

## Chapter 29

# Establishing a Data Culture Using a Data–Driven Instructional System for School Improvement

**Julius N. Shanks**

*University of Montevallo, USA*

### **ABSTRACT**

*School leaders are faced with enormous responsibilities in addressing student achievement as directed by district, state, and federal mandates. There is a need for school leaders to structure and implement how to acquire, analyze, and commit action from identified gaps in student learning using assessment data. A major part of the process is establishing how teachers use student data to improve teaching and learning opportunities. When discussing school improvement measures and initiatives, one commonly refers to observations, feedback, and professional learning communities as its core components. This chapter provides a framework using a data-driven instructional system (DDIS) as a model for school improvement in establishing a school data culture that can improve student achievement.*

### **INTRODUCTION**

The purpose of this chapter is to provide educational leaders with a greater understanding regarding the role and design of a school data culture. The key elements of a school environment that embraces and values data will also be outlined within the chapter. The school data culture is undergirded by a Data-Driven Instructional System (DDIS). This system is a model to explain the framework and practices school leaders use to develop an environment for a school data culture. The major premise in this model is to connect the results of summative assessments to formative information systems in order for school leaders and teachers to use data for improving the educational decisions across the school (Ikemoto & Marsh, 2007). A Data Driven Instructional System will assist school leaders and teachers with accessing data, reflecting on the data, developing a plan based upon the identified needs, and assessing the results

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of that plan for possible improvements. There is research on DDIS, but mainly as a component of other school improvement initiatives; an examination of its impact on student performance is limited. The author of this chapter intends to present the Data Driven Instructional System (DDIS) as a single school improvement initiative as opposed to an ingredient to other school programs or approaches.

The demands from governmental legislation and the public outcry regarding the current state of education, place public schools under arduous demands to demonstrate student success in some quantifiable format. These demands led to numerous school improvement initiatives on the continuum from charter schools, vouchers, to state interventions or school take-overs. Governmental mandates for increased standards also placed a greater emphasis on the quality of school leadership and ultimately on the rigors of student learning within the classroom (Wilhelm, 2011). There is research that purports the intense focus on data use in schools can be attributed to the advent of *No Child Left Behind (NCLB) Act* and its furtherance by the *Every Student Succeeds Act (ESSA)* (Mathis & Trujillo, 2016). Under the ESSA the assessment components for states that were under NCLB remained for grades 3-8 and once in high school. This federal legislation placed a greater demand on standardized assessments as a major component in measuring student growth. The Federal Government under this act, required states to set curriculum standards and to monitor school performance more closely than before; therefore, public schools are placed in a position where their overall effectiveness and viability is connected to student performance data (Mathis & Trujillo, 2016). These educational policies require educators to have the ability to analyze, interpret, and use data for the purpose of making informed decisions within every aspect of education from professional development to student learning needs. For the school leader, that means they must become proficient regarding data use to identify weaknesses and develop an aligned course for improvement. For the classroom teacher, this means that they must examine assessment results for allowing the data to direct their instructional decisions and practices for alignment with the students' individual needs.

When examining the research on public education, it can be asserted that the school is the ideal level where change begins and is sustained (Marzano, Waters, & McNulty, 2005). Schools are where the data are generated, resides and where time is set aside for staff to analyze and reflect on the data. Therefore, schools are where the structure of DDIS will be created and sustained (Wayman, 2009). Schools are central places for the development of knowledge and skills through focused professional development. This is not to overlook the importance that the district-level leadership plays in this process, but the interactions and relationships developed at the school level will play a significant role on how any initiative or program impacts student learning (Wilhelm, 2011). With the increase in performance measures, it is logical that schools are using data at increased levels for improvement. Schools require assessment data to enable them to evaluate their school performance, to be accountable to parents for the progress of their students, and to manage teaching and learning within the school (Hill, 2010).

These data are used to address several areas in the school ultimately for student and teacher growth. Schools that become data-informed can effectively analyze their existing approaches by determining effectiveness and then design aligned action plans for improvement (Anderson, 2010). There is research to indicate that school effectiveness is connected to the effective use of data at the school and classroom levels. At the school level school leaders provide a system for ensuring that process data are available for the faculty and the assessment data is integrated within for monitoring the school goals.

When one analyzes school initiatives, it is important that we examine the role of the school leader within the process. School leaders play a critical role in the implementation of DDIS at the K-12 school level (Abbott & McKnight, 2010). With the advent of ESSA, the demands for the school leader to col-

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