



Promoting Learning in Rural Schools

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Introduction

The research reviewed here suggests that some of the contentions about schools, districts, and communities in rural areas are mistaken. Many of the issues they face also confront urban and suburban educators, and rural communities offer several distinctive educational advantages. While we have not found research to substantiate that student motivation to learn is particularly lacking in rural schools, it is a problem often cited by rural educators. Rather, it seems a widespread problem in most of the nation's schools—rural, urban, and suburban. With that in mind, this report gives special attention to student motivation to learn, along with other contributing factors to student outcomes in rural schools. Our recommendations build upon the advantages of rural settings and address their perceived disadvantages.

At one time, most American students went to small schools in small school districts in small rural communities. Over recent decades, however, both schools and districts grew dramatically in size. Districts merged and consolidated to grow in size as they decreased in number, from about 115,000 school districts at one time, many responsible for a single, sometimes one-room school a century and more ago, to about 15,000 districts today. In the half-century from 1940 to 1990, the size of the average U.S. school district rose from 217 to 2,637 students—a factor of more than 10, and the size of the average school rose from 127 to 653 (Walberg & Walberg, 1994).

Similarly, small family farms consolidated, and many families quit farming and moved away, leaving large distances between the remaining farm families and communities. It is said that demography is destiny, and such remoteness or isolation substantially affected rural families, their communities, and their schools and school districts. In some rural areas, economic decline and increased poverty accompanied depopulation. Not unlike urban settings, rural schools

serve isolated subcultural groups such as itinerant workers, Appalachian Whites, rural Blacks in the South, and American Indians in parts of the West.

To promote student learning in rural schools, both the distinct advantages of rural communities and their possible disadvantages should be taken into account. In the balance, the small size of their schools is an asset, as is the strength of relationships among the people who constitute the schools and communities. While student motivation to learn does not appear to be a generally distinguishable variable between rural and non-rural schools, rural educators often attest to a dampening effect on student aspirations where families do not see education as an essential vehicle to advancement in life, and the improved life chances an education provides require a relocation away from a shrinking rural community.

For rural students inhibited by a “low horizon” mindset, the educational remedies are similar as those for students in other settings. The centrality of the school to rural community life, however, places a greater responsibility on the rural school to elevate students’ aspirations. Likewise the avenues to higher academic achievement are largely the same in rural as in urban and suburban schools. With little district capacity to support its schools’ improvement efforts and few education service providers nearby, the rural school must rely more heavily on its own resources and ingenuity to drive its improvement than elsewhere. That is not necessarily a bad thing, but it requires teaming, defined purposes, ample planning, and disciplined work.

When the remoteness of a rural community is a barrier in attracting and retaining school leaders and teachers, the school’s internal systems for ensuring consistent application of effective practice is paramount. The policies, programs, procedures, and practices must be engrained in the daily operations of the school in ways that optimize the productivity of current staff and readily assimilate new staff. With this in mind, this report recommends actions that drive student learning in any school setting and are necessary and achievable in rural schools.

Rural Schools, Districts, and Communities

By definition, it is low population density together with family isolation and community remoteness that uniquely characterize rural areas. Small schools and small school districts are what distinctively characterize elementary and secondary education in these areas. To understand how best to enhance the learning of rural students, we first turn to these school and district contexts, drawing largely on more extensive summaries of Ehrich (n.d.) and Walberg and Walberg (1994).

School Size Effects

One often contended reason for consolidating rural schools and districts is “economies of scale,” that is, the possible cost savings for each student served since, for example, only one principal and football coach might be necessary in a large school in contrast to one each for several small schools. The research on this contention, however, is not altogether clear. Up to an uncertain point, larger and larger schools cost less and less per student, but beyond that point extra administration may be required to manage a larger staff and student body, and per student costs may increase beyond that point depending on the school community and circumstances.

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One rationale for larger schools is that they provide more extensive course offerings than smaller schools. Students in rural schools, especially in remotely rural schools, may be disadvantaged by (1) the narrow scope of curriculum in their schools (Monk, 2007; Oakes & Maday, 2009), (2) instructional practices that constrain individual opportunities for acceleration and remediation (Howley et al., 2009), and (3) their lack of access to the supports and resources of programs,

organizations, and educational institutions prevalent in urban and suburban areas (Johnson & Strange, 2007; Mackety & Linder-VanBerschoot, 2008; Monk, 2007).

But doubling enrollment yields only an estimated 17% increase in course offerings, and few students avail themselves of the extra offerings (Ehrich, n.d.). In the last few decades, moreover, a recommended and now prevalent pattern of school reform is to return to a common curriculum taken by all students. Today, the use of distance learning technology enables small schools in remote locations to expand their curriculum in such courses as calculus, Latin, and physics beyond that provided by on-site teachers. The net disadvantage of a marginally narrower curriculum in small schools, then, may be erased by the advantages of a focused, basic curriculum and the ability to supplement the curriculum through distance learning.

Not a single study, moreover, shows smaller schools significantly inferior in academic achievement to larger schools, and there is a tendency, other things being equal, for smaller schools to actually achieve more (Walberg & Walberg, 1994). Why do they achieve as well or better? Students in smaller schools tend to be more engaged in extracurricular curricular activities, more regular in attendance, and remain in school till graduation. Psychological factors help explain these positive effects (Barker & Gump, 1964; Ehrich, n.d.; Walberg & Walberg, 1994). Questionnaire analyses show that students in small schools report higher levels of belongingness and self-concept and closer relations among students and teachers. Teachers in smaller schools report better attitudes toward their work, students, and colleagues. From this research, it may be concluded that the belief in economies of scale largely does not widely apply to schools. With the exception of tiny schools, say, less than 200 students, student costs are not much higher in small schools than larger schools. Small schools, moreover, appear to excel at fostering motivation and learning.

School District Size Effects

Smaller schools, of course, tend to be concentrated in relatively smaller rural districts. But contrary to the views that led to consolidating schools and districts, little evidence supports the larger districts' presumed scale economies. In fact, Gold's 1981 article in the *Journal of Economic Literature* shows that larger organizations including business firms with multiple divisions are often less cost-efficient, outcome-effective, and satisfying to employees and consumers. Consider the gigantic but now defunct Pan American Airlines and the near bankruptcies of Chrysler and General Motors that led to their bailouts and downsizing.

In the *American Journal of Agricultural Economics*, White and Tweeten (1973) reported an analysis of data from 27 mostly rural school districts in Oklahoma to determine the optimal size of a school district, defined as "that which has minimum long-run average costs with resources combined in a least-cost manner" (p. 46). The optimal size ranged from 300 average daily attendance (ADA) for areas with low population density to 1,075 ADA in high-density areas. Though the authors did not consider actual learning outcomes, they concluded:

This paper has shown that differences in high school curriculum and student density cause significant differences in optimal size and minimum attainable costs. A more extensive curriculum requires larger school districts to efficiently utilize the program. In sparsely populated areas, school districts could not expand in size to take full advantage of economies in instruction because transportation diseconomies were an overriding factor. (p. 52)

Hirsch's 1969 testimony before the California Senate Committee on Education summarizes the findings on

the pros and cons of consolidation of school districts. Hirsch argued: "Our empirical studies of scale economies indicate that while very small school districts are likely to benefit from scale economies, consolidation into huge school districts is likely to produce major diseconomies" (p. 4). Moreover, "Very large school districts appear to suffer from a geometric increase in the difficulty of successfully communicating intentions and procedures,



establishing a harmonious system of incentives, and achieving adequate cohesion among numerous individuals in sub-units with sharply conflicting wills" (p. 5). Thus, like many other large organizations, large districts appear to perform less well while saving little or no money.

