty
Charlie	Middle	Curious and Suspicious	yes	yes	yes	no	yes	Very Knowledeable	15 years	13 years	Full time faculty
Danny	Middle		yes	yes	yes	no	yes	Very Knowledeable	1o years	2.5 years	Full time faculty
Hayden	Middle		yes	yes	no	no	no	Very Knowledeable	12	6	Adjunct Faculty
Leslie	middle		yes	yes	yes	yes	no	Very Knowledeable			Fulltime faculty
Bobby	No	Naysayers	yes	yes	yes	Yes	No	Knowledgeable			Fulltime faculty
Erin	No		yes	maybe	no	yes	no	Knowledgeable	21 years	13 years	Adjunct Faculty
Iris	Middle to no		yes	yes	no	yes	no	Very Knowledeable			Adjunct Faculty
Jordan	no		yes	yes	yes	yes	no	Gets the jist	~20 years	6.5 years	Adjunct Faculty

Note. All four groups of participants are indicated with their pedagogy, attitude toward AB 705, and their demographic information.

All faculty were knowledgeable or very knowledgeable and understood the rationale for the reform, as indicated in the "understood background" column in Table 5. The majority agreed that AB 705 had an impact on their role and caused them to change their pedagogy mostly to using group work. Half, indicated by blue responses, supported the use of affective domain activities and half felt the AB 705 placement resulted in several unprepared students in their transfer level courses.

Faculty Evaluation of the Rollout

In addition to level of support of AB 705, and their changes in pedagogy, I also set out to learn about the faculty's perceptions on the rollout of AB 705 and get their recommendations on

continual evaluation of the implementation of AB 705 at La Manzanita College. My findings are based on responses from the 13 faculty interviewed in addition to data from a faculty survey with a larger amount of math faculty at La Manzanita College.

Faculty expressed mixed feelings on their assessment of the initial rollout of AB 705 at LMC and so did the faculty in Cafarella's (2016) study. Those giving comments on what went well highlighted specific strategies and resources that LMC used. Participants also gave a variety of constructive critiques explaining what should have been done and what can be improved upon. There were also disparaging comments and recommendations to discard the law and return to the previous conditions. Faculty in other studies have given a similar range of feedback (CCCSE, 2016).

What Went Well in the Implementation

More than half of the respondents commented that there were efforts that LMC did and made available that assisted the implementation of AB 705. One effort done prior to implementation of AB 705 included offering accelerated math courses and pathways. For students who were placed into remediation, this intervention allowed them a shorter pathway and fewer remedial courses to reach a transfer level math course. Another intervention that LMC did prior to AB 705 referenced by these respondents included the multiple measures pilot where students' placement consideration included their high school GPA and coursework. Institutions, who had piloted the interventions, were better prepared for the implementation of AB 705 (CCCSE, 2016). LMC respondents also mentioned the several helpful meetings conducted prior and where AB 705 and its eventual implementation were explained. The experience gained from these interventions eased the transition to full implementation of AB 705 according to multiple participants:

"LMC even had its own history of using multiple measures, so had experience in prep for AB 705." —Professor Angel, full-time faculty member

"LMC did a great job in planning for it." —Professor Franky, full-time tenured faculty member, 22 years

"The meetings before hand in preparation were also helpful." —Professor Iris, adjunct faculty member

In addition to pointing out this planning, respondents mentioned that the additional resources for faculty that LMC provided were beneficial to the rollout of AB 705. The specific resources described by respondents included extended tutoring and supplemental instruction, guidance on how to teach the corequisites, amount of corequisites established, and the collaboration with the counseling department in setting up the new placement system. Similar to NHMED's (2017) study, respondents felt that these resources allowed for a smoother transition given all of the changes this reform created. The other changes suggested included changes in pathway, changes in placement, and changes in pedagogy:

"The whole idea of it worked well. Allowing students to place higher." —Professor Charlie, full-time tenured faculty member, 15 years

"What was good was that there was a syllabus that guided you on what to do during the corequisite course. How to use the extra hour or two. One could tweak it, but the expectations were laid out." —Professor Iris, an adjunct faculty member
"What was also good was that the coreqs were created for only a small amount of classes. Good not to go all in, especially because implementation happened soo fast." —Professor Iris, adjunct faculty member

"Faculty really become involved in the conversation on creating the corequisites and no longer saying this is all just going to fail." —Professor Morgan, full-time faculty member

Respondents acknowledged resources that were made available to them and their involvement in the rollout. The majority of respondents who expressed some positive elements regarding the implementation are full-time tenured faculty members at LMC. Full-time faculty members had more opportunities to attend the meetings leading up to implementation, and they

also assisted in the development of the curriculum for the corequisites. When faculty have involvement in the introduction of reform and leadership in the curricular redesign, implementation is more likely to be seamless (Cafarella, 2016).

What Could Have Been Improved in the Implementation

For some of the items identified as working well, others listed them as needing improvement. All the faculty interviewed also commented and critiqued the parts about the implementation that they felt was not done as well. Some blamed the rift among math faculty as causing a stalemate toward creating the corequisites. Ownership of the reform, or lack thereof, can stifle the progress (RP Group, 2014).

A Rift Within the Math Department

The Vested With Skin in the Game did not shy away from talking about the division within the math department including how they themselves were not well-liked by others. They further used this rift as a basis to critique some of the things LMC did or did not do towards implementation of AB 705:

> *"We have a pretty bifurcated department and there is some instructors who are very much supportive of students who are in need of remediation and worked really hard at making sure the students understood stuff. And we have a, a portion of our department and it's a substantial portion who thought those students really weren't worth their time and that to be assigned a class like that was somehow demeaning. So one group was looking at this as do we meet our students where they come in? And there's a group that's saying our students need to meet us where we need them to be." —Professor Khai, full-time tenured faculty member, 22 years*

> *"Because I am such a, because I am personally such a lightning rod you know, and I work very hard on our, on our are sort of shortening the pipeline, the BAM and the GEA and there's so much hatred there. I did not take center stage on this at all. I was very peripheral. I did, I did raise my concern about limiting the number of hours. I raised my concern that, that half of what the literature says about success in a college course isn't about the math. It's about the affective domain. And that fell on deaf ears. There's not a single, an affective domain thing listed in any of these, these support courses. Mmm. So I would, I would say I played a minor peripheral role rather than a central role on that." —Professor Morgan, full-time faculty member*

The discussion of this dynamic made clear that the math faculty were not in communication or collaboration as a larger community or department. In light of this conflict, faculty recommendations centered around faculty needs, student needs, statewide leadership, student equity and alternatives to AB 705.

Faculty Needs

Some of the recommendations were directed towards faculty and what should have been done to prepare them better for the implementation. Respondents expressed that while the academic freedom and flexibility were appreciated, there should have been more structure, more time for faculty discussions to plan, and more enforcement of faculty training and pedagogy specific to the corequisites. Two respondents exemplified this sentiment:

> *"Many instructors were just NOT prepared because they did not do the trainings. And it is important for the instructors to be a part of this. They did not know how to teach the corequisites. The training should be mandatory." —Professor Hayden, adjunct faculty member, 12 years*

> *"Should have looked at the data and statistics more to figure out how best to implement instead of faculty being told what they had to do. A stop sign in our department." —Professor Khai, full-time tenured faculty member, 22 years*

One respondent even went as far as saying faculty should have been given the chance to accept AB 705 before it was implemented. Without faculty buy-in, such reform may not be sustainable (RP Group, 2014).

> *"Would have liked the opportunity to have accepted AB 705. One of the problems is that many faculty do not accept AB 705." —Professor Erin, adjunct faculty member, 21 years*

A review of meeting notes and emails that were sent to faculty confirmed that faculty were consistently provided with information regarding and leading up to the reform. There were even paid opportunities to attend conferences and shadow other faculty in preparation for teaching transfer math courses. Compensating faculty builds buy-in and participation (Sides, 2016);

however, the majority of the respondents expressed there should have been more resources for faculty are adjunct/part-time faculty. Given that many adjunct faculty teach at various schools and have inflexible schedules, they may not have been able to take advantage of attending the meetings or even ciphering through all of the emails and information.

Student Needs

While some respondents focused their critiques on faculty needs, others focused on how the implementation's rollout could have better served students. Respondents mentioned that LMC should have offered more support to students including more tutoring and similar resources. Faculty also expressed concern for students' academic well-being during what one respondent called an exploration. This supports findings from NMHED (2017), which pointed out that there was a need for better educating the student on which course and/or corequisite they should take. Respondents talked about how students who did not enroll in a corequisite when they should have slowed down the pace of the course, as they were not prepared. And vice versa, those not needing a corequisite but took it anyway, expecting to be allowed to leave class early because they already knew the prerequisite material. They indicated the delicate nature of the corequisites:

> *"But if ideally, if I have a support class, I need like five tutors in my support class." —Professor Jordan, adjunct faculty member, 20 years*

> *"It gave us the freedom to implement and explore but concerned about what happened to our students while we explore." —Professor Charlie, full-time tenured faculty member, 15 years*

These recommendations of more support resources such as tutoring and better guidance as to which course to take are mostly logistical. A review of the placement set up and clearance protocol showed that while students not needing a corequisite could enroll in one if they chose, other students were required to take a corequisite if their high school GPA was under a certain

level. Students required to take a corequisite could only enroll in a corequisite. Placement of students is usually done outside of the math faculty, by counselors. Although math faculty created the placement rules, they did so without the experience of actually using them, which may explain why they thought students required to take a corequisite could decide on their own not to do so. Sides (2016) pointed out the need to have faculty more involved in the placement process during such reform.

