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LEAD ARTICLES: NO CHILD LEFT BEHIND

CONTINGENCIES, MACROCONTINGENCIES, AND METACONTINGENCIES IN CURRENT EDUCATIONAL PRACTICES: NO CHILD LEFT BEHIND?

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ABSTRACT: Using Glenn's framework (1985, 1986, 1988, 1991, 2004), this paper describes the public school system as an entity comprised of interrelated cultural units ranging from federal and state agencies to local school districts, schools and individual classrooms. At each of these levels the interlocking behavioral contingencies (IBCs) resulting from implementation of Public Law 107-110, No Child Left Behind, are described. This paper identifies potentially problematic educational practices (selected by social consequences) and the cumulative effects of these practices.

KEYWORDS: metacontingency, macrocontingency, public education, No Child Left Behind (NCLB), interlocking behavioral contingencies (IBCs)

This paper will introduce the No Child Left Behind (NCLB) educational law, its origins, and goals. The purpose of this paper is to describe and analyze in terms of competing, interlocking, meta- and macrocontingencies, the effects of NCLB's targets for reform throughout the educational system. The analysis, using Glenn's 2004 framework, primarily focuses on NCLB contingency effects on behaving individuals at the basic unit level, the classroom.

Information published about NCLB and public education rarely includes an *analysis* of the problems. To analyze a system as complex as the public education system requires a unique perspective: looking at it as a system of interrelated cultural entities. According to Glenn (1991, p. 61), "...behavior is transformed into cultural-level entities when the

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interlocking behavior of individuals produces aggregate outcomes that could not be achieved by any individual acting alone.” While operant behavior is selected and propagated by contingencies operating at the individual level, the transmission of this learned behavior may result in cultural practices. This transmission, says Glenn (2004), “powers the evolution of human cultures” (p. 133). Thus, the public education system is a cultural system that arises from and engenders the transmission of both learned behavior and cultural practices.

Following the cultural landscape generated by Glenn (2004) and Harris (1964), we have envisioned the various components of the public school system as *permaclones*. Glenn (1991, p. 61) defines a permaclone as a “cultural unit comprised of repeated instances of interlocking behavioral contingencies (IBCs) maintained by specific individuals, replaced by other individuals while the behavioral contingencies remain relatively stable (or evolve gradually) over time.” For purposes of this paper we shall use a biology classroom as an example of a permaclone. The repeated instances of IBCs are the cooperative interactions between teacher and student and between students. These interactions produce multiple outcomes (e.g., science experiments, academic discussions, papers) that ultimately result in enhanced student repertoires. Although the IBCs involve specific individuals at any given point in time, the students and teacher in the classroom are replaced by other individuals, while the behavioral contingencies (e.g., academic content, grading system, course requirements) either do not change or change gradually over time.

“Cultural-level entities become more complex when the IBCs functioning as a cohesive whole come to involve more acts of more organisms, but those acts are themselves maintained by behavioral consequences embedded in the IBCs themselves” (Glenn, 2003, p. 237). The complexity and size of the U.S. public school system and its multiple components (i.e., federal and state agencies, independent school districts, individual schools and classrooms) necessitate using a term that implies the enormity of this system. We propose the label ‘superpermaclonic unit’ be used to describe a unit in which IBCs occur between cultural units (i.e., individual permaclones). This appears to be accurate considering that the agencies, districts, schools, and classrooms involved may change or be replaced, while the contingent relationships between cultural units, their practices, and outcomes of those practices remain mostly unchanged (or develop gradually) over time. Thus, the term “superpermaclonic unit” may be more appropriate to describe the U.S. system for public education.

Nevertheless, superpermaclonic and permaclonic units consist of IBCs (interlocking behavioral contingencies) which are formed when the independent behavior of multiple individuals becomes cooperative, and ultimately interdependent, because such behavior maximizes favorable consequences. “In short, individuals cooperate when interdependent behavior produces more reinforcement than independent behavior” (Glenn, 2003, p. 236). When multiple IBCs function cohesively, the relations between them and their consequences constitutes a *metacontingency*. This term seems appropriate to describe the behavior of the cultural components of the public school system. However, when the independent behavior of many individuals constitutes a cultural practice it may not be

cooperative or interlocking but instead have a cumulative effect or product. In this case, multiple individuals engaging in the same or similar behavior which collectively produces an outcome that could not be produced by any of the individuals acting alone, is classified as a *macrocontingency*. A macrocontingency is exemplified by an orchestra class wherein each musician is practicing playing his or her own instrument simultaneously (but independently), each playing different parts of the same musical piece or different compositions. The combined behavior of these musicians has a cumulative outcome: cacophony. However, when these musicians are playing in a coordinated, harmonious fashion (e.g., in a concert before an audience) the resulting symphony is a product of IBCs involved in a metacontingency.

Because metacontingencies and macrocontingencies both involve the behavior of multiple individuals it may be beneficial for us to describe that behavior in functional terms. Glenn (1985, 1986) distinguished between technologically and ceremonially maintained behavior. Technological behavior is maintained by nonarbitrary changes in the environment—by its usefulness, value, or importance to the behaving person and others. Ceremonial behavior, on the other hand, is behavior maintained by social reinforcers “deriving their [reinforcing] power from the status, position, or authority of the reinforcing agent independent of any relation to changes in the environment directly or indirectly benefiting the behaving person” (Glenn, 1986, p. 3).

Although each component may be designated as a distinct permaclonic unit, the hierarchal units involved in the public school system are clearly interconnected and include, but are not limited to, the following:

- Federal agencies creating laws (ensuring implementation of state directives based on federal guidelines)
- State education agencies prescribing educational teaching programs
- School districts providing qualification guidelines for hiring teachers
- Schools (in site-based management systems) hiring teachers qualified as described above
- Classroom teachers implementing the prescribed training programs

This paper focuses on NCLB, an act that is “...potentially the most significant educational initiative to have been enacted in decades. Among the salient elements of this initiative are requirements that all students have qualified teachers and be given the opportunity to attend high-quality schools” (Simpson, LaCava, & Graner, 2004, p. 67). NCLB initiated use of an Adequate Yearly Progress (AYP) criterion intended to improve education. However, the definition of improved education appears to have devolved into “higher standardized test scores” (Amrein & Berliner, 2002; Urrieta, 2004). The superpermaclonic unit (our public educational system) engages in cultural practices dictated, in large part, by such federal laws as NCLB. However, practices of the constituent permaclonic units diverge and, thus, have distinctly different, sometimes opposing, effects on the resulting outcome—public education. This paper is organized around various conflicting and competing cultural contingencies created by the federal

law No Child Left Behind and delineates the diverse effects of these contingencies at federal, state, and local levels.