Among other studies of school district size on achievement, Walberg and Fowler (1987) analyzed the relationship between average test scores of third, sixth, and ninth graders in all New Jersey rural, suburban, and urban districts. Taking district socioeconomic status (SES) and per-student expenditures into account, the smaller the district, the higher the achievement.

What leads to generally higher achievement of smaller districts at reasonable cost? Close oversight of the school by a school board with strong commitment to the community can be an advantage. The "social capital" inherent to communities in which people live in close proximity, bound by multiple relationships, and with personal connections to one another and each other's children is of immeasurable value. In a study of high-performing, high-needs rural schools, Barley and Beesley (2007) found that supportive relationships with families were strongly associated with the success of rural schools. Teachers in rural schools exhibit an impressively high concern for their students' lives beyond the classroom and accept responsibility for supporting their students' social and behavioral needs (Roeser & Midgley, 1997).

Rural School and Community Challenges

Student motivation to learn is a chief contributor to student learning outcomes and to student persistence in school (Wang, Haertel, & Walberg, 1993). Student motivation to learn is a product of teachers' instructional practices, the school's ethos, and the family's child rearing practices—all of which are strongly influenced by the school community's expressed and unexpressed values, supports, and guidance. Student motivation, then, is strongly affected by the way a school operates and, in turn, influences the school's performance in terms of learning outcomes. While the school's impact on student motivation is significant for students in all schools, it is especially important where the community context, whether rural or not, is anemic in engendering high value for education and laden with adolescent pursuits such as dating, sports, and outside work that vie with academic achievement for young people's time and interest.

When a child is reared in a family and community with weak traditions of regard for academic achievement, his or her reservoir of enthusiasm for learning and persistence in school may lie at low ebb when the child enters the school. This places a heightened responsibility on the school to fill the void. When a child finds in the community and among peers pursuits that are highly valued but in conflict with academic achievement, the child is easily drawn to them and away from what the school has to offer. Again, this makes the school of supreme importance in making learning and school success outcomes worthy of strong efforts.

Inspired teaching, attentive to each student's interests, personality, and readiness for mastery, can lift the student's sights beyond the local horizon. The family and the community can also be influenced by the school, made to understand their importance in students' school success, and enlisted to support children's academic and personal development in practical and meaningful ways.

Though families and communities vary in the value they place on academic learning relative to other pursuits, all families and all communities value some



activities that may be co-opted by schools. For example, a school that once lamented the perception that athletic prowess was more important than academic achievement made 45 minutes of reading and studying each day, under supervision, the price of admission to its intramural basketball program. What the students valued was used as an incentive to encourage behavior that would

enhance learning, and the fruit of this behavior—improved academic performance—became its own, more enduring source of motivation.

Some rural communities and schools may present unique challenges for educators. Poverty rates are rising in some rural schools (Schafft, Prins, & Movit, 2008), and their communities suffer from a paucity of social and behavioral services for families (DeLeon, Wakefield, & Hagglund, 2003). Rural schools may experience high teacher turnover, with their teaching staff consisting of a disproportionate number of newly credentialed teachers who replace the teachers who move on (Monk, 2007). The pattern of school closures and district and school consolidation disrupted many small communities and distanced families from their children's schools (Barley & Beesley, 2007). Limited resources require schools to do more with less (Monk, 2007).

In rural and other communities, district leaders, school boards, school leaders, teachers, parents, and volunteers all aim to change student behavior in positive ways.

While the centrality of the school to rural community life may be an asset, it also places added demands on educators to serve functions beyond that of its primary purpose of education (National Education Association, 2008). Parents in rural schools attend school events more often than in urban and suburban communities, but they also talk less often with their children about school programs and interact less frequently with teachers than parents in other settings (Prater, Bermudez, & Owens, 1997). In closely-knit rural communities, a distrust of “outsiders” often places barriers to collaboration between new school personnel and families (Owens, Richerson, Murphy, Jagelewski, & Rossi, 2007). This tendency may be further aggravated by the high teacher turnover and some teachers’ desire to live outside the community and commute to work.

Education literature on rural schools often assumes that rural schools are remotely located, serving communities with high poverty, declining populations, and limited economic opportunity. Of course, many rural schools are so situated, but some are located in geographic proximity to larger communities, and some may serve students from established agricultural families of substantial means and with a significant portion of adults with college educations. For these schools, student motivation to learn may not be attenuated by the characteristics of the school’s rural setting.

In all rural schools, moreover, certain characteristics may accrue positively to student motivation to learn and to their levels of achievement. Witte and Sheridan (2011) write:

Because of their centrality within the community, rural schools routinely connect with families in multiple capacities as part of typical daily routines. Rural schools provide opportunities for community communication and participation. In many rural communities, the local school building is a point of pride for the community and houses sporting and cultural events, civic

activities, and shelter during severe weather. Teachers serve as coaches and club sponsors, which means that they have frequent and varied contact with students at multiple age and academic levels and with their families. Administrators are often highly accessible, active members of the community, allowing them to connect with families in a variety of ways. (p. 153)

Although the opportunity for frequent contact among school personnel and students' families may be significant in rural communities, the quality of the interaction cannot be taken for granted. School personnel may intentionally take advantage of their interactions with families and community members to influence prevailing attitudes and behaviors that impact student motivation to learn.

Psychological Insights for Rural Learning

An essential question in education is: Why does a student behave, specifically learn, in a particular way? The behaviorist answer is that a student's behavior is driven by external stimuli interacting with previously conditioned patterns of response. Cognitive science expands this answer to include mental operations by which the student perceives and processes information, making associations colored by prior knowledge, attitudes, and sentiments. Theories of motivation affirm that a student's willingness to take a course of action in pursuit of a goal and persist in attaining the goal, depends upon the student's estimation of the goal's value and his or her likelihood of success (Bandura, 1997; Brophy, 2004).

Social learning theory roots this motivational calculation in the student's self-efficacy or the degree to which the student assumes that he or she possesses the abilities necessary to success in a particular undertaking. Self-efficacy perception is both general and specific; a student may possess general confidence in his or her ability to learn but less confidence in a specific subject area, such as mathematics. Further, social learning theory holds that the student learns vicariously through observation of other people's behavior as well as through the student's direct experience and that the student actively alters the environment with which he or she interacts.

Added considerations in student motivation to learn are talent and interest. Talent is the demonstrated ability to master particular domains of activity, and interest is the student's personal inclination toward particular domains of activity. Interest contributes to the student's assessment of the value of a goal, and talent contributes to self-efficacy perception. When a student learns that a modicum of initial talent can be mixed with a mountain of effort to produce superior results, the perception of self-efficacy soars. Talent is redefined as substantial effort.

Student Motivation and Self-Efficacy Perception

The strength of motivation can be measured by a person's willingness to engage in an activity and to persist in it. When confronted with a challenge, a person implicitly calculates the value of the ultimate accomplishment and the likelihood of success. The likelihood of success is determined by an appraisal of the difficulty of the task and the person's self-perception of his or her ability to succeed. Consider a 16-year-old studying the *Rules of the Road* in order to pass the written test to secure a driver's license. The high value the youngster places on the outcome (a driver's license) may overshadow his or her perceived inadequacy in mastering the material.

Albert Bandura defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (1997,

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p. 3). When a student approaches a new learning task, the student's perception of his or her ability to successfully complete the task bears on the motivation to attempt and persist in

the task. Self-efficacy influences academic motivation, learning, and achievement (Pajares, 1996; Schunk, 1995; Schunk & Pajares, 2002). A student's self-efficacy perception, the anticipation of success, is derived from the student's assessment of his or her own level of skill and the relative challenge of the task at hand (Csikszentmihalyi, 1990, 1993). When perceived skill is high and the challenge low, the student is bored and may exhibit half-hearted effort. When perceived skill is low and the challenge high, the student becomes anxious and prone to avoid the task.

