Executive Summary

I n 2022, the Belizean government set forth a vision for education reform that leverages competency-based education (CBE)[1] to transform teaching and learning experiences and prevent dropout in secondary schools. As part of this educational reform, secondary schools piloted CBE in lower secondary classes during the 2023-2024 school year. With the end of the pilot year, the Belizean school system has entered a critical period in which data on the drivers of successful CBE implementation are needed to support the institutionalization of CBE.

To assist the Government of Belize in realizing its vision for education reform, IREX, an international development and education nonprofit, partnered with the Belize-based LevelEd research consultancy from May to June 2024 to study key factors for successful CBE implementation among principals and teachers in government-aided schools.[2] In line with the National Curriculum Framework, which articulates the importance of "technology as a learning tool," the study included a specific focus on the availability and use of technology to implement CBE. Guided by the Research on Improving Systems of Education (RISE) framework,[3] the study focused on frontline educators' perspectives, needs, and behaviors related to CBE and explored teachers' perceptions of how educational authorities have aligned key aspects of the system to facilitate teachers' shift toward the CBE innovation.

Using a mixed methods triangulation design, the study team recruited educators from all six districts of Belize and conducted focus group discussions (FGDs) with teachers (n=9; participants=46), surveys with teachers (n=163), and technology inventories with principals (n=13). Quantitative data were analyzed descriptively and differences across teacher gender and locality (i.e., urban; rural) were explored. Qualitative data were analyzed using rapid qualitative analysis of pre-defined constructs from the RISE framework. The Ministry of Education, Culture, Science and Technology (MoECST) provided ethical approval for the study. Below, study findings and potential solutions are summarized and the full text and study results can be found here.

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1. The Belizean National Curriculum Framework defines competency as "the ability to use learned knowledge, skills, and attitudes appropriately in real situations and contexts and within a defined set of values" and provides multiple strategies that teachers should use for competency-based education including peer communication and interaction, authentic artifacts, kinaesthetic, project-based, problem-based, and inquiry-based learning, and performance assessment approaches.

2. This study selected government-aided schools because they comprise nearly half of Belize's secondary schools. Teachers in these schools may have diverse insights because although their schools receive public grants, the schools are owned and managed by different religious or community groups.

3. Silberstein, J., & Spivack, M. (2023). *Applying systems thinking to education: Using the RISE systems framework to diagnose education systems* (Report No. 2023/051). https://doi.org/10.35489/BSG-RISE-RI_2023/051

Study results

OVERALL THE STUDY FOUND

Teachers are familiar with CBE in the National Curriculum Framework and engaged in a range of foundational CBE practices. In surveys, 55% of teachers self-reported that they were very or moderately familiar with Belize's National Curriculum Framework. In surveys, teachers most frequently reported engaging in strategies such as allowing students to take extra time to finish a topic (61%; n=90) and least frequently reported creating written, individualized learning plans for learners (25%; n=36).

Overall, teachers were most likely to use technology to perform tasks that did not rely on learner engagement. For example, teachers most frequently reported using technology to track student grades or credits (59%; n=94) on a weekly basis. Teachers were least likely to use technology to deliver online classes to students remotely; only 9% (n=14) of teachers used technology for online classes on a weekly basis.

Limited finances for devices, quality internet, and materials for project-based learning within and beyond the classroom create barriers to full and equitable CBE implementation. Approximately 65% (n=98) of teachers felt that they lacked the materials and resources needed to implement CBE. Despite government investment in Chromebooks for students and internet upgrades, 56% (n=89) and 44% (n=70) of teachers reported that lack of access to devices and having insufficient internet access were key barriers to implementation of CBE, respectively. Additionally, many teachers noted that they lacked materials to engage in project-based learning, a core CBE strategy, and that many students could not afford to purchase these materials on their own. Limited student access to resources at home and at school inhibited the ability of some students, especially students of lower socioeconomic status, to participate in CBE assignments, assessments, and core CBE strategies.

There are small but important differences across teachers by gender. Female teachers reported higher levels of familiarity with CBE (59%; n=57) compared to male teachers (49%; n=27). Female teachers were also more likely to report using any CBE strategies and to have received sufficient training on CBE. However, female teachers were also less likely (35%; n=34) to report that CBE will lead to improved learning outcomes for students compared to male teachers (45%; n=24).

Rural teachers report greater barriers to CBE implementation and reduced motivations to implement CBE compared to urban teachers.

Rural teachers were less likely (41%; n=12) to report familiarity with CBE compared to urban teachers (59%; n=72). Rural teachers were also less likely to report positive beliefs and motivations about CBE and less likely to use CBE strategies, especially those that involve technology, compared to urban teachers. Finally, rural teachers were far less likely to report having sufficient materials to conduct CBE compared to all other groups examined (i.e., urban, male, and female teachers).

