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STRUCTURING CURRICULUM

Technical, Normative, and Political Considerations

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Students learn in a remarkable variety of organizational arrangements. They learned in one-room schoolhouses in 19th century Kansas and do today in 21st century Egypt. They learn in formally structured, inner city United States classrooms using the scripted reading lessons of Robert Slavin's *Success for All*. They learn in child-centered schools modeled on A. S. Neil's Summerhill "open school" in Suffolk, England. They learned as a questioning community sitting at the foot of Socrates in the agora in 4th century Athens. There exists no perfect, universal structure for a school or classroom.

Studies of the instructional benefits and detriments of various educational structures yield complex but useful information about the interactions among school organization, instruction, and learning. However, as we discuss later in this chapter, the relationship between structures and instruction is loose; the former can facilitate the latter but cannot dictate it. Beyond these pedagogical considerations, moreover, lies a series of questions that we find equally compelling and worthy of investigation. These are questions about the norms and politics that help explain why various structures arise and endure, seemingly independent of evidence about their impact on learning.

We begin this review using three key themes that help explain the forces behind curriculum structures: (1) the appeal of technical fixes, notwithstanding the depth of underlying problems rooted in fiscal, cultural, political, and historical issues; (2) the role played by three guiding values—that is, the cultural norms of efficiency, choice, and meritocracy—in the development and continuation of many organizational features; and (3) the political use of structures to create stratified, privileged enclaves within the broader system of universal education. In the discussion of this third theme, we particularly examine potential stratification associated with the recent growth of school choice policies.

Our focus in the first half of the chapter on normative and political forces underlying various organizational structures is not meant to minimize research about the effectiveness of various structures for learning and other desired policy goals. In the second half, we offer a brief summary of this research. Our focus is almost entirely schooling in the United States since that is what we know best. Although many of the structural features we discuss are found throughout the world, their normative

and political contexts vary considerably from country to country.

ALLURE OF THE TECHNICAL FIX

Organizational features of United States schools are shaped by the widespread appeal of technical fixes—changes in structures and practices. The key organizational structures that have found solid footing in school yards and classrooms all have carried with them the promise of a technical fix to complex school problems: year-round schooling, distance education, age-graded classrooms, grade retention, gifted pull-out programs, tracking, organizational structures serving students with special needs, programs for English language learners, school choice, and small and large schools.

No significant school reform, including those listed above, could be fairly described as uncomplicated or undemanding; however, many structural changes are perceived by policymakers as comparatively easy (Welner, 2001a). In contrast with reforms to beliefs and values and core practices, however, school structures can be superficially changed by issuing definite orders mandating, for instance, a new bell schedule or an end to social promotion. Further, some of these changes may appear to be cost free (e.g., changes in student assignment policies) or even to save money (e.g., year-round schooling). Politicians have difficulty resisting the siren's song of reforms that are easily understood, promise swift success, and are consonant with preexisting assumptions. As Mencken remarked, "for every complex problem, there is a solution that is simple, neat, and wrong" (as cited in Rodin, 1999, p. 60).

Grade retention policies endure as the archetype of technical fixes. No other school organizational structure has so dependably appealed to common sense and yet so clearly exhibited no educational merit (Shepard & Smith, 1989). It is a testament to the power of the technical fix that policymakers have regularly returned to grade retention as a key tool for improving student achievement. Each time, the proposal is advertised as containing some element—maybe earlier intervention or better summer supports—making it different than the past, unsuccessful attempts (Herszenhorn, 2004).

Policies that do, in fact, have sound empirical support may also be buttressed by the appeal of

a technical fix. Advocates of rigorous curriculum, for example, might fall victim to thinking that simply raising standards and graduation requirements will produce higher achievement. Champions of constructivist pedagogy might naively think that one or two professional development courses, demonstrating improved ways of teaching and learning, would result in radical changes in teaching. Equity-minded reformers might place great faith in the end of de jure segregation and in detracking reforms. Part of this may be wishful thinking; part may be strategic. Nevertheless, in all of these cases the structural change scratches only the surface of the desired change.

PULL OF POLICY NORMS: EFFICIENCY, CHOICE, AND MERITOCRACY

Schools in the United States serve many purposes, including the provision of an educated workforce and citizenry. They are also asked to provide safe environments for children, to inculcate American values in those children, to reward those most deserving, and to serve as a great equalizer—giving each new generation a fair chance at success. Notwithstanding some tensions among these and other goals, there is little that is accidental or capricious about what citizens ask of schools (Graham, 2005). Behind every technical fix, in fact, are cultural norms that make the fixes seem sensible.

Almost every educational policy that finds support in the United States advances one or more of the following ideals: excellence, accountability, equity, innovation, social cohesion, security, efficiency, choice, and meritocracy.¹ The final three of these prevailing values and beliefs, we contend, provide a useful framework for examining the organizational structures in today's schools.

The ideals of efficiency, choice, and meritocracy powerfully shape schools' forms and functions. In doing so, they overlap considerably with themselves and with the other ideals listed above. A policymaker might pursue excellence, for instance, via each or all of the other seven ideals, and any given policy is likely to advance more than one of these goals. For instance, the division of grade levels into separate elementary, middle, and high schools was primarily done to advance efficiency (Callahan, 1962; Tyack, 1974),

but other pertinent values might include safety and social cohesion.

Each of the structural features we named earlier—year-round schooling, distance education, and so forth—is well grounded in the ideals of efficiency, choice, and/or meritocracy and, in particular, in renderings of these ideals that are consistent with the United States market-based economy. Efficiency is often thought best gained through competition and best measured in terms of a predetermined desired output (e.g., test score increases) per dollar spent (Hanushek, 1994; Walberg, 1984). Choice, buttressed by rational choice theory, is pursued by neoliberal and neoconservative policymakers as a way to drive efficiency and excellence because of the potential for individual choices to maximize benefits for all (Hoxby, 2003).