The job of the teacher is to set learning tasks that are sufficiently challenging for the student while within the reach of the student's abilities. The skillful teacher heightens the student's interest in the task to increase the value the student places on the outcome and the student's perception of likely success. This is the essence of effective instruction—planning learning tasks for each student that are appropriate to that student's demonstrated prior knowledge and provided in an instructional mode that heightens the student's interest, value for the result, and perception of likely success.

A teacher can increase students' perception of self-efficacy, thus elevating the students' effort, persistence, and ultimate level of performance by: (1) encouraging students to set goals that are specific, challenging, but attainable, (2) modeling effective responses to tasks, (3) providing feedback that encourages students to stay on course until mastery is achieved, and (4) making attributional statements that help students understand and appreciate that they are improving their own abilities by accepting challenges and maintaining effort (Bandura, 1997; Schunk & Ertmer, 2000).

Self-Efficacy and Metacognition

Teachers also contribute to a student's perception of self-efficacy in learning by intentionally teaching and reinforcing metacognitive skills. Metacognition is thinking about thinking—the learner's ability to know what he or she knows and to adapt learning strategies in order to reach desired ends. Teaching and modeling a metacognitive approach to learning benefits students. The teacher shows students how to address a learning challenge by:

- Defining the task: What am I expected to learn, and what do I already know?
- Goal-setting: How will I know when I have completed the task? What strategies will I apply?
- Applying learning strategies: How will I use research, practice, questions, memorization, outlining, and other strategies?
- Monitoring: What new information do I need? Is this a simple or difficult task? How do I approach it? How am I doing? Should I try a different strategy?

Mastery as a Motivation to Learn

It is idealistic to expect students to learn motivated purely by intrinsic factors. Sometimes learning is simply hard work. Ideally, the reward of mastery makes the effort worthwhile. Teachers build students' motivation to learn by celebrating the end result—what the student now knows and can do (Brophy, 2004).

High interest in a topic and high value for the outcome contribute to motivation, but some learning is essential regardless of the student's initial interest in the topic. The teacher can only do so much to stir enthusiasm for a topic; usually students must be motivated by learning itself, finding reward in the acquisition of new skills and knowledge (Brophy, 2004). Mastery itself can be the fuel of motivation and the goal to be attained.

Schools are using student tracking of their own progress on short-cycle (unit) tests, benchmark assessments, and teacher-determined mastery of objectives as a means for helping students set goals and see their progress toward their goals. With graphs that illustrate the progress, students clearly see the concrete results of their efforts, and this feedback is itself a motivating factor. Engaging parents in this process by including them in the goal setting and in discussions of progress with their children and with the teachers adds to the power of this exercise.

Teacher–Student Interaction

Motivation to learn for the satisfaction of mastery can be enhanced when the teacher models an enthusiasm for learning and for the specific topic, presents material clearly, interacts with the students, and directly teaches the content. Teacher–student interaction (both social and academic) is effective in building motivation to learn (Wang, Haertel, & Walberg, 1993), especially when combined with an expectation for student self-direction and self-management of learning toward clear objectives. When teachers exhibit the right blend of caring and

expectation, showing that the teacher knows the student and thinks there is something special about him or her, students respond positively.

Teacher enthusiasm is more than pep talks and theatrics. The teacher's delight in learning and expressed interest in the topic convey a genuine message that learning is important. All students, but especially at-risk students, whether rural or urban, do better with teachers who:

- share warm, personal interactions with them but also hold high expectations for their academic progress,
- require them to perform up to their capabilities, and
- see that they progress as far and as fast as they are able.

Brophy (2004) challenges teachers to not be blinded by social class differences, cultural differences, language differences, and other potential barriers when forming close relationships with at-risk students. A personal connection their students may derive from teachers' devotion to helping them achieve academic success. By visiting homes, knowing students' familial milieu, and showing respect for what the student brings to the classroom, teachers can solidify the trust that contributes to students' desires to learn.

Effective teachers that help students articulate their own aspirations can be strongly motivating (Jeynes, 2010). Students possess a limited view of the world and its possibilities, so expanding students' knowledge can elevate their aspirations. Working with parents to form a vision of aspirations for their children, and helping them see the everyday behaviors and choices that pave the way to fulfillment of dreams, can be parts of an ongoing conversation among teachers and families that taps into the family's influence on children's motivations to learn.

Attribution

Inappropriate attribution of the cause of success or failure can diminish motivation. Teachers should be on guard against student assumptions that positive learning results come from something other than hard work and skillful application of learning strategies. Assumed lack of ability is a destructive attribution when students assume they are just not smart enough. Externalizing the source of difficulty or accomplishment is also harmful: "The teacher doesn't like me. The test isn't fair." Students may express counterproductive attributions even when they are successful: "The test was easy." "The teacher likes me." "I was just lucky." The teacher should challenge such unproductive attributions and nurture students' responsibility for their learning outcomes. The teacher may ask: "What do you think you need to do to reach this objective?" "Why do you think you did so well?" Such questions may encourage attitudes revealed by student statements such as: "I need to try harder, try a different approach, ask questions." Teaching and reinforcing metacognitive skills and targeting instruction based on each student's prior learning and readiness can build a foundation for constructive attribution of the causes of success.

Action Recommendations for Rural Learning

Given the insights in the foregoing sections, what specific steps can be taken to enhance the motivation and learning success of rural students? Since there is little or no contrary evidence against the general motivational principles in this section for rural students, there is little reason not to recommend them here. They are selected and adapted from the relevant action principles in *Improving Student Learning* (Walberg, 2011) and other sources as cited. Some of the action recommendations selected for inclusion in this paper address barriers that may be especially pronounced in rural settings, such as the use of distance learning to overcome limited course offerings and distance from resources. Other recommendations build upon strengths inherent to rural schools, especially their centrality to community life and their ability to engage families.

Changing the School Culture

Intentionally Address Student Motivation to Learn

Monique Boekaerts' (2002) research synthesis for the United Nations' Educational Practices Series offers insights into students' motivation to learn. Motivational beliefs refer to the opinions, judgments, and values that students hold about objects, events, and various subjects. One student, for example, may find chemistry fascinating, while another may find it irrelevant and boring.

Motivational beliefs also stem from the student's opinion of the efficiency or effectiveness of teaching methods. One student may find it tedious to work in groups, while another student may feel that working in a group helps independent productivity. Students' motivation may also be influenced by beliefs about their own self-efficacy, that is, about their own ability and prospects for success in a subject, such as trigonometry or literary criticism.

Research indicates that motivational beliefs often result from learning experiences, such as success or difficulty in solving mathematics problems or positive or negative feedback from writing an essay. Motivational beliefs, therefore, tend to guide students' thinking, feelings, and actions in a subject, and may be optimistic or pessimistic. Once formed, motivational beliefs may be difficult to change.

Students who learn to value acquiring new skills and knowledge may be less dependent on external encouragement to sustain motivation. When students possess an intrinsic motivation to pursue an activity or learn a specific subject, the need for external rewards may be minimal. Students who demonstrate intrinsic motivation report they find gratification in the activity itself.

Many students may appreciate external rewards (e.g., high marks, praise, and compensation). For other students, ability grouping, competition for grades, and external rewards can diminish their efforts, reinforcing the idea that success is based on innate ability. Students decide how much effort they will allocate to a learning task on the basis of their self-concept of ability and their beliefs about effort. Students may complete tasks they do not value in order to comply with instructions or to receive the reward associated with compliance.

