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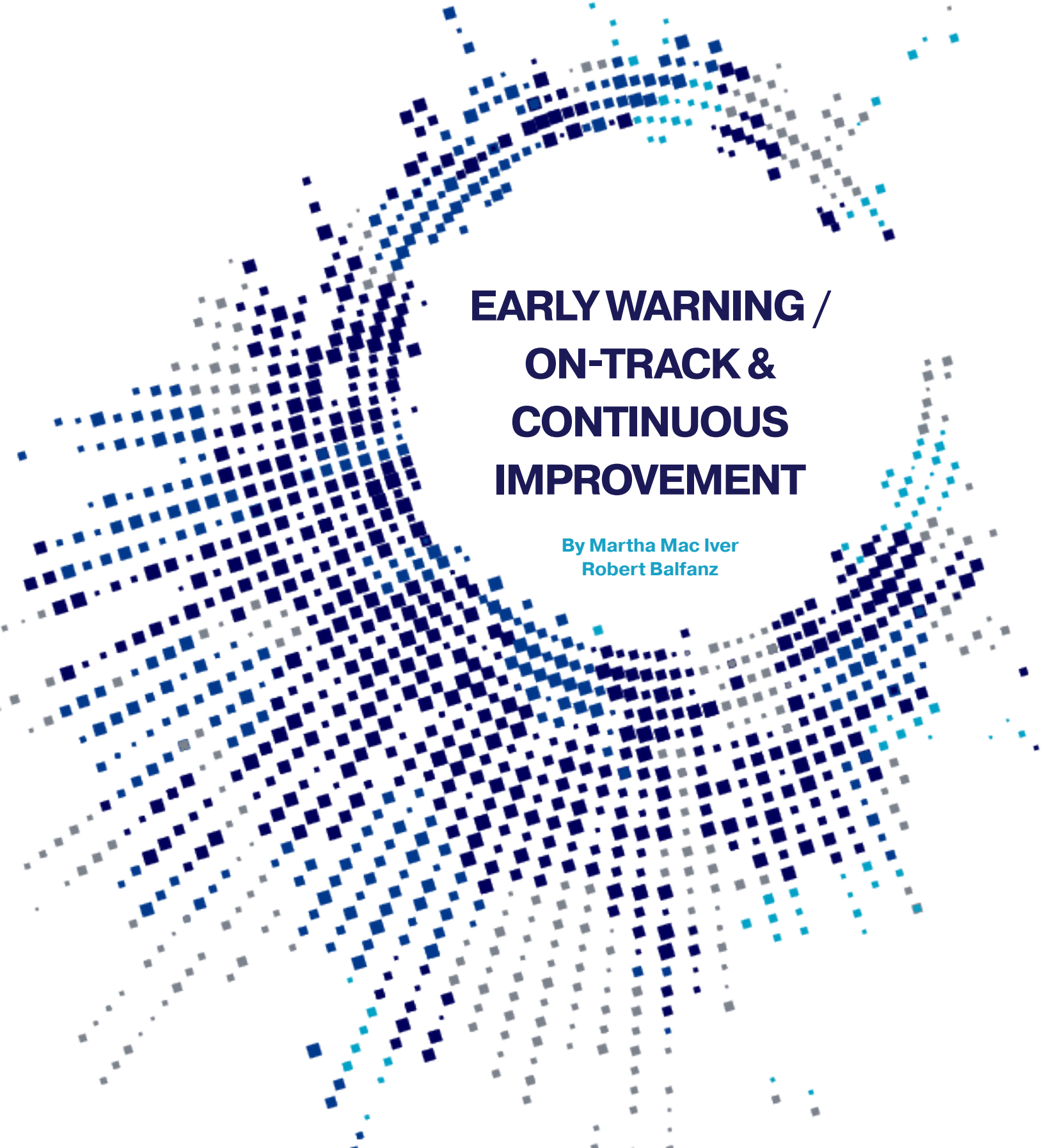

EARLY WARNING / ON-TRACK & CONTINUOUS IMPROVEMENT

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EARLY WARNING / ON-TRACK & CONTINUOUS IMPROVEMENT

THIS BRIEF MAKES THE CASE THAT A WELL-IMPLEMENTED EARLY WARNING/ON-TRACK SYSTEM INVOLVES APPLYING A CONTINUOUS IMPROVEMENT PROCESS WITHIN SCHOOLS. THUS, SCHOOLS CAN USE A WELL-ESTABLISHED EARLY WARNING AND INTERVENTION SYSTEM PROCESS AS AN ENTRYWAY AND A MODEL FOR APPLYING THE CONTINUOUS IMPROVEMENT FRAMEWORK TO OTHER ISSUES WITHIN THE SCHOOL.

