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Reframing Education:

How To Create Effective Schools

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Thomas Fleming

In this issue...
For nearly a half century, educational researchers have debated the factors associated with student achievement. Some have argued that such out-of-school factors as students' socio-economic status are predictive of student success. Others contend that the keys to improving student performance lie in a complex of factors inside schools. The authors survey the educational literature on academic achievement and effective schooling to determine what is currently known about the critical factors that appear to shape performance.

The Study in Brief

Since the 1960s, educational researchers have remained divided on the issue of student achievement. One body of research, reflected in the writings of Coleman, Jencks and others has argued that educational achievement correlates more highly with out-of-school factors, such as socio-economic status, than with in-school factors, such as material resources. Another approach, however, has argued that variability in student achievement is a complex puzzle that transcends simple comparisons of home and school factors. Socio-economic explanations for variance in student achievement have been challenged by the findings of more recent research that accounts for such variance in school-level factors. A large body of literature known in educational circles as "school effectiveness research" (SER), or the "effective schools movement," has emerged over the past 30 years. The purpose of this *Commentary* is to review this research to determine what we know today about the factors that shape student achievement.

Research reveals that eight major characteristics have been widely identified as factors that positively influence student achievement. They include: a focus on student achievement, effective classroom instruction, a shared vision about educational purpose among school staffs, an orderly and secure climate for learning, strong leadership (particularly from principals), a linkage between assessment and curricular practices, high standards and expectations for students and, finally, supportive home-school links.

Taken as a whole, these eight factors provide educational policymakers with useful guidelines to improve student performance and the quality of schooling that young people receive. Although their value is "associative" rather than "predictive" in character, and they cannot be strictly applied as a recipe for results, they serve as sound descriptive indicators of the principal organizational elements essential for good schooling. Research on effective schooling also furnishes important insights for school administrators and policymakers into the complexities of large school systems.

Most importantly, effective schools research points to the necessity of looking at school systems as a whole and promoting research into organizational factors that lie outside schools, but within school systems. Recent research has shown that government officials and educational administrators should broaden the suite of management data they collect to include more comprehensive information at the classroom-level, as well as data which more fully describe the effects of changing curriculum and assessment practices. Policymakers must support educators in interpreting and implementing provincial and district standards and support research that illuminates how different curricular and instructional approaches in different contexts yield variable results in student learning.

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Education matters (OECD 2001). In 2002, the World Bank showed that, for every year of basic education a country provides, its gross national product increases by more than six percent. Investment in human capital is therefore an essential part of expanding an economy and becoming internationally competitive (Psacharopoulos and Patrinos 2002). No nation today can afford poor schools or high dropout rates among its young people unless it wishes to jeopardize its economic future. Without good quality schooling for everyone, important parts of the population are disqualified from participating fully in a nation's political and cultural life, thereby creating a class system and confining the tasks of civic leadership to elite classes as was the case a century ago.

As well, research on health care has found that high school graduates are more likely to use preventative and less costly medical services than non-graduates; make fewer visits to doctors; have a markedly better knowledge of good health behaviour; enjoy a better level of general health, and have better functioning families (see Davis 1982; Bobo and Licari 1989; Ross and Wu 1995). Considering that Canada's health-care programs consume the largest portion of public spending at both federal and provincial levels, improving the country's basic level of education can render enormous health-care savings.

Recently, some researchers have begun to argue that the quality of education matters more to individual and societal growth than does the level of educational attainment (see Hanushek and Kimko 2000; Barro 2001). In a study for the World Bank, Pritchett (1996) uses cross-sectional data from several countries to conclude that more education does not necessarily fuel faster economic growth. Other researchers have shown that, for example, there is little relation between resource use and the quality-of-learning results.[1] Because of such findings, it is easy to understand why government policymakers and educators in Canada continue to seek more effective measures to determine whether our education systems are equipping today's children to "meet the challenges of the future."[2]

Variability in Student Achievement

Public efforts to ensure uniformly high levels of educational achievement in schools have been confounded by evidence that educational achievement correlates more highly with out-of-school factors, such as socio-economic status, than with in-school factors, such as material resources. One of the earliest studies to advance this idea was sociologist James Coleman's 1966 report, which was broadly interpreted to mean that "schools don't make a difference" (Coleman et al. 1966).[3]

1 For a balanced discussion of the outcomes and impacts of schooling on society, see Sweetman (2002).

2 See PISA website: www.pisa.oecd.org/index.htm.

3 According to Coleman, differences between schools "account for only a small fraction of differences in pupil achievement" [approximately 10 percent of variance] (Coleman et al. 1966, 21). Coleman also reported several school-based factors that correlated highly with student achievement, such as teacher quality. The report also showed that "the achievement of minority pupils depends more on the schools they attend than does the achievement of majority pupils" (20 percent for southern blacks versus 10 percent for white southerners). However, these findings were drowned out by the clamour to condemn public schooling.

Christopher Jencks's 1972 study confirmed Coleman's conclusions that educational attainment was highly correlated with family background and that such elements as school resources appeared unrelated to students' achievement levels (Jencks et al. 1972).

As recently as 1998, Canadian researchers found that social class variables "such as family income" explained as much as 45 percent of variation in achievement on mathematics and language arts tests for Calgary students in grades three and six, while school-based factors accounted for only 3-to-6 percent of the variation (Lytton and Pyryt 1998). It should be remembered, as de Broucker (2003) has pointed out, that socio-economic variables are life-long, and educational factors shaping school performance are temporary. A recent New Brunswick study also found that up to 50 percent of variance in elementary mathematics, science, reading and writing scores were attributable to socio-economic status (Klinger 2000). Coleman's and Jencks's work, and subsequent studies offering sociological explanations for achievement, continue to foster a vigorous debate about factors that make schools effective and influence student achievement.

Variability in student achievement remains a complex puzzle that transcends simple comparisons of home and school factors. For example, educational measurements have long shown that girls outperform boys in reading. What is less well known is that international assessments in OECD countries demonstrate that boys outperform girls at the grade eight level by an average of five points in mathematics and 18 points in science (see Tables 1 and 2 on the following page). These results cannot be accounted for solely by socio-economic factors, nor can similar variances in student achievement in inter-provincial differences on national and international assessments. Large-scale assessments such as TIMSS and PISA require participating countries to select randomly from student populations to ensure that sample groups' writing tests share comparable backgrounds. Such assessments show, however, that francophone students in Quebec outperform most other Canadian students in mathematics achievement and have done so for 10 years (see Table 3). How do we explain these differences in student achievement and what can we do about them?

The differences in levels of student achievement present a puzzle that rises above comparisons of home and school considerations.

Longstanding socio-economic explanations for variance in student achievement provided by Coleman, Jencks, and others[4] have been challenged by the findings of more recent research that accounts for such variance in school-level factors.[5] A large body of literature known in educational circles as "school effectiveness research" (SER) or the "effective schools movement," has emerged over the past 30 years and sets out its own explanation for variance in student results. It is the purpose of this discussion to review this research to determine what we know today about factors that shape student achievement.[6]

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4 For overviews, see Bossert (1988, 342); Silver (1994, 79); and Wendel (2000, 8).