State Level and Chancellor's Office Leadership

In addition to focusing on faculty needs and student needs, other concerns on the rollout of AB 705 centered on the state level and what should have been done from the Chancellor's office. Some felt that the reform was not vetted enough and that more time should have been given to testing it out before full blown implementation. Suggestions included centralized enforcement from the state level, better evidence of its potential for success, and individual colleges being given the chance to present their plan on improving student success before being mandated to do this. Faculty did not have buy-in because they felt the reform took on a top down approach (Mangan, 2014). Also, before a full implementation, piloting the reform and customizing it to the needs of each institution is recommended (Cafarella, 2016; NMHED, 2017; Sides, 2016). The respondents had anxieties and critiques about the rollout at LMC in particular:

> *"I fear that colleges are not implementing the same and some including LMC may be in violation since still offering developmental courses." —Professor Angel, full-time faculty member*

> *"There must be some studies done and two, it must be improved must be improved." —Professor Erin, adjunct faculty member, 21 years*

> *"Well, I think it should have been done in stages. There should have been dialogue amongst the 100 plus community colleges in California. Let's see what we recommend. Maybe have a one-week symposium conference, where all these colleges would gather*

together and deliver their idea, their plan. So that we can improve student success student retention." —Professor Leslie, full-time faculty member

Though faculty reported a lack of phased rollout, document analysis, including meeting notes and emails, revealed that the Chancellor's office hosted several conferences, workshops, and webinars during the year prior to the mandated implementation date. It was also discovered from the review of these documents that the Chancellor's office provided data and statistics on the background of AB 705 including the success from early adopters. How the information from the Chancellor's office is disseminated to the local community colleges and faculty vary among each institutions. At La Manzanita College, there was a resource site set up with AB 705 information. As the emails regarding conferences, workshops, data, and research briefs, came in from the Chancellor's office, they would be forwarded to the faculty and posted on the AB 705 information site.

The perceptions of respondents regarding information and information flow from the Chancellor's office not being disseminated contradicts what was discovered from document analysis. Of the four respondents who expressed this concern, three of them also admitted to not supporting the measure at all. In the following quote, one of these respondents did offer a clarification.

"It was an awful way to spring it on people. And maybe it was in years in planning mode and maybe they were given all sorts of types of warnings and evaluations and letters, but no one really realized it until they were in it in that semester that all of a sudden there was no more or barely any remedial classes. Yeah, and the fact that I didn't know much about it, that's my own fault as well." —Professor Jordan, adjunct faculty member, 20 years

This participant took responsibility about their lack of awareness about timing, preparation, and how this lack of awareness may have impacted their view of the rollout.

Alternatives to AB 705

There were some respondents who did not fully accept AB 705, felt it did nothing but overwhelm math faculty, and did not feel that anything went well with the implementation.

> *"So I don't think anything worked well and I would recommend we stop it as soon as possible." —Professor Bobby, full-time faculty member*

> *"It was sprung on teachers at the last minute and no one realized it was coming until it was actually happening." —Professor Jordan, adjunct faculty member, 20 years*

> *"Many faculty members don't support this reform and have several complaints including the students being unprepared and grades being lower." —Professor Erin, adjunct faculty member, 21 years*

Primarily citing that students were unprepared for transfer level math, these participants proposed alternative strategies to placement different from AB 705 or to just return to the previous placement and remedial courses. Alternative strategies suggested included to continue with some type of assessment test, create a hybrid assessment combining high school GPAs, or have the students at least take just one level below transfer level.

> *"Maybe a hybrid decision. Instead of using only the HSGPAs and letting the students decide, maybe some partial placement." —Professor Erin, adjunct faculty member, 21 years*

The literature review confirms that some faculty in previous studies expressed wanting to keep options open for students and not to get rid of all developmental courses or do away with lecture only course (Cafarella, 2016; NMHED, 2017; Sides 2016). What is notable about these recommendations is that they are similar to the interventions including acceleration and multiple measures that were offered prior to AB 705. These respondents may not have supported the interventions at that time, and, now feeling that AB 705 is too drastic, they are now supporting the previous, less exhaustive types of interventions.

There were also respondents who felt there could be a better or different approach. However, they did not offer what that approach should be. They expressed wanting more data collected and further piloting similar to a self-study:

> *"But there must be some other way, there must be some studies done and two, it must be improved must be improved, we have to look at whether the student is really getting into the right course and are they benefiting?" —Professor Griffin, full-time tenured faculty member, 13 years*

> *"So I think, the key or the hard part is going to be how do you evaluate students or how do you determine who is ready to do this in one semester and who's not" —Professor Iris, adjunct faculty member*

> *"Needs to be revamped. Maybe even paused given the virus." —Professor Leslie, full-time faculty member*

The majority of respondents who felt this way also expressed being neutral about their support of the reform. All of these respondents were also aware of the reasons behind AB 705, acknowledging the previous placement was not working well but still disagreeing with AB 705. They expressed caution and a preference to wait to see how the implementation continues before fully accepting it.

Equity

While not from many respondents, there were some concerns expressed about student equity. Respondents expressed that AB 705 has the potential to decrease the equity gaps, and increase access, especially for students of color to transfer level math courses and to the eventual completion of the course. These respondents also mentioned that students of color fare much better under AB 705 than they did under the previous model of placement test and remediation, as supported by RP Group (2014). However, respondents felt that faculty needed to be trained on pedagogy that is also equity-minded and not the same old traditional chalk and talk or lecturing (Timmons-Brown et al., 2016). Two professors shared:

> *"I would argue that it's undeniable that racism is a factor in these in these issues of students completion. And, and the idea of access, students having access to these courses is going to be a huge benefits to students of color. Instructors should address equity issues more and look at outcomes based on demographics. At LMC Math dept, this is unimportant to many instructors." —Professor Angel, full-time faculty member*

> *"Definitely more equitable and better for our student of color." —Professor Charlie, full-time tenured faculty member, 15 years*

Document analysis showed that previous interventions including acceleration had more students of color progressing to transfer level math than when going through the remediation pipeline. For African American students, the comparison was 6% versus 1%. And for Latinx students, the comparison was 9% versus 1%. According to emails, such reports and information were made available to faculty. Decreasing equity gaps and use of Culturally Responsive Pedagogy are huge components of this reform but were not the primary focus of my study.

Future Evaluation

Institutional Research

In responding to what future evaluation should include, there was consensus on the need for more institutional research that includes more surveys, focus groups, and interviews. Some felt that the surveying and attention during fall semester focused more on faculty and stated that they would like to see more student directed research. A review of whether there is an increase in persistence, retention, success, graduation, and completion rates were also common suggestions from respondents. However, some only focused on increase in success rates being the litmus for the success of AB 705, while others expressed it was more a matter of an increase in completion rates. Among early adopters of AB 705, success rates remain stable and throughput increased (Rodriguez et al., 2018). Additional recommendations from LMC faculty included to merge

results from the various evaluation methods together and come up with some overall meanings and connections. The range of responses included:

> *"So I think there's really good things, but there's definitely a lot of work that needs to be done. If it's something, that if we're going to stick with this, I think we can't just kind of let faculty, try to figure it out each semester. I think there has to be something done at the institution level. So we'll see. I don't know. I think little things are happening. Like the guided pathways I think kind of plays a role in that. So there was already things starting, but I don't see the connection. So I think maybe having something connect everything together is important." —Professor Charlie, full-time tenured faculty member, 15 years*

> *"Also do more surveying of students and faculty. Further combine what we learn from the surveys with the passing rates to get an overall assessment. Also SLO data?" —Professor Danny, full-time tenured track faculty member, 10 years*

> *"And now if we can get those students through a math class like statistics successfully so that they can get on with their college degree, then I think that's a great thing for them and for us to have done for them. So I'm hoping we can see in, you know, two years' time that our numbers have changed. Success, you know, success numbers have changed for graduation." —Professor Franky, full-time tenured faculty member, 22 years*

> *"Get subjective feedback in a robust way that looks at which sections are doing better, then maybe can create resources on how to better implement, especially if researched backed ideas." —Professor Khai, full-time tenured faculty member, 22 years*

> *"Well, I think we should start by asking the student. Students have varying circumstances. What if our assumptions about student needs are incorrect? Times change." —Professor Leslie, a full-time faculty member*

There was also a caution about making conclusions too early. One participant advised monitoring results for a few years:

> *"It is super, super early stage, so we need to see at least a couple of years to see the pattern and what, how, how the students do." —Professor Hayden, full-time tenured faculty member, 13 years*

The research shows that even if a student should have to repeat the transfer level course, their chances of completion is still higher than if they had to remediate with several lower courses (RP Group, 2014). One respondent elaborated on the need for a culture change around repeating a course. They recommended that this message be articulated to students.

> *"Because the other problem that we have not done very well is the message has not gone out. That repeating the transfer level course twice before passing really is better than going through long sequence. Need to change the culture around failing and instead of an F, give an NY for not yet, while they take it a second time." —Professor Morgan, full-time faculty member*

Professional Development for Faculty

Among the recommendations toward future evaluation of AB 705, professional development for faculty had the strongest support from a majority of respondents. Most expressed that professional development is essential for this reform. Key studies attest to the need for faculty professional development (Booth et al., 2016; NMHED, 2017; Rodriguez et al., 2018; RP Group, 2014). One participant shared:

> *"Professional development now is more important than ever because we have a variety of different students in our math courses." —Professor Angel, full-time faculty member*

Examples given for what professional development should include were numerous and varied widely. Some advised that the trainings should be mandatory while others expressed that there should be several options giving the faculty the choice to use what works best for them:

> *"Each instructor has to find their own way. Figure out what works best for them and their students." —Professor Danny, full-time tenured track faculty member, 10 years*

Other recommendations are to create faculty workgroups, provide more space and time for discussions and to allow faculty to collaborate on creating classroom materials especially for the new corequisite courses. These faculty groups could also provide peer support among faculty members as some expressed faculty are overwhelmed and need to vent because students were unprepared and grades were low. It was further recommended to have centralized locations (online and otherwise) of resources such as classroom activities, quizzes, exams, and review

material. Additional recommendations included attending workshops and conferences and visiting other schools including those who were early adopters of this reform.

There was at least one acknowledgement of the importance of getting buy-in from faculty members. It was discussed that no matter how much data and facts are provided to some faculty regarding what contributes to student success, it may not be useful if the faculty members does not agree and does not implement.

