

LOOKING UNDER THE HOOD OF COMPETENCY-BASED EDUCATION:

*The Relationship Between Competency-Based
Education Practices and Students' Learning
Skills, Behaviors, and Dispositions*

EXECUTIVE SUMMARY



Competency-based education is gaining popularity in schools nationwide, and research is just beginning to catch up. A growing practice, competency-based education makes student mastery of learning goals—rather than seat time—the metric to determine student credit and progression. Competency-based education approaches can offer students greater opportunities for deep and personalized learning; as students work toward achieving competency at their own pace, they typically experience more individualized support as well as greater autonomy, flexibility, and responsibility over their own learning—conditions that we would expect to increase academic engagement, motivation, self-efficacy and other learning capacities that predict academic success.

This study takes a closer look at how schools implement competency-based education, and examines how ninth grade students' experiences of competency-based education practices are related to these “learning capacities,” or the skills, behaviors, and dispositions that students need to learn effectively. Through a careful analysis of competency-based education in a group of high schools in three states, researchers sought to understand which competency-based education practices, if any, are associated with positive changes in students' learning capacities during their first year of high school.

WHILE THE TERM “COMPETENCY-BASED EDUCATION” IS BROAD AND MAY REFER TO A RANGE OF POLICIES AND PRACTICES, ITS CORE FEATURES INCLUDE:

- Clear, specific learning targets for what students should know and be able to do in order to advance and earn credit.
- Assessment, support, and monitoring of individual students' progress as they work toward meeting these targets.
- Requirements that students demonstrate mastery of competencies before they advance or earn credit.
- Flexible pacing for students who are ready to move more quickly or who need more time to achieve competency.





STUDY DESIGN

The study included 10 schools, representing three states that participated in the Innovation Lab Network facilitated by the Council of Chief State School Officers. All are schools that state and local administrators identified as implementing competency-based learning, most for at least two years. Researchers then selected eight comparison high schools serving similar student populations, most in the same districts or counties, which, according to administrators, had not adopted competency-based education.

TEACHER AND ADMINISTRATOR SURVEY

All core content teachers and at least one administrator from each school were invited to take a survey in spring 2015. In all, 257 core content classroom teachers and 30 administrators completed the survey, reporting on the implementation and frequency of use of competency-based education practices across six domains [see box on p. 4].

STUDENT SURVEY

Ninth-grade students in a subset of four competency-based education and four comparison schools were also surveyed; a total of 1054 students participated. A baseline survey, taken in September and October 2014, asked students questions related to their learning capacities in three domains:

- **Academic mindsets and dispositions:** Attitudes and beliefs about oneself as a learner, as well as feelings of connection and engagement in school.
- **Self-regulated learning skills:** Strategies students use to engage in and complete learning tasks.
- **Academic behavior:** Observable signs that a student is engaged and putting forth effort, such as preparation for class.

In a follow-up spring survey, students reported on the same set of learning capacities as well as their experiences with competency-based education practices over the course of the year.

ANALYSIS

Researchers compared implementation of competency-based education practices across the CBE and comparison schools. To determine whether changes in student learning capacities between the fall and spring of the ninth grade were associated with students' experiences of competency-based education practices, researchers performed regression analyses that controlled for student demographic characteristics and eighth-grade achievement.

Competency-Based Education Practices

The study sought a more fine-grained understanding of competency-based education by asking teachers, administrators, and students to report on the extent to which common competency-based education policies and practices were evident in their schools and classrooms in six domains.

LEARNING TARGETS

Explicit learning targets (or competencies) based on rigorous standards are established and shared with students.

MEASUREMENT OF LEARNING

What counts toward course grades, course credit, and evaluation of proficiency is demonstrated mastery of learning targets, rather than level of participation, effort, or time spent in the classroom.

