Competency-Based Education in Michigan's 21j Pilot Districts: Case Studies of Implementation and Innovation

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INTRODUCTION

In 2018, Michigan invested $2 million in grants to districts to support competency-based education (CBE) and related programming as part of then-Governor Rick Snyder's Marshall Plan for Talent Development. In addition, section 21j of the 2017-2018 School Aid Act allocated $500,000 in grants to seven pilot districts to design and implement CBE programs. The pilot program provided resources and flexibility (e.g., seat time waivers) to help support participating districts' CBE implementation efforts.

Although interest in CBE goes back decades, it has recently come to the fore in education policy conversations as state and local education agencies work to accelerate student learning in the wake of the COVID-19 pandemic.[1] The experiences of Michigan's 21j pilot districts in implementing CBE can help to inform policy and practice conversations about the potential adoption of CBE and similar instructional models to improve student outcomes and increase opportunities for deeper learning. In this brief, we first outline the core components of CBE and its Theory of Change that highlights mechanisms that may be necessary for the core components to translate into deeper learning for students. We then discuss implementation elements at the local level, presenting data from case studies of three participating 21j pilot districts. Finally, we elucidate challenges and successes experienced by the case districts in their work to implement CBE.

What is Competency-Based Education?

CBE originated as part of the mastery learning movement, where schools organize learning around mastery rather than the traditional measure of time (e.g., seat time).[2] Although CBE has been increasingly discussed in recent years, there is often confusion about what, in fact, CBE is. This is because CBE shares common components with other instructional reforms such as student-centered learning, personalized learning, and proficiency-based education, including the development of learner profiles, student agency in learning, and flexible learning environments. However, CBE is different from these other pedagogies in several important ways; CBE emphasizes personalization and requires the development of competencies that are assessed holistically rather than individually.[3] Researchers and organizations supporting CBE describe seven core components of high-quality CBE programs:
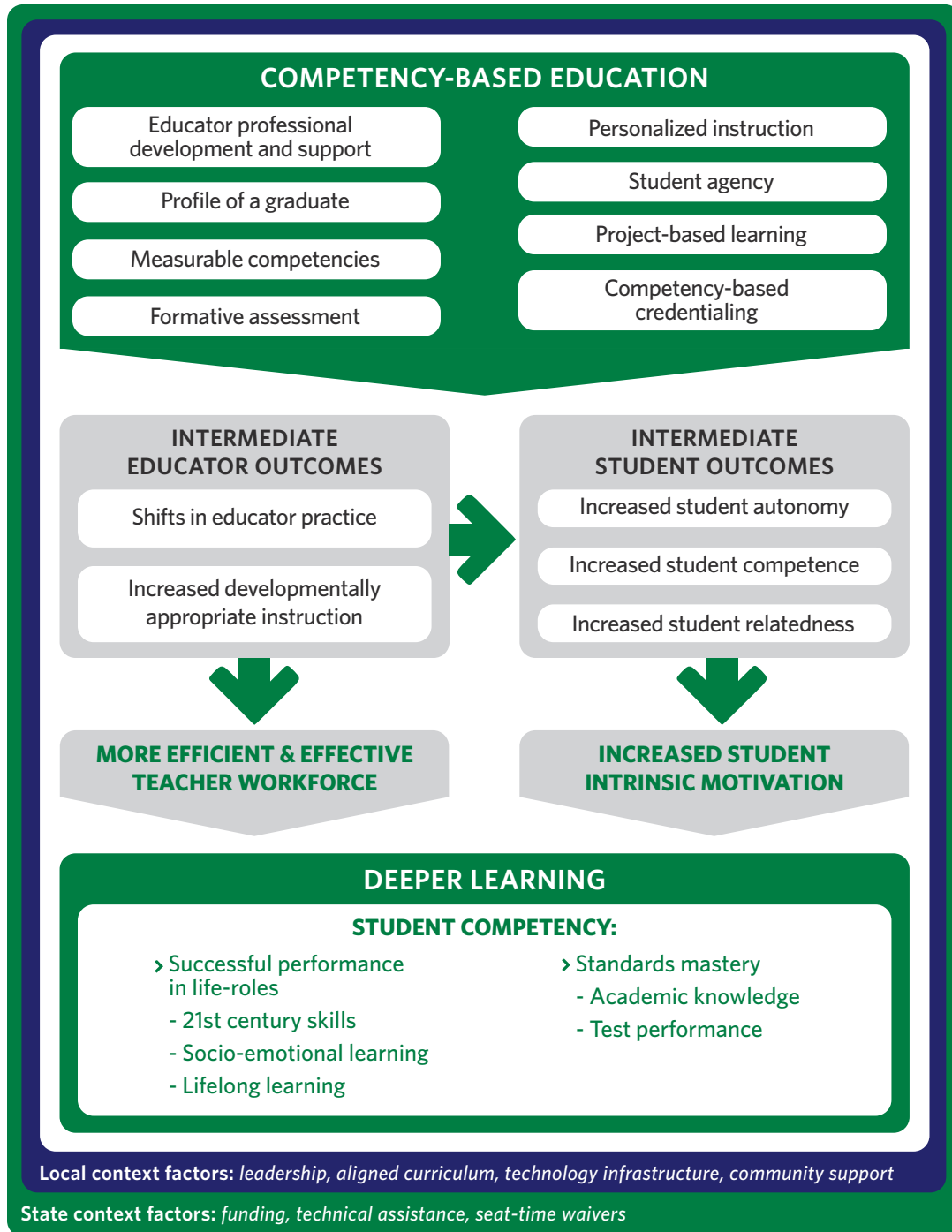
- Students are empowered to make decisions about their learning (i.e., choice and voice).

- Assessment is meaningful.

- Students receive timely, differentiated supports.

- Students advance upon mastery and not based on seat time.

- Students learn at their own pace.