BACKGROUND

Over the past two decades, research on the behavioral predictors of high school dropout outcomes has led to the extensive development of early warning and intervention systems, also known as on-track systems.[1] More recently these systems have expanded to include middle school outcomes and college readiness. In their basic form, these systems facilitate the process of monitoring school data on key predictive indicators, most commonly the ABC's – student attendance, behavior/social-emotional development, and course performance in a timely way. Such monitoring by school staff identifies students who are falling below thresholds for attendance, behavior, and course performance associated with a successful trajectory to on-time high school graduation and post-secondary success. Once these students are identified in a timely way, school staff identify and deliver specific interventions designed to improve students' outcomes in areas in which they are struggling or not reaching on-track thresholds. These interventions should ideally be linked to the root causes of student challenges and aimed at the most strategic level of intervention – i.e. student, classroom, grade, or school level. The organizations that have worked most extensively with schools to implement early warning and intervention systems (the Everyone Graduates Center at Johns Hopkins University, the University of Chicago Network for College Success, and the College and Career (and formerly National High School Center) team at the American Institutes for Research) use a team structure within schools to review and interpret student ABC data, make decisions about implementing interventions with students, and systematically study the follow-up data to make decisions about how well interventions have worked and what next steps to take with students. Before moving to the individual student intervention level, the data review process begins by identifying large-scale school (or district) patterns in students' off-track status. In this way, school leaders can uncover systemic issues that may be influencing individual trajectories.

[1] For example, see Elaine Allensworth and John Easton, *What Matters for Staying On-Track and Graduating in Chicago Public High Schools: A Close Look at Course Grades, Failures, and Attendance in the Freshman Year* (Chicago: Consortium on Chicago School Research, 2007); Elaine Allensworth, "The Use of Ninth-Grade Early Warning Indicators to Improve Chicago Schools," *Journal of Education for Students Placed at Risk (JESPAR)* 18, no. 1 (2013): 68-83; Robert Balfanz and Lisa Herzog, "Keeping Middle Grade Students on Track to Graduation: Initial Analysis and Implications," Presentation given at the second Regional Middle Grades Symposium, Philadelphia." (2005); Robert Balfanz, Liza Herzog, and Douglas J. Mac Iver. "Preventing Student Disengagement and Keeping students on the Graduation Path in Urban Middle-Grades Schools: Early Identification and Effective Interventions." *Educational Psychologist* 42, no. 4 (2007): 223-235; R. Curran Neild, Robert Balfanz, and Liza Herzog. "An Early Warning System." *Educational Leadership* 65, no. 2 (2007): 28-33.

HOW EARLY WARNING / ON-TRACK SYSTEMS INCORPORATE CONTINUOUS IMPROVEMENT PRINCIPLES FROM LEARNING TO IMPROVE[2]

When well-implemented, an early warning/on-track system models the six improvement principles articulated by Anthony Bryk and his colleagues from the Carnegie Foundation for the Advancement of Teaching.[2] In what follows, we illustrate how this occurs throughout the implementation of such a system.

1) "Make the work problem-specific and user-centered"

Early Warning/On-Track systems (EWS) are at their core "problem-specific and user centered." They address the problems of student attendance, behavior, and course failure that have been shown repeatedly in research studies to be associated with lower probabilities of on-time graduation from high school and post-secondary success. The systems rely on the frontline "users" (school staff), organized in a cohesive improvement team, to identify underlying causes of problems and to formulate and deliver interventions that will address those root causes in positive ways. When well-implemented, the systems also seek regular input from the ultimate "users" – the students themselves – to ascertain how the system is working and how it can work even better.