> *"So instructors need more tools and need to improve their instruction, but they're not, there is no character stick approach to incentivize instructors to improve their teaching. With access now to a variety of students, now we gotta look to look at themselves to see, you know, how they can do to be student ready. Regardless of what you know, naysayers you know, might say. Because, you know, and you know, that's where in my professional development I'm working in how do I, how do I message this to, to convince naysayers? And that's, that's a long conversation. That, really can't, I really don't know what more to say." —Professor Angel, full-time faculty member*

Cafarella (2016) and RP Group (2014) also support that faculty buy-in is key and will help sustain the reform. An AB 705 implementation questionnaire (See Appendix B) was presented to LMC math faculty during a math department meeting in fall 2019, the semester of implementation. Faculty were questioned on resources they felt they needed now that implementation was in progress as well as their recommendations on future evaluation. There were 32 respondents. Responses regarding resources were similar to those interviewed with the majority advocating for more tutoring and online resources to help students practice their skills (CCCSE, 2016). Alternatives to AB 705 were mentioned more from those at the department meeting than those who were interviewed. 14 of the 32 (44%) faculty who responded to the activity during the department meeting expressed to either amend AB 705 or abolish it altogether. These faculty members tended to be more in sync with the Naysayers. Alternatives suggested from this activity agreed with Cafarella (2016) and primarily focused on having at least one mandated prerequisite before a student could progress to a transfer level math course:

> *"It's a failure. You can't throw people who can't swim in a pool and be shocked if they drown."*
>
> *"Let's bring back at least one developmental math course as a prerequisite for a transferrable class."*

This recommendation resembles the early interventions of acceleration that were not supported by faculty previously. A few new suggestions from this activity included to have more time for the corequisite courses, a study skills course for incoming students, and more guidance for the counselors when having the conversation with students regarding placement. Similar recommendations were included in the literature review (CCCSE, 2016; NMHED, 2017). Review of the responses to the implementation activity indicates that some math faculty were even blaming counselors for students being placed in the transfer level courses unprepared:

> *"Require all LMC students to take a 1-unit Freshman Seminar course that will teach them how to be a successful student, how to write papers, read academic journals, learn how to use online resources."*
>
> *"What was the #1 factor in your decision to take this course? If we understand the main motivation of choosing a class that you are underprepared for, we can understand and address it. I don't think we really know why students chose the classes they did this semester. Perhaps, they are misinformed by our counseling department, by the website info, by their family or friends, etc. Perhaps, they weren't clear about the class because they didn't read course description. We can always improve the process if we know what is wrong with it."*

These excerpts from the activity authenticate the diversity of data from interviews. Overall, the findings reported in this chapter indicate that that there is not uniformity in faculty members views of the reform brought on by AB 705. Some advocated politically for such reform while others felt it was thrown upon them without their input. Their support, or lack of support, of the reform was correlated with whether and how they changed their pedagogy while teaching the new corequisites mandated as part of AB 705. Some pedagogical approaches that many

resorted to using included group work and affective domain activities. Regardless of faculty buy-in, most faculty were knowledgeable about the policy decision surrounding the reform. Faculty who were interviewed and faculty who were surveyed all agree that faculty training and professional development are most important to better prepare faculty on the needs of students who are what some faculty felt were unprepared. In the next chapter, I will consider these findings in light of the literature I reported in Chapter 2, and related research. In doing so, I will describe the implications of my findings and my recommendations towards future research, practice and policy.

CHAPTER 5: DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

Overview

For this qualitative inquiry, I set out to gain faculty perspectives on their support, or lack thereof, of the new California law, AB 705. This law had two reform features impacting California community colleges. First, the law mandated that community colleges may no longer require students to take remedial courses in English and math. Second, the law mandated that students may immediately start in a transfer level English or math course. I set out to explore the impact of this law on faculty at one community college, La Manzanita College (LMC), and used qualitative methods. I had a particular interest in understanding how faculty understood the rationale for such reform, how faculty felt about such reform being mandated, if, and if so, how faculty adjusted their pedagogy for the new curriculum in the corequisites, and faculty perspectives on and future recommendations for the evaluation of the implementation of AB 705.

Analysis of interviews, survey responses, and document analysis indicate several major findings. The majority of faculty interviewed were well-aware of the policy decision that lead to the reform becoming a law, but most of the faculty were neutral or against the reform feeling that it was top down instituted (NMHED, 2017). Group work and affective domain activities emerged as the agreed upon pedagogy most appropriate for the corequisites. More professional development and faculty and counseling collaboration towards placement were the major recommendations towards improvement and evaluation of the implementation. One surprising finding was that those in support of the reform admitted that they did not change their pedagogy, while those against or neutral toward the reform did change their pedagogy.

In the remaining sections of this chapter, I will discuss and link my findings to the broader literature on reform mandates, faculty experiences on community college campuses, and

rates of remediation. Based on my findings, I will also provide recommendations and implications towards what community colleges can do going forward, policy decisions and future research. I will end by describing some of the limitations that affected my study and will give a conclusion of all that I have learned.

Faculty Buy-In: What Else Could LMC Have Done to Build Buy-In?

The majority of the faculty interviewed and surveyed did not support the reform. The primary reasons for resistance was that they felt the mandate was top down instituted and would lead to several unprepared students in their courses. This sentiment lends support to the findings of Cafarella (2016) study of faculty perspectives on math reform using acceleration. He found that when reform is led by faculty, implementation of reform is much smoother. Similarly, other studies have recommended avoiding a top down approach when instituting reform, and warned of the importance of faculty buy-in (NMHED, 2017; Rodriguez et al., 2018). The RP Group (2014) also expressed that without faculty buy-in, sustainability of the reform is questionable.

LMC, along with several colleges throughout California, piloted interventions prior to AB 705, including acceleration and multiple measures, two predecessors of AB 705 (CAP, 2018). Document review (See Appendix F) indicated that LMC faculty were consistently provided information, primarily through email, regarding the success of these pilots at increasing the completion rates ([La Manzanita] Institutional Research, 2014).

Only interested faculty participated, taught, and redesigned the curriculum for these early interventions (NMHED, 2017; Sides, 2016). Faculty not interested did not participate in this reform but were made aware of it. Such reform and pedagogical preferences contributed to the rifts among faculty in math departments (RP Group, 2014), and this rift further affected faculty buy-in for similar reform including AB 705.

Backed by data from the interventions, faculty groups including CAP advocated for AB 705 to become law (Rodriguez et al., 2018). The Chancellor's office recognized these interventions' impact on improving completion rates and endorsed AB 705, stating that direct placement into transfer level would have an even larger impact on completion rates (Hope et al., 2019). With these recommendations and the research from other states with similar legislations (Daugherty et al., 2018), lawmakers in California enacted AB 705. In making their decision, they also factored the heavy costs associated with remediation and placement tests without any improvements in completion rates (Bettinger et al., 2013).

Once AB 705 was officially a law, school administrators had no choice but to implement. Per document review, LMC administrators did work with faculty on the creation of the corequisite and new placement rules (See Appendix G, I). This included an inflexible timeline to implementation in order to meet compliance by fall of 2019. This urgency may have caused some faculty to feel that the mandate was top down imposed, even locally on their campus, supporting Mangan's findings (2014).

While the faculty who participated in the reform prior to AB 705 did so by choice, AB 705 imposes rules with placement and corequisites that no longer leaves the choice to faculty. All faculty teaching any transfer level math course would now have students that were placed directly into their transfer level courses without any prerequisites or placement exam (Irvin, 2017). Such placement worried faculty and caused many to be concerned about the students' preparedness level (CCCSE, 2016). Literature had been shared with faculty that showed that high school GPAs and direct placement with support through corequisite are better predictors of success than a placement exam and prerequisites (Jackson et al., 2014; Logue et al., 2014). However, some faculty continued to push for some remnants of the old system of remediation

and placement tests (Cafarella, 2016). Yet recent data confirms that even for students with the lowest high school GPAs, direct placement into transfer level courses increases their throughput rate from 4% to 42%. CAP (2020) further holds that there has been no data to support that any student would be better off starting in remediation.

Given this history of the implementation of AB 705 at LMC, I will further discuss the varied implications of this research on this field. The recommendations from my research and findings fall into the following categories: faculty buy-in, pedagogy, professional development, support for adjunct faculty, and faculty-counselor collaboration towards placement.

Implication and Recommendation on Faculty Buy-In

In this study, a third of the faculty were on the fence regarding their buy-in for this reform admitting that they wanted to wait and see how the implementation worked out. The opportunity to build more faculty buy-in and therefore create more sustainability for AB 705 (Cafarella, 2016), lies within this set of faculty. As this reform was driven by outcomes from early adopters as well as from other states with similar initiatives (Daugherty et al., 2018), inclusion of such supportive data should be in the actual legislation. Additionally, before creating such policy, legislators should be transparent, open to considering all faculty perspectives on the reform, and ensure that the law is written to address these concerns. Lawmakers should also include guidance on an overall structure on how to implement that still allows for flexibility and customization among the colleges (NMHED, 2016). The Chancellor's Colleges can share out a variety of best practices from early adopters allowing colleges and faculty to have resources even towards initial implementation. There should also be acknowledgement by college administrators that new reform such as AB 705 is a work in progress. Administrators in collaboration with faculty should continuously assess the implementation including review student outcomes. While

there may not ever be unanimous buy-in, if improvements in completion rates resemble those from early adopters (CAP, 2020), the faculty on the fence could eventually become supportive of AB 705. Merging them with those already in support would represent the majority of the faculty.

Implications for Pedagogy: How Could Reform Have Been Supported?

The literature examining the successes or failures of reforms, warned that pedagogical changes are essential to complement reform that includes changes in placement and structure (Hodara et al., 2012). A document review of course outlines for LMC's corequisites show that faculty had their preference as to how and when to teach prerequisite skills based on the needs of the students (See Appendix H). While there was overall agreement on affective domain activities and group work as useful pedagogies, these approaches were new for several participants. This diversity in faculty experience and perception indicates a need for support through more training and new course structures.

Implications for Pedagogy Changes

Affective Domain Skills Course. The findings of this study support several implications, and associated recommendations, for pedagogy changes that emerged. Since AB 705 enforces all faculty to be involved in the reform, it may be useful for institutions to consider offering a separate course for students to gain these affective domain skills, especially given that some math faculty are not actively teaching these skills in their math courses. To ensure that students have access to and enroll in such a course, colleges can mandate it as a graduation requirement and publicize the change widely. To further ensure that the students have these skills that math faculty have identified as essential, this course should be taken prior to or while the student is enrolled in the transfer level math course. Math faculty can collaborate on the curriculum

building for this course so that study skills specific to success in math courses are included and support the students' trajectories in concurrent and ensuing math courses.