- Districts should adopt strategies to ensure equity for all students.

- Districts should develop rigorous, shared expectations for learning.[4]

Together, these components are intended to foster deeper learning among students, shifting their education from a top-down, seat-time-driven approach to learning to one that provides students with agency over their learning and thus promotes mastery.

Figure 1 shows a Theory of Change that illustrates the intended mechanisms through which CBE might move students along a trajectory toward deeper learning. The Education Policy Innovation Collaborative (EPIC) developed this Theory of Change based on a rigorous review of the literature, interactions with CBE practitioners and school system leaders in Michigan's 21j districts, and conversations with the Michigan Department of Education (MDE) employees facilitating the 21j program. In the top box of Figure 1, we show the core components of CBE (e.g., student agency, formative assessment) as well as resources and supports (e.g., project-based learning, educator professional development) which facilitate the adoption of CBE. At the far right of Figure 1 are the deeper learning outcomes resulting from CBE implementation. The central boxes consist of the mechanisms through which CBE could theoretically lead to the desired learning outcomes.

We note the importance of local and state contextual factors in the boxes surrounding the core Theory of Change. Fundamental to the Theory of Change is the notion that CBE implementation is essentially a local enterprise. While the state offers support, local stakeholders are likely to drive successful implementation. Specifically, unified, supportive leadership at the local level, combined with good-faith instructional shifts on the part of teachers, support from the surrounding community, and access to technology, may be critical for CBE to succeed within a district. Lastly, CBE implementation relies on the support of MDE and the state, including the 21j pilot program, technical assistance, and administrative flexibility.

FIGURE 1. Competency-Based Education Theory of Change

COMPETENCY-BASED EDUCATION

- Educator professional development and support
- Profile of a graduate
- Measurable competencies
- Formative assessment
- Personalized instruction
- Student agency
- Project-based learning
- Competency-based credentialing

INTERMEDIATE EDUCATOR OUTCOMES

- Shifts in educator practice
- Increased developmentally appropriate instruction

INTERMEDIATE STUDENT OUTCOMES

- Increased student autonomy
- Increased student competence
- Increased student relatedness

MORE EFFICIENT & EFFECTIVE TEACHER WORKFORCE

INCREASED STUDENT INTRINSIC MOTIVATION

DEEPER LEARNING

STUDENT COMPETENCY:

› Successful performance in life-roles
- 21st century skills
- Socio-emotional learning
- Lifelong learning

› Standards mastery
- Academic knowledge
- Test performance

Local context factors: *leadership, aligned curriculum, technology infrastructure, community support*

State context factors: *funding, technical assistance, seat-time waivers*

DATA AND METHODS

EPIC conducted case studies of three participating CBE districts during the 2019-2020 school year. These case studies draw on interview and observation data. We designed data collection protocols to capture specific components of the Theory of Change. For example, interview items probed

teachers' experiences with specific elements of the Theory of Change. Similarly, the Theory of Change guided our observation field notes. In observations, the research team noted interactions, activities, and comments regarding their alignment or misalignment to the Theory of Change. Our sample includes administrators, instructional coaches, teachers, and students.

Case Studies

We invited three 21j districts to participate in case studies: Lehigh Public Schools, Mercer Public Schools, and Davis Charter High School.[5] Our rationale for selecting these districts is as follows: first, these districts represent different student populations. Second, these sets of districts vary by governance model, including both traditional public schools and a recently constituted charter school. Implementation varied across case districts: Mercer focused implementation efforts at the secondary level; Lehigh was attempting to implement CBE across all grade levels; and Davis Charter School integrated CBE into its operations to the extent that the reform was part of the schools' original charter.

Table 1 provides an overview of the individual districts' demographics relative to other Michigan school districts.

TABLE 1. Descriptive Characteristics of Case Districts				
	Statewide	**Lehigh**	**Davis**	**Mercer**
Students (%)				
Special Education	14.2%	14.7%	11.8%	13.2%
English Learners	7.0%	8.2%	0.0%	2.8%
Economically Disadvantaged	52.7%	52.1%	37.6%	49.1%
Black	17.9%	4.7%	0.0%	14.4%
Hispanic or Latino/a/x	8.1%	17.1%	4.9%	3.1%
White	65.7%	69.4%	88.6%	73.8%
Other Race/Ethnicity	8.4%	8.8%	6.5%	8.8%
Teachers (%)				
Early Career	10.4%	8.6%	0.0%	1.1%
Master's Degree or Higher	55.7%	64.6%	11.8%	76.5%
N (students)	1,479,706	3,085	263	4,968
N (teachers)	85,104	175	16	272
Ratio	17.4	17.6	16.4	18.3

Notes: Data in this table are taken from Michigan Student Data System and Registry of Educational Personnel.

Interviews

We conducted approximately 115 hours of stakeholder interviews (administrators, instructional coaches, teachers, and students). We designed interview items to create opportunities for participants to share their experiences and tell their unique stories. We conducted multiple interviews with teachers and administrators—all interviews occurred between 2019 and 2021. Interviews lasted between 45 and 90 minutes. We conducted interviews in the spring of 2020

remotely due to COVID-19 safety protocols. To document these interviews, we used a combination of Zoom for video interviews and the recording app Record-A-Call to record these conversations.

Observations

Between September 2019 and March 2020, we observed approximately 200 hours of class time and professional development sessions. Each observation lasted between 30-100 minutes. We recorded all observations as field notes. During observations, the research team recorded jottings in a notebook, keeping track of classroom activities, interactions, and roles teachers and students were assuming in the classroom. The research team paid particular attention to activities and interactions that did and did not invite pathways for students to personalize their learning. In addition, we regularly followed up observations with debriefings between the researcher and the classroom teachers. These informal conversations were essential in providing additional context and clarification to the observations.