5 Subsequent studies both confirmed and denied the conclusions reached by Coleman and Jencks. Critics attacked their studies, arguing that the "input-output" methodology was inadequate because it did not discern how different schools put material to use in different ways. See Weber (1971); Edmonds (1979b, 16); and Silver (1994).

6 Five major indices (CBCA, PsychInfo, Readers' Guide to Periodical literature, ERIC, and WorldCat) were surveyed for the period 1982- to- 2002 to identify academic writings on "effective schools" using two descriptors, "school effectiveness research" and "effective schools research." This...

Table 1: *Differences in Grade 8 Mathematics by Gender (OECD Indicators, 2001)*

	Girls' Mean (Standard Error)	Boys' Mean (Standard Error)	Difference in Means	Standard Error
Countries' combined mean scores	518 (1.3)	523 (1.4)	5 points*	(1.5)

Table 2: *Differences in Grade 8 Science by Gender (OECD Indicators, 2001)*

	Girls' Mean (Standard Error)	Boys' Mean (Standard Error)	Difference in Means	Standard Error
Countries' combined mean scores	517 (1.3)	535 (1.4)	18 points*	(1.5)

* Difference in means is statistically significant.

Data Source: IEA TIMSS-R (1999).

Table 3: *Sample of Mathematics Achievement Among Top-Performing Canadian Provinces*

1990/91 IAEP2 Age 13	1993 SAIP Age 13	1995 TIMSS Age 9	1997 SAIP Age 13	2000 PISA
		% of students at Level 3		
Quebec (F): 68.7	Quebec (F): 43	Quebec (F): 67.5	Quebec (F): 48.7	Quebec: 68.7
Saskatchewan (F): 67.5	Quebec (E): 39	Alberta: 64.8	Quebec (E): 41.9	Alberta: 547
B.C.: 66.2	N.B. (F): 28	Nfld.: 59.2	Nova Scotia (F): 36.1	B.C.: 534

Data Sources: 1990/91 International Assessment of Educational Progress (IAEP2).
1993 Student Achievement Indicators Project (SAIP) (Content).
1995 Third International Mathematics and Science Study (TIMSS).
1997 Student Achievement Indicators Project (SAIP) (Content).
2000 Programme for International Student Assessment (PISA).

School Effectiveness Discoveries

The origins of the effective schools movement can be traced to the work of George Weber and, later, to that of Ron Edmonds, who first associated school-level factors with high student achievement using results from studies of inner-city schools in the U.S., where low-SES students' achievement equalled, or surpassed, the national average. Edmonds, in particular, has been credited as the founding father of school-effectiveness research, largely due to the publication of his 1979 article, "Effective Schools for the Urban Poor."[7] This article, which appeared in the influential journal *Educational Leadership*, galvanized professional attention around the issue of student achievement and served as a platform for numerous studies that focused attention on the capacity of individual schools to make a difference in children's lives.

In his article, Edmonds advocated bringing "the children of the poor to those minimal masteries of basic school skills that now describe minimally successful pupil performance for the children of the middle class" (Edmonds 1979b, 16). In support of this objective, Edmonds outlined six characteristics essential to the success of effective schools, including: strong administrative leadership; high expectations; an orderly atmosphere;[8] basic skills acquisition as the school's primary purpose; capacity to divert school energy and resources from other activities to advance the school's basic purpose, and frequent monitoring of pupil progress (ibid.).[9] These six characteristics touched an immediate and responsive chord in administrators and government policymakers. Before long, however, educational researchers dropped "capacity to divert energy and resources" from Edmonds' list and later condensed his list to a "five-factor model" widely heralded by administrators as the principal framework for reforming failing schools.[10]

Following Edmonds, subsequent researchers have defined effective schools as institutions that "successfully impart basic computation and communication skills,

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Note 6 - cont'd.

...examination produced 579 sources comprised of journal articles, books, book chapters, reports, and documents commissioned by governments, universities, and independent organizations. Special care was exercised to ensure that Canadian sources usually neglected in U.S. and international scholarly reviews were included. Sources considered of particular relevance were refined to 264 by eliminating research that was: outside the scope of K–12 school systems; undertaken in non-English-speaking or developing countries; principally concerned with technical issues, such as methodological calibration; published in non-peer-reviewed conference papers, or was otherwise flawed by serious methodological limitations. These 264 sources were analyzed by content to define a list of characteristics attributed to effective schools. Characteristics appearing in over 50 percent of studies examined were rank-ordered from 1-to-8 according to frequency.

7 Silver (1994, 86). In 1979, Edmonds undertook a review of his own work (Edmonds and Frederikson 1978; Edmonds 1979a) and that of others (such as Weber 1971) and reasserted that "effective schools" are successful at educating the urban poor, despite their pupils' poverty.

8 That is to say, "orderly without being rigid, quiet without being oppressive, and generally conducive to the instructional business at hand" (ibid., 22).

9 Edmonds' model was slightly adapted over time. The most salient changes include elimination of "capacity" to redirect resources and addition of "parental involvement." See Steller (1988).

10 See for example, Scheerens, Nanninga, and Pelgrum (1989). By 1990, little more than a decade later, "over half of all American school districts had implemented improvement programs based on, or linked to, the effective schools knowledge base" (General Accounting Office 1989; and Taylor 1990, cited in Reynolds et al. 2000).

plus some knowledge of the sciences, social sciences, and humanities" beyond achievement levels that could be estimated by socio-economic status.[11]

Soon after publication of Edmonds' influential findings in "Effective Schools for the Urban Poor," critics began challenging school-effectiveness research. Skeptics questioned researchers' faith in Edmonds' five-step approach to improve student achievement (Edmonds 1979b, 22).[12] They also claimed that researchers and, indeed, school managers, generally ignored Edmonds' own admonition that "no one model explains school effectiveness for the poor or for any other social class" (ibid.) and often treated his work as something to be replicated, confusing correlative variables with causative factors that actually shape student achievement. Recently, effectiveness researchers in North America and elsewhere have discovered, through the use of multi-level modeling, that "more variance is accounted for by the classroom level than by the school level."[13] As a result, methodological improvements transformed Edmonds' initial, narrow and managerial view of effective schooling into a more comprehensive notion of effective education, which encompasses classroom instruction, as well as staff and community relations.

Recognizing Effective Education

Altogether, current research reveals that eight major characteristics have been widely identified as factors that positively influence student achievement. How these traits have been described in the literature and how researchers have associated them with improvements in school effectiveness is the subject of the following discussion.

Student Achievement

The most frequently cited characteristic of effective education in today's research is a focus on student achievement at school and classroom levels. Emphasis on student achievement is hardly surprising since researchers ordinarily measure effectiveness in terms of students' results on norm-referenced and criterion-referenced tests.[14] First described by Weber in 1971 as a "strong emphasis on reading," focus on student achievement remains at the heart of effective schools research.