Institutional Support for Group Work. Since the majority of the faculty agree that group work is a necessary pedagogy to produce better student success under AB 705, institutions should include this strategy within the course outline for the curriculum for the corequisites (CAP, 2020). As many faculty had yet to use such pedagogy, the Chancellor's Office should provide resources on best practices and examples. Mandated professional development on the nuts and bolts of using group work in math courses and through culturally responsive teaching has been established as useful to both instructors and students, and should also be provided directly (Rubel, 2017). Institutional support will clarify the positive impact of utilizing grouping in math instruction as well as decreasing equity gaps. While some faculty do use group work during their math courses, by adding this pedagogy in the course outline, all students will receive the benefit of these skills.

Professional Development. Supporting my finding about the importance of professional development in this process, the literature points to extensive and mandatory training for faculty who implemented the early interventions that lead to AB 705 (CAP, 2018; Carnegie, 2010; Statway, 2016). Professional development and faculty training were heavily recommended and sought after by the faculty in my study, much like faculty in other studies (CAP, 2020; Daughety et al., 2016; Rodriguez et al., 2017). When instituting such drastic reform and policy, extensive funding should be allocated to support Professional Development. This will allow faculty to learn how to expand their teaching methods to accommodate the various learning styles and needs of students now enrolling in the transfer level classes due to AB 705 placement. This funding would need to be a byproduct of the legislation and come from state and federal sources.

When the pilots of predecessors to AB 705 were implemented, college administrators complained that the mandatory training for them was too expensive for the pilots to go mainstream (NMHED, 2017). In order for AB 705 to have the greatest impact on students, professional development should be funded and mandated for all faculty teaching the corequisites (Sides, 2016).

Support for Adjunct Faculty. Prior to AB 705, remedial courses made up 60% or more of the math course offerings (CAP, 2020; RP Group, 2014). Moreover, adjunct faculty taught the majority of the remedial courses as full-time faculty were more interested in teaching the transfer level and STEM level courses. In other studies from the literature toward reform similar to AB 705, there was no differentiation between adjunct and full-time faculty perspectives. Further research regarding AB 705 should more clearly extract the adjunct faculty perspective and its specific struggles. Given their schedules from teaching at multiple colleges, adjunct faculty could not attend meetings where AB 705 planning was discussed and may not have had the time to review the plethora of emails they received from all of the schools where they teach. Colleges should offer incentives to engage adjunct faculty more when it comes to major reform especially since they represent a significant percentage of the faculty. Sides (2016) explained that compensating faculty builds buy-in and participation, and this study adds another dimension to how these two groups of faculty, full-time and adjunct, may experience the implementation differently.

Counselor/Faculty Communication. AB 705 requires community colleges in California to use high school GPAs to place students into transfer level English and math courses (Irvin, 2017). However, counselors, not faculty, are charged with advising for placement. Recent literature suggests that students and faculty would benefit from more faculty involvement and

more collaboration between faculty and counselors when it comes to placing students under AB 705 guidelines (CAP, 2020). Given the faculty members' understanding of the skills and commitment for a math course, math faculty can collaborate on guided placements to provide to counselors, including a set of questions or information to pass on to students. Faculty may even be more directly involved by participating in the initial placement by interviewing students and providing more information to students.

Limitations and Future Direction

The responses given by the 13 faculty interviewed, and those from the survey, provided rich data on faculty perspectives on AB 705. There were a few limitations surrounding this study, but they did not decrease the value of the conclusions and findings that were discovered while answering the research questions. The limitations on this study included having a substitute interviewer, the distribution of reform support in the sample size versus in the department, and the COVID-19 pandemic.

Substitute Interviewer

Having a supervisory role over the faculty that were interviewed, IRB required the use of a substitute interviewer to allow participants to be at ease and not worry that their responses would result in any retaliation from me as their dean. Not being able to interact with participants directly somewhat limited my ability to drive the gathering of data. While I practiced with the substitute interviewer and we reviewed all the interview questions and prompts, I felt that the interviewer spent more time on certain questions and had missed opportunities for follow up on other questions. After the first five interviews, I did address this with the interviewer, and adjustments were made. However, some responses with additional follow up would have provided more data to interpret. For future researchers in the predicament of having to use a

substitute interviewer, I strongly recommend more practice with the substitute interviewer to norm responses to study participants. Scheduling practice interviews with a few participants prior to conducting the interviews for the study would give the substitute interviewer more tools for the rest of the interviews.

Distribution of Support of the Reform Between Sample Size and Entire Math Department Faculty

The sample size included 13 faculty who were interviewed. Among these 13, four, or 33%, expressed that they did not support the reform of AB 705. There were also 80+ respondents to a survey distributed to faculty regarding the implementation of AB 705 at LMC. Sixty percent of these respondents admitted to having reservations towards AB 705 as well. The sample of interviewed faculty did not fully represent the math department overall regarding their support of AB 705. Having a sample of faculty that had a similar distribution/percentage of those who did not support AB 705 may have allowed for more testimonials to inform on what faculty require in building buy-in, which is crucial for such reform to be sustainable.

COVID-19

The implementation of AB 705 took place at LMC during fall 2019. As my study engaged faculty on the perceptions of the implementation of AB 705, data collection was scheduled to occur in the spring semester. When faculty returned in the new year, and I began recruitment for participants, the COVID-19 pandemic had reached the United States. There was a shelter-at-home moratorium enforced by the Governor and all campus activities were required to be done remotely from home. This caused a delay in my recruitment of participants and reduced the number of participants, as most became distracted by the pandemic and the transition

to teaching classes from home unexpectedly. This environment also affected some of those interviewed responses as it was mentioned during multiple interviews.

Personal Reflection

Similar to many faculty interviewed for this study, I, too, felt very uncomfortable and suspicious of this reform when it was first announced. I worried that students would not be prepared based on my years in the classroom and working with students who appeared to not have all the skills necessary to advance in the mathematics sequence. As dean at the time of implementation of AB 705, I had no other choice but to push the reform forward. Around this same time, I was also a doctoral student in UCLA's Educational Leadership Program where I was immersed in educational research. In my coursework, I became attuned to the value of qualitative studies at providing a deeper understanding on the what and the why of human behavior and phenomenon. This awareness drove my support of AB 705 as this reform was backed by both quantitative and qualitative analysis. The most recent studies done on the implementation of AB 705 continue to show its impact on significantly increasing completion rates at California community colleges.

Using a substitute interviewer allowed the faculty to be more thorough and honest regarding their perceptions of AB 705. From their responses regarding the reform, I discovered that math faculty need time to process the implications to their role given the traditional confines that have defined mathematics education. Even when presented with a plethora of evidence on pilots and early adopters, faculty desire to see the direct impact at their institution among their students. As implementation continues, it is my hope that administrators engage faculty and their perspectives. May this study be an impetus for showing how collaboration and both quantitative

and qualitative data can unite an institution in implementing drastic math reform that will assist thousands of students in achieving their dreams of higher education.

Appendix A

Faculty Interview Questions

1. Pre-AB 705: Tell me about the environment at your site around remediation, placement and interventions prior to AB 705.
   Potential probes:
   a. Were you using a placement test, how many were placing into remediation?
   b. How were your completion, success, retention, and persistence rates?
   c. How and what were the interventions (acceleration, multiple measures…) implemented and how were they evaluated?
   d. What did you learn from the interventions that you were able to use towards implementing AB 705?

2. Understanding and Impression of AB 705
   a. What was your understanding of AB 705 and why it was instituted?
   b. What are your impressions of AB 705?
      i. Were you originally supportive of this policy?
      ii. Have your feelings changed?
   c. How has it impacted your role including how you teach?
   d. How was this reform communicated to students?

3. Institutional and Organizational Changes:
   a. What is your understanding of the institutional and organizational changes that took place in order to implement AB 705 at your campus?
      i. Placement Reform?
      ii. Curriculum reform?

4. Corequisites
   a. Describe your role in building curriculum for the corequisites required by AB 705.
   b. How was content, assessments and grading prioritized for the corequisites?
   c. How did you prioritize and choose the structure and features of the corequisites?
      i. Mandated based on GPA, comingle vs cohorted, same instructor, amount of time/units, embedded support (tutoring/counseling), credit vs noncredit…
   d. How were alternatives and what alternatives were considered and reviewed?

5. Pedagogy: How do you differentiate your pedagogy if at all?
   a. Do you use different teaching strategies based on level of the course?
   b. What different teaching strategies do you use and why?
   c. Did you differentiate your pedagogy when you taught the corequisite in Fall, 2019?
   d. Have you changed your pedagogy in a corequisite since Fall, 2019?
   e. How did you include/work with other faculty and embedded support?

6. Evaluation of Pedagogy For the Corequisites: How will you evaluate your pedagogy used for the corequisite?

a. What did you hope to accomplish?
b. How did you manage/adjust for issues and challenges?
c. What worked well, what didn't?
d. What metrics will you use if any?
e. If/when you teach a corequisite again, what will you do differently and why?

7. Overall Evaluation: How would you describe and evaluate the overall initial roll out of AB 705 and corequisites?
    a. What has worked well?
    b. What changes would you recommend?
    c. What do you envision for ongoing evaluation of this reform?

Appendix B

AB 705 Implementation Activity

November 2019 (Completed by Math Faculty at LMC During a Department Meeting)

1. *With the previous placement structure that included a placement exam and remedial courses, did you also feel that students were not prepared?*
2. *Clarify what you mean by students not being prepared. Select ONE from the following:*
    a. Students do not have the pre-requisite skill set and have not remembered/mastered it with my reviewing such skills.
    b. Students do not have the pre-requisite skill set but with a review they were able to recall and apply it to the parent course topics.
    c. "a" and "b"
3. *Please add a sentence or two further describing what you mean when you say students are not prepared.*
4. *What are some resources that would assist you in working with your students to reach the desired skill level?*
5. *What strategies do you recommend for [La Manzanita] College's evaluation of AB 705 implementation campus-wide?*

Appendix C

Email to Math Faculty

July 2018

From: Sims Jacquelyn
Subject: Your Feedback Requested: Notes from AB 705 Discussion, Monday, July 23, 2018
Date: Wednesday, July 25, 2018 7:54:06 PM

AB 705 Meeting
Monday, July 23, 2018
Mathematical Sciences

Thanks to all who were able to attend the meeting on Monday, July 23, 2018, regarding our planning for AB 705 Compliance. The majority of the meeting centered on curriculum "structure" going forward. The new guidelines provided by the Chancellor's office includes recommendations for students to take courses with either no support or with support depending on their high school G.P.A. (and in some cases, specific math courses taken or enrolled.) These guidelines include a BSTEM pathway where the B stands for Business. Because of this, we also discussed adding Math 130 as a course that would have a corequistie. For this support, those in attendance unanimously endorsed that the corequisites be "credit" courses. (Non-credit courses are generally open entry/exit for students and the salary rate for faculty is much lower)

Various structures of the established courses and corequisites were also discussed. In the example below, Math 150 is used (although the same structure can be applied to any of the pathway courses – 130, 170, or 180).