INSTRUCTIONAL APPROACHES AND SUPPORTS

Instruction and support are individualized to the needs of the student. Teachers make use of technology and varied instructional strategies to individualize instruction. Students may have considerable autonomy, responsibility, and choice regarding how they learn.

WHEN AND WHERE LEARNING TAKES PLACE

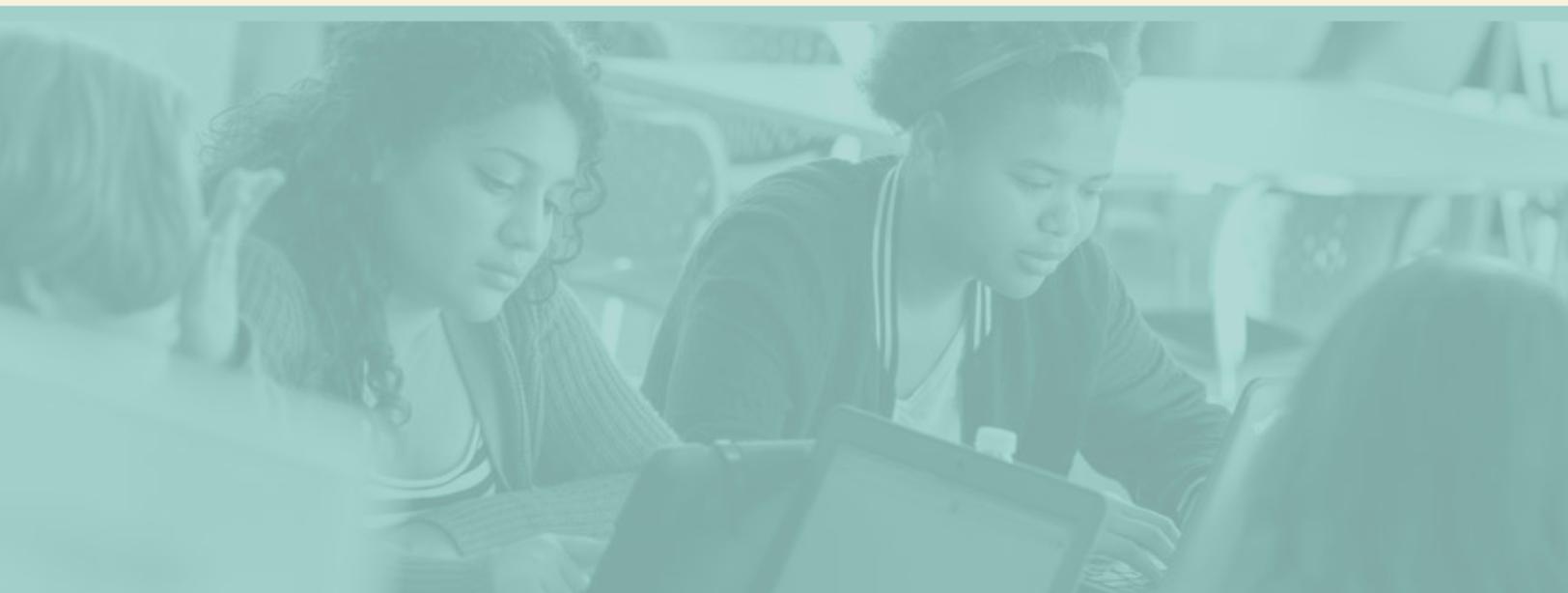
Students have flexibility regarding when and where they learn and may participate in projects, online coursework, internships, and other learning activities outside of the school setting and schedule.

ASSESSMENT STRATEGIES

Learning is continuously assessed, and students receive feedback and support based on individual needs. Students may have latitude to retake summative assessments as well as greater flexibility and choice regarding the ways in which they can demonstrate mastery.

PACING AND PROGRESSION

Credit, course progression, and grade-level advancement are contingent upon demonstrated mastery of required competencies. Students may work at a faster or slower pace than their peers, as appropriate.





