Are Prerequisites Really the Problem of Developmental Education? Reviewing Corequisite and Prerequisite Models in the State of Texas

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ABSTRACT

This paper intends to explore the evolving landscape of DE in Texas; it will examine the effectiveness of these models on student success. This will particularly synthesize previous works to provide an overview of critics and advocates of these DE models, with keen interest in recent shifts towards corequisite. Historically, DE has been criticized for delaying students' academic progress and increasing their cost of completion. As a way of responding, Texas has been at the forefront of implementing approaches like corequisite. With the purpose of enhancing retention and completion rate, this seeks to integrate students more seamlessly into college-level coursework. This paper aims to offer grounded perspectives that can influence future policy decisions in the State of Texas and potentially beyond.

Keywords: Developmental Education (DE), Corequisite, Prerequisite, Student Success, Retention, Equity and Access, Legislative Reform

INTRODUCTION

Developmental education is an important bridge for students who need more preparation to succeed in college-level coursework. Like many other states, the debate over the best means of delivering crucial academic support in Texas has led to significant policy reforms, particularly as touching the drift towards corequisite models over traditional prerequisites. Studies assessing corequisite reforms in Texas community colleges imply that this structural change, where students simultaneously enroll in college-level and developmental education coursework, has shown promising results in improving students' completion of required college-level courses. Corequisite math for example has shown quick improvements in fulfilling math requirements, nonetheless, there has been no significant acceleration to degree completion when compared to traditional prerequisite developmental education (DE) programs over a longer period (Ryu et al., 2022; Meiselman & Schudde, 2022; Mokher & Park-Gaghan, 2023).

This paper intends to explore the evolving landscape of DE in Texas; it will examine the effectiveness of these models on student success. This will particularly synthesize previous works to provide an overview of critics and advocates of these DE models, with keen interest in recent shifts towards corequisite. Historically, DE has been criticized for delaying students' academic progress and increasing their cost of completion. As a way of responding, Texas has been at the forefront of implementing approaches like corequisite models (Mokher & Park-Gaghan, 2023; Park-Gaghan & Mokher, 2025). With the purpose of enhancing retention and completion rate, this seeks to integrate students more seamlessly into college-level coursework.

In exploring these claims, comparing them against traditional prerequisite models to assess their relative strengths and weaknesses, and drawing from a range of policy evaluations, this paper will reflect on the broader implications of these educational strategies for policymaking in Texas. Using Weick's (1999) Sensemaking framework, the paper seeks to provide insights into the effectiveness of these reforms in achieving their educational goals by detailing legislative actions and their impact. This exploration will culminate in a critical evaluation of the available data, allowing for informed recommendations. Beyond contributing to the ongoing conversation in and around DE, this work aims to offer grounded perspectives that can influence future policy decisions in the State of Texas and potentially beyond.

Framework

This review will utilize the sensemaking framework to analyze these models. As described by Weick, sensemaking involves using a plausible understanding or map of a changing world, and testing this with other maps using data collection, conversation, and actions to refine or abandon the map based on its credibility (Weick, 1999). In the realm of policy implementation in higher education, sensemaking framework has been applied to highlight how institutional leaders and actors interpret, adapt, adopt, or reject reform mandates in their various contexts. Specifically for Texas corequisite reform, studies use sensemaking to discuss variation in institutional responses: administrators and faculty at different institutions interpret the reform mandate, adapt scheduling, placement, and support mechanisms based on local conditions, and this variation in adaptation helps explain differential outcomes. (Mokher & Park-Gaghan, 2023). The success of either model depends then on structural design of the pathway as much as it depends on how institutional actors at rural vs. urban, community vs. university settings "make sense" of the reform, allocate resources, redesign curricula, and provide advising and support.