- **Math 150**, Already established course, 4 units, meets approximately twice per week. (What we currently offer. This would be for students not "needing" a corequisite)
- **Math 150S (New Course)** = Math 150 with support. This would include the established Math 150 course AND the corequisite. This would be ONE class but a "new" course for which we would need to submit curriculum. Worth approximately 6 units. Possible 3 – 4 meetings per week. And one instructor where instructor has flexibility on when to teach coreq material and when to teach course content material.
- **Math 149 (New Couse)**. Create a support class/corequisite as an independent section. Example, Math 149 would be a 2-unit course and a corequisite for Math 150.
- Could link a Math 150 and Math 149 together so same students take both. And could have same instructors or different instructors.
- Or could have open Math 149 sections, where any student enrolled in any Math 150 could enroll in Math 149.
- In the chart below a breakdown is given. In the last row is a place for you to provide your feedback (pros and challenges) on the recommendations. We will compile all of the feedback for further discussions on Flex Day. (Please submit by Friday, August 17, 2018)

See table below for more detail and fill in any of your concerns (pros and challenges regarding the options).

Option A	**Option B**	**Option C**	**Option D**
Already Established Course	**Already Established Course and Corequisite combined into one course**	**Already Established Course and Corequisite as separate courses but linked**	**Already Established course and Corequisite as separate course and not linked**
Ex: Math 150, 4 units	Ex: Math 150S, 6 units (Cohort model = same students) New Course	Ex: Math 150 (4 units) + Math 149 (2 units) (Cohort model = same	Ex: Math 150, Math 149 (Comingle = same

		students in both sections) Could possibly have different instructors, one doing the established course and other doing the coreq.	students in lecture, but only those recommended or selecting to take corequisite enroll in the corequiste. Could also include students from different lectures)
-	**Pros** - -	**Pros**	**Pros**
-	**Challenges** -	**Challenges**	**Challenges** - -

Other items discussed include:

1. Future of Math Basic Skills Courses
    - One recommendation was to keep a few sections of each until we see patterns of student enrollment. At least have the options for students for now. (And if they don't fill, can change them to a higher level course)
2. Once fall begins, the department will need to quickly work on curriculum so any proposed new courses can be approved by Fall 2019, the deadline for AB705 Compliance.
3. Faculty will receive compensation or flex for time spent on keeping updated with the curriculum changes.
4. We need counselors in these meetings so they can tell better advise students (and us).
5. Humanities has something similar to the cohort model. They are offering English 1A and an English 1AS that offers support (Students taking English 1AS had lower high school GPAs than those allowed to enroll in to English 1A)
6. [redacted] will be working with local high school to establish data sharing so student's GPAs can be inputted in the system, and this can better inform which courses to offer. Will help with schedule development.
7. There was a suggestions to increase the units in all of our classes, and this would give the time to cover all necessary material.
8. Won't be as many basic skills courses, so will have more of the transfer level options for teaching assignments. This can help in molding our STEM majors altogether.
9. For those students currently in the pipeline and taking courses currently, how will they be able to jump courses given the new guidelines.
    - Consider surveying students during fall.
10. If the new courses with support will meet 3 – 4 times per week, how will this effect adjuncts.
    - Most are "freeway flyers." Can they commit to such a schedule?
11. Can the coreq structures be offered during winter and summer sessions? With such a shorter time length, classes would run 4 – 6 + hours per day.
    - Consider requiring/mandating tutoring and SI during these semesters.
12. This is not about lowering our standards. Maintain our high standards, and be careful not to

"change/raise" standards so more students don't pass.

13. Some of the success of this will be tied to completion versus success rate
    - It may very well be that the success rates drop initially, but the research shows that students will have a better chance of completing a transfer level course as compared to starting in the basic skills courses and completing a transfer level course.

Thanks

Jacquelyn Sims
Dean, Mathematical Sciences Division

Appendix D

Results of Math Department Ballot

(October 2018)

From: Maaza, Marta
To: Sims Jacquelyn
Subject: FW: Results of the Ballot
Date: Wednesday, November 7, 2018 6:01:45 PM

Marta Maaza
Administrative Assistant
Mathematical Sciences Division
Ext. 3201

From: Sims Jacquelyn
Sent: Tuesday, October 16, 2018 7:05 PM

Subject: Results of the Ballot

1. Math 80 Corequisite:
    a. 16 Approve
    b. 24 Do Not Approve
    c. I am assuming that most were fine with the 2units and 2 hours. I will consult with Committee D, and recommend to move the Affective Domain Activities to the other location in the Course Outline of Record.

2. Math 180
    a. 36 Approved

b. 4 Do Not Approve
c. If we can't offer as 1 unit, 2 hours, it will be offered as 2 units and 2 hours.

3. Mandate Corequisites for "Strongly Recommended" Support
   a. 27 Approved
   b. 11 Do Not Approve

4. Mandate Corequisites for "Strongly Recommended" and "Recommended"
   a. 24 Approved
   b. 15 Do Not Approve

For the mandating of corequisites, the ballot should have been set up such that the choice was either #3 or #4. Given that both had majority approval, let's go ahead and mandate for both "strong support recommended" AND "support recommended."

This should conclude our voting on the corequisites. Thank you all.

We have the written in responses typed up and disseminated soon.

Thanks
Jackie

From: Maaza, Marta
Sent: Tuesday, October 16, 2018 9:52 AM

[redacted]

Subject: LAST REMINDER: New Ballot for Corequisites. Due TODAY, Tuesday, Oct 16, 2018

LAST REMINDER: Ballots are due TODAY, Tuesday, October 16, 2018 by 4pm.

Due to the Faculty Position ID Meeting this afternoon, the earliest the ballots can be counted is 5:30pm. The office will be closed, but please knock on the mailroom door for entry if interested in counting the ballots. If no faculty are available at that time, we can also have the ballots be counted on tomorrow, Wednesday, October 17 at 11am.

All are welcome to participate in counting the ballots.

I have opened up the distribution for more conversation if desired.

Thank you!
Jacquelyn Sims
Dean, Mathematical Sciences Division
[redacted]

From: Maaza, Marta
[redacted]

[redacted]

Subject: FW: REMINDER: New Ballot for Corequisites. Due TOMORROW, Tuesday, Oct 16, 2018

Hello all,

Several questions are coming in regarding the differences between the first Math 80S COR vs the revised one. Attached please find both versions for your review.

I have opened up the distribution for more conversation if desired.

Thanks

Jacquelyn Sims
Dean, Mathematical Sciences Division
[redacted]

From: Maaza, Marta
Sent: Monday, October 15, 2018 8:07 AM
Subject: REMINDER: New Ballot for Corequisites. Due TOMORROW, Tuesday, Oct 16, 2018

REMINDER: Ballots are due tomorrow, Tuesday, October 16, 2018 by 4pm

Hello all

Attached please find the next ballot for the corequisites. As a reminder, Math 130S, 150S and 170S (and Math 180) were all approved during the last round of voting.

On the attached ballot, we are voting on FOUR items.

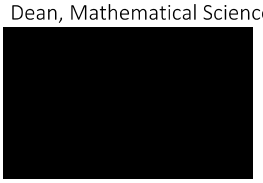
1. Math 80S was revised. See attached COR.
2. Math 180S although already approved, is being brought back to have the unit and hours be the same. 2 units and 2 hours. (It was approved last week for 1 unit, 2 hours, but the CCC is suggesting that the hours and units must be the same. While we investigate, we want to have you vote on if you are okay with the adjustment to 2 units 2 hours for Math 180S.
3. Mandating the Corequisites. We also need to formally vote on if we will mandate the corequisites.

The ballot is attached, and will be placed in mail boxes on Monday. **Ballots are due Tuesday, October 16, 2018 by 4pm**

There was one comment on the secrecy of a ballot if one hand writes their comments. For those with that concern, please use the attached ballot, and type in your comments.

Thanks,

Jacquelyn Sims
Dean, Mathematical Sciences Division



Appendix E

Math Faculty Survey

P0 **AB 705 Math Survey- Faculty**

The purpose of this survey is to measure your perceptions of the new statewide placement system (AB 705), how it has impacted your students' level of preparedness, and how it has affected your pedagogical practices. This is a short survey and should take approximately 5 minutes to complete.

Your participation is voluntary but greatly appreciated.

Q0 Are you a mathematics instructor (full-time or adjunct) at [redacted]?

- ○ Yes
- ○ No

Condition: No Is Selected. Skip To: End of Survey.

Page Break

S0 Below is a list of transfer-level courses. Are you teaching any of these courses this semester?

MATH 80
MATH 80 with MATH 80S
MATH 110
MATH 115
MATH 120
MATH 130
MATH 130 with MATH 130S
MATH 140
MATH 150
MATH 150 with MATH 150S
MATH 165
MATH 170
MATH 170 with MATH 170S
MATH 180
MATH 180 with MATH 180S
MATH 190

- ○ Yes
- ○ No

P1

In this part of the survey, you will select a transfer-level course that you are teaching this semester. Then, you will answer some questions regarding the students and your pedagogical practices in that course. You will then be given the chance to select your next transfer-level course and answer the same questions.

You will not answer questions regarding any courses that you teach that are below MATH 80 or above MATH 190.

S1

What is one transfer-level course you are teaching this semester?

- ○ MATH 80
- ○ MATH 80 with MATH 80S
- ○ MATH 110
- ○ MATH 115
- ○ MATH 120
- ○ MATH 130
- ○ MATH 130 with MATH 130S
- ○ MATH 140
- ○ MATH 150
- ○ MATH 150 with MATH 150S
- ○ MATH 165
- ○ MATH 170
- ○ MATH 170 with MATH 170S
- ○ MATH 180
- ○ MATH 180 with MATH 180S
- ○ MATH 190

S1a

You stated that you are teaching at least one section of the ${q://QID1/ChoiceGroup/SelectedChoices} course. Do you believe that your students are adequately placed into this course?