Analysis

After reading the data in its entirety, drawing on our research questions, the theory of change, and elements that emerged from the data, we developed approximately 20 codes. Next, using this initial set of codes, we coded several interviews and compared code applications. We discussed and reconciled differences in applications, after which we used the revised codebook to code the remainder of our data. We then grouped codes into two categories—challenges and successes— as they related to CBE implementation.

FINDINGS

Educator Professional Development and Support

Because CBE represents a substantial shift in teachers' practice, districts must provide ongoing professional development and support to educators. This is particularly true for CBE even compared to other instructional reforms because many decisions traditionally made at the building, district, or state level now fall on the instructor's shoulders.[6] For example, decisions regarding standards, curriculum, and assessments become, in large part, the responsibility of the teacher or a team of teachers, ideally with their students who are exhibiting greater agency in their learning. Professional development that has facilitated more effective CBE implementation includes the development of a culture of engaged learning[7]; increased opportunities for teacher collaboration[8]; the adoption of instructional coaching[9]; and professional development that specifically engaged with CBE practices.[10]

Challenges and Successes

Case districts have invested in several resources to support their teachers' implementation of CBE components. One of the primary methods of support is the hiring of instructional coaches. While coaches are meant to assist teachers as they adopt CBE practices and thus facilitate the implementation of CBE across the districts, teachers and instructional coaches, for the most part, described significant flaws in the current coaching models used in the case districts. First and foremost, while districts have allotted considerable resources for the coaching model (e.g., full-

time positions and extensive release time), they have not made instructional coaching mandatory. As a result, only interested teachers have participated in coaching sessions. That said, in some cases, teachers have had ample opportunities to work with coaches. In these sessions, coaches have provided teachers with valuable curricular and/or pedagogical support.

In addition, the coaches lack access to specific training to develop their own CBE expertise, diminishing their ability to provide support to teachers working to implement the model's core components. Relatedly, teachers have expressed skepticism regarding coaches' content knowledge and their ability to apply strategies to content areas and subjects outside their teaching expertise. These challenges lead to suboptimal utilization of teacher coaching and support mechanisms.

> **Challenge:** "They're supposed to be the ones who you can ask for their help on, like, "Help us with competency-based." They have no more training than I do, or if they do, they've had one eight-hour session of training, and now they're the experts to teach everybody?"
>
> — *Noah, Secondary Teacher in Mercer*

While Lehigh has not been immune to the challenges of supporting teachers, they have experienced some success at one of their elementary sites due to their emphasis on district-wide policies and adopting a cohort-based coaching model. First, like other CBE districts, Lehigh is committed to incorporating performance assessments and has developed a longitudinal educational and implementation plan. Between the 2018-2019 and 2021-2022 school year, every teacher will have participated in a cohort-based professional development series on designing and implementing performance assessments.

Second, Lehigh created classroom learning labs, which created opportunities for teachers to observe peers for targeted instructional demonstrations. Before the 2019-2020 school year, school leaders required teachers to attend and host a learning lab as part of their observation. While these are no longer required, they have become a regular part of the professional development practices at one of the elementary schools in Lehigh. At this school, teachers collaborate in multi-grade cohorts and develop common professional development goals that inform their learning labs. Unlike other districts, where the instructional coaches' roles are poorly defined, the Lehigh coaches help to plan and facilitate the learning labs. For example, in 2019-2020, one cohort focused on individualized pacing and small group instruction, while another focused on social-emotional learning. Creating shared learning goals and targeting observations to these goals make the learning labs more valuable to teachers. As part of these labs, teachers participate in pre- and post-observation collaboration and reflection. While many professional developments offer high-leverage practices, the pre- and post-conference discussion and reflective components add the opportunity for teachers to work with colleagues and receive support in adapting these new practices for their classrooms.

> **Success:** "We don't just see a finished product. We get to ask questions and hear about the bumps along the way and that helps me to think about it in my own class."
>
> — *Mark, Upper Elementary Teacher in Lehigh*

However, as effective as the learning labs are at the elementary level, the secondary teachers placed less emphasis on them, citing concerns about applicability and time. In addition, while the district has invested in four instructional coaches at the secondary level, one-to-one coaching does not seem to be a priority. Based on interviews with the coaches, their position is more administrative and focuses on large group professional development rather than one-to-one coaching. Notably absent from Lehigh's model are opportunities to learn across grade levels and from other buildings. While there are opportunities for teachers to work in grade-level professional learning communities, learning labs are building-specific.

Profile of a Graduate

As districts begin to implement CBE systems, they must identify a set of qualities, skills, and dispositions that a student should possess upon graduation. This results in a "Profile of a Graduate" around which districts develop their CBE plan—a blueprint through which they can reverse engineer grade-level competencies tied to necessary standards.

Instead of providing instruction based on state-level standards, CBE systems orient instruction around the district's unique graduate profile. The profile should represent components necessary for a student to be prepared for a meaningful role in society—something early CBE proponents argue traditional education was ill-suited to do.[11]

Challenges and Successes

Each of the districts has created its own profile of a graduate. Overall, teachers agreed that their districts' profile of a graduate provided clarity on the essential skills and competencies that they expect their graduates to master upon graduation.

> **Success:** **"These [the profile of a graduate] represent the skills and knowledges we want our students to have when they walk across that stage and shake our hands."**
>
> *— Administrator, Lehigh Public Schools*

However, in all three case districts, students reported limited awareness of these expectations. For example, some students did not know what the profile of the graduate was, nor could they identify the required skills or competencies associated with it. Other students recalled posters in their classrooms or the hallways or remarks by leadership; however, they could not articulate specific goals the profiles were meant to accomplish. Ultimately, students' inability to articulate the essential skills and competencies their districts developed suggests a lack of involvement in setting learning goals, which is contrary to the tenets of CBE.