Developmental Education in Texas

Developmental education in Texas has undergone significant reforms, transitioning from traditional standalone courses to corequisite models (Orlando & Hattaway, 2020; Meiselman & Schudde, 2022; Mokher & Park-Gaghan, 2023). Legislative changes like House Bill 2223 mandated the integration of developmental courses as corequisites to credit-bearing classes, aiming to enhance student progression and success (Paulson et al., 2021). These reforms aimed to address the challenges of traditional prerequisite dev-ed, particularly in math, by providing immediate support within college-level courses (Gehlhaus et al., 2018).

The prerequisite model traditionally requires students to complete DE courses before advancing to college-level coursework, this has been argued to potentially prolong graduation and increase dropout risks (Hernández et al., 2023; Daugherty et al., 2018). Corequisite models, like integrated reading and writing on the other hand, accelerate students into college-level courses while providing concurrent academic support, aiming to enhance student success and equity within developmental education (Atkins & McCoy, 2016). These models focus on addressing students' academic needs and social-emotional well-being, particularly benefiting racially minoritized and low-income students. The debate over the effectiveness of developmental education involves conflicting research, with some highlighting the need for more robust quantitative studies to inform policy and reform decisions (Mitchell, 2013).

Despite conflicting research, developmental education plays a crucial role in the Texas educational landscape by addressing the needs of underprepared students through prerequisite, corequisite models and technology integration. The implementation of a statewide corequisite developmental education reform is aimed at enhancing student success (Mokher & Park-Gaghan, 2023; Orlando & Hattaway, 2020). These reforms aim to bridge the gap between developmental and credit-bearing courses, ultimately improving retention and completion rates (Booth et al., 2014). Additionally, the integration of technology in developmental education in Texas colleges is being explored to enhance instructional practices and overcome barriers to technology integration (Hodges et al., 2018). As Texas continues to experience demographic shifts and diverse student populations, the role of developmental educators becomes increasingly vital in ensuring student readiness, academic support, and alignment between educational institutions (Martirosyan et al., 2017).

Historical Context of Developmental Education in Texas

The historical evolution of developmental education policies in Texas showcases a significant transformation over the years. Initially, in the early 1970s, Texas mandated compensatory education programs for underprepared students, leading to the introduction of basic courses in writing, reading, and mathematics (Mokher & Park-Gaghan, 2023). By the mid-1980s, there was a shift towards more rigorous assessment practices and the integration of developmental education with college-level courses to enhance student outcomes (Orlando & Hattaway, 2020). Subsequently, in response to low completion rates in transfer-credit courses, Texas restructured developmental education by implementing corequisite models, where students simultaneously enroll in developmental and college-level courses to expedite progress and improve success

rates (Giani, 2017). This evolution culminated in legislative changes like House Bill 2223, which mandated a statewide transition of developmental courses into corequisites, rather than institutions' voluntary adoption, emphasizing a more streamlined and effective approach to college-preparatory education in Texas (Saxon & Slate, 2013).

Critiques of Developmental Education

Various concerns were highlighted by critics of developmental education in Texas. First, challenges arose with the effectiveness of DE programs as research indicated the impact of DE on student success in credit-bearing courses may be short-term (Mokher & Park-Gaghan, 2023). In addition, there are issues with the assessment of DE programs because of differences in components and implementations, lack of comprehensive solution, and data limitations (Booth et al., 2014). Furthermore, the fluctuations in the percentage of students enrolled in DE courses over the years have been argued to indicate potential inefficiencies in addressing under-preparedness (Saxon & Slate, 2013). Criticisms also exist regarding the integration of technology into DE, with barriers hindering its effective implementation in Texas higher education institutions (Martirosyan et al., 2017). These criticisms collectively suggest a need for improvements in DE practices in Texas.

Nationwide, developmental education is criticized for its inefficiency and high costs, often viewed as a failure of secondary education that necessitates redundant, costly interventions at the postsecondary level (Saxon, 2016). Many students enrolled in such programs do not progress to college-level courses, and a large proportion do not complete their education, highlighting systemic inefficiencies (Vick et al., 2018). Critiques also focus on the lack of a unified approach in developmental education, which has led to mixed results and a call for research-based reforms (Ari et al., 2017). There are also concerns about the traditional system of assessment, placement, and coursework, which may discourage students due to the additional time and resources required (Bailey et al., 2013).