Teachers express intrinsic motivations for CBE but lack extrinsic motivations and often cannot describe how, if at all, they are held accountable for CBE implementation.

Approximately three in every four teachers (78%; n=123) expressed that they were motivated to engage in CBE because it provides concrete methods for connecting learning to the real world. However, only 20% (n=30) of teachers believe that they would be evaluated more positively by school leadership if they could implement CBE successfully. Many teachers described limited understanding of specific expectations from supervisors regarding what CBE should look like in the classroom. Few teachers could articulate how, if at all, their performance on CBE would be factored into their evaluation or

qualifications for advancing in rank, suggesting a low level of extrinsic motivation.

Teachers may resist CBE adoption in lower secondary classes because of pressure from the education system, parents, and employers to prepare students for the content-heavy Caribbean Secondary Education Certificate (CSEC) implemented by the Caribbean Examinations Council (CXC).

Teachers expressed incoherence between the CBE-based curriculum in lower secondary (Forms 1 and 2) and the exam-based and content-heavy curriculum that is oriented to the CSEC in upper secondary (Forms 3 and 4). In addition, teachers reported feeling pressured to move students on to new subjects before they achieve competency, often because of pressure to teach to the CSEC. Approximately 50% (n=74) of all teachers reported that students frequently moved on to the next topic, unit, or competency area along with their classmates, regardless of whether they had achieved mastery. This pressure, imposed by the CSEC's high stakes and potential consequences on student opportunities after secondary school, is also reinforced by parents and private sector employers who expect numeric grades and excellent performance on the CSEC. These misalignments reduced teachers' motivation to engage in CBE because teachers were concerned about the extent to which existing CBE curricula prepares learners for future requirements.
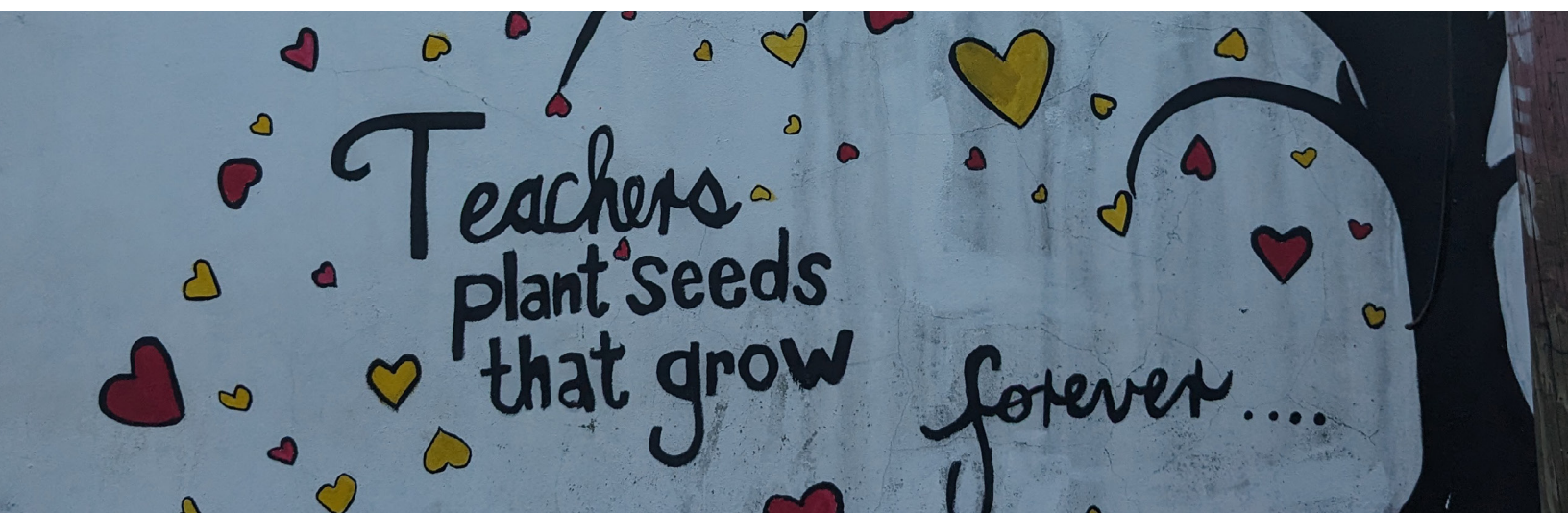
Potential solutions

Findings from this study point to several potential solutions that may facilitate CBE implementation, which are offered to the Ministry of Education, Culture, Science and Technology (MoECST) and its partners for consideration. These findings are relevant to government-aided secondary schools and may not necessarily reflect the needs of educators at private or public schools.