BRIEF HISTORY OF NCLB

The public school system frequently is the focus of media, political, and parental concern. These concerns were expressed in the report, *A Nation at Risk* (1983), that resulted from an 18-month study of the US educational system by the Reagan administration in 1983. This document reported that American student achievement was ranked last 7 times (and never ranked first or second) by comparison with other industrialized nations. Also listed as risk factors were the 23 million American adults who were functionally illiterate, and college Scholastic Aptitude Test (SAT) scores that had continuously declined from 1963 to the time of that report. As America moved into the “information age,” knowledge, learning, and information became even more critical raw materials for competing in international commerce. The report declared that American prosperity, civility and security were dependent on its educational institutions. This report describes how, to maintain our competitive edge, the US must invest in reform of its educational system.

No Child Left Behind (NCLB, also referred to as PL 107-110) was the cumulative outcome of a standards-and-testing movement that began with the release of *A Nation at Risk*, and functionally extended the Elementary and Secondary Education Act (ESEA) of 1965. Formally renamed and reauthorized in 2001-2002 school year, No Child Left Behind marked an unprecedented extension of federal authority over state and local schools and reauthorized local accountability for performance (McDermott, 2003). NCLB requires states to make continuous and substantial progress toward the goal of academic proficiency. Specifically, this law requires that within 12 years (by 2013-2014 school year) of enactment 100% of US students will pass state achievement tests (Hill & Barth, 2004; NCLB, 2002; Orlich, 2004). From 1983 until today federal standards legislation has moved from voluntary goal-setting without deadlines, assessment criteria, or funding contingencies to mandatory annual proficiency/performance standards (accountability) linked to Title I program funding (Fritzberg, 2004).

WHAT IS NCLB?

NCLB is an educational reform law that engages four principal targets. First, it increases state, district, and school *accountability* for educational/academic performance. Second, it expands local control by providing greater *flexibility* to states, districts and schools in terms of meeting those goals. Third, it establishes programs designed to provide more *equal opportunities* to students in poorly performing schools, and fourth, dictates implementation of educational programs, *demonstrated, through rigorous scientific research*, to be effective (NCLB 2002). These four targets for reform are described below.

1. *Increased accountability for performance.* Accountability is achieved via an annual yearly progress (AYP) measure. This AYP measure combines changes in

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- a) student standardized achievement test scores, and b) a non-test indicator such as graduation, retention, or attendance rates to track school improvement over time.
1. *Expanded flexibility.* While NCLB increases state and local accountability, it simultaneously gives states great flexibility (i.e., local control) to set their own goals, define achievement, and evaluate progress. NCLB allows states to approve their own standardized, high-stakes achievement tests, establish their own incremental AYP targets, gather evidence of that progress, and disseminate state and district report cards. Furthermore, NCLB gives individual school districts the discretion to define “proficient student performance,” and to choose and administer tests assessing whether or not they meet (AYP) requirements. Expanded flexibility is included in discussion of the other three targets; therefore there will be no separate section, per se, for this target.
 1. *Equal opportunities.* NCLB efforts to provide equal educational opportunities for students have resulted in state education programs that allow students attending low performing schools to transfer to another (better performing) public school within their own district.
 1. *NCLB scientifically based educational practices.* NCLB legislation mandates that instructional technology to be used is that which has been demonstrated effective via rigorous scientific testing. Specifically, the NCLB phrase, “scientifically based research” was defined as requiring, “...the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (NCLB, 2002).

The remainder of this paper describes problematic educational contingencies arising from application of these four NCLB-generated targets for reform, imposed by the states at the district level and implemented by schools, and affecting our fundamental unit of analysis—the classroom. This paper focuses on contingencies at the school level and is organized according to the four above-mentioned NCLB targets for reform as these affect the unit’s product: student academic repertoires.

NCLB TARGET 1: INCREASED ACCOUNTABILITY FOR PERFORMANCE

Accountability, per se, involves a requirement or responsibility that must be met to avoid a punisher. NCLB encompasses a feature from the original ESEA requiring that those schools receiving Title 1 dollars annually demonstrate that students are making progress toward the 2013-14 school year proficiency goal in order to avoid sanctions (Fritzberg, 2004). In addition to financial sanctions (loss of federal funding), schools may be labeled as poor performing (i.e., needing improvement) from a list of ratings ranging from what appears to be an intended reward/reinforcer (exemplary) to a potential punisher (unacceptable). Ultimately, the contingencies involved in increased accountability affect individual teacher’s and administrator’s behavior directed toward meeting the 2013-14 deadline for 100% student academic proficiency. Because the defined terminal/desired behavior is not currently occurring, it becomes necessary to

identify a starting point—some behavior that will contact reinforcement. It appears that by allowing state educational agencies to select their own tests and set *incremental targets* for performance increases toward that goal, the federal law was attempting to establish achievable steps toward the targeted performance (Fritzberg, 2004). However, NCLB mandates that *all* students be 100% proficient by 2013-2014 school year, regardless of each student's starting point (baseline performance). Further compounding this disparity in 'program step size' is the tremendous difference in funds available to individual schools to achieve the program goal (Mathis, 2004; McDermott, 2003). Thus, student behavior change is unlikely to occur in many schools, because approximations are not being reinforced.

A second issue with the targeted terminal behavior, as defined by NCLB, is the imposition of sanctions for failing to meet AYP incremental targets. Thus schools that improve, but in smaller steps than delineated, are 'punished' with labels describing them as failing and by reductions in their funding. With a few possible exceptions, schools participating in NCLB appear to be set up to fail (Guisbond & Neill, 2004), because the behavioral criteria required to contact reinforcement is too high, thus evoking escape/avoidance responding (Guisbond & Neill). To further confound this problem, as of 2004 the U.S. Department of Education has passed the federal inclusion policy mandate ruling that special education and limited English-speaking students must take the standard state achievement exam or be counted as "artificial failures" in the overall passing rates for each campus and district. In other words, for each special education student and limited-English-speaking student who takes the alternate test, a failing score will be conflated into the overall score for each school and campus in that district. On the other hand, if educators require those students to take the standard achievement test, most will fail because they have not demonstrated the requisite academic skills that the test measures. According to Stutz (2004), "...officials expect the number of failing schools to jump dramatically..." (p. 2A) as a result of this new NCLB AYP contingency. NCLB, a landmark in education reform, has put more than 25% of U.S. public schools on academic probation. According to the most comprehensive study to date, "...thousands more are likely to face federal sanctions in the coming years" (Stutz, p. 2A). NCLB attempts to raise achievement through sanctions for schools failing to reach mandated targets on standardized achievement tests. However, approximately "26,000 of the nation's 91,400 public schools are on probation because they failed to make 'adequate yearly progress' on tests administered" the previous year (Stutz, p.2A).