Various expert opinions on DE have also voiced different concerns. Some (Suh et al., 2022) argue that external scholars and policymakers perpetuate negative perceptions of developmental education without consulting field experts, leading to biased views. Criticisms from these external scholars and policymakers include questioning the effectiveness and cost of developmental education programs, with some stakeholders advocating for their discontinuation due to perceived negative impacts on academic standards and quality (Reynolds, 2015; Bailey et al., 2013). Besides, there are debates on whether developmental education represents a failure of secondary education or serves a crucial role in preparing students for college, leading to differing perspectives on its necessity and value (Shields, 2005). The complex and contentious nature of discussions surrounding developmental education in the US continues to shift because of these criticisms.

Advocacy for Corequisite Models

Proponents of the corequisite model argue that it enhances student success by providing immediate support in college-level coursework (Hernández et al., 2023; Meiselman & Schudde, 2022), with aims of eliminating barriers to degree completion by integrating developmental support within credit-bearing courses (Ryu et al., 2022). Research suggests that corequisite coursework, especially when structured effectively, can significantly improve students' completion of required college-level courses (Orlando & Hattaway, 2020). Particularly, the corequisite model has been shown to accelerate student progress through the curriculum, addressing social and emotional needs while enhancing academic achievement (Atkins & McCoy, 2016). Despite these benefits, long-term outcomes like degree completion may not differ substantially between corequisite and traditional prerequisite approaches. Overall, the corequisite model is praised for its potential to accelerate student success and promote equity in developmental education.

The advocates of corequisite models, including higher institutions, are increasing because of potential benefits. By accelerating student progression through developmental and gateway courses, institutions aim to potentially increase retention and graduation rates, leading to higher overall funding through state formulas and potentially higher tuition revenues due to increased student retention and completion (Elert & Henrekson, 2017). Enhanced operational efficiencies and better utilization of resources are other potential benefits, as corequisite models may allow institutions to manage their staffing and facilities more effectively by consolidating classes or reducing the overall number of sections needed for remedial courses.

Legislative and Policy Frameworks for Corequisite Models

Texas has been at the forefront with the Texas Success Initiative (TSI) leading the adoption of corequisite models. House Bill 2223, passed in 2017, mandates that public institutions in Texas increase the percentage of developmental education students enrolled in corequisite courses. This legislation aims to enhance student outcomes by integrating developmental students into college-level courses sooner, backed by specific targets for scaling the implementation each year (Procknow et al., 2018).

Further efforts in Texas included a collaborative approach to redesigning developmental education, which involved streamlining structures from multi-layered developmental education to more integrated corequisite courses. This was also influenced by legislative actions, such as House Bill 2223, aiming to improve enrollment and success rates in transfer-credit courses (Orlando & Hattaway, 2020). Likewise, key legislative milestones and policy shifts regarding the implementation of corequisite models in Texas have been significant in shaping the educational landscape. Notably, Texas has enacted statewide mandates that require public institutions to adopt corequisite models, particularly in developmental education programs. This shift aims to integrate academic support within the same semester as college-level courses, thereby accelerating the progress of students who might otherwise be placed in non-credit developmental courses. These policies are part of broader educational reforms intended to improve college readiness and completion rates across the state (Bailey et al., 2017).

Despite the statewide mandate of corequisite for public higher education institutions in Texas, several key challenges contend with smooth implementation, most notably in the areas of scheduling and advising. Institutions across the state have reported difficulties coordinating the logistics of scheduling corequisite courses and providing adequate advising services that align with the new corequisite requirements. These challenges stem from the need to align corequisite courses with college-level courses and ensure students are correctly placed and supported throughout their coursework. Notwithstanding, many institutions have adapted by modifying their advising practices and using technological solutions to manage scheduling conflicts. Likewise, the transition to corequisite models has required significant buy-in from faculty and administration, which has sometimes been challenging due to concerns about the effectiveness and resource demands of these new models (Daugherty et al., 2018).