- ○ Yes
- ○ No

S1b

For your ${q://QID1/ChoiceGroup/SelectedChoices} course(s), have you made any changes to your pedagogical practices due to AB 705?

- ○ Yes
- ○ No

Condition: No Is Selected. Skip To: What is another transfer-level course....

S1c

What changes did you make?
[Select all that apply.]

- ☐ Teaching review concepts
- ☐ Giving more activities on review concepts
- ☐ Teaching and giving more activities on review concepts
- ☐ Teaching adaptive learning strategies
- ☐ Increased explanation of concepts
- ☐ Increased student participation
- ☐ Increased team activities
- ☐ Some other pedagogical practice.
  [Specify in the text box.]

S2 What is another transfer-level course you are teaching this semester?

- I'm not teaching any other transfer-level courses.
- MATH 80
- MATH 80 with MATH 80S
- MATH 110
- MATH 115
- MATH 120
- MATH 130
- MATH 130 with MATH 130S
- MATH 140
- MATH 150
- MATH 150 with MATH 150S
- MATH 165
- MATH 170
- MATH 170 with MATH 170S
- MATH 180
- MATH 180 with MATH 180S
- MATH 190

Condition: I'm not teaching any other ... Is Selected. Skip To: You're almost done with the survey! ....

S2a You stated that you are teaching at least one section of the ${q://QID13/ChoiceGroup/SelectedChoices} course. Do you believe that your students are adequately placed into this course?

- Yes
- No

S2b

For your ${q://QID13/ChoiceGroup/SelectedChoices} course(s), have you made any changes to your pedagogical practices due to AB 705?

- ○ Yes
- ○ No

Condition: No Is Selected. Skip To: Do you have another transfer-level co....

Page Break

S2c

What changes did you make?
[Select all that apply.]

- ☐ Teaching review concepts
- ☐ Giving more activities on review concepts
- ☐ Teaching adaptive learning strategies
- ☐ Increased explanation of concepts
- ☐ Increased student participation
- ☐ Increased team activities
- ☐ Some other pedagogical practice.
  [Specify in the text box.]

S3 Do you have another transfer-level course you are teaching this semester? If so, which one?

- I don't have another transfer-level course.
- MATH 80
- MATH 80 with MATH 80S
- MATH 110
- MATH 115
- MATH 120
- MATH 130
- MATH 130 with MATH 130S
- MATH 140
- MATH 150
- MATH 150 with MATH 150S
- MATH 165
- MATH 170
- MATH 170 with MATH 170S
- MATH 180
- MATH 180 with MATH 180S
- MATH 190

Condition: I don't have another transf... Is Selected. Skip To: You're almost done with the survey! ....

S3a

You stated that you are teaching at least one section of the ${q://QID17/ChoiceGroup/SelectedChoices} course. Do you believe that your students are adequately placed into this course?

- ○ Yes
- ○ No

S3b

For your ${q://QID17/ChoiceGroup/SelectedChoices} course(s), have you made any changes to your pedagogical practices due to AB 705?

- ○ Yes
- ○ No

Condition: No Is Selected. Skip To: Are there any other transfer-level co....

Page Break

S3c

What changes did you make?
[Select all that apply.]

- ☐ Teaching review concepts
- ☐ Giving more activities on review concepts
- ☐ Teaching adaptive learning strategies
- ☐ Increased explanation of concepts
- ☐ Increased student participation
- ☐ Increased team activities
- ☐ Some other pedagogical practice.
  [Specify in the textbox.]

S4 Are there any other transfer-level courses that you are teaching this semester?

- I'm not teaching any other transfer-level course.
- MATH 80
- MATH 80 with MATH 80S
- MATH 110
- MATH 115
- MATH 120
- MATH 130
- MATH 130 with MATH 130S
- MATH 140
- MATH 150
- MATH 150 with MATH 150S
- MATH 165
- MATH 170
- MATH 170 with MATH 170S
- MATH 180
- MATH 180 with MATH 180S
- MATH 190

Condition: I'm not teaching any other ... Is Selected. Skip To: You're almost done with the survey! ....

S4a You stated that you are teaching at least one section of the ${q://QID21/ChoiceGroup/SelectedChoices} course. Do you believe that your students are adequately placed into this course?

- Yes
- No

S4b

For your ${q://QID21/ChoiceGroup/SelectedChoices} course(s), have you made any changes to your pedagogical practices due to AB 705?

- Yes
- No

Condition: No Is Selected. Skip To: You're almost done with the survey! ....

What changes did you make?

S5b

This semester, are you incorporating any non-mathematics content such as college survival skills, time management, or study skills in your course?

- Yes
- No

Condition: No Is Selected. Skip To: Did you have any reservations about A....

Page Break

S5c

For which courses are you incorporating these activities/skills the most?

- Only in the support/corequisite course, but not the linked parent course
- Only in the linked parent course, but not the linked support/corequisite course
- In both the parent course and the linked support/corequisite course
- In my other courses that have no linked support courses
- In all of my courses

S5a

Prior to the Fall 2019 semester (the full implementation of AB 705), did you incorporate any non-mathematics content such as college survival skills, time management, or study skills in your course?

- Yes
- No

S5d

Which activities/skills have are you incorporating?
[Select all that apply.]

- ☐ Study habits
- ☐ Time management
- ☐ Stress management
- ☐ Positive mindset
- ☐ Some other skill.
  [Specify in the textbox.]

Page Break

S6a

Did you have any reservations about AB 705 prior to its implementation?

- ○ Yes
- ○ No

Condition: No Is Selected. Skip To: Are you a full-time or adjunct facult....

Page Break

S6b

What were your reservations?
[Select all that apply.]

- ☐ Students not being fully prepared
- ☐ Structuring the plan to place students
- ☐ Determining how to provide support to students
- ☐ Some other reason.
  [Specify in the textbox.]

Page Break

S7a

Are you a full-time or adjunct faculty member?

- Full-Time
- Adjunct

Condition: Adjunct Is Selected. Skip To: How many years of college teaching ex....

S7b

Are you a tenured faculty member?

- Yes
- No

S8

How many years of college teaching experience do you have?

- Less than 1 year
- 1 year to less than 10 years
- 10 years or more

Add Block

End of Survey — Survey Termination Options...

Appendix F

Accelerated Math Progression Report

[redacted] College

Accelerated Math Progression Study
Spring 2012-Summer 2016

[redacted]

This report summarizes progression for two accelerated math courses at [redacted] College: Basic Accelerated Mathematics (BAM) and General Education Algebra (GEA).

Progression Tracking

Each BAM/GEA cohort was tracked for the following cohort years:

- BAM Spring 2012 & Fall 2012 Cohorts – two, three, and four-year tracking
- BAM Spring 2013 & Fall 2013 Cohorts – two and three-year tracking
- BAM Spring 2014 & Fall 2014 Cohorts – two-year tracking
- GEA Spring 2012, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014 Combined Cohort – two-year tracking

Methodology

Students included in this study were placed into a cohort based on the first math course attempted at [redacted] College.

Accelerated Cohort	Comparison Cohort
Math-37[1] (BAM)	Math-12 (Arithmetic)
Math-67[2] (GEA)	Math-40 (Elementary Algebra)

Students in the comparison cohort were removed from the study if they left the traditional math sequence and took the comparable accelerated course during the tracking period. A description of the math sequences for the accelerated and comparison cohorts can be found in the appendix of this report.

Summary Findings – BAM Progression

Progression is defined as the percentage of the original cohort that successfully completes the next course(s) in the math sequence. Students in the BAM cohort were much more likely to progress through levels of math sequence up through transfer-level compared to students in the non-BAM cohort. When progressions of BAM and non-BAM cohorts were disaggregated by ethnicity, all four of the largest groups (African American, Asian, Latino, and White) had higher rates in the BAM cohort than the non-BAM cohort. Although all groups saw increases in progression in the BAM cohort, equity gaps increased with larger differences between the groups. Other ethnic groups could not be included in the disaggregation due to small numbers of students in the cohorts. Progression rates for each cohort were also disaggregated by financial aid recipients and students who did not receive financial aid. Slightly less than three-quarters (73%) of students in the BAM cohorts received financial aid and 77% of students in the non-BAM cohorts received financial aid. There were not large differences in progression rates between financial aid recipients and students who did not receive financial aid.

[1] Effective Fall 2013, the *BAM* course number is Math-37. The previous numbering for this course was Math-50D.
[2] Effective Fall 2013, the *GEA* course number is Math-67. The previous numbering for this course was Math-50C.

Appendix G

New Math Placement Guide

High School Metrics for Placement into Transfer-Level Mathematics Courses

Effective: Fall 2020 Semester

The appropriate mathematics course to take depends on your future goals, including major preparatory requirements by transfer institutions. It is always best to verify with a counselor which mathematics course is most appropriate for you.

Liberal Arts, Education, and other majors	
$GPA_{HS} \geq 3.00$	(no corequisite required) MATH 110- Structures and Concepts in Mathematics MATH 115- Probability and Statistics for Teachers MATH 120- Nature of Mathematics MATH 140- Finite Mathematics or MATH 150- Elementary Statistics with Probability
$GPA_{HS} < 3.00$	MATH 110, 115, or 140 or MATH 120 + 120S (corequisite required) or MATH 150 + 150S (corequisite required)

Business and STEM majors – no corequisite required	
$GPA_{HS} \geq 3.40$ **AND** Algebra II (or equivalent)	MATH 130- College Algebra or MATH 170- Trigonometry†
$GPA_{HS} \geq 2.60$ **AND** Trigonometry or $GPA_{HS} \geq 2.30$ **AND** Pre-Calculus	MATH 130- College Algebra or MATH 180- Pre-Calculus††
$GPA_{HS} \geq 3.50$ **AND** Trigonometry or $GPA_{HS} \geq 3.10$ **AND** Pre-Calculus or $GPA_{HS} \geq 2.60$ **AND** Calculus	MATH 165- Business Calculus I or MATH 190- Calculus I†††

Business and STEM majors – corequisite required	
$GPA_{HS} < 3.40$ **AND** Algebra II (or equivalent)	MATH 130 + 130S or MATH 170 + 170S
$GPA_{HS} < 2.60$ **AND** Trigonometry or $GPA_{HS} < 2.30$ **AND** Pre-Calculus or $GPA_{HS} < 1.90$ **AND** Calculus	MATH 130 + 130S or MATH 180 + 180S

Students who have not completed Algebra II (or equivalent) in high school are strongly recommended to enroll in MATH 80 (Intermediate Algebra for STEM) or MATH 80 + 80S.