Reiterating Weber's 1979 finding, Edmonds says that "[E]ffective schools get that way partly by making it clear that pupil acquisition of basic school skills take

11 See, for example, Brookover (1981), cited in Lytton and Pyryt (1998). Critics continue to decry the narrow academic focus of SER, insisting that education systems include broader social and affective goals, as well. Unfortunately, there is no recognized body of literature that systematically assesses how well schools attend to these broader goals. For summaries of criticisms levelled against SER, see Elliot (1996); Scheerens, Bosker, and Creemers (2000); Teddlie and Reynolds (2001); Thrupp (2001); and Townsend (2001).

12 For references to predictive modeling, see Scheerens, Nanninga, and Pelgrum (1989), who state that the "best-known formulation of effectiveness predictors is the so-called five-factor model of school effectiveness, first formulated by Edmonds." For criticisms, see Thrupp (2001).

13 Scheerens and Bosker (1997, 302); see also Hill et al. (1995); Scheerens, Nanninga, and Pelgrum (1989); and Wang, Haertel, and Walberg (1993).

14 Since almost no SER studies measure social and affective outcomes, it is not known whether "focus on achievement" would be as prominent using other dependent variables.

precedence over all other school activities." He adds: "School energy and resources can be diverted from other business in furtherance of the fundamental objectives" (Edmonds 1979b, 22). Effective schools, in essence, are defined as institutions capable of reallocating resources — time, for instance — to optimize teaching and learning basic school skills.[15]

Arthur Steller, Oklahoma City's Superintendent, synthesized effective schools research in 1988, reporting that the "centerpiece of the school is instruction in the academics," and that effective schools exhibit a clear instructional focus that staff and the school's community understand (1988, 23). To Steller, academic focus calls for teachers to know the curriculum for their own grade level, as well as for preceding and following grades. In other words, teachers are cognizant of students' academic records and of their professional responsibility to prepare pupils "for success with their next teacher" (ibid., 24). Many worthwhile activities can be distracting from the school's central focus on instruction," Stellar cautions, and he advises teachers and principals to prevent interruptions that "interfere, or conflict with, the school's instructional goals." Scholastic achievement, in short, depends on keeping school personnel focused on "the instructional issues at hand and how to help youngsters achieve" (ibid., 23).

One expert contends that many worthwhile activities can distract from a school's internal focus on instruction.

Lee and Bryk's 1989 study of mathematics achievement illuminates the importance of instruction from another angle. Using multi-level modeling to analyze factors affecting mathematics results, they report that "differentiation among students in mathematics course-taking and larger schools is both associated with a more dis-equalizing distribution of achievement in schools along class and academic background lines" (1989, 185). In large schools offering a shopping mall of courses, students appear to be tracked along class and academic lines, a process leading to greater variance in student achievement. In schools where fewer alternatives are available, achievement tends to be homogeneously higher.

Syntheses of effective schools research highlight the achievement focus throughout the 1990s. Levine and Lezotte's 1990 review supplements earlier findings by observing that a "focus on central learning skills" requires two key components: maximizing time for learning and mastery of central learning skills. The first necessitates reducing time-consuming transitions between classes and "off-task" behaviours. Skill mastery, according to Levine and Lezotte, is achieved by concentrating on academic content, adhering to principles of mastery learning, and teaching students learning strategies in explicit ways.[16] This mastery concept

15 Interestingly, soon after Edmond's six descriptors entered the effective schools literature, "capacity to reallocate resources" disappeared from the discourse as researchers and administrators increasingly referred to Edmond's "five-factor model." See, for example, Scheerens, Nanninga, and Pelgrum (1989); and Steller (1988).

16 Mastery learning has important implications for curriculum construction. Researchers in comparative education have described curricula in North America as repetitive in character, embodying as they do Bruner's "spiral" notion of learning. See McKnight (1987); Schmidt, McKnight, and Raizen (1997); and Valverde and Schmidt (1997–98). According to Bruner, effective learning results from a deep and profound comprehension that accrues after multiple exposures to concepts, skills and knowledge (Bruner 1961). In sharp contrast to mastery learning principles, however, Bruner's "spiral" notion is reflected in curricula that never compel full mastery. Students who do not "get it" the first time around can "revisit" the concept when it appears in the next "spiral," usually at the next grade level.

upholds Edmonds' second characteristic that "no children are permitted to fall below minimum but efficacious levels of achievement" (Edmonds 1979b, 22).[17] Since the 1970s, many alternative education programs, sometimes referred to as shopping mall schools, have distinguished themselves by their singular emphasis on teaching students core learning skills. This focus has been obtained largely by eliminating what researchers call "time-consuming transitions" between subjects and assorted "off-task" behaviours.

A 1995 literature review by Sammons, Hillman, and Mortimore found that a focus on teaching and learning optimized learning time and enhanced achievement results. Cotton's 1995 review supports that study, as well as Levine and Lezotte (1990), by concluding that academic achievement in basic subjects is a school's core business. Cotton advises administrators and teachers to "focus on student learning considerations as the most important criterion for making decisions" and, whenever necessary, to "develop mission statements, slogans, mottos, and displays that underscore the school's academic goals" (1995, 23).

Zigarelli's 1996 synthesis of findings also notes the importance of "achievement orientation" in effective schools, a finding also observed by Wang (1999) and in studies by Holdaway et al. (1997), Stein and Burger (1999), Barth et al. (1999), and Taylor et al. (2000). Barth, for instance, reports that increasing instructional time in reading and mathematics helps students meet standards that, in turn, raise achievement. In 1997, Phillips described "achievement orientation" in terms of "academic press," a concept based on a demanding curriculum and high expectations for all children. An emphasis on academic achievement, Phillips found, related to both mathematics achievement and to attendance and he advised "those who really care about improving students' skills…[to] reconsider a model of school effectiveness that places academic learning at its center" (1997, 657).

"Those who really care about improving student's skills {should} reconsider a model of school effectiveness that places academic learning at its centre."

Canadian studies, although relatively fewer, produce similar results. Case studies completed in 2001 by Henchey et al. compared effective schools in British Columbia, Alberta and Quebec and identified 14 "elements of success" — including a "focus on academic achievement" — as well as "other indicators of success and student needs" (2001, 53). "[T]he best schools," the study proclaims, "are those that prepare their students well to write the final examinations" (ibid., 50).[18] In short,

17 During the late 1980s, research on international assessments began to parallel and inform scholarship in SER. For example, a secondary analysis of SIMS data led Scheerens, Nanninga, and Pelgrum (1989) to conclude that opportunity to learn (that is, in-class mathematics coverage) showed a consistently positive relationship with mathematics achievement. More recently, Reynolds' review of factors associated with high mathematics achievement concluded that one of the key classroom elements consists of a mechanism "to ensure that things are taught properly first time around, and that there is no 'trailing edge' of children who have to be returned to" (Reynolds 2000, 251).