Measurable Competencies

Central to CBE is the establishment of and adherence to a set of measurable competencies. These competencies serve as a set of outcomes that determine what students must do before advancing through the educational system. Early research uses a narrow definition of competency that is tied to the ability to successfully fill a life role in a given community and time.[12] More recent research grounds competencies in standards.[13] A district's interpretation of what defines a competency

will inherently affect the role of competencies in their CBE implementation. Some districts may develop competencies based on their profile of a graduate, and others may interpret a competency to be similar to current standards being taught. Developing competencies is complicated by other factors such as the development of shared expectations for proficiency, differences in standards interpretation, and tensions between measuring competencies and grade-level expectations.[14]

Challenges and Successes

Teachers across the case districts reported developing and providing students with measurable competencies. However, while a critical component of CBE requires students to master competencies before advancing, teachers in all three case districts report that students regularly advance without achieving mastery. For instance, a secondary teacher in Mercer noted that "everyone is on the same page at the same time," suggesting the lack of flexible pacing and the requirement that students advance in the curriculum before mastering competencies.

In interviews and observation debriefs, teachers discussed at length the barriers to enacting measurable competencies. These barriers include scripted curricula with strict pacing guides, normative practices such as teacher-centered classrooms, and concerns about managing multiple student interests and instructional paces.

> **Challenge: "We're expected to keep pace with the lessons."**
>
> — *Elementary Teacher, Mercer Public Schools*

> **Challenge: "We have to continue a teacher pace, or we will lose our minds. To have 30 kids every hour at 30 different spots was not manageable."**
>
> — *Middle Grades Teacher, Lehigh Public Schools*

While teachers at Davis Charter School were not immune to these difficulties, their institution's use of a project-based learning model enabled them to mitigate these challenges. The Davis teachers made it clear that the school's adoption of project-based learning alleviated many of their concerns about implementing and abiding by set competencies and requirements for mastery prior to advancement. One world languages teacher expressed that the projects provide structure for both teachers and students while also offering flexibility for students.

> **Success: "They are at different stages or doing different things but they're all working on the same project and I'm not managing completely different activities. It's all related."**
>
> — *Secondary Teacher, Davis Charter School*

Formative Assessment

The CBE literature identifies the use of formative assessment as critical to CBE systems.[15] Within CBE, formative assessment facilitates differentiation of learning and is implemented through various classroom practices. These practices may be informal—for instance, short one-on-one discussions or reflection periods—or more structured and formal, such as using standardized

benchmark assessments. Educators regularly monitor students through formative assessments, and they use that information to guide instructional practices and communicate with students regarding progress toward competency. Even traditionally summative assessments may serve a formative purpose in CBE, providing students unable to demonstrate competency on a summative assessment time for re-learning and reassessment.[16]

Challenges and Successes

Within each of the case districts, teachers spoke at length about formative assessments, describing district and school policies that required this element of CBE. In addition to providing teachers with critical data related to students' current mastery from which they might adjust learning activities, these formative assessments also served as evidence suggesting students' preparedness to demonstrate competency mastery.

> **Success:** "We're doing some practice where they're applying the skills on their own, gearing up for that ultimate assessment of 'okay. You've had all these pieces of formative assessments or, you know, practice evidence—you know, your evidence of learning. Now let's see how that fits into this overall competency."
>
> *— Secondary Teacher, Mercer Public Schools*

While formative assessments were a common part of teachers' practice in all three districts, it was at the elementary level where we observed teachers using these assessments to individualize learning activities. For example, in one of the lower elementary grade teams, students were assigned color-coded sets of developmentally appropriate learning activities. These teachers provided students with learning sets based on formative assessment results.

> **Success:** "The formative assessments have really helped me out, understanding when I need to reteach because the kids don't always know that they don't get it."
>
> **— Secondary Teacher, Lehigh Public Schools**

While these assessments are meant to be used as evidence, several teachers are still working on incorporating these assessments into students' grades effectively. While the theory of change behind CBE—and any mastery learning pedagogy—holds that formative assessments should be just that—formative and not at all summative, multiple teachers reported that assigning a grade on the tests was ultimately necessary.

> **Challenge:** "When we stopped collecting homework, they stopped doing it and we couldn't assess them."
>
> *— Middle Grades Teacher, Lehigh Public Schools*

Without the incentive of a grade, students often failed to complete these assessments. And without the data from the formative assessments, teachers were not prepared to determine whether their students were ready to demonstrate mastery.

Moreover, while formative assessments serve as a critical tool in CBE settings to measure students' progress, teachers rarely use these assessments to advance students to other competencies. Most likely because of the emphasis on maintaining a singular instructional pace or keeping up with pacing guides. Additionally, few teachers at the middle and secondary levels used these formative assessments to alter content or pace for their students.

At the elementary level, however, and particularly in the lower elementary classrooms in Lehigh, teachers regularly used formative assessment to not only measure student preparedness for mastery but also adapt instruction and future assessments. For example, one lower elementary grade team used ability grouping across their grade level. These teachers used regular formative assessments and classroom observations to place students in appropriate groups and move them across levels when appropriate.

Project-Based Learning

Project-based learning is a teaching method through which students gain knowledge and skills by working for an extended period to investigate and respond to an authentic and engaging question, problem, or challenge.[17] Project-based learning can be an essential pedagogy within CBE classrooms, specifically increasing student engagement and ownership over learning. Project-based learning is distinctive in that the project is the vehicle through which teachers present content knowledge and skills. CBE implementation studies have found that the project-based approach is associated with positive outcomes such as increases in student intrinsic motivation, higher achievement, and promotion rates.[18]

Challenges and Successes

Davis Charter School is designed as a project-based school.