This apparent no-win situation has encouraged creative escape/avoidance maneuvers such as "teaching to the test" to ensure higher scores and avoid potential sanctions by following the *letter* of the law while negating the *intent* (Guisbond & Neill, 2004). In fact, this focus on higher test scores has resulted in a nationwide practice of "punishing" the behavior of those teachers whose classes fail to meet the criterion scores on these standardized tests (Hill & Barth, 2004). While teaching to the test may artificially increase AYP numbers, it subsequently prevents low-performing schools from being labeled as such. The combined behavior of many teachers "teaching to the test," to the exclusion of providing the basic prerequisite components underlying the complex

composite skills being assessed, constitutes a cultural practice. One cumulative effect of this cultural practice is an overall decline in student academic competency, masked by higher achievement test scores. However, even this teaching strategy may not improve test scores for every individual classroom in a school, *a measure added to teacher evaluations as part of NCLB accountability* (Porter-Magee, 2004).

NCLB EFFECTS ON TEACHER PERFORMANCE RATINGS

The NCLB accountability requirement changes procedures used to evaluate *teacher* performance. Specifically, states are required to develop plans ensuring that teachers and paraprofessionals are “highly qualified” by the end of 2005-2006. Plans must include annual measurable objectives that each local school and school district must meet. “Highly qualified,” however, has not been defined by NCLB and, thus, is left to interpretation (Education Trust, 2003).

Likewise, a report by the Task Force on Teacher Tenure (1998) stated the national trend in tenure reform was an effort to link teacher job security to student performance. The National Education Association (NEA) debates the validity and effectiveness of using student test scores to evaluate teachers’ performance. Arguments in favor of this change point out that because the purpose of teaching is to educate and other teacher evaluation measures have failed to provide accountability, tying student test scores to teacher evaluations could provide *objective* criteria (Anderson & Robertson, 1999). On the other hand, many educators warn that such a system will result in extensive “teaching to the test” to ensure higher student test scores.

According to NCLB, each state is allowed the leeway to define “highly qualified” as they determine. In Texas, for example, the current education code requires teacher evaluations be based on *student* performance, *but does not state how much weight this criterion measure should carry* (Dodge, 2003). The Dallas Independent School District has proposed a new teacher evaluation system under which at least 25% of the assessment would be tied directly to student performance on annually administered standardized tests (Navarrette, 2004). Some Texas public school principals have begun posting teacher performance charts in school hallways (Parks, 2003). According to school administrators, these charts constitute a “report card” for each teacher based on her/his classroom’s performance on the state-mandated Texas Assessment of Knowledge and Skills Test (TAKS). This is school-level accountability, because TAKS scores constitute a portion of both teacher and principal annual evaluations, according to Parks (2003).

Until NCLB, teachers were evaluated almost entirely on their length of service. Many teachers oppose changing the existing tenure system, and the National Education Association (NEA) argues that linking teacher assessment to student performance does not improve student performance. Contingencies imposed on teacher performance are intended to improve the product of teacher behavior: student academic repertoires (student behavior—upon which it must be assumed that teachers will then impose appropriate contingencies to achieve the desired change). Possible fallouts from such contingencies include additional teacher pressure on students performing at or below

average. Further, “every incidence where this has been tried has failed,” according to the NEA, which adds that it typically results in a “mass exodus of teachers [from] low performing schools” (Hobbs, 2003, p. 21A). This may be, in part, because teachers who receive “low expectation” ratings are characterized as “needing assistance,” and an intervention plan is created for them by their school. Teachers who do not meet these intervention plan goals are then subject to dismissal.

As mentioned, teachers often leave to avoid dismissal. Tying teacher evaluation directly to student performance on standardized tests may be related to the teacher-turnover findings of the Texas Schools Project. This project analyzed variables responsible for high turnover and revealed that teachers transfer more as a reaction to the academic performance of students in their classes than in response to better salary. Schools where students score, on average, in the bottom quartile on standardized tests lose almost 20% of their teachers each year (Hanushek, Kain, & Rivkin, 2004).

Teacher moves are most pronounced from urban to suburban schools, despite the fact that teacher salaries are, on average, 7% lower in the suburbs. The NCLB requirement to evaluate teachers based on student performance may exacerbate this existing contingency, leaving disadvantaged, lower-achieving students with relatively inexperienced, new teachers. University of Texas at Dallas and TEA data indicate that a 25%-40% salary increase would be required to offset the effects of difficult working conditions in large urban schools. However, for the neediest and most troubled schools in urban areas, even these salary increases would probably not be sufficient to stem the high level of turnover in such schools, according to Hanushek, Kain and Rivkin (2004). For example, in Georgia teachers reported feeling pressured to leave low-performing schools since the state has passed the NCLB-prompted education reform law tying teacher pay to achievement test scores (Roedemeier, 2003).

From a behavior analytic perspective, the negative reinforcement contingencies described both generate and sustain multiple cultural practices—with detrimental effects on the public school system’s product: student academic repertoires. In addition to those students who make acceptable test scores but have failed to receive the underlying remediation necessary to be able to progress onto the next step, those students who are unable to benefit from the “teaching-to-the-test” strategy are left lacking the basic component skills necessary to ever achieve the desired composite academic outcome. The combined behavior of teachers engaging in the two practices (teaching to the test and migrating to better performing classrooms or schools) has a cumulative effect, and because NCLB is nation-wide, this constitutes a problematic cultural practice with both unpredictable and culturally damaging results. A second NCLB incentive for schools to ignore high dropout rates and avoid addressing dropout prevention is the inflation of school test scores resulting from elimination of poor and minority students from class rolls. Texas schools are accused of pushing out poor-performing students who may drag down standardized test scores, according to Easton (2003). “The dropouts become absolutely necessary because what they’re trying to do is get the [test] numbers up,” says Rice University researcher, Dr. Linda McNeil, who claims that this system rewards principals who get those students out of the school (Easton, 2003, p. 3A). Apparently,

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there are competing contingencies which both result in additional funding; however, addressing a dropout problem increases amount of dropout-prevention funding, while ignoring the dropout problem may result in higher test scores and increased Title 1 funding. Furthermore, through its granting of flexibility and local control, NCLB enables schools to report dropout numbers that meet federal AYP requirements. Devising these dropout accountability systems is left to each state's discretion— increasing the potential for problems associated with this practice.

ACCOUNTABILITY INCLUDES DROPOUT RATE

Because AYP scores are a combination of test performance and attendance numbers, NCLB also holds schools accountable for the number of students who drop out annually (Wiener & Hall, 2004). Under NCLB guidelines an annual dropout rate of 1% or less earns a campus an “exemplary” rating. For a “recognized” rating the requirement is 2.5% or less. An “acceptable” rating [the equivalent of a C- in a state's accountability system according to Pyle (2004)] requires a 5% or less dropout statistic. Campuses reporting rates in excess of 5% are labeled “low performing” (NCLB, 2002).