Meritocracy harkens back to an earlier period in capitalism when social Darwinists posited that wealth and poverty are natural and deserved and just (Hofstadter, 1944; Spencer, 1862). To a large extent, policies based on ideals of meritocracy are at odds with the empirical social science finding that students' academic achievement is highly correlated with their parents' education and wealth (Armor, 1972; Jencks et al., 1972). However, when meritocratic values are superimposed on existing inequalities, we see policies premised on an apparent belief that high achievements and low achievements derive from the character and accomplishments of individuals, independent of their good or bad fortunes. From that perspective, additional rewards and penalties become sensible and fair.

Dominant organizational structures pay tribute to these ideals of efficiency, choice, and meritocracy. Tracking, for example, is grounded in all three. Historically, in the United States, at least, it owes much to the Taylorist efficiency movement of the early 20th century (Callahan, 1962; Oakes, 2005). Separating students into different groups and then targeting an appropriate curriculum at each is the educational equivalent of the factory assembly line. Efficiency was potentially gained in at least two ways: (1) each teacher could design one set of specific lessons appropriate to each given classroom, and (2) each child could be provided with the particular instruction appropriate to his or her station in life—to his or her future as a worker and citizen.

The ideals of meritocracy and choice also bolster the practice of tracking. Until recently, track

placement was officially determined by a combination of teacher recommendations, test scores, and other judgments of student achievement and aptitude (Oakes, 2005). Students showing sufficient merit would be rewarded with greater educational opportunities. The role of choice was largely unofficial, with efficacious parents actively intervening to obtain a higher track placement than officially merited. Elements of choice, however, have now become engrained in the formal course selection procedures of most United States secondary schools (Lucas, 1999; Yonezawa, Wells, & Serna, 2002). Together, the ideals of meritocracy and choice stand as a bulwark against charges that tracking systems are unfair, with defenders offering both justifications: Even assuming that low-track classes provide a lesser quality education, the students choose to be there, or alternatively the high-track students deserve the better opportunities.

Efficiency is the driving motivation behind two increasingly common practices: year-round schooling and distance education (Ready, Lee, & Welner, 2004). In populous urban and suburban areas, school overcrowding has prompted policymakers to rethink the traditional school calendar (O'Neil & Adamson, 1993). Instead of building more schools, these policymakers are trying to make more efficient use of existing facilities. Correspondingly, some policymakers in rural areas faced with extremely small schools and daunting transportation costs have turned to distance education, using technology to increase efficiency (Jensen, 2000).

Efficiency also provides the primary rationale for the age-graded organizational structure of United States schools (Oakes & Quartz, 1995). Based on a developmental theory that posits school readiness and progress at times and rates that are relatively uniform, this structure too owes a great deal to the Taylorist factory-model of schooling. Nineteenth century advocates in the United States sought to emulate the division of labor and hierarchical supervision by focusing teachers on one grade (Tyack & Cuban, 1994). The efficiency argument is perhaps stated most clearly in the negative: It would be inefficient to educate a diverse group of children in the same classroom.

Grade retention (flunking) is an organizational feature that arises out of the age-graded school structure. Although the practice has been defended as improving efficiency, it also is heavily grounded in beliefs about meritocracy (Shepard

& Smith, 1989). In a nutshell, grade retention appeals to the common sense belief that children should not be promoted to the next grade until they are ready and deserving of the reward. Accordingly, those most in favor of grade retention refer to the alternative using the deprecatory term social promotion (Steinberg, 1998). Policymakers have also advocated grade retention because of its purported usefulness in improving the retained students' achievement (Alexander, Entwisle, & Dauber, 1994). However, research fails to support this belief (Hong & Raudenbush, 2005; Shepard, Smith, & Marion, 1996).

Schools often adopt organizational structures as a response to differences among students. For the most part, these organizational practices appeal to the efficiency ideal, although gifted programs are also solidly grounded in beliefs about meritocracy. Programs for students with special needs are largely governed by explicit statutory requirements that lead to the mainstreaming of most students for most of the school day. These special education statutes are also grounded in the ideal of equity (Hehir & Gamm, 1999).

The interplay and occasional tension between powerful ideals is demonstrated by the school consolidation movement, which has been followed, in recent years, by the small-schools movement. In the United States, the consolidation movement began as part of the efficiency-minded Progressive Era reforms around the 1920s (Lee & Smith, 1995). Later, the movement picked up steam as a way to ensure high-level math and science courses—to prepare future Cold War scientists (Conant, 1959). Choice, too, became an objective for these large schools, which offered a wide range of electives (Powell, Farrar, & Cohen, 1985). Today, more than 70% of United States high school students are still enrolled in schools with more than 1,000 students (Allen, 2002). In the 1990s, advocates of smaller schools began a now thriving movement, focused primarily on reducing the size of urban and suburban secondary schools (Fine & Somerville, 1998; Meier, 1995). A synergy has developed between the school-choice movement and the small-schools movement, but the driving ideal appears to be social cohesion rather than choice.²

In response to the testing and incentives of the federal No Child Left Behind (NCLB) law, schools in the United States have begun devoting greater time and resources to the teaching of mathematics and reading. This is reflected at some schools in a restructuring of the school day,

with social studies and other nontested topics receiving less school time. Form follows function. If accountability remains a national priority, this function will become more clearly reflected in school structures just as efficiency-based structures began taking hold in the 1920s, as equity-based structures briefly blossomed in the 1960s and 1970s, and as choice-based structures became prevalent in the 1990s. As noted above, the way schools look is not accidental; structures reflect policy norms.