2) "Focus on variation in performance"

An important first step for the EWS Team is to analyze the variation in the key student outcome measures of attendance, behavior, and course performance. This is key for understanding the problems and being able to address them effectively. What is the size of the problem in each of these outcomes, and how is the tendency to struggle in any of these areas related to student characteristics or school structural variables? For example, are failure rates higher in first period classes (which students may miss disproportionately because of tardiness issues)? Are failure rates higher in some subjects (or for some teachers) than others? To what extent is course failure correlated with attendance? What characterizes students who attend regularly but still fail courses? Addressing these broad analytical questions

SYSTEM IMPROVEMENT MAP

CLASSROOM SYSTEM	SCHOOL SYSTEM	DISTRICT SYSTEM
May have large variation in standard procedures for:	**May have large variation in standard procedures for:**	**May have large variation in standard procedures for:**
Preventing discipline problems before they occur	Providing PD on positive classroom management	Providing PD on positive classroom management
Decisions on when students receive disciplinary referral	Decisions on consequences for students with referrals	Setting policies about appropriate disciplinary referrals
Communication about disciplinary referral with families	Communication about disciplinary referral with families	Setting policies about appropriate consequences for students
Providing interventions to address behavior problems	Providing interventions to address behavior problems	Providing resource and training to support appropriate interventions

is crucial before seeking to establish a systematic process for intervening at the individual student or targeted group of students levels.

3) "See the system that produces the current outcomes"

Careful analysis of data on student attendance, behavior, and course failure can help to shine a light on systemic issues. If large percentages (more than 20%) of students are struggling in these areas, it is crucial for the team to explore where systems may need adaptations or transformations. Mapping out systems and processes may help the team to see where there are "holes in the bridge" or specific issues that need to be addressed in a wholistic way (rather than student by student). This process may identify root causes of high levels of absenteeism, behavioral issues or uneven social-emotional development, or course failure and course success patterns that need to be addressed more broadly. At this stage the team may decide that there are whole school change ideas that need to be implemented and tested through the disciplined inquiry process described in the System Improvement Map (previous page).

4) "Emphasize measurement to 'improve at scale'"

The goal of EWS teams is to see improvement in the specific outcome metrics (e.g., at least 90% attendance, passing all core courses, B or better GPA) that predict on-track status, on-time graduation and/or post-secondary success. Measuring the outcome variables (specific ABC measures) and how they change over time is a crucial first step. But finding ways to measure improvement in the "lever variables" that help to influence the outcome variables is also critical. To what extent is the team measuring whether or not student interventions happen and how students perceive those interventions? At a more systemic level, how well is the school addressing root cause issues (e.g., lack of student interest in classroom assignments) and measuring change in intermediate outcomes (e.g., student engagement) that are related to the ABC outcomes?[3]

5) "Use disciplined inquiry to drive improvement"

Improvement science leaders at the Carnegie Foundation use three overarching questions to guide disciplined inquiry in their continuous improvement approach:

- "What specifically are we trying to accomplish?"
- "What change might we introduce and why?"
- "How will we know that a change is actually an improvement?"[4]

The PLAN-DO-STUDY-ACT (PDSA) cycle is a common continuous improvement framework for ensuring that teams employ disciplined inquiry in their quest for improvement. Well-implemented Early Warning/On-Track systems are also guided by these questions and a PDSA cycle process as they seek to identify students in need of additional support and provide interventions to help improve their attendance, behavior-social-emotional outcomes, and/or course performance. The

[2]Anthony S. Bryk et al., *Learning to Improve: How America's Schools Can Get Better at Getting Better* (Cambridge, MA: Harvard Education Press, 2015). These six principles are from Bryk et al., *Learning to Improve*.

[3]See Martha Abele Mac Iver and Robert Balfanz, *Continuous Improvement and High Schools: Helping More Students Succeed* (Cambridge, MA: Harvard Education Press, forthcoming Fall 2021), Chapters 4 and 5.

[4]Bryk et al., *Learning to Improve*, 114.