18 Although the researchers note that "schools don't want to think of themselves as pure prep schools," they maintain that successful schools include (a) a priority set on student achievement; (b) the careful analysis of examination results in all areas; (c) the integration of these data into planning programs and services; (d) links between these needs and professional development activities; (e) initiatives to correct deficiencies through remedial action; (f) alignment of curriculum and instruction with examination content and skills, especially in core areas of language and mathematics; (g) use of school examinations to prepare students for the content and style of government examinations; and (h) follow-up measures to ensure students are better prepared next time.

from its origins in Coleman's 1966 work, the quest to determine what makes schools effective has become intertwined with the objective of producing equitable results in basic reading and writing skills for all students, regardless of socio-economic background, race or ethnicity.

Effective Classroom Instruction

Early school effectiveness researchers were criticized for selecting the school as their primary unit of organizational analysis.[19] However, introduction of hierarchical linear modeling (HLM)[20] in the late 1980s, enabled subsequent researchers to investigate classroom-level factors and to compare how variables at multiple levels of school systems influence student achievement. This permits consideration of how other factors shape achievement, including variables such as individual student characteristics, classroom instructional features, school-level initiatives, and social context. Among other things, this research shows that variability between classes in a school is far greater than variability among schools.[21]

Levine and Lezotte's 1990 review produced eight sets of features characterizing effective schools, the first of which is effective instruction. "Effective instructional arrangements and implementation," consisted of nine sub-parts, including "effective teaching practices." Levine and Lezotte portray effective teaching practices as time-on-task, appropriate reinforcement, lesson sequencing, "wait time" after questions, and student-teacher interaction guidelines. In 1995, both Cotton and Sammons, Hillman, and Mortimore reiterated the importance of "purposeful" teaching, characterized by multiple sub-categories. Effective teachers, according to Sammons, Hillman, and Mortimore (1995, 16) teach the classroom as a whole; present information or skills clearly and animatedly; keep teaching sessions task-oriented; are non-evaluative and relaxed; have high expectations for achievement, and relate easily to students.

Cotton's 1995 literature review offered an even more complete description of "effective instruction." Effective teachers, according to Cotton,

- orient students to lessons through explanation, relation of prior learning to new knowledge, arousal of student motivation, and use of "advance organizers;"
- provide clear and focused instruction through directions, lectures, independent practice, strategy training, and skill development;
- provide feedback and reinforcement;
- review and re-teach when needed for mastery learning;

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19 Reynolds (1995, 59), cited in Thrupp (2001, 13). See also Elliot (1996); and Good and Brophy (1986, 49).

20 For details on HLM and its use see Lee and Bryk (1989); Slavin (1996); Phillips (1997); Klinger (2000); Willms (1999); Kyriakides, Campbell, and Gagatsis (2000), and Osborne (2000).

21 See Scheerens, Nanninga, and Pelgrum (1989); Wang, Haertel, and Walberg (1993); Creemers (1994); Scheerens and Bosker (1997), and Hill, Rowe, and Holmes-Smith (1998, 423). For example, research by Hill et al., (1995) in Australia indicated that the percentage of variance among primary English classes accounted for by among-class differences was 45.4 percent, compared to 8.6 percent between schools. In primary mathematics, the difference was even greater with 54.7 percent accounted for by among-class differences and only 4.1 percent between schools.

- teach cognitive, as well as meta-cognitive learning strategies, through which students can "learn to learn";
- use effective questioning techniques to build basic- and higher-order thinking skills, and
- integrate workplace-readiness skills into content-area instruction, such as decision-making skills, consciousness, and self-discipline.

One informative study highlighting the significance of classroom as opposed to school-level effects was reported by Hill et al. (1995) in Australia. The Victoria Quality Schools Project reported data collected from 1992 to 1994 in 59 primary and 31 secondary schools, representing over 14,000 students. Hill et al. discovered that school-level variables were not significant in accounting for student achievement, but that classroom-level variables — notably teacher participation in literacy programs — were. Hill et al. estimate that school-level factors account for a mere 5-to-10 percent of variance in student outcomes, while classroom-level effects account for 40-to-55 percent. Townsend credits Hill et al.'s research with redirecting school reform in the state of Victoria "from management of resources to improving teaching and learning" (2001, 19). School-level reforms produce minimal effects, Townsend contends, but government initiatives to "implement substantial professional development programs, both in teaching methodology, learning technologies and curriculum…have started to lead to actual changes in student achievement patterns" (ibid.).

Barth et al. (1999) reached a similar conclusion after examining 366 top-scoring, or significantly improving, elementary and secondary schools in the United States, where family poverty levels were over 50 percent. One important factor, Barth et al. note, was that top-performing high-poverty schools direct a larger proportion of funds toward teachers' professional development (ibid.; see also Henchey et al. 2001, 53).

Neglect of classroom-level variables by effective schools researchers is certainly not attributable to a paucity of educational literature about what constitutes good teaching. Classroom-based "teacher effectiveness" research (TER) has a long and empirically sound history. Regrettably, school effectiveness and teacher effectiveness literatures have remained apart. As Teddlie and Reynolds say: "Researchers in the two fields came from different academic and intellectual backgrounds, with those in SER more likely coming from educational administration and sociology of education, while those in TER were more likely to have come from educational psychology" (2000, 313).

Recognizing the critical connection between classroom practice and student achievement, Creemers and others suggest that effectiveness researchers replace distinct inquiries into "school" and "teacher" effectiveness with an integrated approach to measure overall "educational effectiveness" (Creemers and Reezigt 1997). But Scheerens and Bosker counter that "even if there is more variance between classes within schools than between schools and classroom-level conditions account for more variance than school-level conditions, one still cannot discard the potential relevance of the school organizational level, providing that there would be some variance between schools" (1997, 301–02). As research currently stands, the challenge is one of discriminating among school-level factors that inhibit and

enhance instruction , and identifying classroom features that impede or promote "school effectiveness."

Teamwork for a Shared Vision

Emphasis on the school as the primary unit of organizational analysis also led early school effectiveness researchers to ignore staff interactions (see Coleman et al. 1966; Weber 1971; Brookover and Lezotte 1979). Purkey and Smith's 1983 review of research indicates that few studies recognized the relevance of staff cooperation. Since the late 1980s, however, school effectiveness researchers increasingly acknowledge the central role teachers play in student achievement and show new interest in the social dynamics of school personnel.[22]

Reviews in 1995 by Cotton and Sammons, Hillman, and Mortimore furnish similar characteristics for effective schools. Among them, Sammons and colleagues note shared vision and goals, which they defined by three main features: unity of purpose, consistency of practice, and collegiality and collaboration. Cotton similarly reports that effective schools plan carefully to ensure consistency and continuity with respect to resources, curricula, and result standards.[23] Both reviews indicate it is unproductive and confusing for students to study the same things over two different years with two different teachers. Schools that adhere to well-delineated curricular programs avoid repetition and allow successive teachers to deal with new subject content in ways that motivate and challenge learners.[24]

Although principals may not contribute to teachers' daily planning, research indicates it is vital for principals and teachers to agree on a school's mission to avoid a splintered vision. Principals, for example, who view a school's mission in terms of students' social and affective development may plan many "out-of-class" activities, such as assemblies, with non-scholastic emphases. But if teachers in such a school envision their roles in more "academic" terms, the potential for conflict is apparent, with teachers resenting interruptions that prevent curriculum coverage. A common vision, in short, reduces potential for conflict. Holdaway et al.'s (1997) investigation of 103 elementary and 76 junior high schools reports that staff cohesion and motivation was one of eight significant factors in junior high schools, but was considerably less influential in elementary schools. Because of the integrated nature of elementary teaching, it is possible that these schools are more unified in purpose than junior high schools with different subject specialists.