PERSISTENT POLITICS OF STRATIFICATION

The entire schooling system might itself be considered a curriculum structure. In the United States, the system includes both public schools and nonpublic options of private- and home-schooling. The division of students among public and nonpublic options reveals a great deal. A random group of 100 eight-year-old United States children would, on average, be distributed with a single child being homeschooled, 11 attending private schools, and 88 attending public schools (Alt & Peter, 2002). Most public school students attend neighborhood schools. But some attend charter schools, others enroll in magnet schools, a third group is in test-admission schools, and still others enroll at non-neighborhood public schools in their own or a nearby school districts. Taking into account all these choice options, for instance, Alt and Peter found that among public school students in grades 1–12, active choosers increased from 12% in 1993 to 16% in 1999. The school size and class size in private schools also vary tremendously, and the annual tuition may vary from less than \$2,500 to more than \$25,000.

These choices among types of schools have clear organizational implications. With each of these options comes the potential for stratification. Elite private academies provide superior resources and opportunities, as do elite public schools. Public school choice allows efficacious parents to acquire enhanced opportunities for their children (Wells, Lopez, Scott, & Holme, 1999). Even among homeschoolers, children receive disparate educational opportunities associated with the educational level and educational goals of their parents (Welner & Welner, 1999).

This complex and stratified system in the United States sits as the larger contextual background for each school's structural features.

A small-school reform at an urban comprehensive high school enrolling 90% low-income students of color may come with different costs and benefits than the same reform option at a better funded school serving a White, suburban community.

With this in mind, consider the expanding role played by school choice. Efficacious parents have long had certain limited but important choices among neighborhoods and among the public and private sectors (Goodman & Moore, 2001). Additional options now include magnet schools, charter schools, public school open enrollment, tuition tax credits, and vouchers. Schools located within such marketplaces must, to some degree at least, compete to attract and retain students. For many neoliberals and neo-conservatives, this competition is to take the form of excellence (Chubb & Moe, 1990). That is, schools providing the highest quality education would attract the greatest enrollment. One can assume that this phenomenon has, in fact, played out in some instances (Dolan, 2000).

However, the educational marketplace is predictably uneven in terms of both buyers and sellers. Schools and families with fewer resources are at a competitive disadvantage. Residential segregation limiting families' information and access to the best schools combine with the incentives for schools to recruit the best students to create an imbalanced competition (Diaz-Bilello, Welner, Howe, & Wiley, 2005; Welner & Howe, 2005). Only the most downtrodden schools (or schools with special missions) are likely to compete for those students with lower test scores and lesser likelihood of attending college or otherwise succeeding academically. Accordingly, wealthier parents of high-achieving students are in a position to make demands (see Roza & Miles, 2002, concerning funding disparities).

Schools might, for instance, be expected to provide special academic resources to these advantaged students (Wells & Serna, 1996). Parents denied such resources could viably threaten to take their valuable children to a different school. These special academic resources play out as elite enclaves such as magnet schools and high-track honors, advanced placement, and gifted classes. Corresponding lower level classes and opportunities are left for other, less fortunate students. Competitive pressures in a system of school choice thus appear to be catalyzing the creation of within-school stratified

structures, including tracking. This is in addition to the above described stratification between schools, which can itself be thought of as tracking writ large (Howe, Eisenhart, & Betebenner, 2001).

These forms of stratification have distressing racial undertones. Wealthier and more educated families—the most active choosers—are, on average, more likely to be White than African American or Latino, and inequalities linked to wealth are highly stable over generations (Bowles & Gintis, 2002). Policies that facilitate disproportionate resource and opportunity advantages to White families generate a form of de facto discrimination. The predictable result of such a stratified, racially identifiable system is the perpetuation of inequalities over multiple generations.

THE LOOSE CONNECTION BETWEEN STRUCTURAL AND INSTRUCTIONAL CHANGE

Organizational scholars refer to the school system as loosely coupled (Weick, 1976). Structural reforms that are intended to change instruction do not do so directly. Instead, most of their effects are felt indirectly through associated reforms in curriculum and pedagogy or in instructional resources.

This phenomenon is demonstrated by the small-school reform movement. Researchers have pointed to the potential of this reform to accomplish a variety of beneficial outcomes, such as an atmosphere with more intimate connections, more engaged students, a more rigorous curriculum, fewer disciplinary problems, and fewer dropouts (Raywid, 1999; Wasley et al., 2000). But simply reducing school size guarantees none of these things. In fact, small high schools were found in one study to be under pressure to emulate large schools by specializing their curriculum—although less able to do so successfully (Lee, Smerdon, Alfred-Liro, & Brown, 2000). Michelle Fine (2005), looking at the rapid development of small schools that share little of the innovative and equity-minded spirit she saw when the reform was young, worries that the movement has become “commodified, ripped from its participatory and radical roots, and used to facilitate union busting, privatization, faith-based public education, and gentrification.” Structural reforms merely have the

potential to facilitate or catalyze other instructional reforms—but so much more is involved for the reform to make meaningful change.

Similarly, early advocates of charter schools theorized that this new organizational approach would prompt a wave of innovation (Bulkley & Fisler, 2002). But notwithstanding isolated examples of creativity, no large-scale instructional innovation ever materialized (Lubienski, 2001). Structurally detracking, too, is not guaranteed to drive instructional change; structural change may be necessary, but surely not sufficient (Oakes, 2005).

STRUCTURES REVISITED:

SUMMARIZING THE RESEARCH LITERATURE

Considerable empirical research has examined the impact of various structural forms on learning and other desired outcomes, as well as on other policy goals such as efficiency. The discussion above makes clear that empirical evidence is not the only, and often not the most important, influence on decisions about these structures. With that caveat in mind, we devote the remainder of this chapter to a brief review of this empirical work.