However, large discrepancies exist between federally reported dropout rates and those generated by the states. For example, in the 1999-2000 school year, federal data indicated more than 9,000 students dropped out of north Texas high schools. The state, for this same period, reported only 3,000 dropouts. The gap between the two reported rates, according to the executive director of the National Dropout Prevention Center, is the way Texas counts dropouts, which artificially lessens the extent of the problem (Benton, 2002).

First, the federal definition includes grades 9 through 12; whereas, the TEA uses grades 7 through 12 (Kaufman, Alt, & Chapman, 2004). Because fewer students drop out of grades 7 and 8 this ultimately lowers dropout percentages. Another difference is the accounting for students who say they *plan* to pursue a GED. TEA does not count these students as dropouts, while the U.S. Department of Education does. Finally, students who drop out, re-enroll, and then drop out again are counted only once as having dropped out; whereas, at the national level they are counted twice (Benton, 2003). These discrepancies may be a function of the increased control granted to states by NCLB to independently define their own parameters regarding critical educational criteria. As an example, in 1998—before NCLB was signed into law—Texas' reported annual dropout rate was 6.7%. However, in 2002 when the state rating system was implemented, the reported level plummeted to 1% (Benton, 2002). Apparently, to achieve higher AYP ratings, and because of the increased flexibility granted by NCLB, schools have been able to report lower dropout rates.

Texas is not the only state using different definitions and data-collection procedures that result in lower dropout numbers than those used by the federal government. In fact, only 37 out of 50 states *even report* dropout statistics to National Center for Education Statistics (NCES), and, of those 37, only 26 adhere to the definition and collection procedures outlined by NCES. Because so many states are either not reporting or are

reporting non-equivalent data (i.e., out of compliance with NCES criteria), it is difficult to compare dropout statistics across states. Furthermore, the effects of numerous instances of this behavior are cumulative and constitute macrobehavior, (i.e., “the combined behavior of many people,” Glenn, 2004, p. 143). The aggregate sum of the consequences of this macrobehavior when transmitted socially may constitute a cultural practice, analogous to the previous description of achievement test score comparisons across states. As each state calculates its own dropout rate from individual school reports and because school officials are under pressure to keep dropout rates low, this self-report system tends to be biased in a reductive direction.

CONFLICTING CONTINGENCIES SUPPORTING SEPARATE TRACKING SYSTEMS

The use of different dropout tracking systems by federal reporting agents and states is likely maintained by opposing contingencies. NCLB appropriates additional dropout-prevention funding in proportion to dropout rates reported by the states. This NCLB contingency may, in fact, support inflated state dropout reports. On the other hand, NCLB ratings of school performance are based, in part, on that school’s annual dropout/graduation rate. Thus, campuses with the *lowest* reported dropout rates earn more favorable labels but do not receive additional dropout-prevention funds.

A particular example of the effects of the school performance rating contingency has been referred to as the “Texas Miracle.” Sharpstown High School, a poor, mostly minority high school in Houston, TX, had an entering freshman class of 1,000 that dwindled to fewer than 300 students by senior year. The “miracle” was that there were no dropouts reported (Meier, Kohn, Darling-Hammond,Sizer, & Wood, 2004). Coincidentally, at the beginning of that same school year Houston ISD unveiled its newest retention mandates: student attendance rate will increase from 94.6% to 95% and district-wide annual dropout rate will decrease from 1.5% to 1.3%. Those Houston principals whose schools failed to meet the mandated percentages were subject to termination or dismissal for cause but without a hearing. Conversely, principals could earn a \$5000 bonus and district administrators, up to \$20,000, for meeting these mandated low percentages (Winerip, 2003). At Sharpstown High School alone, “\$75,000 in bonus money was issued before the fictitious numbers were exposed” (Dobbs, 2003, p. A0). Ultimately, the high school achieved a higher-than-appropriate AYP rating, gained unearned financial rewards and avoided addressing an obvious dropout crisis.

FURTHER SCHOOL-DEVELOPED “ALTERNATIVE STRATEGIES” FOR IMPROVING ACHIEVEMENT

As previously mentioned, NCLB accountability requirements set forth a system by which schools are rated according to their achievement test performance. Ratings range from *Exemplary* (90% passing standard in each academic subject) to *Recognized* (70% passing standard in each academic subject) to *Academically Acceptable* (50% passing standard in reading, writing and social studies; 35% for math, and 25% for science). Schools with scores falling below the *Acceptable* range are labeled as *Unacceptable*, and

are subject to consequences that include being identified as a school “needing improvement” (NCLB, 2002). Pressures to excel on such achievement tests, or to reach and maintain at least an “Acceptable” rating, have resulted in diverse tactical approaches undertaken by schools to try to ensure high overall achievement test scores (Abrams, Pedulla, & Madaus, 2003; Fritzberg, 2003).

Texas Examples

Stewart (2003) reports that several Texas school districts have begun Saturday sessions (to supplement the time allowed during the 5-day school week) to boost student scores on TAKS. While this response may be the closest approximation of the desired target, it is probably the most labor-intensive. Variability in responses resulting from accountability contingencies includes providing answers to state-wide NCLB-mandated achievement test questions and giving cash for passing these tests. One 16-year-old student was pictured in a Dallas paper holding a \$48 check from his high school for passing the state test. Several 6th graders from another school in the district reported receiving \$20 each for passing scores. One mother claimed that her daughter’s teacher marked incorrect answers with question marks and kept the elementary student after school to correct those answers before the teacher turned in the test (Nelson & Benton, 2001).

National Examples

The extent to which schools have acted to protect their ratings includes allowing unlimited time in 1 school day for students to complete these tests (Benton, 2003). Several Texas 3rd graders “took all day to answer the 36 questions” (Hughes, 2003, p. 29A) on the Texas Assessment of Knowledge and Skills (TAKS) test. The scores on this test determine whether or not these students will be promoted to the 4th grade. An additional tactical maneuver, likely reinforced by higher ratings, allows these same 3rd graders three opportunities to pass the TAKS test. Furthermore, students need to answer only 20 out of 36 questions correctly (just over 55%) to pass (Stutz, 2002). North Carolina also allows three attempts. In Florida 60,000 4th graders (approximately 30%) failed the Florida Comprehensive Achievement Test (FCAT), yet 88% of those who failed were promoted to the 5th grade (Benton, 2003). This flexibility was extended to Iowa’s and Nebraska’s plans, although neither included a uniform, statewide, criterion-referenced assessment, because such a test would have violated the states’ laws (Olson, 2003, p. 1).

While states do not have the authority to change minimum required scores for the NCLB accountability ratings, in some instances individual states have lowered the scores required for graduation. For example, scores on Arizona’s test have been so low that its use as a graduation requirement has been delayed four times. When Nevada’s math scores were coming in too low, the state reduced the score required for graduation. California’s state education board voted in 2003 to delay full implementation of its graduation test for 2 years. It was supposed to be in force for spring 2004’s graduating

class; now this requirement has been delayed until the class of 2006. In another instance, Maryland recently adopted a system whereby their student achievement test scores are averaged rather than each academic area being scored individually (e.g., If a student scores 5 points above passing on math, that student could score 5 points below passing on science and still graduate).