> **Success:** "I think many schools might claim that they do project-based learning. I would argue that we do project-based learning very well because of the level at which we do it. It is not an option. It is what we do."
>
> — *Administrator, Davis Charter School*

According to the Davis principal, one of the roles of teachers and administrators is to build their students' capacity to engage in project-based learning throughout their time at Davis. This means that the teachers and administrators at Davis Charter School have designed the school's instructional framework around project-based learning and have invested in ensuring the success of its approach. At the most basic level, Davis has purchased and made available the material resources students need to create projects using a variety of mediums, including but not limited to computer software, 3D printers, tools, and culinary equipment. They have also invested in providing their incoming 9th graders with the intellectual and tangible skills to engage in project-based learning. For instance, incoming 9th graders enroll in a "flex class," a workshop class where teachers introduce students to various project-making tools to facilitate students' familiarity with these tools.

> **Success:** "That class was made so kids would have a space to learn and do projects. And the hope is that once they see that there are all these project mediums they can use, then they'll start thinking in projects."
>
> — *Secondary Teacher, Davis Charter School*

Additionally, the 9th grade instructional team collaborates to create interdisciplinary projects, which help to model how future projects may integrate multiple subjects and competencies. While these 9th grade projects are more teacher-directed, there are increased opportunities for choice and voice as students advance at Davis. Davis' emphasis on scaffolding is essential to their success. Rather than expecting their students to adapt to the project-based learning environment immediately, Davis provides important scaffolded learning opportunities that allow their students to develop their understanding and competencies with project-based learning over time.

> **Success:** "If we can have the critical mass where our junior and senior population is comprised of students who have been here for two or three years, they're going to be able to serve as leaders and better the building culture that we want around here and value in project-based learning."
>
> — *Administrator, Davis Charter School*

The effect of this is that Davis can better address tensions related to students' expectations for how they learn and demonstrate mastery.

Personalized Instruction

In an educational system that determines advancement by the demonstration of content or skill mastery instead of instructional time—as is generally understood in a CBE framework—it is imperative that instruction is personalized for each student.[19] This personalization requires differentiation of content, delivery, and pacing for the individual student, with most conceptualizations of CBE centering on the significance of time.

Personalization is an educator-driven enterprise, and in the CBE framework three common elements should drive it: 1) systems that "accelerate and deepen student learning by tailoring instruction to each student's individual needs;" 2) "a variety of rich learning experiences that collectively prepare students for success for the college and career of their choice;" and 3) teachers expanding their role in "providing students with expert guidance and support to help them take increasing ownership of their learning."[20]

Challenges and Successes

Middle and secondary teachers in Lehigh and Mercer often struggled to provide personalization. In Mercer, especially, the emphasis on standardization and scripted curricula limited opportunities for personalization of learning. The use of this common structure makes it difficult for teachers to adjust their instruction better to meet their students' interests and learning needs.

> **Challenge:** "If you go into any {subject} class—any {grade} {subject} class, for example, they're all doing the exact same thing on the same day. They're reading the same story. They're doing the same vocabulary words. They're doing the same grammar. What it looks like in the classroom might be a little different but the content, for the most part, is the same."
>
> *— Secondary Teacher, Mercer Public School*

Standardization also extends to the curricula used in Mercer classrooms. Over time, departments have developed significant curricular resources that they are uncomfortable abandoning. There are expectations that the materials be used, making their adaption to a CBE-based approach of personalizing instruction beyond a set curriculum challenging. These kinds of relatively scripted curriculums limit opportunities for personalized instruction by restricting teachers' abilities to alter materials for students or to shift pacing. For instance, one elementary STEM teacher in Mercer told us she felt compelled to stay on pace with the program's pacing guide. Similarly, another elementary teacher in Mercer explained feeling "boxed in" by the curriculum. While she was willing to take "detours" to meet the needs of her students better, she described feeling immense pressure to stay on pace.

This emphasis on standardization was also present in Lehigh, this time in the districts' use of assessments. Lehigh students largely take the same assessments, and opportunities for alternatives are typically limited to reassessments rather than creating opportunities for students to exercise choice and voice.

In contrast, Davis Charter School's adoption of project-based learning made personalizing instruction relatively easy for their staff. Under a project-based approach, students engage in broad inquiries that facilitate flexibility and empower them to make decisions regarding their projects' substance and medium. For example, in one Davis classroom, students are creating urban dictionary entries. As part of this project, students explore their selected word or phrase in the context of competencies related to connotation, denotation, and etymology.

Much of the difficulty with personalizing instruction may reside in the higher grade levels. Indeed, our evidence suggests that elementary classrooms, particularly lower elementary (e.g., kindergarten and 1st grade), were successful in personalizing instruction for their students. While the elementary teachers engage in direct and whole group instruction, they make room for fluidity with either independent work time or small group instruction. In addition, elementary teachers are creating opportunities for personalized instruction in various ways:

- Curating learning activities that are developmentally appropriate and offer choices.

- Creating time for students to make choices about what they want to work on (WIN Time: What I Need Time).

- Creating opportunities for students to work in fluid ability groups and sharing students across classrooms and grade levels.

- At the lower elementary level specifically, teachers create opportunities for students to decide when they are ready to be assessed.

> **Success:** "Inside each {learning set} is two things: there's the paper activity that allows me to see evidence of their learning and then a manipulative activity that allows them that movement, but that is also at their level."
>
> *— Lower Elementary Teacher, Lehigh Public School*

The combination of the elementary schedule and emphasis on essential standards rather than content coverage provides the flexibility necessary for personalization in the lower grades.

Student Agency

Student agency is central to CBE and closely tied to the concept of personalization. However, whereas we identify personalized instruction as the set of decisions an educator makes to differentiate instruction among students, we identify student agency in terms of decisions made by students. In competency-based settings, students are expected to take ownership of their learning, shape their experiences, and become active agents in education instead of passive recipients.[21] This represents a notable shift from the status quo, as under CBE, students can express agency by making choices over content, assessment, and even the goals of schooling—choices typically made by teachers, administrators, or higher-level officials.