In a study of variables facilitating the institutionalization of school improvements, Canadian researchers Hajnal, Walker, and Sackney (1998) report the importance of

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22 Some researchers have subsumed "Teamwork/ Shared Vision" under the broader category of "School Climate and Culture." More recent studies have dealt with them separately because school climate refers more generally to environmental conditions, such as safety, whereas teamwork speaks to the actions of school personnel. See Levine and Lezotte (1990); and Cotton (1995).

23 Note that this curricular consistency overlaps with Steller's view that teachers know not only the curriculum for their grade level but also understand how theirs connects to that of the preceding grade and the grade which follows. See Steller (1988, 24).

24 This does *not* imply that teachers should not review previously learned material. Teachers should review previous material as per students' needs.

shared vision and a caring climate as two significant school-level factors.[25] This study, which surveyed principals and teachers involved in the Saskatchewan School Improvement Program (SSIP) during the late 1980s, observes:

> The teachers and administrators in these schools were able to foster a collaborative culture for organizational learning where the climate for renewal was promoted from within. Organizational learning is both personal and group-oriented and operates most successfully where a shared vision and processes are in place to facilitate the realization of that vision. (Ibid., 87.)

Henchey et al.'s 2001 investigation of effective schools in Alberta, British Columbia, and Quebec also identifies a "sense of engagement and belonging among teachers and students and commitment to the basic mission and core values of the school" among 14 "elements of success" (2001, 53).[26] Henchey et al.'s study notes also the "unifying" force imposed by external examinations and says that such events "strengthen the sense of collaboration between teachers and students in preparing for an external challenge…[in] the results of which they all have a stake" (2001, 47). Alternatively, borrowing from Stoll and Fink's 1996 study, Wendel (2000) summarizes ineffective schools as those suffering from lack of vision, unfocused leadership, dysfunctional staff relations, and ineffective classroom practices. Schools lacking vision, according to Wendel, manifest a "maintenance mentality," with teachers holding little attachment to anything or anybody.[27]

Orderly, Secure and Caring

Edmonds observed the importance of a secure and caring climate in his six original characteristics, claiming that the atmosphere of effective schools "is orderly without being rigid, quiet without being oppressive, and generally conducive to the instructional business at hand" (1979b, 22). According to Sweeney, school climate combines "beliefs, values and attitudes shared by students, teachers, administrators, parents, bus drivers, personnel, custodians, cafeteria workers and others who play an important role in the life of the school" (1988, 1). Climate — sometimes described as culture — has remained a factor of significance throughout the evolution of school effectiveness studies.[28]

In the late 1980s, Steller suggested that researchers overstated the importance of the school's physical climate in observing that "children can learn and teachers can teach in well-maintained older structures just as well as they can in spanking,

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25 Hajnal and colleagues examine a number of characteristics: competent leadership, shared vision, caring climate, quality instruction, a planned curriculum, staff development, systematic monitoring and evaluation, parent and community involvement, and collaborative problem-solving.

26 See also Saunders (2000); Taylor et al. (2000); and Taylor, Pressley, and Pearson (2000).

27 Ineffective schools, it appeared, were less of an organizational "entity" than a storehouse of disparate visions, goals, and agendas, where staff worked at cross-purposes (ibid., 41).

28 Notably, school climate has proved to be less significant in studies conducted in non-English-speaking countries. See for example, Brandsma and Knuver (1993), cited in Scheerens and Bosker (1997); and Reynolds (2000).

brand new buildings with all the latest architectural features" (1988, 33). A more critical aspect of climate, however, refers to the degree to which children and staff feel safe. Effective schools are characterized by a discipline that is "applied consistently throughout the school" and by personnel who demonstrate a caring attitude by maintaining order and communicating behavioural expectations children understand and follow (ibid., 34). Lee and Bryk claim that "academic achievement, particularly for minorities, is higher in schools with orderly environments" and that "a minimum of disciplinary problems is a necessary condition for the routine pursuit of academic work" (1989, PAGE). Effective school climate, they add, involves more than "maintaining control." Achievement is linked to doing so in a fair and effective manner (ibid.).

Levine and Lezotte's 1990 survey also found that safe, orderly school climates are characterized by discipline not bounded by "rules and external control," but by a desire to reinforce "belonging and participating" (1990, 9; see also Wang et al. 1995). They also note that school climate may not be a strongly discriminating factor between effective and ineffective schools. Efforts to improve school climate are likely more critical in "out-of-control" schools. Klinger's re-examination of New Brunswick School Climate Study data reports that disciplinary climate — as opposed to parental involvement and academic focus — is the "most important determinant of academic achievement" (2000).

In 1997, Holdaway et al. studied 103 elementary and 76 junior high schools and reported that school climate was an important factor in effective junior high schools, though insignificant in elementary schools. They further observed that effective schools characteristics have greater descriptive than prescriptive power, since elementary and junior high schools vary considerably in context and subject matter (see also Canada 1995–96; and Lytton and Pyryt 1998).

Strong Leadership: A Challenge for Principals

Because school effectiveness studies have focused primarily on school-level characteristics, it is natural that substantial discussion surrounds principals' leadership qualities. Edmonds' effective schools characteristics emphasize the value of strong administrative leadership, "without which the disparate elements of good schooling can neither be brought together nor kept together" (1979b, 22).

Since the 1970s, a constellation of studies has examined the role of principals and concluded that they are essential to improving instructional quality and student learning.[29] Steller's 1988 review of school effectiveness notes that educational writing is replete with examples of principals who effectively mobilize "available resources in order to implement policies that lead to desired outcomes" (see Persell and Cookson 1982; cited in Steller 1988, 20). "Effective principals," as summarized by Steller, focus on academic goals, create a climate of high expectations, act as instructional leaders, consult effectively with others, create order and discipline, marshal resources, use time well, and evaluate results. In addition, they provide the support necessary to allow teachers "to concentrate on the primary goal of academic achievement" (1988, 21). In Canada, Hajnal, Walker, and Sackney surveyed 377 teachers in 93 Saskatchewan schools and found that those in which principals

29 See Andrews (1989, 211); and Bamberg and Andrews (1989, 309).

visited teachers in classrooms were more effective and successful in implementing the province's "school improvement program" (1998, 78). In a paper using B.C. data, Coelli, Green, and Warburton (forthcoming) argue that changing high-school graduation rates correlates significantly with changes in the schools' principals.