Individuals in these school systems implementing “alternative strategies” appear to be engaging in a form of behavior described by Glenn (1986) as ceremonially controlled in that the reinforcers for student test scores are unrelated to actual student academic achievement. Instead, implementation of “creative tactics” to boost student test scores could be viewed as being under social control—i.e., maintained by consequences delivered by a reinforcing agent that derives power from his or her authority. Unlike technological contingencies that involve behavior maintained by the valuable outcomes it produces, this behavior is functionally related to both preserving and avoiding the loss of position, status and/or reputation. Nation-wide implementation of ceremonially controlled behavior constitutes a cultural practice involved in a macrocontingency the cumulative effects of which are unknown at this time, but likely to be culturally damaging.

When financial incentives are coupled with sanctions for failing to achieve mandated targets at least three outcomes are highly probable: 1) actually achieving the academic goal through improved educational technology, 2) implementing improper tactics to achieve higher test scores (e.g., improper assistance to test-takers/falsifying data regarding achievement test outcomes, etc.) or 3) dropping out of the NCLB program altogether. Schools actually achieving the academic goals (outcome 1) were possibly excelling academically prior to the passage of NCLB. However, many examples of outcome 2 exist including one described by Benton (2004) in which cheating was reported as being a likely explanation for “TAKS test [scores] ‘skyrocketing’ unexpectedly” (p. 12A). This Texas elementary school’s test scores had been poor to mediocre for years; whereas, in 2004 its students did not merely pass the state achievement test, but instead they “aced” it. Almost all of the students answered nearly all 100 test questions correctly and topped the scores of 3,212 other grade schools in a nearby major metroplex (Benton, 2004). Outcome 3, “opt out,” is under legislative consideration by 15 states according to Communities for Quality Education, a Washington, D. C.-based advocacy group tracking state actions on NCLB. Arizona, Colorado, Connecticut, Georgia, Hawaii, Illinois, Louisiana, Maine, Minnesota, Nevada, New Mexico, North Dakota, Texas, Vermont, and Wyoming would forego federal education funds upon dropping out of the NCLB program. Four additional states (Maine, New Hampshire, Vermont and Wisconsin) are considering bills that would *prohibit using state monies to comply with NCLB* despite the federal “financial carrot” being dangled (Kolikof, 2005; Simpson, LaCava, & Graner, 2004).

NCLB TARGET 3: EQUAL OPPORTUNITIES

The target of reform intended to provide equal opportunities to students attending poorly performing schools (Bushweller, 1997) provides students attending low-

performing schools the option to transfer to one that is “adequately performing.” However, while NCLB offers these transfers it does so only under very limited conditions. NCLB: a) does not allow inter-district transfers; b) requires school districts to pay for student transfer-transportation costs; and c) has lower standards for acceptable school performance; thus, fewer campuses perform poorly enough to be eligible for the transfer option, according to Stutz (2004).

In addition to the transfer option, “... students have the right to receive supplementary services [e.g., after-school tutoring at their school districts’ expense] if a school is labeled poor performing for two consecutive years. In the third year the district must take at least one set of actions including replacing school staff, implementing a new curriculum, significantly decreasing management authority at the school level, appointing an outside expert, extending the school year or school day, and restructuring the school. In the 4th year corrective action must include at least one of a set of interventions including replacing all or most of the school staff...” (McDermott, 2003, p. 174). In this way, NCLB attempts to minimize the disparity between low-performing and higher-performing schools.

However, NCLB performance criteria for this equal opportunity provision are quite low. For example, in the same year that 126 Texas campuses were rated as low performing by Texas’ Public Education Grant (PEG) standards, only 35 earned this rating based on NCLB criteria. However, in 2004, while the number of schools labeled “low performing” increased to 199 statewide, according to Popham (2004), schools gained no additional resources to provide those supplementary services, to implement corrective interventions, or (in the case of receiving schools) to cope with the influx of transfers.

Furthermore, if all schools in a district are labeled “in need of improvement” transferring to another district is not an option allowed under NCLB. However, in this case, students attending schools “in corrective action” are authorized to transfer to another district—*provided that district agrees to accept such transfers*. Many reasons exist for refusing these transfers. Potential detrimental effects on a successful school include: a decline in subsequent AYP scores, teacher attrition due to increased class size, and an increase in proportion of students requiring remedial services.

For example, in 2003 in Texas, out of 150,096 eligible students, only 107 (or .0007%) transferred successfully. The biggest reason was that schools and districts shut their doors to students with the right to transfer (Stutz, 2004). In fact, in 2001 a majority of transfers were rejected by schools with empty classroom seats and/or low student enrollment. The contingencies in effect for the receiving school or district are in direct conflict vis à vis compliance with NCLB directives. Thus, while NCLB states that these transfer options *increase* choices available to students attending poorly performing schools, the actual contingencies in effect may function to *decrease* the probability that requests are made and that transfers occur. Furthermore, by artificially increasing a school’s AYP scores, the previously described alternative remedial strategies may *preclude* transfer options altogether. Therefore, transfer provisions in NCLB provide a [largely] transparent set of “equal opportunity” options.

VOUCHER SYSTEM AND CHARTER SCHOOL OPTIONS

In addition to the aforementioned transfer options, the original NCLB legislation included a provision for using federal funds to provide private/charter school vouchers to students attending schools with lagging test scores. The Department of Education's school choice pilot programs provided Title 1 funds so these students could attend for-profit educational institutions as an alternative to public education. However, pilot data indicated that the private/charter school voucher system's primary benefit was a reduction in the load on district-run public schools—at considerable expense.

For example, in the 1999-2000 school year Dallas ISD handed over operation of 7 schools to Edison Schools Incorporated: 3 low performing, the rest "acceptable." One year later, 2 of those that had been rated as "acceptable" were instead labeled "low performing" by the state, while the other 5 earned "acceptable" ratings (an overall change of 1 school out of 7 improving by 1 level). However, the next year, 2001-02 the ratio returned to its original base: 3 low-performing schools and 4 acceptable. Dallas originally had agreed to pay \$35 million/year for these services. However, in March 2001 the district was informed that the Edison contract could cost up to \$20 million more because of transportation, security, and "other costs" that Edison was not contractually obligated to cover, according to Shaw and Hobbs (2002). Furthermore, in 2002-03, the third year of Edison Schools Incorporated, ratings were still unchanged for these 7 schools. By comparison with the remarkable progress achieved in the remaining district-run schools, the additional cost for the Edison Schools may not have been justified. This outcome was unexpected given that Edison students had longer school days and extended school years (Stutz, 2004).