Young children tend to over- and under-estimate their own performance, based on a naïve theory of effort. They may believe that if they want something badly enough and do their best to accomplish it, they will be valued for their effort, which motivates them to keep practicing with high expectations even after repeated failure. By middle childhood, however, some children have lost their belief that their efforts lead to success, especially when their efforts have continually demonstrated result-oriented failure. Such a loss can impede learning



because students let their pessimism about past experience and increasingly stronger beliefs about their supposed lack of ability in a particular skill or subject deter them from focusing on the learning activity and trying again. Even though children's understanding of causality changes with age, children resist changing their beliefs about the cause of their own successes and failures in a particular subject area

or task. Students who state that they will never succeed at a particular task or subject indicate that they no longer perceive a causal link between their actions and a positive outcome.

Such pessimism can be overcome. By creating learning situations in which students experience success, positive motivation builds up domain-specific positive beliefs as students' knowledge and skills develop. Age- and skill-appropriate tasks require students to predict the effort needed to complete tasks and, once finished, think about how they completed it. This process helps students develop the capacity to self-regulate their own learning more effectively. When students understand how their actions and thinking resulted in a correct solution, strong performance, or positive result, they are more inclined to repeat their behavior and seek

By creating learning situations in which students experience success, positive motivation builds up domain-specific positive beliefs as students' knowledge and skills develop.

to improve upon it. Ironically, students with negative motivational beliefs may be uninterested in process-oriented feedback. They may only want to know whether their answer is correct. Teaching students goal-setting techniques and encouraging perseverance are two ways to help them overcome motivational blocks.

See also the previous section on Psychological Insights for Rural Learning for instructional practices that contribute to students' motivation to learn. In rural schools where the learning of some students may be inhibited by low aspirational horizons, efforts to enhance motivation with these techniques can produce an uplifting effect.

Employ Incentives for Students and Staff

In the world of work, youths and adults are paid to do what others want done; they may intrinsically enjoy their work, but they expect payment for performance. Such thinking is entering or re-entering education. Policymakers' and educators' interest in incentives is rising. Both economists and behavioral psychologists have long assumed that appropriate incentives, both symbolic and real, powerfully shape behavior. If a person appears irrational in being unresponsive as expected to incentives, the observer may not realize the person's perceived benefits and costs. The incentives may be too small, inappropriate, or too far in the future; the costs in time and effort may be too costly.

Nevertheless, Cameron and Pierce (1994) synthesized 96 experimental psychological studies that measured the effects of incentives or rewards on sustained intrinsic motivation to learn and found nearly all positive effects. Similarly, economists have found substantial positive achievement effects of monetary rewards (Kremer, Miguel, & Thornton, 2009). These strikingly consistent findings of the extraordinary effects that can be achieved with external incentives sharply contradict the prevalent idea in education that learning must be intrinsically motivated.

For teachers, incentives can be tied to evidence of routine and expert application of specified professional practices and to student outcomes. For students, the personal tracking of progress toward mastery goals, though motivating in its own right, can also be connected with incentives for reaching the goals. Though

incentives for individual accomplishment may be most powerful, incentives can also be provided for teacher teams and for school-level achievement by the entire faculty. Again, the incentives for teachers (individually, in teams, or across the faculty) can be connected with both routine and expert application of specified professional practices and to student outcomes, including those tracked by the students themselves.

Focus on Consistent, Effective Instructional Practice

In a previous section, the effects of instructional methods and teacher–student interactions on student motivation to learn have been demonstrated. Instruction, of course, affects more than motivation. The teacher’s instructional planning and management of the classroom were found to have the strongest effect on student learning among 28 factors examined in a meta-analysis (Wang, Haertel, & Walberg, 1993). Redding (2006) describes the interrelationships among instructional

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planning, classroom management, and instructional delivery. Instructional planning is necessary to organize and align the curriculum, develop formative

assessments, prepare lessons, and differentiate (individualize) instruction for each student. Instructional planning is efficiently accomplished by teams of teachers, sharing approaches, examining student outcomes, aligning instruction to standards, and developing lesson plans and materials.

Instructional planning and classroom management can be highly linked; how the teacher orchestrates activity in the classroom depends largely on the teacher’s planning. Classroom management is more than rules and procedures, it is also the teacher’s organization of the classroom to effectively use a variety of instructional modes (whole-class, student groups, independent work, computer-based learning, homework) to both directly teach new material and differentiate learning activities for individual students. Classroom management also includes the way the teacher navigates the classroom, interacts with students, and demonstrates purposefulness in what students are asked to do.

Instructional delivery, the methods a teacher applies within each instructional mode, is also dependent upon instructional planning and classroom management. For example, in whole-class, direct instruction, research underscores the effectiveness of specific methods for reviewing the previous lesson, introducing the new lesson, stimulating interest in the topic, relaying the central content, questioning, summarizing, and confirming mastery.

In small group instruction, the teacher must know when heterogeneous groups are appropriate and when homogeneous groups are best, whether the group should be teacher-directed or student-directed, and when cooperative learning techniques are applicable. The small group activities should be well planned and aligned to learning objectives. The teacher should differentiate learning activities

appropriate to each student's current level of mastery on standards-aligned objectives and likely interest in a topic. Differentiation is accomplished with student-specific learning assignments for independent work, computer-based learning, and homework.

While these instructional methods are sound in any school setting, differentiation (indeed, individualization) may be particularly important in rural schools to guide the more able students to pursue content beyond the scope of the standard curriculum. This approach ameliorates limitations in course selection of some small schools. The opportunity to learn is no longer a function of the curriculum's breadth, but is widened by the teacher's planning for each student within the current subject areas and course offerings.

Encourage Self-Instruction

Arguably, successful teachers make themselves unnecessary since students should continue learning after the end of the school day and after they finish their schooling. Students need to acquire new knowledge and skills for the rest of their lives. Extensive and intensive studies of distinguished experts in a variety of fields show that almost universally they have continued to concentrate on their techniques and short-term gains as much as long-term outcomes.

Similarly, highly successful students not only strive after long-term goals but those very specific operational goals that can be measured or observed. They devise the best ways to obtain quick, accurate, and informative feedback on their accomplishments of the short-term operational steps. They also assess whether or not the short-term steps are actually leading to the long-term goals.

At one extreme of achievement, the example of world-class chess experts illustrates how the most skilled learners use such principles to teach themselves. Differing from casual players and even those who have played many games for many years, the experts carefully study champion games of previous world masters to understand how their



steps and sequences of steps eventually led to checkmate. The highest levels of skill in sports, arts, professions, and other occupations are brought about not only by long hours of practice. The leading scholar on the highest levels of expertise, Anders Ericsson (2007), calls this necessary component of outstanding success "deliberate practice," which requires personally setting specific short-term goals, designing methods for attaining immediate feedback on success or failure, and practicing the necessary correctives. Similarly, teachers can employ

such principles with their students so students can acquire not only the specific knowledge and skills but disciplined study habits that will benefit them throughout their lives.

Foster Classroom and Peer Group Morale

Researchers measure classroom morale by obtaining student ratings of their perceptions of the classroom group. High, positive morale means that the class members like one another, they have a clear idea of the classroom goals, and the lessons are matched to their abilities and interests. Good classroom morale fosters student concentration on academic learning rather than on such distractions as cliques and favoritism. Peer groups outside school and stimulating home environments can provide positive reinforcement of academic achievement by expanding learning time and enhancing its efficiency. Students can learn in both of these environments—among peers and at home—as a reinforcement and enhancement to formal schooling.

Much of classroom learning is a social activity, and participation in the social life of the school may be necessary for learning to occur (Vosniadou, 2001).

Good classroom morale fosters student concentration on academic learning rather than on such distractions as cliques and favoritism.