Address teachers' concerns around misalignments between CBE and the CSEC. The Ministry may consider several pathways to address the potential resistance among teachers to implement CBE because of pressures associated with the CSEC. First, the Ministry may consider adjusting the CBE curriculum to better align with the CSEC in upper secondary and articulating these linkages to teachers. Second, the Ministry may consider providing curricular materials and professional development on the use of CBE strategies to implement the CSEC-based curriculum in Forms 3 and 4, which could support the implementation of CBE in a more consistent manner throughout secondary schools. Finally, while this would be a substantial reform, the Ministry could consider an alternate testing regime that would test competencies acquired, thus incentivizing CBE curriculum uptake.

Strengthen and articulate systems of accountability and incentives for CBE implementation to enhance teachers' extrinsic motivations. To address teachers' desires for clear, written guidance on how CBE performance factors into teacher evaluation and advancement, the Ministry may consider 1) clarifying expectations around CBE (e.g., including CBE expectations in job descriptions); 2) formalizing how CBE performance factors into appraisals, teacher rank, and/or pay grade; 3) creating a framework that outlines professional development practices and needs and equitably serves teachers; and 4) developing data reporting tools and accountability metrics for school leaders and district/regional education officials related to CBE implementation.

Engage with employers and families to raise awareness of changes to curriculum and how they might relate to the CSEC. Teachers expressed a great deal of pressure to support students in meeting the expectations of parents and employers while also adhering to the values of CBE. To alleviate this pressure, it may be beneficial for the Ministry and school leaders to develop a community and family awareness plan to raise awareness of and buy-in for CBE among parents, students, and employers who are accustomed to the grading and testing systems associated with the CSEC and prior curricula.

Strengthen local professional development (PD) support for CBE implementation so that teachers, especially rural and new teachers, have ongoing, regular, and hands-on support. Regular PD activities could be provided through professional learning communities, peer-to-peer mentorship, and when needed, engagement with external subject matter experts. Based on teacher responses, content areas for consideration in future PD may include: 1) subject-matter specific CBE strategies; 2) tangible methods of assessing learners' progress; 3) strategies for deciding when to move learners to a new topic, unit, or subject area; 4) approaches for supporting learners with disabilities to engage with CBE; 5) applications of different technological devices and applications to facilitate effective student learning ; 6) approaches for implementing project-based learning with resource constraints in mind; and 7) strategies for monitoring students' use of technology in the classroom to prevent academic misconduct and to support their focus on education-related tasks. Although pre-service training was not explicitly examined in this study, findings suggest that the Ministry may also consider integrating CBE strategies into pre-service training so that newer teachers can enter the workforce prepared to implement CBE.

Support equitable learning opportunities for students by increasing finances for technological devices, project-based learning, and internet for teachers and students within and outside of school hours. Teachers applauded efforts that have increased the distribution of devices (e.g., laptops, projectors etc.) and internet and improved access for both teachers and students. At the same time, they identified persistent gaps in access that disproportionately affect learners of low socio economic status and rural teachers. To maintain current levels of device access, it may be beneficial to invest in maintenance of current technological devices. To further extend access and advance equitable learning opportunities and outcomes, it may be beneficial to expand distribution of devices to teachers (such

as projectors) and to students (such as laptops and tablets) through loaning programs, and to improve internet access within classrooms and across communities. Finally, the Ministry and school leaders may consider providing additional materials and/or professional development to facilitate project-based learning opportunities.

Study strengths and limitations

Several strengths underpin this study. First, the study triangulated data from multiple sources (surveys, technology inventory, and focus groups) and stakeholders (principals and teachers) to support the validity of the findings. Second, although the study had varying degrees of participation across schools, participants across all six districts were engaged in either FGDs, surveys, technology inventories, or a combination of methods supporting the generalizability of findings. Third, the study checked key results with multiple key stakeholders involved in the education system, further contributing to the validity of the findings.

One key limitation of this study is that research was only conducted in government-aided secondary schools, excluding those schools designated as private or public, which may have brought further nuance to these findings. Furthermore, in some instances, LevelEd staff had provided professional development training to teachers involved in FGDs, which may have contributed to rapport building but also had the potential to lead to social desirability bias. Participants were assured that their responses would not impact their relationships with LevelEd or the education system. Their responses regarding professional development trainings reflected a wide range of opinions, suggesting that this limitation did not substantively impact the study results.

Conclusion

Findings from this study suggest that initial progress has been made in supporting teachers to implement CBE strategies in government-aided secondary schools: frontline educators are using some CBE strategies and generally perceive the envisioned goals of CBE in a positive light. Teachers have also articulated real concerns around feasibility that, with the continued leadership of the Ministry and local education officials, can be addressed through systems alignment to realize the promise of CBE. Future studies should engage with other key stakeholders, including students, parents, master teachers, principals, and supervisors, to explore their unique perspectives on CBE to increase the uptake, impact, and sustainability of the CBE innovation.