Challenges and Successes

As mentioned above, Davis is a project-based school. Given this, the concept of student agency is already present in Davis' approach and there are significant opportunities for student agency. Projects are primarily driven by student interest and the medium through which they demonstrate this mastery is also in their control. The teachers at Davis augment opportunities for student agency by providing necessary scaffolding for their students to learn about different mediums by which they can create projects. While other case districts have expressed a desire for students to demonstrate their knowledge in different ways, Davis has operationalized this process by providing both resources and important scaffolded learning opportunities, such as the project-based learning seminar for their 9th-grade students.

At Davis, the emphasis on student ownership also is evident in teaching practices outside of the project-based approach. For example, we rarely observed teachers using direct instruction or lecturing. Instead, teachers typically led group activities or met with students individually or in groups. In this setting, teachers act as facilitators.

Overall, opportunities for student agency are limited in the other two case districts, Mercer and Lehigh. Both teachers and students described the content as being dictated mainly by teachers or curricula guides, leaving little room for student choice. In the rare cases where students can make decisions about their content (e.g., independent reading, performance assessments), they are limited to selecting from options curated by their teachers. Thus, the learning goals and outcomes are still teacher-driven.

> **Challenge:** "My advanced placement kids they don't get a choice. We do what's going to be on the AP test, and that's just what's going to be."
>
> *— Secondary Teacher, Lehigh Public School*

While it may be that teachers are reluctant to cede control of their classrooms to their students, we find evidence to suggest that students have limited interest in making choices about content and how they will demonstrate what they've learned. For example, when asked if they wanted to direct their learning, many students expressed interest but said that they wanted to make these choices within a structure of support and guidance from their teachers. Other students expressed a strong desire to cede choice and control to their teachers.

In both districts, however, there are instances in which educators and administrators have adapted existing school strutures to support student agency. For example, Lehigh teachers use "flipped classrooms," where students are introduced to content at home, and classroom time is for student-directed inquiry. Lehigh also developed a strategy they call WIN (What I Need) time, which provides students time to work on competencies they choose because they believe they need additional time or support to reach mastery. These kinds of practices place more onus on the student for learning.

In addition, both districts have adapted their advisory programs to serve multiple purposes, one of which is academic support. As part of the advisory periods, students decide with which teachers to meet about academic support or reassessment. Additionally, students have opportunities to work on executive functioning skills (e.g., goal setting).

> **Success: "I love the opportunity for students to travel from other classrooms to come to my room to get the extra help, to take the makeup tests that they weren't ready for the first time, and to provide remediation for struggling students if they take advantage of it. We need to have that sort of flexible time every single day to accommodate those students who need the flexibility."**
>
> **— *Secondary Teacher, Mercer Public School***

In addition to the advisory program, the middle grades school in Lehigh also briefly introduced an extended day program, which provided further opportunities for flexible pacing and personalized instruction. Ultimately, these successes are limited because these opportunities primarily target students below teacher pace, where students working at or above pace have opportunities to participate in electives or extracurriculars.

Competency-Based Credentialing

Transitioning to a competency-based framework allows districts to modify how they give grades or credentials to students. Grading within traditional schooling is not necessarily reflective of student competency, given that grades often include considerations for things like attendance or participation. Under CBE, credentials should be assigned exclusively upon demonstration of competency.[22] To this end, districts may consider transcripts that identify content and skills students have mastered instead of traditional letter grades.

Beyond what a student's credentials look like, this component also explores the decisions behind how credentials are awarded. For instance, the assigning of grades may be standardized to align

with CBE principles, with different scale measures relating to varying levels of mastery. Marzano and colleagues,[23] in their handbook on CBE, suggest the use of proficiency scales, which attempt to measure the level of performance on a given task the student has mastered.

Challenges and Successes

To date, 21j pilot districts' efforts to incorporate competency-based credentialing have been limited. Administrators identified several barriers to implementing alternative credentialing. First and foremost, at the secondary level, schools faced immense pressure to conform to the expectations of post-secondary institutions. Mercer's high school principal spoke at length about this dilemma, noting that they had to weigh how changes to grading or credentialing would affect students' transcripts. In this instance, districts feel forced to negotiate between competing demands—fidelity of implementation of their instructional policy or improving their students' opportunities for post-secondary attainment.

> **Challenge:** "Other students in {county name} and {county name} were getting scholarships from universities because they have weighted grades. And we didn't have weighted grades, but our students would have competed for {those scholarships} too, so we've gone to weighted grades."
>
> — *Administrator, Mercer Public School*

Administrators across the case districts explained that disrupting normative expectations for credentialing is another significant barrier. Administrators elaborated on this expectation, suggesting that there would be more room for fluctuation in students' grades in a competency-based system where mastery dictated outcomes. This ultimately may leave parents uncertain of their students' performance. Administrators recognized that in a competency-based setting, learning is a process and not always linear. As many of them were parents themselves, administrators empathized with these parents who were trying to adjust their understanding and expectations for schooling. Competency-based credentialing proves to be a significant challenge because schools are not simply trying to find alignment with other institutions but also negotiate normative expectations from students and parents who are also socialized to experience schooling differently.

IMPLICATIONS FOR SUCCESSFUL IMPLEMENTATION

The data we present in this brief surface several suggestions for the successful implementation of CBE.

1. **Commit to professional development**. While some CBE districts have invested significant resources in an instructional coaching model, these resources are largely going underutilized. To improve implementation efforts, districts need to do more than invest in and mandate instructional coaching. Instead, districts should provide release time for teachers to participate. In addition,

coaches need explicit and substantial training in CBE that will offer them both a sense of expertise and credibility. Moreover, professional development should target teachers' normative practices and beliefs that hinder districts' abilities to implement critical components of CBE. Instructional coaching, professional development sessions, and professional learning communities could provide teachers opportunities to engage in discussions that unpack and challenge their practice's professional norms, giving teachers a space to discuss and reflect on their changing role in a CBE system.