Comparative Assessment of Prerequisite and Corequisite Models

The corequisite model on the one hand offers significant benefits, such as a 6-percentage point increase in the likelihood of corequisite students completing college-level courses within a year and persisting into a second year, compared to those in traditional developmental education (DE) programs. It also improves course completion rates and is being widely adopted by institutions and states like Texas for its effectiveness. Furthermore, corequisites prove to be cost-effective, potentially lowering the traditional DE costs of approximately $7 billion. Additionally, their implementation aligns with best practices in DE instruction, ensuring personalized and effective academic support for students (Daugherty et al., 2018).

The corequisite model also facilitates immediate progress toward degree requirements, thereby enhancing student success by increasing their chances of academic achievement as well as providing essential support through integrated course structures. Furthermore, corequisite reduces the time-to-degree for academically underprepared students and broadens college access, effectively bridging the completion gap and fulfilling the promise of higher education for a wider demographic (Mokher & Park-Gaghan, 2023). However, Implementing the corequisite model poses challenges including potential instructor overload due to managing two simultaneous courses, which could affect the quality of instruction. The model is resource-intensive, necessitating additional faculty training, support services, and materials, which can strain institutional budgets. Some students may struggle with the accelerated pace if they lack foundational knowledge, potentially leading to higher dropout rates. The complexity of planning, coordinating, and aligning developmental and credit-bearing courses adds significant implementation challenges for educational institutions (Adams, 2020). Besides, corequisite model seems to focus more attention on students' course completion and not retention over a longer period (Miller et al., 2022)

The prerequisite model on the other hand offers enhanced student preparedness by ensuring that individuals possess the necessary foundational knowledge before advancing to more complex coursework. This model improves student success rates by equipping them with essential concepts for challenging courses, and further allows for more efficient resource allocation, focusing on institutional support where it is most needed and enhancing overall student and institutional outcomes (Edgecombe et al., 2013).

DE's prerequisite model, such as those incorporating multiple measures for student placement, can also significantly improve placement accuracy in community colleges, thereby enhancing student outcomes. By implementing strategies such as formative assessments and fostering metacognitive skills, these models effectively boost student achievement by enabling learners to monitor and regulate their own learning processes. Additionally, prerequisite models facilitate increased access to higher education for underrepresented populations through varied developmental pathways, providing broader opportunities for success. Educators are also enabled to make more informed decisions regarding students' developmental needs, ensuring that each student receives tailored support and resources, thereby promoting personalized learning experiences that effectively address individual academic challenges (Jaggars & Bickerstaff, 2018).

Despite DE's prerequisite model's impact on student success, it is criticized in Texas and the United States for inefficiencies and limited long-term success. Challenges like inconsistent assessments, technological barriers, and enrollment variability point to systemic flaws needing reform. Nationally, DE is sometimes seen as a costly, inefficient remedy to secondary education failures, often failing to advance students to college-level courses. Critics, including policymakers and scholars, argue that DE may compromise academic standards and quality, prompting calls for a reevaluation of its effectiveness and the implementation of evidence-based reforms to address these issues (Mokher & Park-Gaghan, 2023; Booth et al., 2014; Saxon & Slate, 2013; Martirosyan et al., 2017; Saxon, 2016; Vick et al., 2018; Ari et al., 2017; Reynolds, 2015; Bailey et al., 2013).

CONCLUSIONS

While designed to enhance academic success, the corequisite and prerequisite models in developmental education, each exhibit distinct benefits and challenges. The corequisite model effectively increases course rates, offering a cost-effective approach and aligning with educational best practices for immediate academic progression. However, it faces hurdles such as instructor overload, high resource demands, and struggles with long-term student retention. In contrast, the prerequisite model strengthens student preparedness and placement accuracy, promoting efficient resource use and broader access to higher education. Yet, it is criticized for its high costs and limited effectiveness in advancing students to higher-level courses. Both models highlight the pressing need for evidence-based reforms to resolve ongoing inefficiencies and improve the sustainability and impact of developmental education programs.