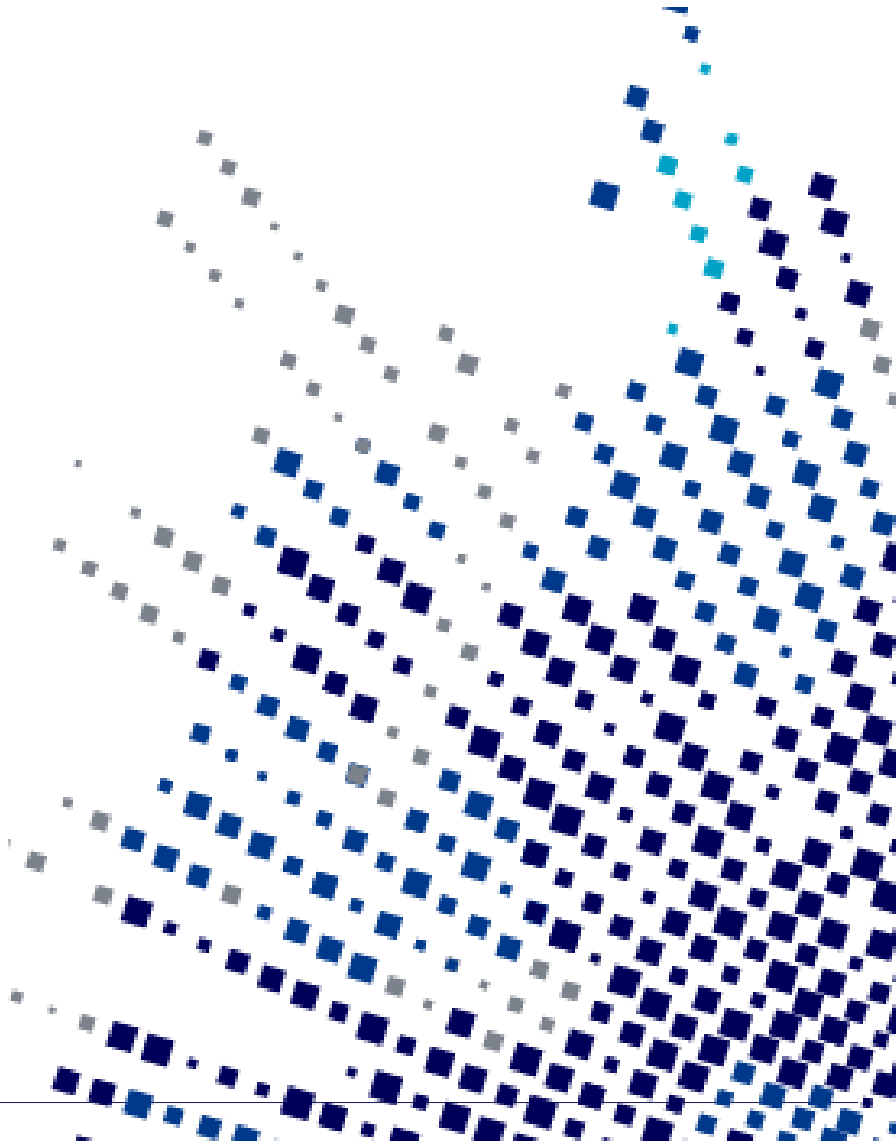
team meets regularly to review data on student needs, PLAN intervention strategies, ensure they are implemented (DO), review (STUDY) how well those strategies were implemented, and then how well they are working in helping students to improve their outcomes (or to begin to improve them by addressing specific root causes). Based on their analysis of results, they ACT to continue or change the interventions for students. And the PDSA cycle continues. The use of such a PDSA cycle in the school's on-track system work also provides a gateway to using continuous improvement approach to address other school and student outcome issues.

6) "Accelerate learning through networked communities"

The Network for College Success, AIR, and the Everyone Graduates Center have facilitated networks of schools using Early Warning/On-Track Systems for over a decade. These networks allow schools to share their learning with each other as they use the same metrics to measure improvement in the ABC outcomes and similar intervention strategies with individual students. There is also a need for continuous improvement in the functioning of these networked communities, particularly in helping them to use common measures to be able to examine variation and compare outcomes across multiple schools.

EARLY WARNING/ON-TRACK SYSTEMS CAN BE A BRIDGE TO BROADER USE OF A CONTINUOUS IMPROVEMENT FRAMEWORK

Getting started in continuous improvement can be daunting. The "disciplined inquiry" component and measurement challenges often pose a formidable barrier. Schools and districts may be able to "grow into" a more comprehensive continuous improvement approach by beginning with implementing an early warning/on-track system or ensuring that an existing early warning/on-track process is systematically incorporating the continuous improvement principles described above. Once such a early warning/on-track system is in place and teams are reflecting regularly on what they are learning from its continuous improvement process, they can begin themselves or assist others in applying the same process to other improvement challenges and needs identified in the school or larger educational system.



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