NCLB TARGET 4: SCIENTIFICALLY BASED PRACTICES REQUIREMENT

While the detrimental influence of the many issues discussed thus far may be relatively obvious, other NCLB requirements appear, at least initially, to be beneficial and are only recognized as problematic upon closer inspection. An example of this, the 4th and final target for reform, is the NCLB scientifically based practices requirement. Few educators would disagree with federal legislation requiring that instructional technology be proven effective via rigorous scientific testing. However, the NCLB law combines two approaches to improving public education: increased emphasis on testing and increased federal funding specifically for classroom technology expenditures. Both encourage schools to buy more educational software. While federal funding supports only 8% of local school budgets, it pays for one-third of all school technology spending.

As part of the goal to improve the performance of all students, NCLB requires programs and educational practices to be research based. The NCLB phrase "scientifically based research" was promulgated as requiring "the application of rigorous, systematic and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs" (NCLB, 2002). However, the software industry's main lobbying arm, the Software and Information Industry Association, argued against stringent requirements that "schools buy only programs with evidence of effectiveness"

(MacGillis, p. 1, 2004). As a result, language in the NCLB law requiring evidence was softened to remove specific criteria for the term “scientifically based” and to allow “unprecedented flexibility in the use of program funds” (MacGillis, p. 1, 2004). Computer teaching programs, once shown to be effective in properly conducted trials, could be a valid addition to public school curriculum. However, “We’re spending all this money on technology...and we don’t know where it’s effective..,” according to the U.S. Department of Education’s Director of Education Technology (MacGillis, 2004).

Educational researchers routinely disagree on how best to teach basic academic skills. One of the promises included in the NCLB Act is to eliminate “the nation’s reading deficit by ensuring that every child can read by the 3rd grade” (NCLB, 2002). To do so, NCLB proposes applying the findings of years of scientific research on reading to all schools in America by providing a guide for scientifically based reading instruction. This legislation will provide funds for reading instruction—but only if the instruction has been demonstrated effective through scientifically based research (SBR) (Simpson, LaCava, & Graner, 2004, p.72). The SBR requirement in NCLB terms excludes studies which include limited student samples, heterogeneous educational programs, and experimental methodologies other than randomized group designs. Such an SBR requirement essentially precludes all “evidence-based-via-single-subject” research.

Meta-Analysis Guide to Research-Based Reading Instruction

The National Institute of Child Health and Human Development (NICHD) formed a panel to report to Congress on previous findings from research on reading programs. The primary method for evaluating this research was a meta-analysis, a statistical method that pools a group of studies and estimates the average effect that something has on something else—in this case, the effect of aspects of various types of instruction on achievement. Meta-analyses may have substantial deficiencies, such as not uncovering the quality of and logic in the studies pooled as a result of combining studies and averaging effects (Eisenhart & Towne, 2003). The government panel compiling the data concluded that results of the experimental studies infer that phonological awareness training was the top predictor of later reading achievement.

Accuracy of this conclusion becomes questionable when one considers that zip codes are also good “predictors” of academic achievement. A student’s zip code (an indication of family income and education, quality of schools in the area, and a child’s access to educational experiences) is strongly correlated with future success in school. However, this correlation does not make zip codes a cause of academic achievement. Given the possible difficulty of some who will be reading this research guide to understand the difference between correlation and causation, procedures demonstrating high correlations with reading could be implemented in the classroom as “scientifically based” instructional practices (Coles, 2001).

Responses to Data-Based Educational Technology

For too many years, too many schools have experimented with a multitude of instructional technologies to the detriment of student learning, according to Adams and Englemann (1996). However, when the results of unbiased government-funded studies indicated efficacy of an instructional technology, instead of implementing this proven program, the federal government elected to continue to fund the less effective programs to determine why these had been ineffective. An example of this, Project Follow Through—the largest educational experiment ever conducted—demonstrated empirically that the Direct Instruction® model was superior to other academic models tested. To this day, widespread resistance to this scripted reading program has prevented its extensive adoption in public educational facilities.

Even when federal and state government officials support a valid scientifically proven-effective approach to reading, district and school administrators may still resist. In 2004 traditional phonics became an NCLB-approved “Reading First” program, with strong support at the federal level. Although many regard this return to phonetic teaching as regressive, and consider whole language programs more progressive, schools and districts are adopting the phonics approach because of the federal funding that accompanies the program. Proponents of whole language, who argue that method is superior for teaching meaning and context, are pitted against those in favor of scientifically based phonics programs. However, school and district administrators claim it is worth “ceding local control of reading curricula and adopting an approach they disagree with” in order to qualify for Reading-First dollars. Among those acquiescing are New York City and districts from Boston to San Diego with their sights set on “winning a chunk of the \$900 million set aside for the national literacy initiative” (Mendez, 2004, p.3A).

This is also an example, however, of both ceremonially and technologically controlled behavior. The behavior of those permaclonic units (i.e., schools and districts) whose selection of reading instructional material is a function of federal approval constitutes ceremonially controlled behavior. Ironically, because the federal decision to support language programs that have been validated scientifically was technologically controlled, adoption of the Reading-First program by schools and districts constitutes an interaction (an IBC) between the ceremonial and technologically controlled behavior of two separate cultural units. Problems are multiplied in the superpermaclonic system when the behavior of individuals and units at the implementation level is largely under ceremonial, rather than technological, control.

While the NCLB legislation requires scientifically based instructional programs, this requirement is apparently not extended to all content and subject matter included in classroom curricula. In October 2004, a Pennsylvania school district approved a policy change to include teaching of a new theory, Intelligent Design. However, a federal judge ruled against inserting intelligent design into the science curriculum stating to do so would violate the constitutional separation of church and state. Although Intelligent Design was adopted for textbooks in Kansas, a recurring battle continues over the content

of this state's science standards. This theory proposes that Darwinian evolution cannot account for the complexity of nature that must have been created by an unnamed all-powerful force. Scientific educators describe Intelligent Design as a thinly veiled version of creationism—the teaching of which has been ruled against by the U.S. Supreme Court. Proponents of the Pennsylvania School Board's policy change defend it, saying it is intended “to present a balanced view” (Hurdle, 2004, p.1) [to which dissenters might add between scientific theory and science fiction].

The NCLB goal is to improve education by compelling schools to use research-based instructional technology, providing monetary incentives based on achievement test scores, by holding teachers accountable for student performance, and by imposing other mandated measures described in this paper. However, while schools and district units may use disparate tactics that appear to achieve this NCLB goal, few of these would be considered valid by the scientific community. Still, these approaches have been selected by the environment and endure as a product of their consequences.