Carter and Klotz (1990) report that principals' efficacy lies in their primary focus on teaching and learning and their high expectations for staff and students (see also Wang et al. 1995; and Zigarelli 1996). In contrast to principals in "effective" schools, principals in "ineffective" schools seem to view their roles more bureaucratically and passively, hold multiple goals for schools and regard student achievement as something complex, personal and ambiguous (Stringfield and Teddlie 1988). Although principals' leadership may not be the only critical influence on student achievement, principals no doubt have instrumental roles to play in developing and maintaining effective schools.

Levine and Lezotte's 1990 synthesis of research portrays effective school leaders as individuals who are directed toward the inner workings of their schools. They participate fully in teacher selection and replacement, monitor school activities, support teachers, are generally concerned with acquiring resources, and usually reduce the influence of external pressures on staff and students. By comparison, school leaders in ineffective schools appear more externally directed in their outlook, and are more likely to cite external forces as reasons for in-school problems.

One 1990 synthesis of research paints a picture of effective school leaders as people who are directed toward the inner workings of their schools.

The principal's place in effective schools literature has been lionized in writings such as *The Principal, Keystone of a High-Achieving School* and in such phrases as "effective school, effective principal" (Educational Research Service 2000; see also Bossert 1988). No strong evidence, however, has been presented to support the attention given to principals of allegedly effective schools in non-English-speaking countries (see Scheerens and Bosker 1997; Reynolds 2000). U.S. researchers Zirkel and Greenwood (1987) caution strongly against prescriptions about reform based on school effectiveness, noting that the importance of leadership may be overestimated.

Other research points out that the supply of qualified candidates for principals' positions may be dwindling (Educational Research Service 2000), and that faculties of education are failing to teach skills and knowledge necessary for the principal's role (Finn 1983). Finn claims that preparation for becoming a principal should focus essentially on understanding the nature of effective schools and how principals can serve in evaluating and improving instructional programs — two areas not usually emphasized. Smyth in Australia similarly argues that principals spend most of their time dealing with administrative and managerial issues, rather than instructional matters (1980, 1983). In 1995, the Canadian federal government commissioned a large-scale project to investigate what makes a high school successful. The research showed that staffs of most schools are unaware of the nature and extent of their success and that few collect telling indicators of institutional performance (Canada 1995–96, 1). Accordingly, one instrumental way in which principals can contribute to effective schools lies in implementing systems to monitor student achievement and instructional effectiveness.

Monitoring, Assessment, and Planning

Among the six original characteristics of effective schools Edmonds compiled in 1979 was the "means by which pupil progress can be frequently monitored"

(1979b, 22). Acknowledging the role of monitoring systems, in 1983 the American Association of School Administrators published a document on effective instructional management, which holds that instructional management requires knowing what students should learn, arranging resources and people to promote learning, and using results to guide adjustments. Such effective instructional management consists of four elements: a set of guiding statements or goals to direct measurement of results; a means of collecting baseline data on instructional needs; a flexible organizational or instructional process with respect to resources and student needs, and a method to record progress and to compare results with goals (American Association of School Administrators 1983).

According to Steller, "good teachers long have used their own informal instructional management systems on a daily basis in their classrooms," procedures to identify which students are falling behind and require alternative or supplementary instruction. Steller contends that it is advantageous for educational managers to undertake school and district-wide assessments for accountability purposes (1988, 37). School effectiveness researchers reported throughout the 1980s and 1990s that effective schools featured systems that assessed student learning and used these results to inform planning and school management.

Effective schools literature reviews by Levine and Lezotte (1990), Sammons, Hillman, and Mortimore (1995), and Cotton (1995) support the practice of monitoring student progress — although Levine and Lezotte observe a weaker correlation for this factor than for Edmonds' other characteristics. Levine and Lezotte are also critical of frequent or continuous monitoring from which data are not assessed. Although most education systems collect data on student achievement in basic skill areas such as reading, writing, mathematics, and science at various grade levels,[30] these data are rarely analyzed to ensure that curricular, instructional and assessment practices are aligned.[31]

Recent effective schools research in the United States and Canada underscores the value of linking achievement data to curriculum and instructional planning at school and district levels.[32] Despite this advocacy, many schools fail to use school-level monitoring systems. A Canadian study reveals that few schools systematically collect information about effectiveness or performance (Canada 1995/1996). The challenge to educators and policymakers appears two-fold: Teachers and administrators should collect broad, school-wide indicators of student performance results, and policymakers throughout the system should ensure that these and other data, including results from large-scale provincial, national and international

30 British Columbia's system is known as the Foundation Skills Assessment, administered by the Ministry of Education to children across the province in grades 4, 7, and 10.

31 For this reason, critics have accused various national and international assessments (such as the Third International Mathematics and Science Study — TIMSS) of promoting "Olympic gamesmanship," where countries are merely ranked by achievement levels with few of the results actually helping to reform schooling. See Thiesen, Achola, and Boakari (1983); Travers (1988); Schmidt and McKnight (1998); and Stevenson (1998).

32 See, for example, Taylor, Pressley, and Pearson (2000); and Barth et al. (1999) in the U.S. In Canada, see Henchey et al. (2001).

assessments, are analyzed and considered in curriculum development and instructional planning to promote student achievement.[33]

High Standards and Great Expectations

Does student achievement improve when educators' expectations increase? This was certainly the conclusion reached in 1968 by Rosenthal and Jacobson in their much-cited study, *Pygmalion in the Classroom*. Prompted by behavioural science research on the effects of self-fulfilling prophecies, Rosenthal and Jacobson examined how teachers' expectations of students' behaviour could "quite unwittingly become a more accurate prediction simply for its having been made" (vii).

To test their hypothesis, Rosenthal and Jacobson informed elementary teachers that certain children showed "unusual potential for intellectual growth" (ibid., 62).[34] Even though researchers drew children's names randomly, after eight months, teachers reported that these children "showed significantly greater gains in IQ than did the remaining children who had not been singled out for the teachers' attention" (vii–viii).[35] Although researchers did not observe actual classroom interactions, they concluded: "By what she said, by how and when she said it, her facial expressions, postures, and perhaps by her touch, the teacher may have communicated to the children of the experimental group that she expected improved intellectual performance" (180).

Despite criticism of *Pygmalion*'s methodology, "its basic conclusion has become widely accepted" (Steller 1988, 27).[36] In 1971, Weber cited high expectations as one of eight distinguishing features of inner-city schools with higher-than-expected reading scores. In 1979, Edmonds observed: "Schools that are instructionally effective for poor children have a climate of expectation in which no children are permitted to fall below minimum, but efficacious, levels of achievement" (1979b, 22).