Note: MATH 12, 23, 37, 40, 60, 67, and 73 courses will continue to be offered.

Students must show completion of:
†Geometry in high school (min. grade C-) or MATH 60 (min. grade of C) to enroll into MATH 170;
††Trigonometry in high school (min. grade C-) or MATH 170 (min. grade of C) to enroll into MATH 180; and
†††Pre-Calculus in high school (min. grade of C-) or MATH 180 (min. grade of C) to enroll into MATH 190.

Appendix H

Math Course Description

[redacted] College

DCC Approval Date: 10/17/18

Originator: [redacted]

1. COURSE SPECIFICATIONS

1.1 Division: Mathematical Sciences
1.2 Department: Mathematics
1.3 Subject: Mathematics
1.4 Discipline(s): Mathematics
1.5 Course Information
1.5.1 Title and Number: Mathematics 150S
1.5.2 Descriptive Title: Elementary Statistics Support
1.5.3 Catalog Description:
This course is designed to support students concurrently enrolled in Elementary Statistics (Math 150). As needed, students review core skills and topics necessary to meet the Elementary Statistics student learning outcomes and objectives. Students explore strategies and habits used by successful independent learners. Topics reviewed in this support course may include: concepts from arithmetic, pre-algebra, elementary and intermediate algebra, and descriptive statistics that are needed to understand the basics of college-level statistics.

1.5.4 Prerequisite, Corequisite, Recommended Preparation, Enrollment Limitation (specify):

Corequisite: Math 150

Justification: This corequisite course is necessary to satisfy AB 705. Its intent is to strengthen and supplement the essential skills needed for success in statistics. The implementation of this course will allow Math 150 classes to focus on and explore new topics in statistics to a greater extent rather than devote time in class to covering prerequisite topics in statistics.

1.5.5 Grading Method: ☐Letter ☒ Pass/No Pass ☐Both ☐No Grade
1.5.6 Degree Status: ☐ Associate Degree Credit ☒ Non-Degree Credit ☐ Non-Credit

1.6 Course Units, Hours, and Offerings
1.6.1 Credit Units: 1.0
1.6.2 Hours Lecture: 1.0 Hours Laboratory: 0 Activity Lab: 0
1.6.3 Maximum Semesters of Credit: 1.0 Maximum Credit Units: 1.0
1.6.4 Course Length: Full Term: X or Weeks:_____
1.6.5 Class Size: 35
1.6.6 Number of sections: Fall: _____ Spring: _____ Summer: _____ Winter: _____
1.6.7 Total enrollment per year: _____
1.6.8 Instructor Load: 6.67% WSCH/FTE Ratio: _____
1.6.9 Apportionment: ☒Daily/Weekly Census ☐Positive Attendance ☐Distance Education
☐Independent Study ☐Non-Credit

1.7 Transfer and General Education
1.7.1 Proposed Transfer Articulation:
1.7.2 Proposed GE Patterns
[redacted]

1

CSU GE:
IGETC:

2. PURPOSE OF COURSE

2.1 Course is designed for:

☐Transfer
☐Interdisciplinary
☐Occupational (preparatory)
☐Occupational (upgrade)
☒Precollegiate Basic Skills
☐Basic Skills (developmental)
☐Other (explain):_____

2.2 How widespread and established is this course at post-secondary institutions?
☐ Course is well-established and widely offered at many post-secondary institutions.
☐ Course is not yet found in many (or an) other post-secondary institutions.
☐ Traditional as generally offered in corresponding community colleges and/or four-year institutions.
☒ Not Applicable – Not for Transfer.

2.3 Examples of parallel courses at both California Community Colleges and CSUs or UCs. List the institution, the title and number of the parallel course, and the number of units. For each parallel course, attach copies of the appropriate pages of that college's or university's catalog. If the course is proposed for transfer, lower division status must be evident in the CSU or UC courses.

These courses generally did not exist until the recent mandate of AB 705. [redacted] Community College offers a similar course, Math 31: Support for Statistics (1 unit). Math 150S is a support course for Math 150; therefore, it is not for transfer to CSU or UC.

3. JUSTIFICATION FOR THE COURSE

3.1 Explain how the course relates to the mission and goals of the College:

It is the goal of [redacted] College to meet the requirements of AB 705; this course has been created to do so.

3.2 Explain how the course strengthens and relates to existing curriculum:

This support course is a review of the core prerequisite skills needed to pass Math 150.

4. COURSE DEVELOPMENT INFORMATION

4.1 The following have been consulted in the development of the course.
4.1.1 Faculty: Math Department
4.1.2 Counselor(s): [redacted]
4.1.3 Students:
4.1.4 Advisory Committee(s):
4.1.5 Other:

Appendix I

Corequisite Guidelines

Corequisite Guidance for Mathematics Instructions

Division of Mathematical Sciences

Updated: July 29, 2019, Version 2.0

I. Introduction

The new AB 705 law created new corequisite (or 'support') courses that link to some of the division's transfer-level mathematics courses (or 'parent' courses). Five new support courses begin in the Fall 2019 semester, including:

- MATH 80S: Intermediate Algebra Support
- MATH 130S: College Algebra Support
- MATH 150S: Elementary Statistics with Probability Support
- MATH 170S: Trigonometry Support
- MATH 180S: Pre-Calculus Support

The support courses allows more time for faculty to cover needed prerequisite skills since students are now being placed into transfer-level courses.

AB 705 allows students to advance into transfer-level courses. While some students are taking advantage of this opportunity given they have not retained the prerequisite skills from former high school or college mathematics courses, research shows that direct placement with support instruction gives them a better chance of success. Many of these students will also arrive in a transfer-level course without the necessary college-survival skills, and so it is recommended that study skills and college skills are emphasized in the support course as well. Additionally, SI and tutorial services provide additional classroom support to help teach these college skills to these students.

The purpose of this document is to provide information on how to prepare for the linked courses. All faculty are encouraged to read this entire document in its entirety. Faculty are also invited to provide any constructive comments or suggestions that can be beneficial for others. Note that this is a working document and will continue to be updated as needed.

II. Suggestions for Corequisite Support Preparation

Below includes guidance for teaching corequisite 'support' courses:

1. **Teaching a Linked Course:** The parent course and the linked support course should be taught as one interconnected course.
    a. Teach prerequisite material on a "just-in-time" basis. The question of 'when' to cover such material should not be limited to the timing of the corequisite course.
2. **Use One Syllabus:** Create one syllabus to cover the parent and support courses together. Be sure to include the catalog description, course objectives, and student learning

outcomes for both the parent and corequisite courses. *The division office will make some samples*.

3. **Recommendations for Exams/Assignments:** Consider blending assignments and assessments between the parent and support courses. For example, create a two-part assignment/exam such that Part 1 covers material from the support course while Part 2 covers material from the parent course. A folder will be on the faculty portal via [redacted] including examples of gateway quizzes, two-part examinations, quizzes, final exams, and projects.
4. **Course Grading:** Unlike the parent course (which offers a letter grade), the support course incorporates a 'Pass/No Pass' grading scale. A 'Pass' grade is the result of a student's average of 'C' or higher; a 'No Pass' grade otherwise.
5. **Consistency of Parent & Support Course Grades:** Blending the assignments and assessment, a student's grade should be consistent between the parent and support courses. One should expect that if a student passes the parent course, he or she should also pass the support course (or vice versa).
6. **Attendance of Linked Courses:** If your course is linked, a student cannot enroll in the parent course without enrolling in the support course. In addition, a student will be dropped from both courses if he or she drops any one of the two courses.
7. **Attendance:** Attendance should be taken as if the class is just one class. If a student misses only the support or the parent course, they should be marked absent for the entire day. Instructors should continue the policy regarding dropping students if they miss 10% or more of the total classes for either the parent or support courses. This will help students realize that the courses are interconnected.
8. **Handling Waitlisted Students:** In the registration system, students registered to the waitlist through the support course. Students must be present to the first day of the lecture course to determine whether a seat will be granted. The following guidelines describe how to handle waitlisted students:
    a. Instructors will receive two different sets of add codes: one for the parent course and another set for the support course.
    b. On the first day of class, allow students registered for the course to sit.
    c. Identify the students registered but not present in the lecture. Drop them from the parent and support courses at the end of the day.
    d. Determine the number of open seats.
    e. Announce students' names from the waitlist one at a time until all seats are filled. Allow them to sit.
    f. Give each of these students two add stickers: one from the parent course and another from the support course.
    g. Inform these students to use the add codes to register for course immediately.
9. **Link to Resources**: All resources for corequisite preparation will be stored within the 'Corequisite Resources' subfolder of the 'AB 705' folder of [redacted]. You are encourages to submit any resources that you would like to share.

Here are some additional recommendations:

- Since courses cannot have a duration less than 50 minutes, the division cannot offer one-unit corequisite courses across two days.
- Instructors should be specific on the grading of assignments between the parent and corequisite courses.
- Consider giving a final review prep to students as an assignment/exam to prepare them for the final exam in the parent course.
- Given this is the first semester of the AB 705 course, it will be important to try a variety of tactics to learn what works effectively for students.
- Use the *Corequisite Guidance Recommendation Sheet* to provide or review suggestions learned from teaching the corequisite course. This can be found on the faculty portal of [redacted].

III. Suggestions for Teaching Corequisite Courses

Teaching underprepared students can be challenging and sometimes 'frustrating'. Research also shows that an instructor's behavior and comments during instruction can influence a student's drive to succeed. In an effort to remain focused on student success, instructors are asked to adhere to the following:

- Do not express verbally (as well as in writing) comments of frustration, negative beliefs, or disagreements with the AB 705 policy.
- Do not express verbally (as well as in writing) comments of students' underpreparedness in your course or other courses.

IV. Glossary

Here are some definitions for terms used in this document:

1. **Prerequisite**: course or grade requirements that students must satisfy prior to registering for a course
2. **Parent Course**: the lecture course
3. **Linked**: a connection of a lecture (parent) course and a supplemental (corequisite) course
4. **Corequisite Course**: also called the "support" course, provides supplemental instruction connected to the parent course
5. **Pass/No Pass**: grades that can be given to students at the end of the support course; a student who passes a course with an average of 'C' or higher is said to 'Pass' the course, while a 'No Pass' grade is otherwise

References

Alase, A. O. (2017). The tasks of reviewing and finding the right organizational change theory. *International Journal of Educational Leadership and Management*, *5*(2), 198-215.

