



The Composite Learning Index

Highlighting Student Needs Before It's Too Late

Boston Plan for Excellence in Public Schools

Tackling Boston's Drop-Out Crisis

In Boston and across the country, too many young people leave school without a diploma and the skills they need to lead healthy, productive adult lives. With Superintendent Carol Johnson's "Acceleration Agenda," the Boston Public Schools (BPS) aims to dramatically improve its graduation rate and increase the number of graduates who are ready for success in college and careers. Reaching that goal will require new ways of organizing resources to reach the young people who are most at risk of dropping out of school or who are struggling to meet increased academic challenges.

The first step is to identify students who will need more help and those who are ready for an academic push, as soon as possible. To do that the Boston Plan for Excellence (BPE) developed the Composite Learning Index (CLI), an easy-to-use tool that provides schools with key data on each student before the school year begins.

How Early-Warning Data Can Help

The CLI empowers school teams to act. Current research has surfaced patterns in middle and high school performance and social behavior that are highly predictive of a student's chances of dropping out.* But while factors such as poor attendance and course failure point toward students who are at risk of dropping out, each student's

ultimate fate is not a given. Teachers and school leaders have the power to break negative patterns by acting early. The CLI gives them a heads-up on the factors that matter most so that they can use resources strategically to get struggling students back on track. CLI data also point to students who are ready for more academic challenge.

The CLI is systematic. School staff sometimes knows which students are struggling and which are likely to drop out. Few schools, however, have a process that looks at each student across multiple risk factors and can show the combined effect of those factors. The CLI applies weights to all of the factors that are predictive of dropping out and provides a combined risk level for each student, available before the start of the school year. With a reliable predictor of risk, the principal-headmaster and teachers know which students to start helping right away.

The CLI puts everything in one place. The CLI pulls important pieces of data that are housed in different places into a single, easy-to-use tool that teachers and principals can

manipulate and supplement with data of their own. The CLI is updated every academic quarter with course grades and attendance data, enabling school teams to track the progress of students over a school year and make timely decisions about which students need which kinds of support.

"The CLI has been extremely valuable in identifying at-risk students entering the 9th grade and designing interventions to help them find success in our school."

—Toby Romer, Headmaster,
Brighton High School



* In Boston, independent studies by The Parthenon Group and Dr. Robert Balfanz of Johns Hopkins University analyzed BPS dropout data to identify Boston-specific predictors, most of which parallel national research.

How the CLI Works

BPE gathers key data points from the BPS central office and combines them in a single Excel-based file that is sent to schools. The CLI displays information about each student, including:

- 15 indicators of risk: six social/behavioral (e.g., age, attendance, suspensions) and nine academic (e.g., past performance on state assessments, course grades, district benchmark assessments)
- A weight assigned to each indicator; the greater the correlation to risk, the higher the weight; negative weights are assigned where students perform exceptionally well
- A composite score calculated from the weighted indicators that place him/her on a continuum of risk, from “off-track” to “on-track”
- Color-coded composite scores broken out by English Language Arts (ELA), math, and non-academic factors to pinpoint where each student’s needs are most acute

The result is a detailed, color-coded profile of each student as he/she starts school that extends beyond the narrow lens of past test performance.

How School Teams Use the CLI

BPE has supported nine schools — a mix of elementary, middle, and high — to use the CLI within school-based cycles of inquiry. Teams of teachers and administrators in these schools meet regularly to examine student perfor-

mance data (including the CLI), identify students who are struggling, and design and implement changes in practice that lead to improvements in student performance.

The CLI provides teams with a snapshot of incoming students that helps to reveal patterns in performance and guide decisions about how they allocate valuable resources, such as teachers. School teams can select one or more indicators to track over a year and add other pieces of data that are useful to them.

Using the color-coded spreadsheet, school data teams can easily sort and filter the data to answer questions for each student:

- Q. Is he/she at risk of failing or dropping out?
If so, how great is the risk?
- Q. What specific academic, social, or behavioral indicators put him/her at risk?
- Q. Could this student benefit from more challenging assignments or other academic opportunities?
- Q. What supports, interventions, or changes to our instruction would benefit this student and others like him/her?

It is the quality of questions and commitment of school teams to act on what they learn that makes CLI data powerful. Brighton High School attributes its impressive leap in student performance last year — a 23 point gain in English Language Arts scores and a 5 point gain in math scores — in part to the powerful data provided by the CLI.