Children often learn by adopting the activities, habits, vocabulary, and ideas of people in their classrooms. Classroom collaboration in

learning can enhance student achievement when focused on academic learning. Social interaction in the classroom can keep students engaged and motivated in academic work. Students may become more productive and improve the quality of their work (in essays, projects, artwork, etc.) when they know that it will be shared with other students.

Employ Distance Technologies

As pointed out in the opening paragraphs of this report, the defining characteristic of rural schooling is low population density, which means that generally smaller schools and their families are remote from one another. But various forms of “distance education” have long served rural families starting with written correspondence instruction, still employed in Australia’s outback. Computer and Internet technology, particularly instantly interactive methods tailored for individual abilities and interests of students, makes distance methods increasingly attractive, feasible, and employed as evidenced by “virtual schools” and other modern developments.

Academics continue to study these technological transformations. At the Harvard Business School, Clayton Christensen revived such thinking about industries in general and argued that “disruptive technologies” are likely to transform schools (Christensen, 2006; Christensen & Horn, 2008). Such developments reflect the broad changes in the American economy and society and are more widely appealing to young people who are often much more facile with computers and the Internet than older adults.

Technological change is leading to new products, services, and forms of organization, management, transportation, advertising, and financing. The Internet is replacing traditional publishing; digital is replacing film photography; television, cable, DVDs, and downloadable media are replacing theaters; mobile cell phones are replacing pay phones and hardwired home phones. Today, Google, Yahoo, iTunes, and other Internet technologies challenge newspapers, book publishing, and music distribution.

Contrary to the views of some long experienced educators, computer-based methods are at least as effective as traditional classroom teaching. As pointed out in *Improving Student Learning* (Walberg, 2011), the most extensive synthesis of research covering 232 control-group studies found that student achievement, attitude, and retention were the same for classroom and online Internet instruction. Eight separate meta-analytic reviews revealed that offline computer-based instruction had superior effects on student achievement. On average, students gained more knowledge in computer-based instruction and took more pleasure in learning than their counterparts in standard classrooms. Much of this research was decades old, and the newer technologies undoubtedly are becoming more effective and cost-efficient.

A recent survey of the public, moreover, showed about a quarter thought middle and high school students should get credit for online courses (Howell, Peterson, & West, 2011). Expanded access to electronic media offers today's teachers and students effective and potentially cheaper new ways to teach and learn. In the long run, instructional technology is likely to prove increasingly more effective, cost efficient, and time saving than regular classroom teaching since technologies, particularly computer and Internet technologies, are generally improving with time.

New electronic media can add sound, color, animation, and interactivity to text, adding stimulation for engagement. The Internet can offer instantaneous and free (or inexpensive) access to content.

When low-speed Internet connections, slow computers, or both are a concern, CDs or DVDs provide large amounts of material, which can be distributed at a low cost. Providers' websites or files on local servers also can provide access to materials for individual students or staff in education centers, schools, libraries, and classrooms—both for small-scale specific distribution and for uniform, large-scale curriculum adoption.

But CDs and DVDs cannot be easily updated like material on the Internet—material that, like printed matter, should be vetted for accuracy, currency, and appropriateness of content (Walberg, 2011).



Policymakers at the state and national levels increasingly seem to agree on the value of having a stable set of specific curriculum offerings and standards, and some emphasize a core curriculum for the whole country. This would make it far more worthwhile to develop online programs carefully designed and matched to the agreed-upon content and standards. Spending sufficient funds for high-quality programs would increase learning and reduce the unit costs to the extent that increasingly large numbers of students are taught using this technology.

Influencing Students' Out-of-School Life

Foster Academically Constructive Out-of-School Activities

Limiting television exposure (and time with other media) appears to be one of the key factors affecting academic achievement, and parents can do much to make children's out-of-school time complement and enhance their formal instruction. Children appear to do better in school when parents provide predictable boundaries for their lives, encourage productive use of time, and provide learning experiences as a regular part of family life (Redding, 2000). In families run by calendars, schedules, grocery lists, "to do" lists, shared household chores, reading, studying, and playing mentally challenging games, children may more easily adapt to the responsibilities of school. The disadvantages of poverty may be mitigated by such conditions for learning.

One study (cited in Redding, 2000) found that high achieving students spend about 20 hours each week outside of school in constructive learning activities, particularly with the support and guidance of parents or other close adults.

Music practice, reading, writing, visiting museums, and participation in youth groups engage children in varied learning experiences, keeping them energized. Parents' support for exploring and working together with their children on hobbies and games multiplies the school's efforts to effectively nurture a child's talents and interests.

Children appear to benefit when their parents know their whereabouts, know their friends, monitor their television viewing and

media time, and maintain contact with their teachers. Taking a regular inventory of a child's weekly schedule provides valuable information to parents on how time is being allocated to activities that are in a child's long-term interests. Recreational and social activities, of course, should become a regular part of a child's life, while maintaining the importance of reading and studying.



Minimize Time with Mass Media

Mass media, particularly television, can displace homework, leisure reading, and other learning and academically stimulating activities. Television viewing may dull the student's motivation for academic work. Even so, researchers have estimated that high school students spend an average of 20–30 hours a week watching television in contrast to a mere 4 or 5 hours spent on homework weekly. More recently, video games have risen in popularity, also displacing homework time and leisure reading and distracting students from more constructive activity.

Mass media, particularly television, can displace homework, leisure reading, and other learning and academically stimulating activities.

K–12 studies indicate that students watching 4 hours or more of television per day have lower academic achievement than do students who limit their television viewing (Barton & Coley, 2007). Eighth graders who watched more than 5 hours of television per day showed the lowest average mathematics scores in a large international survey. According to a 2004 Child Trends report (cited in Barton & Coley, 2007), about one third of eighth graders watched 4 hours or more of television on weekdays. Only 19% of children whose parents attended graduate school watched 4 hours or more of television per day, compared to 42% of students whose parents had less than a high school education.

The implications of research on television and video game effects are uncertain because randomized experiments have not been conducted, and it has been difficult to statistically control for rival causes, such as parent education. Moreover, it can easily be envisioned that students may benefit from watching academically constructive programs and discussing them with their parents, classmates, and teachers. For these reasons, educators might best counsel parents to monitor the number and quality of programs their children watch and to limit the amount of time they spend on academically unproductive programs and video games.

Employ Effective Preschool Programs

Can developmental and early educational programs diminish growing achievement gaps that begin in early childhood and increase as children enter and proceed through school? While the positive effects of many preschool programs has been found to be minimal, the benefits of rigorous, academically focused programs with strong parental engagement are substantial. An analysis of 48 published articles on early childhood interventions to improve home environments shows positive but small (0.2 standard deviation) overall effects (Bakermans-Kranenburg, van IZendoorn, & Bradley, 2005), with randomized intervention studies showing a smaller average effect size of 0.13 standard deviation. Children of middle class parents benefited more from the programs than those from poor families—the “Matthew effect” in which the already advantaged gain increasingly more than others as they grow older (“to him that hath shall be given,” Walberg, 2011, p. 21). One reason for limited program effects overall is that the program sessions are usually limited in time and take place over only a small

fraction of the child's life. Moreover, parents, particularly those in poverty, may be less able to fulfill the program requirements.

Head Start is by far the largest and longest enduring early childhood program. Intended to help children in poverty from birth to age five, it began in 1965 by providing grants to local public and private non-profit and for-profit agencies to establish an array of services, including dental, optical, mental and physical health services, nutrition, and parental involvement and education. Head Start now serves over 900,000 low-income children and their families each year.

