

# Principal's Impact on Student Achievement

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## Introduction

Many researchers have confirmed that school principals have a significant impact on student achievement. Without question, an effective principal is the key to a successful school. Principals are responsible for the overall functioning of their school. As managers, they oversee the day-to-day operations of schools. They set budgets, manage the school facility, and develop relationships with the broader community. As instructional leaders, they direct and supervise the development, delivery, assessment, and improvement of educational programs and activities in their schools. They also hire (or make recommendations to district administrators) and induct new teachers, provide professional development opportunities to teachers, evaluate their performance, assign them to classrooms, and dismiss ineffective teachers. They interact directly with students by monitoring their conduct and by disciplining students who are, for example, frequently truant or disruptive. Additionally, they act as the liaison between the school district and the school, itself, interpreting and implementing policies passed down by federal, state or district authorities, then communicating feedback on the success of those initiatives (Dhuey & Smith, 2018). In sum, principals' practices influence school conditions, teacher quality, instructional quality, and student achievement. Research also indicates that effective principals have significant positive effects on student absenteeism, student engagement with student academic self-efficacy, staff satisfaction, and collective teacher efficacy (e.g., Dou, Devos, & Valcke, 2016; Hitt & Tucker, 2015; Loeb, Kalogrides, & Béteille, 2012).

## Principal's Direct Impact on Student Achievement

Research has found that the impact of highly effective principals<sup>1</sup> is equivalent to raising the achievement of a typical student by two or more months of extra learning in a single school year, whereas ineffective principals lower achievement by the same amount (Branch, Hanushek, & Rivkin, 2012, 2013). There is substantial variation when it comes to effectiveness across principals. For instance, Dhuey and Smith (2014) used data from British Columbia and found that a one standard deviation improvement in principal quality can boost student performance by a range of 0.289 to 0.408 standard deviations in reading and math. That means if the principal effectiveness of a school increases by one standard deviation, the school's reading achievement would increase by 11 percentile points and math achievement would increase by 16 percentile points. They also found that a principal at the 75th percentile in effectiveness improves student scores by 0.170 (i.e., 7 percentile points) in reading and 0.193 (i.e., 8 percentile points) in math relative to the median principal. However, when Dhuey and Smith (2018) used data from North Carolina, the effect sizes of principal leadership decreased, but still were significant. In the North Carolina study, Dhuey and Smith (2018) found that a one standard deviation increase of principals' effectiveness increases student learning by 0.17 standard deviations (i.e., 7 percentile points) in math and 0.12 standard deviations (i.e., 5 percentile points) in reading. Similarly, Chiang et al. (2012, 2016) used data on elementary and middle school students in Pennsylvania

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<sup>1</sup> In this section, principle effectiveness is defined as principal's value-added score. Student achievement reflects not only principals' effectiveness, but also other school-specific influences that are outside of principals' control, such as the socio-economic composition of the student population. Value-added method can disentangle principals' true effects on student achievement from the impact of out-of-school factors or school-level factors beyond principals' control. Value-added studies usually involve big databases with longitudinal data. They used students' standardized scores to generate estimates of principals' effectiveness. Those estimates are usually in normed distribution. Principals who have high value-added estimates are considered as effective.

to explore how much of the “school effect” on student performance can be attributed to the principal. They found that principals explain approximately 15% of the overall school effect. They also found a standard deviation increase in principal effectiveness accounts for roughly a difference of 0.12 standardized student scores (i.e., 5 percentile points) for both math and reading.

Coelli and Green (2012) estimated the variance of high school principal effects on graduation and grade 12 provincial final exam scores in British Columbia. In particular, they found that a principal moving up one standard deviation in effectiveness would increase graduation rates by a third of a standard deviation. Branch et al. (2012) conducted a similar study with a Texas sample and found a principal whose effectiveness is a standard deviation above the mean is equal to an achievement gain of 0.05 standard deviations (i.e., 2 percentile points) over average. The direct estimation of the variance in principal effects revealed a small value of the variation in principal productivity, but it is still important, particularly for high poverty schools.

The review of extant research concludes that school leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school, and leadership effects are usually largest where they are needed most. As noted above, there is a strong and direct link between school principals and student achievement. However, the principal’s indirect influence is even more pronounced (Clifford, Behrstock-Sherratt, & Feters, 2012; Leithwood et al., 2004).

### **Principal’s Indirect Impact on School Success and Student Achievement**

Leadership is the second most influential school-level factor on student achievement, after teacher quality (Clifford, Behrstock-Sherratt, & Feters, 2012). Research consistently has revealed that principal effectiveness influences student learning indirectly through direct impact on school conditions, teacher quality and placement, and instructional quality, and an indirect link with student achievement gains or progress over years (Brewer, 1993; Bruggencate, Luyten, Scheerens, & Slegers, 2012; Cotton, 2003; Hallinger, Brickman, & Davis, 1996; Hallinger & Heck, 2010; Leitner, 1994; Robinson, Lloyd, & Rowe, 2008; Sabastian & Allensworth, 2012). For instance, Dutta and Sahney (2016) found that the impact of principal leadership on student achievement is mediated through teacher job satisfaction and a positive learning climate. Principals play an important role in hiring, assigning, developing, keeping, and removing teaching staff. They impact curriculum issues, such as course offering and curricular guidelines. They also have an impact on allocation of school funding. All these factors influence student achievement (Bloom & Owens, 2013) and form the basis for the principal’s indirect influence on student achievement.