School Size

In the 1990s, school reformers began to focus on the improvement potential of reforms that reduce school size, particularly at the high school level (Ready et al., 2004). Until then, larger high schools were seen as academically advantageous because they were able to differentiate course offerings, meeting the needs of a diverse student body (Monk, 1987; Monk & Haller, 1993). In rethinking this feature, some scholars questioned whether negative consequences associated with curricular differentiation, particularly tracking, outweigh the benefits of such choices (Lee & Bryk, 1989; Lee, Bryk, & Smith, 1993). Larger high schools had also long been presumed to be more economically efficient (Guthrie, 1979; Michelson, 1972). But this claim, too, had been challenged (Chambers, 1981; Fox, 1981; Stiefel, Iatarola, Fruchter, & Berne, 1998). As schools get larger, their support and administrative staffs usually expand (see Nathan & Febey, 2001, arguing that facilities' funding is best devoted to creating smaller schools in shared spaces). Also, in

rural areas the cost of distributing materials and transporting students often offsets any savings (Chambers, 1981).

Within the small-schools movement, however, there is some dispute over ideal school size. Some advocates of small schools argue for only 300 to 400 students per facility (Meier, 1996). Garbarino (1980) found few if any academic benefits when high school size was increased beyond 500 students (see also Barker & Gump, 1964). The Gates Family Foundation has provided generous funding for the initiation of such distinctly small schools. The National Association of Secondary School Principals and the Carnegie Foundation issued a report recommending that high schools break into units of no more than 600 students (National Association of Secondary School Principals [NASSP], 1996, p. 5). But slightly larger schools also have their supporters. Attempting to determine the ideal size of a high school, Lee and Smith (1997) used a national, longitudinal database and determined that achievement gains in mathematics and reading over the course of high school were found to be greatest in mid-sized high schools (600–900 students total). The point of agreement is in rejecting large, comprehensive high schools; Irmsher's (1997) literature review found no study recommending fewer than 300 or more than 900 students.

Looking outside the high school level, a team of economists used California's STAR (Standardized Testing and Reporting) 1998 test score data to explore the relationship between school size and the distribution of test scores across elementary, middle, and high schools (Bedard, Brown, & Helland, 1999). At all school levels, they found that smaller school size has a positive and statistically significant and economically large impact on school performance. These results held true for suburban, rural, and urban schools. Another study, focusing on Chicago's elementary (K–8) schools, found favorable effects for smaller schools in terms of teachers' willingness to take responsibility for their students' learning as well as in the student learning itself (Lee & Loeb, 2000).

The potential benefits of small schools include greater learning, more rapid progress toward graduation, greater satisfaction, fewer dropouts, and better behavior with fewer instances of both minor and serious disciplinary infractions (Raywid, 1999; see also Cotton, 1996). Moreover, as Raywid notes, large schools seem

to disproportionately harm disadvantaged students (see also Lee & Bryk, 1988, 1989; Lee et al., 1993). A study conducted by Pat Wasley and her colleagues examined longitudinally 150 small schools by design in Chicago, all founded between 1990 and 1997 (Wasley et al., 2000; Wasley & Lear, 2001). The schools had enrollments between 200 to 400 students. Among their findings were the following: (a) students demonstrated persistence toward graduation; (b) fewer students were retained at the elementary level; (c) incidents of violence were reduced; (d) students' performance, attendance and graduation rates improved; (e) disadvantaged students significantly outperformed those in large schools on standardized tests; (f) students of all social classes and races were treated more equitably; (g) teachers, students, and the local community preferred the smaller schools; and (h) dropout rates were significantly lower in the smaller schools. Stiefel et al. (1998), studying high schools in New York City, also highlighted this dropout issue, finding that small schools are a better investment when the cost of dropouts is considered. Although they found small high schools to have higher costs per student, these small schools had the lowest cost per graduate—once their higher graduation rates and lower dropout rates were factored in.

Age Grading

Age-graded schools became common in large cities by 1860, and by 1870 they had replaced one-room schoolhouses in places; age-grading remains today as the nearly universal structure for assigning students to classrooms (Tyack & Cuban, 1995). However, educators have experimented with alternative classroom structures. Combination classes, usually employed to maximize human and spatial resources, group children of multiple grades within single classrooms, but the children remain classified as in a particular grade. Mixed-age or multigrade classes, intended to increase cross-age interaction and cooperation among children, group together children with age differences of greater than one year. Nongraded (or un-graded) classrooms, designed to accommodate each child's unique learning stage with developmentally appropriate curriculum and instruction, group children of various ages in classes; neither the children nor the class has grade designations.

Today, combinations classes are the most common alternative to age-graded classes; multiage classes exist, but are rare; and nongraded classroom are virtually nonexistent (Kappler & Roellke, 2002).

Advocates of nongraded and multiage structures claim four types of benefits: opportunities to nurture, ways of learning, social participation, and intellectual benefits (Katz, 1995; Kolstad & McFadden, 1998). For example, Katz argues that multiage classrooms provide children with the context and opportunities to understand, help, and learn from each other and that wider age ranges expand the learning process to beyond normative expectations, allowing difference and individuality to exist among students in their academic and social development. Others see multiage grouping as a viable alternative to retention (Kappler & Roellke, 2002).

Empirical studies that compare the cognitive and noncognitive effects of multiage and age-graded classroom organization on student achievement and social development have not produced consistent findings (Kinsey, 2001). Some reviewers conclude that the research supports multiage classes, particularly for its noncognitive benefits (Lloyd, 1999; Veenman, 1995, 1996). They cite small but significant benefits for multigrade classrooms on children's attitudes toward school, personal adjustment, and self-concept. Others disagree, citing selection bias as the source of positive outcomes (Mason & Burns, 1996). However, the current decline in enthusiasm for multiage classrooms probably has less to do with evidence than with the standards movement, NCLB's requirement of grade-level testing, and waning interest in educational practices that focus on students' affective development (Pardini, 2005).