FINDINGS

One of the most striking findings of the study was that the implementation of competency-based education practices was neither comprehensive nor uniform, varying greatly across and within both groups of schools. While more teachers in the schools identified as CBE reported using specific competency-based education practices than teachers in the comparison schools, they did not do so consistently. As surprising, many teachers in schools that had not explicitly adopted a competency-based education approach nonetheless reported using practices associated with competency-based education, such as requiring students to master specific learning targets, meeting with students individually or in small groups to discuss their progress, and allowing students to retake summative assessments. Students in both sets of schools also reported experiencing a range of competency-based education practices, even experiencing different types of practices

in mathematics and English language arts classrooms within the same school.

These findings suggest that the distinction between competency-based and more traditional models is not as sharp as expected, and that practices may fall along a continuum, even across classrooms within a school.

The lack of strict distinction among school types made a direct comparison between CBE and comparison schools less useful than anticipated at the outset of the study. The researchers, therefore, adjusted their analysis to examine whether students' experiences with specific competency-based education practices were associated with changes in their learning capacities, no matter which type of school they attended.

Regardless of setting, students' self-reported experiences of specific competency-based education practices were positively associated with changes in their learning capacities.

FIVE TRENDS STOOD OUT:

- 1 Intrinsic motivation (i.e., students' possession of an internal drive to engage in their education) was the measured learning capacity most strongly associated with competency-based education practices.** Several competency-based education practices—including the provision of clear learning targets, use of varied strategies, and opportunities to earn credit beyond the classroom—were related to an increase in students' intrinsic motivation.
- 2 Students' perceived clarity of learning targets was positively associated with the greatest number of favorable changes in their learning capacities.** Favorable changes included intrinsic motivation, belief about one's control over school outcomes (locus of control), self-management, perceived utility of math and English, and preparation for courses.
- 3 Some practices appear to be related to positive changes in math but not English language arts.** In math classes, several practices were associated with positive change in self-efficacy, but the same associations between practices and self-efficacy were not observed in English language arts.
- 4 Providing varied and flexible instruction was one of the only CBE practices favorably related to students' self-regulated learning skills.** Offering a variety of instructional strategies was positively associated with positive changes in students' self-monitoring of understanding and use of cognitive control.
- 5 Some learning capacities do not appear to be strongly associated with any specific competency-based education practices.** Students' sense of belonging in school, self-efficacy in English language arts, theories of learning, and expectations and planning for future education were not related to the presence of competency-based education practices.





CONCLUSION

This study found that school-level implementation of competency-based education is neither comprehensive nor uniform, suggesting that the model may still be evolving. There is much still to learn. To better understand how competency-based education approaches influence learning, future research should pursue several additional directions.

- **Impact on underserved and underrepresented student groups.** There is little or no previous research regarding the influence of competency-based education practices on outcomes for students from low-income households, traditionally underrepresented racial groups, and English language learners. Understanding the impact for these subpopulations is an important area for future research.
- **Links between implementation, student experiences, and outcomes.** This study focused on associations between students' own experiences and changes in their learning capacities. Future research designs should also link students to teachers within schools, thereby examining the relationships among classroom-level practices, students' experiences, and student outcomes.
- **Relationships among competency-based education practices.** It may be that some competency-based education practices must be implemented together to positively influence student learning. Future studies with larger populations should explore potential interactions among practices.



The Nellie Mae Education Foundation is the largest philanthropic organization in New England that focuses exclusively on education. The Foundation supports the promotion and integration of student-centered approaches to learning at the middle and high school levels across New England—where learning is personalized; learning is competency-based; learning takes place anytime, anywhere; and students exert ownership over their own learning. To elevate student-centered approaches, the Foundation utilizes a four-part strategy that focuses on: building educator ownership, understanding and capacity; advancing quality and rigor of SCL practices; developing effective systems designs; and building public understanding and demand. Since 1998, the Foundation has distributed over \$180 million in grants.



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