A primary channel for principal influence is the management of the teaching force. Sun and Leithwood (2015) found leadership effects on student learning are mediated by teacher emotions, such as collective teacher efficacy, teacher commitment, and trust in colleagues, the principal, students, and parents. When principals foster these productive teacher emotions, student achievement improves. Sebatian and Allensworth (2012) also identified paths through which principal leadership explains differences in achievement and instruction between schools. They found variation of classroom instruction quality is associated with principal leadership through

multiple pathways, including professional community, program quality, learning climate, and ties with parents and community. The strongest pathway is program quality, which is defined as the quality of professional development and coherence of programs.

### **Specific Principal Characteristics that Impact Student Achievement**

Research has shed light on specific principal practices and characteristics that link to school performance. Grissom and Loeb (2011) linked principal skills to student achievement growth. They found that principals with stronger organization management skills (e.g., personnel, budgeting) lead schools with greater student achievement gains. Similarly, Grissom, Loeb, and Master (2013), using data from longitudinal observations of principals, found that principal time spent on specific areas of instructional leadership – including coaching, evaluation, and developing the school’s educational program – are associated with positive achievement gains. In contrast, time spent on informal classroom walkthroughs negatively predicts student growth, especially in high schools.

Research indicates that principal tenure (i.e., length of time in the current position) and principal stability have a positive relationship with student achievement (Brockmeier et al., 2013). This means that schools with greater principal stability (i.e., lower principal turnover rates) tend to have higher student achievement. This finding also implies principals must be given adequate time to have a significant impact on school culture and climate, and, ultimately, student achievement. In addition, incoming new principals with no prior experience are associated with higher rates of student absences, lower rates of experienced teachers, higher rates of teacher turnover, and higher rates of novice teachers (with zero to three years’ experience). Studies also found that frequent principal turnover and having a brand new principal have a detrimental impact on student achievement (Beteille et al., 2012; Dhuey & Smith, 2018). Miller (2013) found student achievement continues to fall in the two years following the installation of a new principal and then rises over the next three years. Five years after a new principal is installed, average academic performance is no different than it was five years before the new principal took over. These research findings imply that it is imperative for schools to retain principals for a sufficient period of time in order to see a positive impact. This is particularly important for schools with high percentages of economically disadvantaged students and minority students as these schools are more often led by principals with less experience and stability (Huff et al., 2011).

Waters, Marzano, and McNulty (2003) conducted a meta-analysis of research on effects of principals’ leadership practices on student achievement. After analyzing studies conducted over a 30-year period, they found that the effectiveness of a school’s leadership is significantly associated with increased student academic performance. They also identified a number of leadership practices that were associated with student learning. These practices include establishing clear goals and fostering shared beliefs. They found the average effect size between leadership practices and student achievement is .25 (i.e., an increase of 10 percentile points). In addition, they also found the following leadership practices result in student achievement growth.

<b>Leadership Practices</b>	<b>The extent to which the principal...</b>	<b>Average Effect Size</b>
Situational awareness	is aware of the details and undercurrents in the running of the school, and uses this information to address current and potential problems.	.33
Intellectual stimulation	ensures the faculty and staff are aware of the most current theories and practices, and makes the discussion of these a regular aspect of the school's culture.	.32
Input	involves teachers in the design and implementation of important decisions and policies.	.30
Change Agent	is willing to and actively challenges the status quo.	.30
Culture	fosters shared beliefs and a sense of community and cooperation.	.29
Outreach	is an advocate and spokesperson for the school to all stakeholders.	.28
Monitors/Evaluates	monitors the effectiveness of school practices and their impact on student learning.	.28
Order	establishes a set of standard operating procedures and routines.	.26
Resources	provides teachers with materials and professional development necessary for the successful execution of their jobs.	.26
Affirmation	recognizes and celebrates school accomplishments and acknowledges failures.	.25
Ideals/Beliefs	communicates and operates from strong ideals and beliefs about schooling.	.25
Discipline	protects teachers from issues and influences that would detract from their teaching time of focus.	.24
Knowledge of Curriculum, Instruction, and Assessment	is knowledgeable about current curriculum, instruction, and assessment practices.	.24
Communication	establishes strong lines of communication with teachers and among teachers.	.23

Adapted from Waters, Marzano, and McNulty, 2003, p. 5.

Similarly, a meta-analysis by Robinson, Lloyd, and Rowe (2008) inductively derived leadership dimensions that have been supported by research as influencing student outcomes:

<b><i>Leadership Dimension</i></b>	<b><i>Meaning of Dimension</i></b>	<b><i>Mean Effect Size</i></b>
Establishing goals and expectations	Includes the setting, communicating, and monitoring of learning goals, standards, and expectations, and the involvement of staff and others in the process so that there is clarity and consensus about goals.	.42
Strategic resourcing	Involves aligning resource selection and allocation to priority teaching goals. Includes provision of appropriate expertise through staff recruitment.	.31
Planning, coordinating, and evaluating teaching and the curriculum	Direct involvement in the support and evaluation of teaching through regular classroom visits, and provision of formative and summative feedback to teachers. Direct oversight of curriculum through school-wide coordination across classes and year levels and alignment to school goals.	.42
Promoting and participating in teacher learning and development	Leadership that not only promotes but directly participates with teachers in formal or informal professional learning.	.84
Ensuring an orderly and supportive environment	Protecting time for teaching and learning by reducing external pressures and interruptions and establishing an orderly and supportive environment both inside and outside classrooms.	.27

## Conclusion

Effective schools are run by effective principals who have proficiency - not just in leading programs, but also in leading people. There is no high-performing school without an effective principal. Although school leaders' influence on student achievement is largely indirect, they improve teaching and learning in the schools they lead by influencing beliefs, attitudes, and conditions about teaching and learning. Principal leadership matters. And it matters substantially.

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