Grade Retention

Although national data concerning the amount of grade retention is limited, a report from the National Research Council concludes, "Among cohorts who reached ages 6 to 8 in the 1980s and early 1990s, age-grade retardation reached 25 to 30% by ages 9 to 11" (Heubert & Hauser, 1999, p. 121).³ Moreover, two of the nation's largest school districts—New York and Chicago—have since adopted expanded retention policies (Herszenhorn, 2004; Nagaoka & Roderick, 2004; Steinberg, 1998). African

Americans and Hispanics are disproportionately more likely to be retained; the same is true of boys (Heubert & Hauser).

The disproportionate effect of grade retention on low-income students of color has been to place them at greater risk by increasing the dropout rate and having little positive effect on achievement (Fine, 1991; Grissom & Shepard, 1989; Holmes, 1989; Hong & Raudenbush, 2005; House, 1989; Luppescu, Bryk, Deabster, Easton, & Thum, 1995; Shepard & Smith, 1989).⁴ Today's policymakers who adopt grade retention regimes can expect increases in dropout rates. It should be noted here that underreporting of dropout rates has long been a problem, but consistent, reliable approaches for calculating and reporting appear ready to be implemented (National Center for Education Statistics [NCES], 2005; Swanson & Chaplin, 2003).

Year-Round Schooling

The traditional school calendar in the United States consists of 180 days of instruction, approximately between September to June. Popular myth, but little evidence, holds that this calendar came about to free child labor up for summer farm work. The best evidence seems to support a more nuanced conclusion (Weiss & Brown, 2003). The traditional calendar served a variety of needs, not the least of which was that the summer heat made indoor schooling difficult. Whatever its origins, the summer vacation has become institutionalized, along with other calendar staples such as summer vacations and summer jobs.

At least two forces are now placing pressures on the traditional calendar. One of these is high-stakes, statewide accountability testing, usually administered in the spring. Shifting to an earlier start date means that students have more days of instruction prior to the test. Consequently, many school districts now begin school in August; at least two now begin in July (Janofsky, 2005).

The second pressure comes from school overcrowding. Five percent of overcrowded schools nationwide have rearranged school schedules and calendars so that not all students are in the building at the same time (NCES, 2000a). Schools using this option typically operate split-day schedules, where two shifts of students attend the same school on the same day. For example, half the students may attend school between 7 a.m. and noon, while the other half attends between noon and 5 p.m.

Other overcrowded schools have tinkered with the year rather than the day. Abandoning the traditional nine-month calendar, some operate schools year-round. In 2005–2006, more than 3,000 United States schools, enrolling over two million students, operated on some form of year-round calendar (National Association for Year-Round Education [NAYRE], 2006). The vast majority (97%) are public. In California, almost 25% of all public schools students (over one million students) attended year-round schools (Mitchell & Mitchell, 2001).⁵ Although year-round schedules may be less expensive than building new facilities, a year-round calendar requires additional spending on utilities, transportation, maintenance, and staff salaries (Kern High School District, 1992; Kreitzer & Glass, 1993).

In multitrack year-round education, students are organized in three or four groups, with one group on vacation at any time. These schools are always in session. One common plan is California's 60/20, which involves four tracks; each track alternates between 60 days of school and 20 days of vacation. A second common model is Concept 6, which divides students into three groups, with one always on vacation. This model expands enrollment capacity by 50% by limiting each student's attendance to 163 days per year. To compensate for this reduced instructional time, schools typically add between 20 to 40 minutes to each school day.

Gene Glass (2002), who published some of the earliest research on year-round schools (Smith & Glass, 1976), reviewed the literature in 2002 and concluded that university-based research (that is, research not conducted by advocacy groups) consistently failed to find achievement advantages for the year-round calendar. However, as Glass notes, the primarily policy rationale for switching to a year-round schedule is efficiency, not learning.

Distance Education

Research on distance learning in high school and college shows that students fare neither better nor worse in such courses (Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004; Institute for Higher Education Policy, 1999). Cavanaugh and her colleagues (2004) conducted a meta-analysis of 116 effect sizes from 14 Web-delivered K–12 distance education programs studied between 1999 and 2004. They found no significant performance differences between

students in traditional classrooms and those in online programs.

Nonetheless, distance learning holds promise in rural areas because of efficiency benefits. Further, as computer technology has become the core of the new economy, access to these tools in schools is important. Considerable research has documented inequities in access to computer technology (see, e.g., NCES, 2000b; NCES, 2002). Although the research presently available is not strong enough to establish a connection between access to computers and increased student learning, generally (see Ringstaff & Kelley, 2002), Wenglinsky (1998) found positive effects when teachers use computers primarily for simulations and applications.⁶

Tracking

Since the turn of the 20th century, schools have placed students in different classes based on perceived ability (Kliebard, 1995). The asserted purpose is to tailor the rigor and pacing of curriculum to meet the specific learning needs of each student (Hallinan, 1992, 1994). However, the empirical results have fallen short of the theory, with evidence that tracking depresses student achievement and brings racial and socioeconomic stratification in schools (Braddock & Dawkins, 1993; Conger, 2005; Gamoran, 1986, 1992; Lipman, 1998; Moore & Davenport, 1988; Murphy & Hallinger, 1989; Oakes, 1990, 1992, 2005; Oakes, Gamoran, & Page, 1992; Slavin, 1987). This short summary focuses on findings in three key areas: track assignment, student achievement, and detracking.

Track assignment: Students' track assignments are influenced by factors unrelated to student achievement (Lucas, 1999; Oakes & Gupton, 1995; Welner, 2001a). The philosophy of school leaders and organizational factors of the school, such as the perceived number of vacancies in classes, often influence the decision as to whether or not a student is placed in advanced classes (Garet & DeLany, 1988; Hallinan & Sorenson, 1987; Useem, 1992). Parents with college degrees are more likely to intervene in school experiences, resulting in their children's placement in more advanced classes (Useem, 1992; see also Wells & Serna, 1996).