Literature shows that while corequisite promises immediate benefit of course completion and can reduce degree completion time, long term academic success and retention cannot be guaranteed. The rapid adoption of corequisite to facilitate faster progress in college coursework focuses on short-term academic outcomes without laying emphasis on deeper educational needs of students or ensuring their sustained academic success (Meiselman & Schudde, 2022). This can sometimes lead to a mismatch of support and instruction for students who need to develop their fundamental skills, thereby overlooking the depth of learning necessary for long-term academic and professional success. Prerequisite models on the other hand ensure students' adequate preparation before moving on to more complex subjects, sustaining educational progress and deeper comprehension, which is critical for success beyond initial college courses.

Finally, the success of both prerequisite and corequisite models in Texas can be influenced heavily by institutional contexts, whether rural, urban, two-year community college or four-year university. Rural institutions for instance serve smaller student population and are more likely to face resources constraints such as fewer full-time faculty and limited scheduling flexibility. On the other hand, urban institutions and larger universities have more robust support infrastructure, including larger student population. A statewide study of corequisite implementation in Texas found considerable heterogeneity in how institutions—two-year vs. four-year, urban vs. rural—responded to scale-up mandates under House Bill 2223, with variation in capacity, data

infrastructure, and stakeholder readiness (Daugherty et al, 2019). Community colleges in urban settings experience higher enrolment which can allow quicker implementation of paired corequisite models, whereas many rural or small colleges need to modify schedule formats and combine sections due to low enrollment or limited faculty. Capacity, student demographics, commuting patterns, and institutional infrastructure are all major contexts that influence how well each model works in practice.

RECOMMENDATIONS

This comparative evaluation echoes significant questions about who the true beneficiaries of swift course completion models like corequisite are. While corequisite models seem to benefit institutions through enhanced metrics like college-level enrollment numbers and course completion, one must critically consider if they truly serve students' educational journey or primarily enhance the statistics of institutional performance. This voices a call for the reevaluation of rapid-course-completion models to ensure that educational strategies do not only attend to institutional goals, but more importantly, genuinely align with and support long-term learning and success of students.

Rather than abolishing traditional prerequisite models, state and federal policies could strengthen and optimize them to not only measure initial readiness, but also ongoing progress to ensure effective preparation of students for subsequent coursework. Additionally, integrating adaptive learning technologies could enhance educational experiences allowing for more effective tailored instructional support. Allocation of funds should prioritize DE programs that are committed to students' sustained success and graduation rates rather than just initial course completions.

Some actionable recommendations for institutions include a) require faculty training and collaborations between both gateway and developmental support instructors, b) improve on the use of multiple measures for college placement, especially in rural colleges, where students may have non-traditional trajectories or part-time enrollment, placement protocols should reflect context to avoid under-placing or over-placing, c) Explicitly map the curriculum of the developmental-support course to the gateway course, schedule co-enrollment or linked sections, and ensure common faculty meetings or shared learning outcomes, (d) provide structured advising, early alert systems, supplemental instruction, and peer tutoring. In rural settings, where students may have longer commutes, work obligations, or fewer campus-based resources, institutions should consider flexible modalities (online/hybrid labs, weekend workshops), and (e) collect and use institutional data on placement, enrollment, gateway pass-rates, and student demographics by campus type (rural vs. urban).

Moreso, professional development can be enhanced to arm instructors and educators with necessary skills that can efficiently deliver introductory courses that build necessary competence for academic success. Lastly, policymakers could foster collaborations between secondary and postsecondary institutions to align curricula with expectations, thereby easing the transition for students and reducing the high need for remediation. These actions would ensure DE's long-term support for academic achievement and preparation of students for the challenges of higher education and beyond.

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