Atkins, C., & Beggs, C. T. (2017). Commuting the Math Sentence: Accelerating Developmental Mathematics Using the Co-Requisite Model. *NADE Digest*, *9*(1), 20-24.

Bahr, P. R., Fagioli, L. P., Hetts, J., Hayward, C., Willett, T., Lamoree, D., Newell, M.A., Sorey, K., & Baker, R. B. (2019). Improving placement accuracy in California's community colleges using multiple measures of high school achievement. Community College Review, 47(2), 178-211.

Bailey, T. R. (2015). *Redesigning America's community colleges: A clearer path to student success*. Harvard University Press.

Bailey, T., Jaggars, S. S., & Scott-Clayton, J. (2013). Characterizing the Effectiveness of Developmental Education: A Response to Recent Criticism. *Community College Research Center, Columbia University*.

Battilana, J. (2007, August). Initiating divergent organizational change: the enabling role of actors' social position. In *Academy of Management Proceedings* (Vol. 2007, No. 1, pp. 1-6). Briarcliff Manor, NY 10510: Academy of Management.

Bettinger, E. P., Boatman, A., & Long, B. T. (2013). Student supports: Developmental education and other academic programs. *The Future of Children*, 93-115.

Booth, E. A., Capraro, M. M., Capraro, R. M., Chaudhuri, N., Dyer, J., & Marchbanks III, M. P. (2014). Innovative developmental education programs: A Texas model. *Journal of Developmental Education*, 2-18.

Burdman, P., Booth, K., Thorn, C., Bahr, P. R., McNaughtan, J., & Jackson, G. (2018). Multiple paths forward: Diversifying mathematics as a strategy for college success.

Cafarella, B. (2016). Acceleration and compression in developmental mathematics: Faculty viewpoints. *Journal of Developmental Education*, 12-25.

California Acceleration Project, CAP. (2018). AB 705 Math recommendations August 2018. https://accelerationproject.org/Portals/0/Documents/CAP%20AB 705%20Recommendations%20Math.pdf?ver=2018-08-15-105318-960.pdf.

California Community Colleges Chancellor's Office. (2018). Looking ahead: Goals for meeting California's needs. https://vision.foundationccc.org/looking-ahead.

California Community Colleges Chancellor's Office. "Vision for Success," 2018, 57.

California Community Colleges Chancellor's Office. (2018). Overview of the student centered funding formula. https://extranet.cccco.edu/Portals/1/CFFP/Fiscal_Services/SCFF/OverviewStudentCenteredFundingFormula8-27-2018.pdf.

California Community Colleges. (2018). 2018 student success scorecard. https://scorecard.cccco.edu/scorecardrates.aspx?CollegeID=021#home.

Canning, E. A., Muenks, K., Green, D. J., & Murphy, M. C. (2019). STEM faculty who believe ability is fixed have larger racial achievement gaps and inspire less student motivation in their classes. *Science Advances*, *5*(2),

Carnegie Math Pathways, Statway. (2015). http://storage.googleapis.com/cmp-wordpress-public-uploads/1/sw_one_pager.pdf.

Center for Community College Student Engagement. (2016). Expectations meet reality: The underprepared student and community colleges. Austin, TX: The University of Texas at Austin. https://www.ccsse.org/docs/underprepared_student.pdf.

Community College Research Center. Designing Meaningful Developmental Reform, n.d. https://ccrc.tc.columbia.edu/media/k2/attachments/designing-meaningful-developmental-reform-research-overview.pdf.

Cook, A. G. (2016). SOARing to New Heights with Underprepared Students. *NADE Digest*, *8*(1), 2-9.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Daugherty, L., Gomez, C. J., Carew, D. G., Mendoza-Graf, A., & Miller, T. (2018). *Designing and implementing corequisite models of developmental education* (Vol. 37). Santa Monica, CA: RAND Corporation. https://www. rand. org/pubs/research_reports/RR23.

Garcia, R., Morales, J. C., & Rivera, G. (2014). The use of peer tutoring to improve the passing rates in mathematics placement exams of engineering students: A success story. *American Journal of Engineering Education*, *5*(2), 61-72.

Goudas, A. M., & Boylan, H. R. (2012). Addressing Flawed Research in Developmental Education. *Journal of Developmental Education*, *36*(1), 2.

Goudas, A. M., & Boylan, H. R. (2013). A Brief Response to Bailey, Jaggars, and Scott-Clayton. *Journal of Developmental Education*, *36*(3), 28.

Handel, S. J. (2013). The transfer moment: The pivotal partnership between community colleges and four-year institutions in securing the nation's college completion agenda. *New Directions for Higher Education*, *2013*(162), 5-15.

Hayward, C., Willett, T., & Harrington, D. (2014). Curricular redesign and gatekeeper completion. *The Research and Planning Group for California Community Colleges*.

Hayward, Craig, John Hetts, Dan Lamoree, Mallory Newell, Craig Rutan, Terrence Willett, and Cabrillo College. "Replicating AB 705 Adjustments Locally," 2018, 37.

Hern, K. (2019). Getting there: Are California community colleges maximizing student completion of transfer-level math and English? A regional progress report on implementation of AB 705. Sacramento, CA: Campaign for College Opportunity & California Acceleration Project. https://collegecampaign.org/wp-content/uploads/2019/09/Getting-There-FINAL-small.pdf.

Hetts, J. (2017). Multiple measures assessment project: unleashing the full potential of the common assessment system through multiple measures. file:///C:/Users/jsims/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/MMAP%2003032017.pdf

Hodara, M., Jaggars, S., & Karp, M. J. M. (2012). Improving developmental education assessment and placement: Lessons from community colleges across the country. Community College Resource Center, November 2012, 44.

Hope, L., & Stanskas, J. (2018). AB 705 implementation guidelines. https://asccc.org/sites/default/files/AA%2018-40%20AB%20705%20Implementation%20Memorandum_.pdf.

Huntsman, H. & Henson, L. (2020). The CAPacity Gazette. Sacramento, CA: California Acceleration Project. https://accelerationproject.org/Portals/0/Documents/Cap_Gazette_2020_Jul_Web.pdf

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge*, *3*(3), 123-127.

Irwin. AB 705 Seymour-Campbell Student Success Act of 2012: matriculation: assessment. An act to amend Section 78213 of the Education Code, relating to community colleges, Pub. L. No. AB 705, 78213 Education Code (2017). https://leginfo.legislature.ca.gov/faces/billStatusClient.xhtml?bill_id=201720180AB 705.

Jackson, J., & Kurlaender, M. (2014). College readiness and college completion at broad access four-year institutions. *American Behavioral Scientist*, *58*(8), 947-971.

Jaggars, S. S., Hodara, M., & Stacey, G. W. (2013). Designing Meaningful Developmental Reform. Research Overview. *Community College Research Center, Columbia University*.

Kirst, M. W. (2008). Secondary schools and colleges must work. *Thought & Action*, Fall 2008, 111–22.

Kurlaender, M., & Larsen, M. F. (2013). K–12 and postsecondary alignment: Racial/ethnic differences in freshmen course-taking and performance at California's community colleges. *Education Policy Analysis Archives/Archivos Analíticos de Políticas Educativas*, *21*, 1-25.

Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: aka the remix. *Harvard Educational Review*, *84*(1), 74-84.

Marshall, T., & Krajewski, R. (2017). Making the case: corequisite support classes.

Mayfield, V. M., & Garrison-Wade, D. (2015). Culturally responsive practices as whole school reform. *Journal of Instructional Pedagogies*, *16*.

McPhail, C. J. (2010). The completion agenda: A call to action. Summary report from the November 10-11. Meeting of the American Association of Community Colleges Commissions and Board of Directors. https://files.eric.ed.gov/fulltext/ED532208.pdf.

Mireles, S. V., Acee, T. W., & Gerber, L. N. (2014). FOCUS: Sustainable mathematics successes. *Journal of Developmental Education*, 26-36.

Moore, C., & Shulock, N. (2010). Divided we fail: Improving completion and closing racial gaps in California's community colleges. *Institute for Higher Education Leadership & Policy*.

New Mexico Higher Education Department. (2016). New Mexico math remediation taskforce report. https://files.eric.ed.gov/fulltext/ED572828.pdf.

Ngo, F., Kwon, W., Melguizo, T., Prather, G., & Bos, J. (2013). Course placement in developmental mathematics: Do multiple measures work? *Policy Brief*, *4*.

Northouse, P. G. (2018). *Leadership: Theory and practice*. Sage publications.

O'Brien, M., Fielding-Wells, J., Makar, K., & Hillman, J. (2015). How inquiry pedagogy enables teachers to facilitate growth mindsets in mathematics classrooms. *Mathematics Education Research Group of Australasia*.

Rodriguez, O., Johnson, H., Mejia, M. C., & Brooks, B. (2017). Reforming math pathways at California's community colleges. *Public Policy Institute of California*.

Rodriguez, O., Mejia, M.C., & Johnson, H. (2018). Remedial education reforms at California's community colleges: Early evidence on placement and curricular reforms. *Public Policy Institute of California*.

Rubel, L. H. (2017). Equity-directed instructional practices: Beyond the dominant perspective. *Journal of Urban Mathematics Education*, *10*(2), 66-105.

Rutschow, E. Z., & Mayer, A. K. (2018). Early findings from a national survey of developmental education practices. Research Brief. *Center for the Analysis of Postsecondary Readiness*.

Sides, M. (2016). Adapting the ALP model for student and institutional needs. *NADE Digest*, *9*(1), 27-29.

Stewart, S., Lim, D. H., & Kim, J. (2015). Factors influencing college persistence for first-time students. *Journal of Developmental Education*, 12-20.

Timmons-Brown, S., & Warner, C. (2016). Using a conference workshop setting to engage mathematics teachers in culturally relevant pedagogy. *Journal of Urban Mathematics Education*, *9*(1), 19-47.

Walvoord, M. E., & Pleitz, J. D. (2016). Applying matched sampling to evaluate a university tutoring program for first-year students. *Learning Assistance Review*, *21*(1), 99-113.