African American and Latino students are dramatically over represented in low-track classes and under represented in high-track classes (Black, 1992; Braddock & Dawkins, 1993; Hallinan, 1992; Oakes, Ormseth, Bell, & Camp,

1990; Slavin & Braddock, 1993). Socioeconomic status (SES) affects track location as well (Lucas, 1999; Lucas & Gamoran, 1993; Vanfossen, Jones & Spade, 1987). Even after accounting for prior performance, high-SES and White students are over represented in the academic track, and the effect of SES on track placement extends beyond the effect of SES on student performance (Oakes, 2005; Vanfossen et al., 1987; Welner, 2001a).

Student achievement: Many studies have documented an association between low-track classes and lowered student achievement (Heubert & Hauser, 1999). These studies also indicate that the achievement gap between low- and high-achieving students widens over time in tracked settings (Gamoran & Mare, 1989; Welner, 2001a). This is because low-track classes, "typically characterized by an exclusive focus on basic skills, low expectations, and the least qualified teachers," cause students to fall further and further behind (Heubert & Hauser, 1999, p. 282). The higher expectations and greater demands of higher-track classes appear to drive higher achievement (Oakes et al., 1992).

Comparisons of high-tracked to detracked classes have yielded mixed results. Some studies report that the learning of higher achievers decreases in detracked, heterogeneous classes (Brewer, Rees, & Argys, 1995; Epstein & MacIver, 1992; Kulik, 1992), while other studies report no significant differences (Burris, Heubert, & Levin, 2004; Mosteller, Light, & Sachs, 1996; Slavin, 1990). Even if high-track classes result in higher achievement than detracked classes, it is not clear why this is so. Researchers have not disentangled the effects of peer effects, better instruction, and more qualified teachers—all high-track class characteristics (Kerckhoff, 1986; Levin, 1997; Oakes, 1986; Slavin & Braddock, 1993; Wheelock, 1992). For this reason, Oakes (1990), Slavin and Braddock (1993), Wheelock (1992), and others have proposed that de-tracking occur as a process of "leveling up," in which the "top track" curriculum "becomes accessible to a broader range of students without watering it down" (Slavin & Braddock, 1993, p. 15).

Detracking: The most common justification for tracking today rests on the belief that high achievers will be hurt by heterogeneous grouping (Kulik, 1992). Those who favor tracking warn that an influx of low-achieving students in high-track classes will depress the learning of high achievers, even if the high-track curriculum remains (Gamoran & Hannigan, 2000;

Loveless, 1999; White, Gamoran, Porter, & Smithson, 1996). However, recent studies have found high achievers, as well those previously in low-track classes, to thrive in a universally accelerated environment (Boaler & Staples, 2005; Burris & Welner, 2005).

Since the late 1980s, policy groups have advocated for detracking. The National Governors Association's report (1993), *Ability Grouping and Tracking: Current Issues and Concerns*, firmly stated its opposition to school tracking. Similarly, the Carnegie Council for Adolescent Development's (1989) *Turning Points: Preparing American Youth for the 21st Century* identified detracking as central to reforming middle grades education. Also, The College Board (1989) has criticized the role of tracking in imposing barriers to minorities' access to college. Most recently, the National Research Council (2004) called for schools to move away from the practice.

The NCLB legislation (20 U.S.C.A. §§ 6301 et seq.), signed in 2002, does not directly address classroom grouping practices. However, the law includes provisions requiring the disaggregation of test score results, effectively mandating that subgroups of a school's population cannot be subject to lowered expectations. Offering more challenging classes for students who had formerly been shunted aside is considered basic to standards-based reform (Oakes & Wells, 1998; see also Welner, 2001b).

Other nations have made tracking policy choices that differ from those in the United States. Notably, Finland and a number of other high achieving societies, (e.g., the other Scandinavian countries, Canada, Hong Kong, and Japan) have apparently concluded, tracking (at least prior to age 15) is fundamentally inconsistent with having all students meet the same high academic standards and perform well on the same tests.

Gifted Pull-Out Programs

Closely related to tracking are special programs for students identified as having superior intellectual ability or other talents. From state to state, the definition of giftedness varies, with corresponding wide variation in the percentage of students obtaining the label (Bricker & Braverman, 1998). Some jurisdictions limit gifted programs to students with an IQ score of 130 or more—that is, the top 2% of all students (Carpenter, 2001). From 3 to 5% is probably

more common, but some expand the definition to include those testing in the top 10% or even wider (Bricker & Braverman, 1998).

Gifted programs respond to concerns, emerging early in the 20th century, that traditional schools ignore the needs of gifted students because they disdain achievement, effort, and merit (Resnick & Goodman, 1994). Today, advocates argue that gifted children have special needs that cannot be accommodated in the regular classroom and that require additive and special resources above and beyond general education programs. Many see a separate, homogeneously grouped classroom setting, as well as the enriched curriculum, as essential to meet gifted students' needs (Gallagher, 1994).

Generally, gifted education programs are pull-outs (Olszewski-Kubilius & Limburg-Weber, 1999), wherein students leave the classroom weekly for several hours. Such programs are intended to provide an environment where gifted peers can interact and experience accelerated content and skill mastery. Alternative structures include clustering, multigrade classrooms, and differentiated instruction in mixed classrooms. In-class clustering of gifted students is intended to accommodate students' needs for advanced curricula without removing them from their heterogeneous classroom. Few studies have assessed this strategy, but reviewers conclude the effect is positive (Kulik & Kulik, 1990). Advocates for multiage grouping for gifted students claim that it combines the benefits of high intellectual engagement with cross-age interaction (Lloyd, 1999). Evidence about the effectiveness of these strategies is mixed; some reviewers claim benefits (Vaughn, Feldhusen, & Asher, 1991), and others do not (Delcourt, Loyd, Cornell, & Goldberg, 1994).