However, a 1985 synthesis of about 300 studies of Head Start and other early childhood programs revealed that their moderate immediate effects on achievement



and other cognitive tests faded within 2 to 3 years; that is, program students did better on achievement tests than control-group students at the end of the program, but over time the difference between the groups diminished to insignificance (White, 1985). Since 1985, the programs attempted to improve by con-

centrating on children's academic readiness, and reviews since then have been slightly more encouraging (Currie, 2001; Karoly et al., 1998).

A recent large-scale study by the U.S. Department of Health and Human Services (HHS) found that Head Start helps children make gains in cognitive development that narrow the achievement gap. In May 2005, the first year findings from the impact study—a Congressionally mandated study that requires HHS to evaluate the impact of Head Start on the children and families it serves—offered evidentiary support for Head Start. Based on a rigorous, randomized experimental design, the study demonstrated that after less than one school year, Head Start narrowed achievement gaps by 45% in pre-reading skills and by 28% in pre-writing skills and positively impacted vocabulary skills as well. Head Start apparently changed parent behavior, too, including increasing the frequency of parents reading to their children.

Another rigorous, large-scale, random-assignment evaluation of Head Start showed small positive effects on parental behavior and on children through age three (Mathematica Policy Research, 2002). The particular Head Start project studied was designed to enhance children's development and health, strengthen family and community partnerships, and deliver new services to low-income families with pregnant women, infants, or toddlers. The 17 project instances

investigated included 3,001 families and showed small, temporary effects. Thus, early programs for children in poverty have generally and regrettably shown inconsistent effects.

So far, this section considered learning in the preschool years and parents' contribution to an environment that stimulates learning, either through actions of their own or in collaboration with family-child programs like Head Start. Unlike other early childhood programs that emphasize "developmental appropriateness," self-esteem, and play, one program, the Chicago Child-Parent Centers (CPC), directly taught academic language and number skills, which concerns one of the teaching factors not yet discussed—the quality, including content, of instruction. This program emphasizes the acquisition of language and pre-mathematical experiences through teacher-directed, whole-class instruction, small-group activities, and field trips for preschoolers, beginning at age three.

The program also featured intensive parental participation in each center's parent resource room. A landmark study of the CPC—the only long-term study of an academically focused early learning program—demonstrated significant long-term effects and cost-effectiveness of this academically oriented family-support program (Reynolds, 2000; Reynolds, Temple, Robertson, & Mann, 2001).

Compared with matched control-group children, the 989 participating CPC children showed higher cognitive skills at the beginning and end of kindergarten, and they maintained better school achievement through the later grades. Furthermore, by age 20, CPC graduates had substantially lower rates of special education placement and grade retention than the control group, a 29% higher rate of school completion, and a 33% lower rate of juvenile arrest. A cost-benefit analysis showed that, at a per-child program cost of \$6,730 for 18 months of part-day services, the age-21 benefits per child totaled \$47,759 in increased economic well-being and reduced expenditures for remediation. Few education studies have either followed children as long or calculated the costs and benefits of the programs.

In CPC, program staff coordinated preschool activities with continuing kindergarten services in neighborhood schools. The program involved parents by engaging them in academically stimulating experiences for their children at home, such as teaching them numbers, letters, and colors. The results support productivity factors—namely, the home environment; the quality of instruction, particularly its academic emphasis; the amount of instruction, since the children were given the advantage of extra academic time; and contributed to their prior learning before starting school. Both the program and the evaluation are unique.

Most programs lack the CPC features, and a review of evaluations (Karoly et al., 1998) found that about half the early childhood intervention programs showed no significant effect on achievement. As the CPC evaluation and others illustrate, even though most early childhood programs show small and unsustainable effects, a few programs may show substantial effects. The continuing research task is to find the exemplary features of programs that work well, which is easier said than done because such research is likely to require randomization and long-term study.

Employ Programs for K-12 Parents

In addition to the preschool programs discussed in the preceding section, a variety of programs teach parents how to enhance the home environment in ways that may benefit their children's learning. Parents may be encouraged, for example, to support their children's academic, social, and emotional learning by participating in parent education and home-visit programs beginning in preschool years and continuing throughout the school years (Redding, 2000). The home visit model typically targets parents of preschool age children, some as early as birth, and appears most effective when combined with group meetings with other parents to reinforce a collegial and nonthreatening atmosphere of learning.

As described by Redding (2000), workshops and courses, designed by experts and conducted by trained parent leaders under the supervision of professional school staff, have the advantage of research-based content, access to professional knowledge, and the collegiality of peer leaders. The programs can teach parents ways to improve the quality of cognitive stimulation and verbal interactions that produce immediate, positive effects on their child's intellectual development.

- **Home Visiting:** Home visit programs enable focused, personalized coaching in the natural setting of the home, though this feature may be labor-intensive and expensive. Small-group sessions led by trained parents in homes and schools are less expensive, encourage parents' attachment to the school, and allow them to share experiences and assist one another.
- According to Redding, the two most common challenges in parent education are providing staff to organize and provide programs and attracting parents to participate. To meet the challenge of staffing, Redding suggests partnering with health and religious organizations that conduct childhood outreach programs. To attract parents, programs could seek parental suggestions for programming; engage parents in recruitment efforts; and use field-tested, proven models and curricula.
- **Language Stimulation:** Several kinds of parent-child interactions may enhance a child's success in school, including conversing with the child daily, reading with the child and talking about what is read, storytelling, and letter writing (Redding, 2000). As parents increasingly lead busy lives, spending several minutes a day in fully engaged private conversation with a child can make an important difference. Furthermore, verbal interactions can reinforce the affective bonds between parents and children, and affectionate communication affirms the joy of learning. Parents can reinforce their children's attempts to expand vocabulary use, while ridicule about faulty new vocabulary use can cripple children's natural learning and experimentation process. Family visits with their children to museums, libraries, zoos, historical sites, and cultural centers provide enriched contexts for conversation and inquiry.

Strengthen the “Curriculum of the Home”

Children throughout the world learn their native language readily and seemingly without effort, while adults beginning a second language find it extraordinarily difficult and frustrating. Thus, nearly universal experience shows that early and sustained immersion in a language has powerful effects. Since language is largely the medium of schooling, its early mastery and sustained encouragement is a key to school success. In language exposure and encouragement, what are the potential effects of parents and educators? Of all the hours in the first 18 years of life, American children spend only 8% in school. The other 92% of the hours are the responsibility of their parents, and parents vary widely in their child-rearing practices and in the circumstances they provide for their children.

Hart and Risley’s (1995) careful study showed professional parents,

in contrast with low-income parents, not only spoke with their young children much more frequently, but also encouraged them six times more often with positive verbal feedback for good behavior. These parental practices would seem to have highly consequential effects on their children’s school preparation and success.

Though the causal evidence is neither as clear-cut nor as scientifically rigorous as we might like, the effects of child rearing on children’s character and learning seem plausible and are widely believed. For this reason educators may help children by reaching out to their parents and informing them of practices that appear to help children at home and in non-school hours including afternoons, evenings, weekends, vacation days, and summers.

Because parents are their children’s first and perhaps most important teachers, educators might well inform them of their children’s progress in school and share ideas about specific practices that can help them at home, such as providing a quiet place for reading and homework and discouraging them from watching unconstructive television. Parents may benefit from greater knowledge of home practices that promote their children’s learning before and after the school day. Students may also benefit from communication between their parents and their teachers that flows in both directions. Students appear to show higher levels of achievement when parents and teachers understand each other’s expectations and communicate regularly about the child’s learning habits, attitudes towards school, social interactions, and academic progress.