2. **Improve communication with students about larger learning goals**. District leadership teams have invested significant time in developing their profiles of a graduate. However, students were limited in their capacity to articulate these goals. As one of the goals of CBE is for students to become co-owners of their learning, districts should consider how to better communicate learning goals to their students. This will enable students to have a better idea of what is expected of them and to make choices that align with those expectations.

3. **Invest in student-centered pedagogies (e.g., project-based learning and teacher-curated curricula).** The adoption of student-centered pedagogies would create more opportunities for students to choose content and demonstrate mastery. Additionally, relying less on scripted curricula would also improve chances for teachers to provide alternative paces.

4. **Provide students scaffolded learning opportunities to help them accept agency.** Districts can provide their students with more scaffolding for taking on greater responsibility in directing their learning. As other states and districts begin to consider adopting CBE, the evidence from Lehigh demonstrates the benefits of gradual implementation. More elementary teachers are currently implementing core components of CBE and providing crucial scaffolding for students as they progress in this framework. Other districts might consider starting these programs in their elementary schools and progressively adopting and adapting practices as students progress.

5. **Organize schedules around competencies rather than content.** At the secondary level, the traditional school schedule makes it challenging to implement the kinds of innovations seen at the elementary level (e.g., classes scheduled at a different time). While competencies exist for all classes, classes are organized by content at the secondary level, not specifically competencies, making it difficult for students to advance upon mastery or for teachers to share students. Districts should consider alternative schedules, clustering classes where students are working on similar competencies. This would create opportunities for students to move at their own pace and allow teachers to provide more developmentally appropriate instruction.

ENDNOTES

1. Walser, N. (2021, August 13). Emerging from the pandemic, districts look to expand personalized competency-based education. The *Washington Post Online.* https://www.washingtonpost.com/local/education/schools-competency-based-education/2021/08/13/a8faac98-fac0-11eb-9c0e-97e29906a970_story.html; Owen, B., & Lee, J. (2021, April 15). From pandemic to possibility: Now is the time to consider competency-based education. *Getting Smart.* https://www.gettingsmart.com/2021/04/15/from-pandemic-to-possibility-now-is-the-time-to-consider-competency-based-education/; Barnum, M. (2020, March 28). Pandemic boosts interest in 'mastery-based' learning, though evidence remains thin. *Chalkbeat.* https://chalkbeat.org/2020/5/28/21272602/ed-tech-mastery-competency-based-learning-coronavirus

2. Colby, R. L. (2019). *Competency-based education: A new architecture for K-12 schooling*. Harvard Education Press.

3. Evans, C. M., Landl, E., & Thompson, J. (2020). Making sense of K-12 competency-based education: A systematic literature review of implementation and outcomes research from 2000 to 2019. *The Journal of Competency-Based Education*, *5*(4), e01228.

4. Evans, C. M., Landl, E., & Thompson, J. (2020). Making sense of K-12 competency-based education: A systematic literature review of implementation and outcomes research from 2000 to 2019. *The Journal of Competency-Based Education*, *5*(4), e01228.; Le, C., Wolfe, R. E., & Steinberg, A. (2014). *The past and the promise: Today's competency education movement.* Boston, MA: Jobs For the Future. https://www.jff.org/resources/past-and-promise-todays-competency-education-movement/; Levine, E., & Patrick, S. (2019). *What is competency-based education? An updated definition.* Aurora Institute. https://aurora-institute.org/resource/what-is-competency-based-education-an-updated-definition/; Lewis, M. W., Eden, R., Garber, C., Rudnick, M., Santibañez, L., & Tsai, T. (2014). *Equity in competency education: Realizing the potential, overcoming the obstacles.* Boston, MA: Jobs for the Future. https://www.jff.org/resources/equity-competency-education-realizing-potential-overcoming-obstacles/; Sturgis, C., & Casey, K. (2018). *Designing for equity: Leveraging competency-based education to ensure all students succeed.* CompetencyWorks Final Paper, Aurora Institute (formerly iNACOL). https://aurora-institute.org/wp-content/uploads/CompetencyWorks-DesigningForEquity.pdf

5. To protect participant identity, pseudonyms were randomly assigned to each district and participants/roles were anonymized.

6. Torres, A. S., Brett, J., Cox, J., & Greller, S. (2018). Competency education implementation: Examining the influence of contextual forces in three New Hampshire secondary schools. *AERA Open*, *4*(2), 2332858418782883.

7. Stump, E. K., & Silvernail, D. L. (2015). *Proficiency-based diploma system in Maine: Implementing district-level high school graduation policies phase III report.* Maine Education Policy Research Institute in the Center for Education Policy, Applied Research, and Evaluation. https://cpb-us-w2.wpmucdn.com/wpsites.maine.edu/dist/e/97/files/2016/09/Proficiency-Based_Diploma_System_in_Maine_Implementing_District-Level_HS_Graduation_Policies_Phase_III-2mk6u66.pdf

8. Stump, E. K., Connor, E., Fallona, C., & Doykos, B. (2017). *Proficiency-based high school diploma systems in Maine: Implementing a standards-based system and proficiency-based graduation policies in a public high school (a case study).* Maine Education Policy Research Institute in the Center for Education Policy, Applied Research, and Evaluation. https://usm.maine.edu/sites/default/files/cepare/PBDS17_HS_policy_implementation_case%20study.pdf

9. Steiner, E. D., Hamilton, L. S., Stelitano, L., & Rudnick, M. (2017). *Designing innovative high schools: Implementation of the opportunity by design initiative after two years*. RAND Corporation. https://www.rand.org/pubs/research_reports/RR2005.html