Differentiated instruction in mixed-ability classrooms offers a seemingly practical way to accommodate the special needs of students identified as gifted, particularly in standards-based schools (Tomlinson, 2001; Tomlinson et al. 2003; VanTassel-Baska & Little, 2003). Teachers develop an understanding of the differences among their students and adjust their teaching practices to ensure that all students are equally engaged and valued (Tomlinson, 2001).

Special Education Organizational Structures

Organizational structures for special education emanate from procedural safeguards and antidiscrimination laws for children who are

identified as needing special education services (Losen & Welner, 2001). The statutory framework is grounded in a presumption that students with special needs should be mainstreamed—they should not be educated in a different, separate environment.

Pursuant to the Individuals with Disabilities Education Act (IDEA), students with disabilities are entitled to be educated with their regular education peers to the maximum extent appropriate (20 U.S.C. § 1412). This is intended to ensure exposure to the same curriculum, the same high academic standards, and the same opportunities for socialization (Losen & Welner, 2001). The shorthand version of this concept is taken from language in the IDEA: a Free and Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE). The concept of LRE is subsumed under the definition of appropriate in FAPE.

The reauthorization of the IDEA in 1997 reemphasized the preference that students with disabilities be taught in general education classrooms (20 U.S.C. 1412(a)(5)). Further, the Act's congressional findings noted that the IDEA's successful implementation "has been impeded by low expectations" and acknowledged substantial concerns about students with cognitive and emotional/behavioral disabilities who are taught in restrictive, segregated classrooms (20 U.S.C. § 1401(c)(4)).

Individually, some students do benefit from educational settings apart from the regular classroom. Accordingly, the IDEA authorizes student placements based on individual needs, rather than based on disability type (such as educationally mentally retarded). At the heart of the IDEA lies the right to an individual eligibility determination and subsequent individualized education plan, along with the right to be educated with regular education peers to the maximum extent appropriate. The organizational framework thus attempts to balance inclusion with differentiated curriculum and instruction.

Programs for English Language Learners

As part of the efficiency movement in the early 1900s, immigrant children with no English were often placed in steamer classes that separated them from their English speaking colleagues (Tyack, 1974). Others were placed in the first grade, regardless of age (Cuban, 1993). Since that time, schools have developed a range of

structures for teaching English language learners, most of which focus on teaching English. These include immersion in general education classes where English is the language of instruction, separate English as a second language programs, transitional bilingual programs, and dual-language or two-way immersion programs (TWI; Welner & Escamilla, 2002).

Immersion programs may place English language learners in classes with monolingual English-speaking children, or provide separate classes for English learners not yet ready to be mainstreamed. Transitional bilingual programs begin with native-language instruction, with students then transitioned to English. These range from early-exit models that transition students to English within two or three years, to late-exit models that continue to provide native-language instruction throughout elementary school. TWI programs integrate native English speakers and native speakers of another language (usually Spanish) and provide instruction in both languages. TWI, the least common structure, is the only one that focuses on helping students maintain or develop literacy in their native language.

Several research reviews have documented the greater effectiveness of bilingual approaches, when compared to English-only programs (August & Hakuta, 1997; Rolstad, Mahoney, & Glass, 2005; Willig, 1985; Wong-Fillmore & Valadez, 1986). In 2003, Slavin and Cheung conducted a "best evidence" review of experimental studies of reading programs for English language learners. They concluded that the high-quality studies favor bilingual approaches, especially those programs that simultaneously teach reading in the native language and in English. However, Slavin and Cheung also found that the specific structure or language of instruction alone did not account for students' success. Rather, they call attention to the content and pedagogy, identifying as the most successful programs those that use systematic phonics, one-to-one or small group tutoring, cooperative learning, and extensive reading (Slavin & Cheung, 2003).

Findings about TWI are particularly striking. The Center for Applied Linguistics reviewed 266 such programs (Howard & Christian, 2002), the majority Spanish-English programs in public elementary schools. Howard, Sugarman, and Christian's (2003) review of research reported generally positive findings concerning the design and implementation of these programs, student outcomes, instructional strategies,

cross-cultural issues, and the attitudes and experiences of students, parents, and teachers. Native Spanish speakers and native English speakers in TWI programs performed as well or better than their peers educated in other types of programs, on standardized achievement tests in English as well as in Spanish.

Decisions about which programs to offer often turn on ideological commitments, rather than on the basis of evidence (Welner & Escamilla, 2002). Some scholars argue that because the United States has a relatively negative view of bilingualism, decision making about English language learners instructional practices has been influenced more by politics and values than by empirical research (La Celle-Peterson & Rivera, 1994; Pavlenko, 2002; Rothstein, 1998). This helps explain why the debate on instructional programs for English language learners is largely limited to a narrow focus on language of instruction (Leistyna, 2002).

School Choice

School choice policies have a variety of goals and research dimensions, including their effects on stratifying access to curriculum. Interestingly, school choice played two contrasting roles in the desegregation movement. Initially, it arose as a mechanism to evade desegregation orders (see *Green v. School Board of New Kent County*, 1968). So-called “freedom of choice” plans in Southern school districts ostensibly allowed each student (whether Black or White) to choose a school—a reform that arguably did away with the old segregated system. But each group opted to choose segregated schools, in large part because of unambiguously applied pressure from defenders of the Jim Crow status quo (*Green v. School Board of New Kent County*, 1968).