Schools that provide incentives or recognition for teachers to maintain close connections with parents tend to sustain a quality, disciplined educational environment. Redding (2000) recommends a variety of communication strategies:

Because parents are their children’s first and perhaps most important teachers, educators might well inform them of their children’s progress in school and share ideas about specific practices that can help them at home, such as providing a quiet place for reading and homework and discouraging them from watching unconstructive television.

- parent–teacher–student conferences that stimulate positive and constructive feedback on student work (such as through a portfolio) with the structure of a meeting agenda
- report cards (daily, monthly, or quarterly) that include written two-way communication
- newsletters with contributions by parents
- open door parent–teacher conferences at designated times, such as 30 minutes before school each morning
- emails to parents or general listserve bulletins

Redding affirms observations made by sociologist James S. Coleman (1987): When the families of children in a school associate with one another, social capital is increased; children are watched over by a larger number of caring adults; and parents discuss standards, norms, and the experiences of child rearing. Children may benefit when the adults around them share basic values about child rearing, often communicate with one another, and give their children consistent support and guidance aligned with thoughtfully defined values. The school can help orchestrate the opportunities for parents to meet and learn from one another.



Thus, eminent authorities and some research suggest that educators can reach out to parents to encourage them to stimulate their children’s academic achievement. A variety of programs discussed in this and the prior sections provide insights into the planning and conduct of new programs. Witte and Sheridan (2011) recommend, “Teachers in rural schools should be trained in culturally sensitive parent communication, especially in districts wherein a majority of

teachers are recruited from outside the community. Schools can also invite families to help establish policies and share in communicating the partnership goals to all parents” (p. 155).

Rigorously Evaluate Parent Programs

Two bodies of research on the parents’ role emerged over recent decades to answer questions regarding the impact of parent involvement. One strand of research investigates the effects of parent’s naturally occurring involvement, and another body of research evaluates the effects of interventions designed to improve parents’ involvement in children’s schooling. In a recent review

of nonrandomized research on parent involvement (Pomerantz, Moorman, & Litwack, 2007), parents' naturally occurring school-based involvement suggests fairly consistent and occasionally substantial positive influences on achievement.

Definitive randomized research based on programs that seek to involve parents in the schools and their children's education is unavailable; however, some longitudinal designs take into account children's achievement progress. These suggest that the value of school-based involvement—regardless of parents' socioeconomic status or educational attainment—is not great. A research synthesis of 41 studies that evaluated K–12 parent involvement programs concluded that there is little empirical support for their efficacy to improve student achievement and changing parent, teacher, and student behavior (Mattingly, Prislin, McKenzie, Rodriguez, & Kayzar, 2002). The synthesis found few quality (randomized, experimental) studies of parent involvement programs, and most studies lacked the necessary rigor to provide strong, valid evidence of program effectiveness. Thus, it seems possible that the programs may improve outcomes, but the research may be insufficiently rigorous to prove their efficacy. Obviously, both rigorous research and continuing evaluation of local programs is in order. (Of course, the same is called for in most school and other social programs that mainly rely on experience, intuition, and common sense.)

Redding and Keleher (2010) offer a framework for designing and evaluating parent programs, beginning with a keen focus on the program's purpose, intended audience, and desired outcomes. Their logic model outlines a process for determining the initiative's effectiveness guided by the following:

1. **Type or category:** Is this program aimed at enhancing parent involvement, parenting skills, and/or strengthening the school community? Will the program address specific challenges faced by some students? Some parents?
2. **Target audience:** Will the program include parents? Teachers? Students? Others? Is it designed for certain grade levels? Interests? Characteristics of participants?
3. **Purpose, goals, and objectives:** What does the program intend to accomplish? Objectives may be identified by asking:
 - a. Knowledge: What will participants know that they did not know prior to their participation in the program?
 - b. Skills: What will participants be able to do that they were not able to do prior to their participation in the program?
 - c. Actions: In what ways will participants' behaviors and habits change as a result of newly acquired knowledge and skills?
4. **Theory of action:** A theory of action addresses the ways in which the program will "work" in changing participants' knowledge, skills, and actions. A theory of action is determined by asking:
 - a. Incentives: How will the program enhance the participants' motivation to achieve the intended outcomes?

- b. Capacity: How will the program provide the participants with the necessary knowledge and skills to achieve the intended outcomes?
 - c. Opportunity: How will the program remove barriers that stand in the way of participants achieving the desired outcomes and provide them with avenues for personal adaptation of the program's proposed or prescribed practices? (For more information on incentive, capacity, and opportunity, see Rhim, Hassel, & Redding, 2008.)
5. **Activities, tasks, outputs, timeline, and responsibilities:** This is the common planning component in the logic model, linking elements of the program to its purpose and providing a roadmap for implementation.
 6. **Evaluation design – data sources, criteria, data analysis:** The evaluation design is suited to the purpose of the program and includes the instruments, forms, and data sources necessary to make formative and summative determinations about the program.
 7. **Uses of evaluation results:** Will periodic reports be prepared? How will the information be shared? With whom? For what purpose? How will the program be improved in response to the findings?

This intentional construction of family engagement initiatives and their evaluation is always good practice, and in attempts to improve the performance of schools and the achievement of their students, it seems imperative. While rural schools may be advantaged by their centrality to community life and their families' possibly more ready engagement, increased learning outcomes for students will not be achieved with haphazard family engagement activities. Well-designed, executed, and evaluated initiatives, however, may turn a natural advantage into an engine for significant improvement.

Conclusion

Experienced rural educators and empirical evidence suggest insights and evidence for improving rural students' motivation and increasing their learning. Rural communities, by definition, are small and geographically remote, as are their schools. There is little evidence that community or school size militates against student performance, all else being equal. Geographic remoteness presents its challenges, but distance technology available today helps close the miles in ways not possible in the past. In many ways, rural schools are advantaged—conscientious governance by school boards with a vested interest in the well being of their small communities, school personnel who assume broad responsibilities for their students' success, close-knit families, abundant social capital (or close social relations among area families), and the centrality of the school in community life.

Rural schools struggle with many of the same obstacles to improved student learning that bedevil schools in urban and suburban settings. Some of these obstacles are contextual in nature—pockets of poverty, limited English usage in migrant and immigrant populations, the distractions of mass media, the temptations of drugs and alcohol to youth, and the difficulty in attracting and keeping quality personnel in places in which not everyone wants to live. But the avenues to greater learning outcomes and persistence in school in rural schools are primarily within the control of the schools and are not substantially different from the paths to improved performance evidenced in non-rural schools.

Because rural schools may not count on the recruitment of new talent to elevate their level of human capital, they must intentionally ingrain systems (policies, programs, procedures, and practices) that optimize the productivity of current staff and readily assimilate new staff. These systems, supportive of the action recommendations offered in this report, are necessary and achievable in rural schools.