Demographic/Programmatic Data										Incoming Composite Learning Index (CLI)				
ID	Age	Sex	Race	Sped Code	Sped (Y/N)	LEP	Bill	9th Gr Repeater	Sending School	ELA CLI (8=highest)	Math CLI (7=highest)	Non-Academic CLI (15=highest)	CLI (30=highest)	CLI Group
Student A	15	M	Black		N	N			School V	7.0	7.0	9.0	23.0	Off Track
Student B	14	M	Hispanic	U4	Y	L	S		School F	8.0	7.0	6.0	21.0	Off Track
Student C	16	M	Black	A4	Y	N			School V	7.0	3.0	8.0	18.0	Off Track
Student D	17	M	Hispanic		N	no data	S		School T	4.0	5.0	8.0	17.0	Off Track
Student E	14	M	Hispanic		N	N			School L	5.0	7.0	4.0	16.0	Off Track
Student F	16	M	Black	R2	Y	no data			School C	3.0	6.0	5.0	14.0	Off Track
Student G	14	M	Hispanic		N	L	S		School Q	6.0	5.0	2.0	13.0	Off Track
Student H	14	M	Black	Q4	Y				School N	3.0	4.0	5.0	12.0	Off Track
Student I	16	M	Black		N	no data			School P	2.0	3.0	7.0	12.0	Off Track
Student J	15	F	White		N	L			School W	1.0	5.0	5.0	11.0	Off Track
Student K	15	M	Hispanic		N	no data	S		School T	1.5	5.0	4.0	10.5	Off Track
Student L	16	M	Black	R3	Y	N			School N	5.0	3.0	2.0	10.0	Borderline Off Track
Student M	16	F	Hispanic	L4	Y	L			School W	4.0	2.0	3.0	9.0	Borderline Off Track
Student N	15	M	Hispanic		N	no data			School W	1.0	2.0	6.0	9.0	Borderline Off Track
Student O	15	M	Hispanic		N	N			School M	3.0	1.0	4.0	8.0	Borderline Off Track
Student P	15	M	Hispanic		N	N			School V	0.0	6.0	2.0	8.0	Borderline Off Track
Student Q	14	F	Hispanic		N	L	S		School Q	5.0	2.0	0.0	7.0	Borderline Off Track
Student R	15	M	Hispanic		N	N			School U	0.5	0.5	4.0	5.0	Almost On Track
Student S	15	M	Black		N	N			School V	0.0	4.0	1.0	5.0	Almost On Track
Student T	14	M	Hispanic		N	N			School M	1.5	0.0	3.0	4.5	Almost On Track
Student U	14	F	Asian		N	N			School C	0.0	0.0	1.0	1.0	On Track
Student V	15	M	Hispanic		N	N			School F	0.0	0.0	1.0	1.0	On Track
Student W	15	F	Black		N	N			School I	0.0	0.0	1.0	1.0	On Track
Student X	15	M	Black	R2	Y	no data			School K	n/a	n/a	1.0	1.0	On Track

In some schools, the CLI has helped to confirm hunches about which students need more support and provided backing for deliberate resource decisions. In others, the tool has illuminated patterns among students that teachers and administrators may not have otherwise seen. School staff sometimes found that their assumptions about students were wrong. For example, the majority of students “off-track” were not in special education classes in most schools, and in one school, many students at high risk of dropping out had already passed MCAS. In these cases, the CLI pointed to other needs and different interventions.

The CLI is useful as...

- An upfront alert about possible academic or behavioral challenges in the incoming class of students, leading to a proactive plan for preventive supports.
- A baseline from which to identify students who may need additional assessments.
- A dashboard for monitoring the progress of individual students and cohorts over time.
- A basis for making resource decisions, such as class size and teacher assignments, use of mentors and outside providers, one-on-one counseling resources, and family outreach activities.
- A rallying point to create a sense of collective responsibility among members of the broader school community.
- A tool for examining patterns among groups of students who the school is serving well or needs to serve differently.
- A dashboard for tracking the effectiveness of a particular intervention or initiative.
- A database for generating progress reports for families.
- A tool for identifying students who may be ready for more academic challenges.
- A baseline student profile to which other data can be added.

The CLI is not...

- A diagnostic tool: it indicates which students may need help but does not prescribe one particular action over another.
- An item analysis: it does not tell teachers which academic skills a student has mastered or has yet to master.
- An instructional planning tool: it does not provide fine-grained information that can guide teaching decisions.
- An accountability tool : it can't (and shouldn't) be used to assign rewards or blame to students or faculty.
- A complete picture of a learner or human being: it is designed specifically to track students who may need help to graduate but does not include other types of data that may be of interest to teachers.

The CLI Has Further Potential

Access to timely, targeted data is changing the discussions about how to address the needs of Boston's least successful students, and it may have the power to change conversations in other districts as well. The CLI, in concept and design, is highly adaptable.

As an outside partner to BPS, BPE originally took the lead in designing the CLI and gathering data for schools because few school staff have both the time and the skills to pull together such a complex set of data, from several different sources, without errors. Although the data comes from the district, it comes from different departments and in different formats that are not easily integrated.

The CLI has influenced the BPS and the state to develop their own CLI-like tools, however. The Massachusetts Department of Elementary and Secondary Education sent out its first Early Indicators Index to all urban high schools in September of 2008. The EII has a smaller set of indicators and is currently used only for 9th grade. The BPS Office of Research, Assessment and Evaluation also designed a tool of its own, focused on the 9th grade, called Early Warning Indicators.

While the state and district continue to develop these tools and extend them to more grade levels, the Boston Plan is working with a set of elementary, middle, and high schools to use the CLI in multiple grade levels and to test additional uses — for example, using the tool to identify students who, with some support, could take on more academic challenges.

The CLI, still in its first years of use, has potential to help schools serve their struggling students better and guide efforts to accelerate the achievement of all students.

Evaluation of the CLI

The UMass Boston Donahue Institute is conducting an independent evaluation of BPE's work with school teams, with attention to how the CLI informs the inquiry process. The final report is anticipated in fall of 2009, and early feedback is promising:

“... the CLI, in the context of supportive, targeted coaching, has not only affected teachers’ thinking with respect to instructional strategies (e.g., use of classroom-based activities and materials) but has also begun to provoke a cultural shift. In some schools, staff members now engage in an inquiry process — dialogue about their students — that ex-

tends beyond previously held notions of ability and potential, to include now a greater awareness of the strengths and challenges of each student. Administrators and, in some cases, teachers have found that the rich portrait that the CLI paints of students helps them to move beyond the traditional special education profiles and to consider instructional strategies likely to yield high gains.”

For more information about the CLI

Contact Jennifer Amigone, Director of Data Analysis and Evaluation at the Boston Plan for Excellence: jamigone@bpe.org.



Over more than two decades, the Boston Plan for Excellence has contributed to improvements in Boston's public schools. A local education fund and nonprofit, the Boston Plan seeks and supports innovative solutions to the toughest problems faced by Boston's students, their teachers, and the school district as a whole.

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