School districts and courts also used choice as a mechanism to foster desegregation. Magnet schools, generally located in inner-city, high-minority neighborhoods, seek to attract White, suburban students to minority schools by offering exceptional programs or resources (American Institutes for Research, 1993; West, 1994). Controlled choice plans ask parents to rank the top three or four schools for their child. Choices are honored to the extent that they do not result in segregation, as defined in the plan (Alves & Willie, 1990).

In the push-and-pull between segregative and desegregative policies, a clear winner emerged by 1990. Resegregation began in earnest in the late 1980s due to shifting priorities for policymakers as well as antipathy, or at least apathy, toward desegregation from the federal courts (Orfield & Lee, 2004). As a tool for desegregation, choice had once combined two core values: liberty and equity. Parents were given greater say over which schools their children would attend while the constraints placed on parental choices furthered the societal goal of racial integration. In most states, this is no longer the case; current open enrollment and charter school policies do little if anything to directly advance desegregation. The result has often been increased segregation of students by race, family wealth, and special needs status (see Cobb & Glass, 1999; Frankenberg & Lee, 2003; Hochschild & Scovronick, 2003; Horn & Miron, 2000; Howe et. al., 2001; Howe & Welner, 2002; Welner & Howe, 2005). Research into the voucher program in Chile has also documented troubling patterns of segregation (Hsieh & Urquiola, 2006), and New Zealand’s universal choice plan has fared no better (Fiske & Ladd, 2000). Because existing voucher programs in the United States are generally means-tested and thus limit eligibility to low-income students, many concerns about stratification are lessened.

Class-Size Reduction

The class size reduction movement caught fire after findings were published from Tennessee’s Project STAR (Finn, Gerber, Achilles, & Boyd-Zaharias, 2001; Krueger, 1999, 2000; Nye, Hedges, & Konstantopoulos, 2000; Wenglinsky, 2001). Using a random-assignment experimental methodology, the Tennessee researchers found that reducing class size to approximately 15 students in grades K–3 resulted in academic benefits in all subject areas, especially for children living in poverty. Researchers tracked 11,000 Project STAR students who were randomly assigned in the early grades to one of three groups: regular classes (around 25 students), small classes (around 15), and regular classes with an instructional aide. Students in smaller classes showed improved outcomes as compared to those in regular-sized classes, including those with an instructional aide. Importantly, these

improvements continued to be evident even after the students were placed back in regular-sized classes in the seventh and eighth grades (Finn et al., 2001; Nye et al., 2000).

The Tennessee results are consistent with other studies. An early meta-analysis concluded that decreased class size results in increased achievement, at least when class size crosses a threshold of about 15 students (Glass & Smith, 1978). Molnar et al. (1999) used a quasi-experimental (comparison group) design to evaluate Wisconsin's Project SAGE, reaching similar conclusions. In his study of National Assessment of Educational Progress (NAEP) scores, RAND's Grissmer and her colleagues (2000) also found reduction of class sizes to be a successful strategy for raising achievement. And Wenglinsky (1997) of the Educational Testing Service, who studied the effect of class size for fourth and eighth graders using regression analyses to examine a large-scale database, found that reduced class size was associated with significant math score gains, particularly for the fourth graders. Math scores of inner-city fourth graders in classes of fewer than 20 students were about three quarters of a grade level above those of their counterparts in larger classes. Wenglinsky found smaller but still substantial (one third of a grade level) improvements for kids in smaller classes in suburban schools. For summaries of the class-size reduction research, see Finn (2002), Krueger (1999, 2000) and Wenglinsky (2001).⁷

In addition to this evidence that the reform can lead to increased achievement, the allure of class-size reduction policies is likely due to their straightforward connection to a more appealing classroom environment (see Bohrnstedt, & Stecher, 2002). Although a structural reform, it is more akin to a policy mandating new textbooks or computers. That is, it offers an important classroom resource—more teacher attention.

CONCLUSION

The organizational structures found in today's schools were adopted and have been maintained to serve concrete, powerful goals. Dominant structures, such as approaches toward student assignment to schools and classrooms, are closely tied to three key objectives: efficiency, choice, and meritocracy. These objectives and

others help to shape the “zone of mediation”—the context within which policies are adopted and implemented (Welner, 2001a). Welner's basic contention is that the combined effect of forces internal and external to the policymaking jurisdiction create a zone demarcating the boundaries of feasible policies. A policy proposal falling outside the zone cannot feasibly be adopted or implemented. The context created by NCLB, for instance, substantially detracts from the feasibility of nongraded classrooms. Understanding these issues of contexts, how they are formed and changed, is the key to understanding the initiation and implementation of organizational structures and to building structures most consistent with best educational practices.

NOTES

1. Many of these ideals are discussed in Oakes, Quartz, Ryan, and Lipton (2000).
2. Although researchers have argued that the reform can be cost effective, particularly when costs are calculated per graduate (Steifel, Berne, Iatarola, & Fruchter, 2000), efficiency does not appear to be a driving force.
3. “Age-grade retardation” refers to enrollment below the modal grade level for a child's age. This is often due to retention, but can also be due to other factors such as late enrollment in kindergarten.
4. Although one study, using data from Baltimore, suggested that grade retention does in fact increase the chances of academic success (Alexander et al., 1994), these findings did not stand up to a careful reanalysis of the same data (Shepard et al., 1996).
5. As part of a litigation settlement, many school districts in California will stop using year-round schools. The lawsuit had alleged that the particular year-round approach, called Concept 6, deprived students of instructional time and opportunities (California Department of Education, 2006).
6. Valdez et al. (1999) offer a comprehensive summary of the research on the effects of instructional technology associated with personal computers.
7. As with all reforms, these positive findings concerning class-size reduction are likely tied to effective implementation. The reform should not outpace supplies of qualified teachers and quality facilities (see Bohrnstedt & Stecher, 2002). Students cannot be expected to benefit from class-size reduction if they are being taught by uncertified teachers in cafeterias and trailers.

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