High standards and expectations are intertwined in the educational literature with other effective schools' characteristics — notably a focus on achievement, good school climate, strong leadership, and effective monitoring systems. But

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33 This curriculum-teaching-assessment link is more easily suggested than enacted for the main reason that separate players have control over each of these elements. For example, curricula are generally developed provincially or at the state or district level. Teaching practice falls under the purview of teachers and universities. Assessment can reside in several locations. Within the classroom it falls within the domain of the teacher. Large-scale provincial, national or international assessments are designed and collated within provincial, national or international agencies that are not necessarily in touch with the players involved in curriculum development or classroom pedagogy. These "disconnects" illustrate the highly fragmented reality of the "system." For a discussion of the assessment-curricula-teaching "link" and the development of alternative assessments for special needs learners, see Cotton (1995).

34 The school, given the pseudonym "Oak School," enrolled children from predominantly low socio-economic status families.

35 Forty-seven percent of the experimental group gained 20 or more IQ points as opposed to 19 percent of the control group (176).

36 Researchers have been critical of the study for the key reason that Rosenthal and Jacobson did not observe the teacher-student classroom interactions and, thus, have no idea what exactly prompted the students' increased achievement. Despite this important omission, the authors did not hesitate to speculate as to the nature of the teacher's actions.

researchers also caution that "high expectations" may result from — rather than cause — effective schooling, especially in studies based on correlative research methods (Sammons, Hillman, and Mortimore 1995). Methodological considerations aside, Levine and Lezotte's 1990 review reaffirms the significance of high expectations in shaping student achievement. To be instrumental, they add, expectations must be well-communicated, concrete, and prompt students to become accountable for their learning. High achievement, they contend, depends on educators providing support and effective learning strategies to assist students in becoming efficacious learners. Steller wrote: "Whether teachers believe all children can learn is less important than that they behave as if all children can learn" (1988, 29). In a study of 12 Canadian "schools that make a difference," Henchey et al. describe a conflict-ridden French-language school in Montreal where staff "believed" students could succeed, and proved willing to adapt to their varying needs (2001, 18). The school also supplied various support services.[37]

Whether behaviours change values or changes in values precede behavioural alterations is open to debate. Writings on educational expectations are informed to some extent by research in comparative education that illustrates systemic differences between high-performing and low-achieving countries on international assessments in mathematics, reading, writing, and science.[38] Stevenson's 1998 study, for instance, compares student-level results data, as well as qualitative data[39] (such as teacher attitudinal measures) and reports:

> [W]hen Americans were asked to explain the basis of individual differences in academic achievement, they cited family stability and family supports as the major factors. In poor communities, broken families were most frequently blamed for low achievement, while in more affluent areas, family support for schooling was cited as the main factor. Explanations focusing on innate ability were also more common in affluent communities. (528.)

Corbett, Wilson, and Williams' *Effort and Excellence in Urban Classrooms* (2002) provides a detailed analysis of teachers' expectations and behaviours. Using survey and observational techniques, the authors collected data from over 200 students, 1,079 teachers, and 974 parents in two U.S. school districts. They conclude that district and state-level reforms — including reduced class size, greater school and district accountability, and heightened parental involvement — are necessary initiatives, though insufficient in themselves to ensure high achievement. What distinguishes "classrooms and schools where the achievement gap has been

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37 To encourage high levels of student achievement, the school provided a Help Centre where students assist other students with learning problems; a Mathematics Centre to help students with specific math problems; catch-up sessions in morning, noon, and evening; a system of points and rewards for punctuality and assignments (if assignments are not regularly submitted, teachers do not correct examinations); special funding for supplementary personnel to help students and prevent dropping out; and a special week of activities in cooperation with social services to prevent suicide among young people. (Henchey et al. 2001, 17.)

38 Unlike North Americans, Japanese teachers and parents have discounted the role of innate ability and cited effort, instead, as the factor contributing to high student achievement. See Stevenson (1998, 527).

39 These measures were drawn from the TIMSS.

significantly reduced from those where it persists," the study concludes, "are educators who assert that 'All children can succeed in school, and it is our job to make sure that they do'" (156–57).

Corbett, Wilson, and Williams' work also acknowledges that high expectations prompt questions about whether all students can be held accountable for similar standards of excellence. Several teachers in the study maintain it was better to avoid "absolute" standards and to consider relative standards that reflect students' objectives. One principal, for example, awarded different achievement certificates on a quarterly basis. "Honors" went to students obtaining A's in all subjects, "Achievement" for a mixture of A's and B's, "Perseverance and Improvement" for improvement in three subjects, or in social behaviour, and "Excellent Attitude and Respectful" for those with excellent social, but poor academic, skills. About this practice, the researchers write: "While the school symbolically sought academic excellence, some students could have become successful solely by being 'good citizens,' thereby allowing the school to take an unwarranted pride in its accomplishments" (111).[40] The message is clear: schools should not inadvertently subvert their stated goals.[41]

Even allowing for Rosenthal and Jacobson's findings, teachers' expectations alone do not appear to change levels of student achievement. For high expectations to be significant, they must be supported by clear institutional objectives clearly communicated to students within an effective instructional environment, along with appropriate assessment measures to ensure that these objectives are met.[42]

Home-School Links

The connection between home and school — sometimes described as parental involvement — was not considered a salient factor in school effectiveness studies of the 1970s, principally because children's home lives lay beyond the school domain, the unit of analysis preferred by researchers.[43] By the mid-1980s, however, "active parental involvement" had become widely ensconced in lists of "school effectiveness" factors — prompting one researcher to speculate that "school practitioners probably were responsible for adding this factor to the list" (Steller 1988, 29), presumably as a way of drawing attention to the important work teachers perform with families.

Research concerning the effects of parental involvement and cooperation has proven equivocal, however. In some studies, as Levine and Lezotte point out, it has

40 Indeed, surveyed parents were critical of efforts to boost self-esteem at the expense of academics (40–41).

41 The following quote by a grade 5 teacher in the study highlights one school's efforts to overcome teachers' differing views on "absolute" and "relative" achievement standards: "We have a set of clear standards for the kids [at fifth grade]. They need to know their times tables, know the Preamble to the Constitution, write a five-paragraph essay, know a rationale for doing math problems, be of service to the school and their classmates. We also have a perfect homework list, and last month all the kids met it." (113.)