To summarize, NCLB has resulted in both competing and conflicting contingencies, while simultaneously motivating variability in escape-avoidance responses. At the individual level these appear to be largely ceremonial. The U.S. Department of Education and its NCLB mandates, funding policies, and implied sanctions function as environmental events for the behavior of state administrators as well as administrators and teachers at the local level. While teachers “teach to the test” and administrators encourage this policy, districts refuse legal transfer requests, and “adjust” dropout reports. These recurring IBCs, in turn, function as environmental events for the behavior of federal and state officials. The interlocking contingencies described thus far appear to reinforce behavior antithetical to improving education overall.

DISCUSSION

Glenn's (2004) delineation of cultural-level contingencies includes the metacontingency and macrocontingency, both of which are identifiable concepts extant in the public educational system. While these two terms describe cultural-level antecedent-behavior-consequence relations involving many individuals, these concepts differ in significant ways. First, the metacontingency involves recurring interlocking behavioral contingencies (IBCs); while the macrocontingency involves the aggregate sum of temporally unrelated operants. Outcomes produced by recurrences of IBCs are not the cumulative effect of individual participants' behavior, but instead are a product of two or more persons' interrelated behavior functioning as an integrated unit that may wax and wane together. The outcome could not have resulted from the same individuals acting independently. By contrast, the macrocontingency results from a widespread practice of multiple individuals, the cumulative effects of which are additive. Thus, “the more widespread a practice, the greater its cumulative effects; the greater the cumulative effects, the more important they are to the well-being of large numbers of people” (Glenn, 2004, p. 143). These conceptual units have been identified throughout this paper

in discussion of the NCLB four targets for reform, and the IBCs and cumulative individual behavior resulting from this implementation.

The role of the social environment is the critical element in the emergence and survival of cultural practices. Unintended or culturally damaging results may emerge as an outcome of selection (metacontingencies) and/or an accumulation of effects (macrocontingencies). When practices within a culture “have unpredicted, undesired, or belatedly sub-optimal results” (Glenn, 2004, p. 133), systematic planning “may be critically important to the welfare of the people of the culture and even to the survival of that culture” (Glenn, 2004, p. 143). To be effective, this cultural engineering must begin by identifying problematic macro and metacontingencies.

Because there are limited data resources that present the effects of NCLB on educational practices and/or that analyze these effects within a behavior analytic framework, we have derived the contents of this paper from data reported in journal articles, newspapers, government documents, electronic resources, books, and, in some cases, direct contact with the author(s) of the article(s). Although this paper focuses primarily on data published in the state of Texas (residence of both authors), when we were able to obtain data about the effects of NCLB on educational outcomes in other states we have provided those data.

The examples described in this paper paint a somewhat bleak picture of educational practices and their impact on instructional technology. We have pointed out possibly important NCLB-generated shifts in education and implied that these shifts may affect future cultural practices. The outcome of the previously described IBCs at federal, state, and local levels is the appearance of an overall improved education system resulting in more academically competent students. In other words, NCLB has imposed stringent reform requirements that, due to “creative strategies,” superficially appear to have been met. Thus, the impression left with the general population is that the education system has thereby been improved—an outcome that increases the probability of future recurrences of these IBCs.

Cultural practices evolve as a result of contingencies of selection operating on the behavior of many individuals (Glenn, 2004). “Metacontingencies, then, are the contingencies of cultural selection... [that] give rise to the organized collections of behavioral contingencies that constitute increasingly complex cultural-level entities” (Glenn, 2004 p. 145). Some cultural practices, however, threaten the integrity of the organizational structure in which they have been selected. Such cultural practices at the individual level and at the various permaclonic unit levels include, but are not limited to, alternative strategies for boosting academic achievement and manipulation of data-collection procedures for tracking dropouts. These cultural practices have multiple consequences and an aggregate effect on the cultural superpermaclonic unit, public education.

We have tried to point out the incompatibilities of these cultural practices and how they have affected the behavior of individuals functioning within each of the multiple levels comprising the educational superpermaclonic unit. This paper is not the first to describe institutional settings using Glenn’s cultural concepts. Other behavior analysts

have described a prison system, private sector organizations, and political systems in terms of metacontingencies (Lamal, 1991).

Different cultural practices come into existence and are selected by the environment. This paper has outlined and briefly described instances in which potentially problematic educational practices have been selected. The social environment within the educational superpermaclonic unit may be viewed as the critical element in this operant selection process. “Effective cultural engineering requires identifying the macrocontingencies that produce less than desirable effects and altering the relevant operant contingencies or metacontingencies to produce change in the cumulative effects” (Glenn, p. 133, 2004).

Traditionally, the focus in behavior analysis has been on the individual; however, the problems in education appear to be systemic and may require a modification of focus. The mention of systemic solutions in this paper refers to engineering change by identifying problematic cumulative effects of macrobehavior and analyzing current metacontingencies within the educational system. Next, our discipline must be viewed as a remedial option for the identified competing contingencies within the current educational superpermaclonic system. Finally, we must be able to demonstrate a more effective technology- and data-based instructional strategy—and to do so will require implementing educational approaches such as the Century Schools, Spectrum Schools, Morningside Model of Generative Instruction, Precision Teaching®, Direct Instruction®, and Headsprout®.

The aim of this paper is not to provide a solution to the problems within the educational system, but rather to alert behavior analysts to the educational challenges facing our culture. Skinner’s message (1987), delivered over 20 years ago, reminds us of the challenges that we as behavior analysts and promulgators of educational technology are facing in the 21st century:

A culture is punished by its failure or by other cultures that take its place in a continually evolving process.....A culture that is not willing to accept scientific advances in the understanding of human behavior, together with the technology that emerges from these advances, will eventually be replaced by a culture that is [so willing] (p. 128-129).

REFERENCES

- Abrams, L., Pedulla, J., & Madaus, G. (2003). Views from the classroom: Teachers’ opinions of statewide testing programs. *Theory into Practice*, 42, 18-29.
- Adams, G., & Engelmann, S. (1996). *Research on direct instruction*. Seattle, WA: Educational Achievement Systems.
- Amrien, A. L., & Berliner, D. C. (2002). High-stakes testing, uncertainty, and student learning. *Educational Policy Analysis Archives*, 10, 1-56.
- Anderson, E., & Robertson, P. (1999, March 17). Debate: Should student test scores be used to evaluate teachers? *National Education Association Today*, 1-5.
- Benton, J. (2002, August 21). Bleaker dropout picture painted: Federal figures almost quadruple state’s estimation of problem. *The Dallas Morning News*, p. 1A.