10. Evans, C. M., & DeMitchell, T. A. (2018). *Mapping out the terrain: Northeast principals' perceptions of the barriers and facilitators to implementing K-12 competency-based education (policy brief #18-02).* Durham, NH: University of New Hampshire, Education Department, Division of Educational Studies. https://www.researchgate.net/publication/328356063_Mapping_out_the_Terrain_Northeast_Principals'_Perceptions_of_the_Barriers_and_Facilitators_to_Implementing_K-12_Competency-Based_Education_October_2018; Stump, E. K., Doykos, B., & Fallona, C. (2016). *Proficiency-based high school diploma systems in Maine: Local implementation of state standards-based policy phase IV policy report.* Maine Education Policy Research Institute in the Center for Education Policy, Applied Research, and Evaluation. https://digitalcommons.usm.maine.edu/cepare_proficiency/4/

11. Spady, W. G. (1977). Competency based education: A bandwagon in search of a definition. *Educational Researcher*, *6*(1), 9-14.

12. Spady, W. G., & Mitchell, D. E. (1977). Competency based education: Organizational issues and implications. *Educational Researcher*, *6*(2), 9-15.

ENDNOTES *(continued)*

13. Colby, R. L. (2019). *Competency-based education: A new architecture for K-12 schooling*. Harvard Education Press.

14. Pane, J. F., Steiner, E. D., Baird, M. D., & Hamilton, L. S. (2015). *Continued Progress: Promises Evidence on Personalized Learning.* RAND Corporation. https://www.rand.org/pubs/research_reports/RR1365.html; Steele, J. L., Lewis, M. W., Santibanez, L., Faxon-Mills, S., Rudnick, M., Stecher, B. M., & Hamilton, L. S. (2014). *Competency-Based Education in Three Pilot Programs: Examining Implementation and Outcomes*. RAND Corporation. https://www.rand.org/pubs/research_reports/RR732.html; Stump, E. K., Doykos, B., & Fallona, C. (2016). *Proficiency-based high school diploma systems in Maine: Local implementation of state standards-based policy phase IV policy report.* Maine Education Policy Research Institute in the Center for Education Policy, Applied Research, and Evaluation. https://cpb-us-w2.wpmucdn.com/wpsites.maine.edu/dist/e/97/files/2016/09/Proficiency-based_HS_Diploma_Systems_Maine_Local_Implementation_State_Standards-based_Policy_Phase_IV-22nwu83.pdf; Stump, E. K., Connor, E., Fallona, C., & Doykos, B. (2017). *Proficiency-based high school diploma systems in Maine: Implementing a standards-based system and proficiency-based graduation policies in a public high school (a case study).* Maine Education Policy Research Institute in the Center for Education Policy, Applied Research, and Evaluation. https://usm.maine.edu/sites/default/files/cepare/PBDS17_HS_policy_implementation_case%20study.pdf

15. Colby, R. L. (2019). *Competency-based education: A new architecture for K-12 schooling*. Harvard Education Press. Torres A. S., Brett, J., & Cox, J. (2015). *Competency-based learning: Definitions, policies, and implementation.* Regional Educational Laboratory Northeast & Islands. https://www.researchgate.net/publication/316558365_Competency-Based_Learning_Definitions_Policies_and_Implementation

16. Slavin, R. E. (1987). Mastery learning reconsidered. *Review of Educational Research, 57*(2), 175-213. Anderson, L. W., & Burns, R. B. (1987). Values, evidence, and mastery learning. *Review of Educational Research, 57*(2), 215-223. Spady, W. G. (1977). Competency based education: A bandwagon in search of a definition. *Educational Researcher, 6*(1), 9-14.

17. Buck Institute for Education (2021, October 26). What is PBL? *PBL Works* (Project-Based Learning). https://www.pblworks.org/

18. Hayes, E., Zeiser, K., Surr, W., Hauser, A., Cylmer, L., Watson, J. & Yang, R. (2016). *Looking under the hood of competency-based education: The relationship between competency-based education practices and students' learning skills, behaviors, and dispositions*. American Institutes for Research. https://www.air.org/resource/report/looking-under-hood-competency-based-education-relationship-between-competency-based; Steele, J. L., Lewis, M. W., Santibanez, L., Faxon-Mills, S., Rudnick, M., Stecher, B. M., & Hamilton, L. S. (2014). *Competency-based education in three pilot programs: Examining implementation and outcomes*. RAND Corporation. https://www.rand.org/pubs/research_reports/RR732.html

19. Colby, R. L. (2019). *Competency-based education: A new architecture for K-12 schooling*. Harvard Education Press. Casey, K., & Sturgis, C. (2018). *Levers and logic models: A framework to guide research and design of high-quality competency-based education systems.* CompetencyWorks Report, Aurora Institute (formerly iNACOL). https://www.aurora-institute.org/wp-content/uploads/CompetencyWorks-Levers-and-Logic-Models.pdf; Torres, A. S., Brett, J., Cox, J., & Greller, S. (2018). Competency education implementation: Examining the influence of contextual forces in three New Hampshire secondary schools. *AERA Open, 4*(2), 2332858418782883.

20. Pane, J. F., Steiner, E. D., Baird, M. D., & Hamilton, L. S. (2015). *Continued progress: Promises evidence on personalized learning* (pp. 2-3). RAND Corporation. https://www.rand.org/pubs/research_reports/RR1365.html

21. Spady, W. G. (1978). The concept and implications of competency-based education. *Educational Leadership, 36*(1), 16-22.

22. Spady, W. G. (1977). Competency based education: A bandwagon in search of a definition. *Educational Researcher, 6*(1), 9-14.

23. Marzano, R. J., Norford, J. S., Finn, M., & Finn III, D. (2017). *A handbook for personalized competency-based education*. Marzano Research.

CREDITS

RESEARCH WITH CONSEQUENCE