42 For analysis of the impact of exit assessments on student achievement, see Bishop (1998).

43 Parental involvement was not mentioned by Weber (1971), or Edmonds (1979a) in the U.S., nor was it considered significant in England (see Rutter et al. 1979).

proven positive, but others have either "failed to find support for a relationship between involvement and unusual effectiveness or have concluded that less effective schools may have more involvement of some kinds than more effective schools" (1990, 22).[44] Several factors confound these results, including the variation of involvement with socio-economic status and the fact that involvement takes many forms, some negative. Tabulating numbers of parent-school contacts obscures the reality that schools are more likely to contact parents because of student problems than because of student successes (see Corbett, Wilson, and Williams 2002; see also Patrikakou and Weissberg 1996–97). So what do researchers mean when they refer to home-school links? According to Levine and Lezotte, parental involvement includes good home school communication; political advocacy by parents with respect to public officials; enhanced parental involvement in children's learning; and shared school governance (1990, 23).[45]

Although researchers continue to debate the meaning of home-school links, some interesting findings have appeared. For example, in a 1993 article assessing equity in U.S. schools, McGee Banks concluded: "[p]arents and teachers live in different worlds that can be divided by psycho-social barriers" (44). Despite evidence to the contrary, McGee Banks claims, teachers generally believe African-American parents do not value education, a finding the study by Corbett, Wilson, and Williams (2002) supports. After examining case studies involving 1,079 teachers and 974 parents in two large districts, the study reports:

Mutually negative views that parents and teachers hold of each other may be a result of lack of familiarity.

> [S]omehow teachers and parents had both formed negative opinions about each other while claiming that they themselves served as major positive and compensating forces in children's educational lives. The ironic point was that while they were complaining about one another, both ignored the power of forming an alliance, of building on this unrecognized but mutual commitment to enabling students to succeed in school. (2002, 42.)

Mutually negative views that parents and teachers hold of each other may simply result from lack of familiarity. In 1989, Townsend reported on changes in attitudes that resulted from implementation of school councils in the state of Victoria, Australia. When school councils — consisting of equal numbers of parents and school personnel — were first granted policy-making powers in 1975, few school staff members appeared pleased with parental input into curriculum planning. By 1988, however, sentiments changed considerably, and teachers who sat on councils expressed greater satisfaction with parental involvement than they had at the time of implementation.[46]

Although other researchers note parental involvement depends largely on the attitudes and efforts of principals (see Lytton 1998; and Patrikakou and Weissberg 1996–97), teachers also play an important role. In a study of 366 top-performing, or

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44 According to Sammons, Hillman, and Mortimore (1995), researchers do not really have a clear idea as to how parental involvement influences school effectiveness.

45 More recently, Ho and Willms (1996) have identified four types of parental involvement: home supervision, home discussion, home-school communication, and volunteer work.

46 Townsend (1989, 360). Notably, however, teachers who did not sit on councils had "not really changed their opinion."

most-improved, elementary and secondary schools with poverty levels over 50 percent, Barth et al. (1999) conclude that effective schools involve parents in helping students meet clearly delineated standards. Studying the University of Illinois' School Family Partnership project, initiated in 1994, Patrikakou and Weissberg (1996/1997) observe that parents had difficulty understanding the homework teachers assign to their children. Their finding underscores the important role teachers play in ensuring that students leave class with clear understandings of what is expected in homework tasks and clear strategies for completing assignments. Research has also shown, in the case of minority learners, or uninterested parents, that attempts by schools to build home-school links are not always fruitful (see, for example, Stringfield and Teddlie [1990]; Van der Werf and Weide [1996, 40]). Accordingly, it may be more productive for educators to focus on improving home-school communication than involving parents in political advocacy or school governance matters. As recent PISA findings indicate, parental involvement may correlate negatively with student achievement, particularly in situations where parents make contact with schools only in the event of difficulties (see OECD 2000).

Conclusions

Over the past two decades, eight factors have been associated with effective schooling: a focus on student achievement; effective instruction; teamwork for a shared vision; an orderly, secure and caring climate; strong leadership from principals; monitoring and assessment linked to planning; high standards and expectations, and the importance of home-school links. Taken as a whole, these factors provide educational policymakers with useful guidelines to improve student performance and the quality of schooling that young people receive. Although their value is "associative" rather than "predictive" in character, and they cannot be strictly applied as a recipe for results, they serve as sound descriptive indicators of the principal organizational elements essential for good schooling.

Research on effective schooling also furnishes important insights for school administrators and policymakers into the complexities of large school systems. Through this research, administrators have learned they have important leadership roles in monitoring and understanding what takes place instructionally in their schools. Teachers' instructional practices are unlikely to change without administrative support and without information about how various factors work together to enhance student performance.

Recent research has also shown that government officials and educational administrators should broaden the suite of management data they collect to include more comprehensive information at the classroom level, as well as data that more fully describe the effects of changing curriculum and assessment practices. Much also can be gained by bringing together findings from best practices in the professional instructional literature with the results of province-wide assessments to explore in greater depth what seems to work well and what does not. Only by connecting provincially generated information on student performance to what teachers actually do can instructional practices be modified to produce optimum strategies for student learning. Various researchers, including Tomkins (1986, 425)

and Glickman (2002, 57) have argued this connection is currently missing. Tomkins, in particular, contends that since the mid-1970s policymakers across Canada paid less attention to curriculum and instructional issues as their vision shifted toward broader planning and school governance concerns.

Unless policymakers reclaim their interest in curriculum and instruction, it is not reasonable to expect that these two critical areas of educational activity will become important parts of the public policy agenda in education for provincial governments. Policymakers must support educators in interpreting and implementing provincial and district standards and, at the same time, support research that illuminates how different curricular and instructional approaches in different contexts yield variable results in student learning. New research efforts aimed at investigating the relative effects of various levers of the system (classroom instruction, administrative leadership, staff relations, home-school links, curriculum, monitoring, and assessment) may also yield profitable results. Understanding more completely how these factors act together and act on each other would greatly assist in developing data-driven policy initiatives, something seldom found inside educational bureaus of government.

Most important, effective schools research points to the necessity of looking at school systems as a whole and promoting research into organizational factors that lie outside schools, but within school systems. To illustrate: two frequently cited characteristics of effective schools are a focus on student achievement and effective classroom instruction. Yet, remarkably little research examines how curricular standards differ across various jurisdictions and whether the differences relate to student achievement.

Nor has serious attention been directed to how educators interpret and implement educational standards in high and low-achieving schools. As Glickman puts it, researchers do not currently "collect sufficient information or provide trend information about curriculum, instructional practices, policies and student background and attitudes" (2002, 57). Glickman further contends that, in rare instances where such data are collected, "we too often fail to invest in analyzing it and in disseminating the research in a manner that supports schools, teachers, administrators, students and parents" (ibid.; see also Sweetman 2002). Relationships between different forms of pre-service and in-service teacher education and their effects on student achievement also remain uninvestigated. All of this suggests policymakers should examine such relationships more carefully — and consider the system as a whole — before setting out new standards for public education.

Much has been learned since Weber and Edmonds' inquiries in the 1970s to make schools more effective. Today, it is evident from interprovincial comparisons that some jurisdictions have been notably better than others at securing improvements in student achievement and that less successful provinces could learn much from their neighbours.[47] For researchers, the task that remains is to improve the clarity of understanding about school systems as a whole and how the various parts cohere to produce high results for learners.

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47 See results from the Council of Ministers of Education School Achievement Indicators Program (SAIP); website: www.cmec.ca.

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