References

- Barker, R., & Gump, P. (1964). *Big school, small school: High school size and student behavior*. Stanford, CA: Stanford University Press.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Barker, R. and Gump, P. (1964). *Big school, small school: High school size and student behavior*. Stanford, CA: Stanford University Press.
- Brophy, J. E. (2004). *Motivating students to learn*. Mahwah, NJ: Lawrence Erlbaum.
- Barley, Z. A., & Beesley, A. D. (2007). Rural school success: What can we learn? *Journal of Research in Rural Education*, 22, 1–16.
- Boekaerts, M. (2002). *Motivation to learn*. International Academy of Education Educational Practices Series, H. J. Walberg (Ed.), Geneva, Switzerland: UNESCO, International Bureau of Education. Retrieved from <http://www.ibe.unesco.org/en/services/publications/educational-practices.html>
- Brophy, J. E. (2004). *Motivating students to learn*. Mahwah, NJ: Lawrence Erlbaum.
- Cameron, J., & Pierce, W. D. (1994, Fall). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research*, 64(3), 363–423.
- Christensen, C. M. (2006, December). Disruptive innovation for social change. *Harvard Business Review*, 94–96.
- Christensen, C. M., & Horn, M. B. (2008). How do we transform our schools? *Education Next*, 8(3), 13–19.
- Coleman, J. S. 1987. Families and schools. *Educational researcher*, 16(6), p. 32–38.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper & Row.
- Csikszentmihalyi, M. (1993). *The evolving self: A psychology for the third millennium*. New York, NY: Harper Collins.
- DeLeon, P. H., Wakefield, M., & Hagglund, K. J. (2003). *The behavioral health care needs of rural communities*. Washington, DC: American Psychological Association.
- Ehrich, R. (n.d.). *The impact of school size*. Retrieved from <http://delta.cs.vt.edu/edu/size.html>
- Friedkin, N. E., & Necochea, J. (1988). School system size and performance: A contingency perspective. *Educational Evaluation and Policy Analysis*, 10(3), 237–249.
- Gold, B. (1981, March). Changing perspectives on size, scale, and returns. *Journal of Economic Literature*, 19, 5–33.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Paul H. Brooks.
- Hirsch, W. Z. (1969). *Reorganization of large school districts*. Los Angeles, Institute of Government and Public Affairs, Los Angeles, CA: University of California at Los Angeles.
- Howell, W. G., Peterson, P. E., & West, M. R. (2011). PEPG Survey – 2011. *Education Next*. Retrieved from http://educationnext.org/files/EN-PEPG_Complete_Polling_Results_2011.pdf
- Howley, A., Rhodes, M., & Beall, J. (2009). Challenges facing rural schools: Implications for gifted students. *Journal for the Education of the Gifted*, 32(4), 515–536.
- Jeynes, W. (2010). *Parental involvement and academic success*. New York, NY: Routledge.
- Johnson, J., & Strange, M. (2007, October). *Why Rural Matters 2007: The realities of rural education growth*. Arlington, VA: The Rural School and Community Trust.
- Karoly, L. A., Greenwood, P. W., Everingham, S. S., Houbé, J., Kilburn, M. R., Rydell, C. P., & Chiesa, J. (1998). *Investing in our children: What we know and don't know about the costs and benefits of early childhood interventions*. Santa Monica, CA: RAND.

- Krechevsky, M., & Seidel, S. (2001). Minds at work: Applying multiple intelligences. In J. Collins & D. Cook (Eds.), *Understanding learning influences and outcomes*. London, UK: The Open University.
- Kremer, M., Miguel, E., & Thornton, R. (2009). Incentives to learn. *The Review of Economics and Statistics*, 91(3), 437–456.
- Lauer, P. A., Akiba, M., Wilkerson, S. B., Apthorp, H. S., Snow, D., & Martin-Glenn, M. L. (2006). Out-of-school-time programs: A meta-analysis of effects for at-risk students. *Review of Educational Research*, 76(2), 275–313.
- Mackety, D. M., & Linder-VanBerschot, J. A. (2008, August). *Examining American Indian perspectives in the Central Region on parent involvement in children's education* [Issues & Answers Report, REL 2008-No. 059]. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central.
- Mattingly, D. J., Prislun, R., McKenzie, T. L., Rodriguez, J. L., & Kayzar, B. (2002). Evaluating evaluations: The case of parent involvement programs. *Review of Educational Research*, 72(1), 549–576.
- Monk, D. (2007, Spring). Recruiting and retaining high-quality teachers in rural areas. *Future of Children*, 17(1), 155–174.
- National Education Association. (2008). *Rural education*. Washington, DC: Author.
- Oakes, A., & Maday, T. (2009). *Engaging Native American learners with rigor and cultural relevance*. [Issue Brief]. Washington, DC: The Center for Comprehensive School Reform and Improvement.
- Owens, J. S., Richerson, L., Murphy, C. E., Jagelewski, A., & Rossi, L. (2007). The parent perspective: Informing the cultural sensitivity of parenting programs in rural communities. *Child Youth Care Forum*, 36, 179–194.
- Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research*, 9(77), 373–410.
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66, 543–578.
- Prater, D. L., Bermudez, A. B., & Owens, E. (1997). Examining parental involvement in rural, urban, and suburban schools. *Journal of Research in Rural Education*, 13, 72–75.
- Redding, S. (2000). *Parents and learning*. International Academy of Education Educational Practices Series, H. J. Walberg (Ed.), Geneva, Switzerland: UNESCO, International Bureau of Education. Retrieved from <http://www.ibe.unesco.org/en/services/publications/educational-practices.html>
- Redding, S. (2006). *The mega system: Deciding, learning, connecting*. Lincoln IL: Academic Development Institute. Retrieved from <http://www.centerii.org/survey>
- Redding, S., & Keleher, J. (2010). Evaluating parent pro-grams. In D. B. Hiatt-Michael (Ed.), *Promising practices to support family involvement in schools* (pp. 151–170). Charlotte, NC: Information Age Publishing.
- Reynolds, A. J. (2000). *Success in early intervention: The Chicago Child-Parent Centers*. Lincoln, NE: University of Nebraska Press.
- Reynolds, A. J., Temple, J. A., Robertson, D. L., & Mann, E. L. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15 year follow-up of low-income children in public schools. *Journal of the American Medical Association*, 285, 2339–2346.
- Rhim, L. M., Hassel, B. C., & Redding, S. (2008). State role in school improvement. In S. Redding & H. Walberg (Eds.). *Handbook on Statewide systems of support*. Charlotte, NC: Information Age Publishing.
- Roeser, R., & Midgley, C. (1997). Teachers' views of issues involving students' mental health. *Elementary School Journal*, 98, 115–133.

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- Schafft, K. A., Prins, E., & Movit, M. (2008). *Poverty, residential mobility, and persistence across urban and rural family literacy programs in Pennsylvania*. University Park, PA: Goodling Institute for Research in Family Literacy.
- Schunk, D. H. (1995). Self-efficacy and education and instruction. In J. E. Maddux (Ed.), *Self-efficacy, adaptation, and adjustment: Theory, research, and application* (pp. 281–303). New York, NY: Plenum Press.
- Schunk, D. H., & Ertmer, P. A. (2000). Self-efficacy and academic learning: Self-efficacy enhancing interventions. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 631–650). San Diego, CA: Academic Press.
- Schunk, D. H., & Pajares, F. (2002). The development of academic self-efficacy. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation* (pp. 16–31). San Diego, CA: Academic Press.
- Vosniadou, S. (2001). *How children learn*. International Academy of Education Educational Practices Series, H. J. Walberg (Ed.). Geneva, Switzerland: UNESCO, International Bureau of Education. Retrieved from <http://www.ibe.unesco.org/en/services/publications/educational-practices.html>
- Walberg, H. J. (2011). *Improving student learning*. Charlotte, NC: Information Age Publishing.
- Walberg, H. J., & Fowler, W. J. (1987). Expenditure and size efficiencies of public school districts. *Educational Researcher*, 16, 5–15.
- Walberg, H. J., & Walberg, H. J., III (1994, June-July). Losing local control. *Educational Researcher*, 23(5), 19–26.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1993). Toward a knowledge base for school learning. *Review of Educational Research*, 63, 249–294.
- Witte, A. L., & Sheridan, S. M. (2011). Family engagement in rural schools. In S. Redding, M. Murphy, & P. Sheley (Eds.), *Handbook on family and community engagement* (pp. 153–156). Lincoln, IL: Academic Development Institute. Retrieved from www.families-schools.org
- White, F., & Tweeten, L. (1973, February). Optimal school district size emphasizing rural areas. *American Journal of Agricultural Economics*, 55(1), 45–53.

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