- Benton, J. (2002, December 26). A bleaker view of dropout problem: 17 districts' ratings would be lower if federal definition used. *The Dallas Morning News*, pp. 1A, 11A.
- Benton, J. (2003, March 3). A lesson in consequences: TAKS scores to dictate who moves on, but exceptions are possible. *The Dallas Morning News*, pp. 1A, 6A.
- Benton, J. (2003, May 5). To limit or not to limit time spent taking TAKS. *The Dallas Morning News*, pp. 1B-2B.
- Benton, J. (2003, September 1). True dropout rate? It takes calculating. *The Dallas Morning News*, pp. 1B – 2B.
- Benton, J. (2004, April 27). TAKS forecast: Gloomy. *The Dallas Morning News*, pp. 1A, 6A.
- Bushweller, K. (1997). Teaching to the test. *The American School Board Journal*, September 1997. Retrieved August 30, 2004, from <http://www.asbj/>
- Coles, G. (2001). Learning to read 'scientifically.' *Rethinking schools*. On line, 2002. Retrieved August 30, 2004 from www.rethinkingschools.org
- Dobbs, M. (2003, November 8). Education 'miracle' has a math problem: Bush critics cite disputed Houston data. *The Washington Post*, p. A0.
- Dodge, R. (2003, August 4). Teacher credentials go under microscope: 'Highly qualified' staff is the goal by 2005-06 but, definitions vary. *The Dallas Morning News*, p. 12A.
- Easton, P. (2003, September 8). Definition of 'dropout' leads to rate discrepancies. *Denton Record Chronicle*, p. 3A
- Eisenhart, M., & Towne, L. (2003). Contestation and change in educational policy on "scientifically based" education research. *Educational Researcher*, 32, 31-38.
- Fritzsche, G. J. (2003). *No Child Left behind: Changes and challenges*. *Journal of Education*, 184, 37-43.
- Fritzsche, G. J. (2004). *Revise and resubmit: A critical response to Title I of the No Child Left Behind Act*. *Journal of Education*, 184, 69-87.
- Glenn, S. S. (1985). Some reciprocal roles between behavior analysis and institutional economics in post-Darwinian science. *The Behavior Analyst*, 8, 15-27.
- Glenn, S. (1986). Metacontingencies in Walden Two. *Behavior Analysis & Social Action*, 5, 2-8.
- Glenn, S. S. (1988). Contingencies and metacontingencies. Toward a synthesis of behavior analysis and cultural materialism. *The Behavior Analyst*, 11, 161-179.
- Glenn, S. (1991). Contingencies and metacontingencies: Relations among behavioral, cultural, and biological evolution. In P. A. Lamal (Ed.), *Behavioral analysis of societies and cultural practices* (pp. 39-73). NY: Hemisphere Publishing Corporation.
- Glenn, S. (2003). Operant contingencies and the origin of cultures. Chapter in K. A. Lattal & P.N. Chase (Eds.), *Behavior theory and philosophy* (pp. 223-242). NY: Kluwer Academic/Plenum Publishers.
- Glenn, S. (2004). Individual behavior, culture, and social change. *The Behavior Analyst*, 27, 133-151.
- Guisbond, L., & Neill, M. (2004). Failing our children: No Child Left Behind undermines quality and equity in education. *The Clearing House*, 78, 12-16.
- Hanushek, E. A., Kain, J. F. & Rivkin, S. G. (2004). Why public schools lose teachers. *Journal of Human Resources*, 39, 326-354.
- Harris, M. (1964). *The nature of cultural things*. NY: Random House.
- Hill, D. M., & Barth, M. (2004). NCLB and teacher retention: Who will turn out the lights? *Education and The Law*, 2-3, 173-181.
- Hobbs, T. D. (2003, December 18). Kids' scores may sway teacher ratings: Groups oppose Moses' idea to link evaluations to student test results. *The Dallas Morning News*, pp. 1A, 21A.

CONTINGENCIES, MACROCONTINGENCIES, & METACONTINGENCIES

- Hughes, K. (2003, March 28). Some parents fear exams toll on kids. *The Dallas Morning News*, pp. 29A-30A.
- Hurdle, J. (2004, November 19). Pennsylvania school district retreats from evolution. Retrieved November 20, 2004, from <http://www.KERA.org/>
- Kaufman, P., Alt, M.N., & Chapman, C. (2004). *Dropout Rates in the United States: 2001* (NCES 2005-046). U.S. Department of Education. National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Kolikof, J. (2005, July 7). Forty-seven states take action to fix NCLB, *Communities for Quality Education*. Retrieved October 6, 2005, from <http://www.qualityednow.org/>
- Lamal, P. A. (1991). *Behavioral analysis of societies and cultural practices*. NY: Hemisphere Publishing Corporation.
- MacGillis, A. (2004, September 24). No sales left behind. *The Baltimore Sun*. Retrieved September 30, 2004, from <http://www.BaltimoreSun.com/>
- Mathis, W. J. (2004). No Child Left Behind Act: What will it cost states? *Spectrum*, 8-14.
- McDermott, K. A. (2003). What causes variation in states' accountability policies? *Peabody Journal of Education*, 78, 153-176.
- Meier, D., Kohn, A., Darling-Hammond, L.,Sizer, T. R., & Wood, G. (2004). *Many children left behind: How the no child left behind act is damaging our children and our schools*. Boston: Beacon Press.
- Mendez, T. (2004, January 29). U.S. hooked on phonics? Schools caught between financial need, curriculum control. *The Dallas Morning News*, p. 3A.
- National Commission on Excellence in Education (1983). *A nation at risk: The imperative for educational reform*. Washington, D.C.: U.S. Department of Education.
- Navarrette, R. (2004, January 2). Grading teachers: Why not use students' performance on tests as one factor? *The Dallas Morning News*, p. 24A.
- Nelson, C. M., & Benton, J. (2001, May 31). DISD investigates cheating allegations: Students reportedly received answers to TAAS questions, cash for passing. *The Dallas Morning News*, pp. 25A, 36A.
- No Child Left Behind Act*, Pub. L. No. 107-110, 20 USC § 7801 (2001).
- Olson, L. (2003). All states get federal nod on key plans. *Education Week*, 22, 1.
- Orlich, D. C. (2004). No Child Left Behind: An illogical accountability model. *The Clearing House*, 78, 6-11.
- Parks, S. (2003, September 2). At school, TAKS data and open book: Classroom pass-fail rates on display, but is it fair to teachers? *The Dallas Morning News*, pp. 1A, 8A.
- Popham, W. J. (2004). *America's "failing" schools*. NY: RutledgeFalmer.
- Porter-Magee, K. (2004). Teacher quality, controversy, and NCLB. *The Clearing House*, 78, 26-29.
- Pyle, E. (2004, April 9). Smoke and miracles: Who really benefits in the accountability system? *Texas Observer*, 96, 4-5.
- Roedemeier, C. (2003, January 11). White teachers fleeing predominately black schools. *Denton Record-Chronicle*, p. 4A.
- Shaw, A., & Hobbs, T. D. (2002, June 19). Edison schools' hard knocks: Education firm wrestles with finances as DISD reconsiders contract. *The Dallas Morning News*, pp.1A, 11A.
- Simpson, R. L., LaCava, P. G., & Graner, P. S. (November, 2004). The No Child Left Behind Act: Challenges and implications for educators. *Intervention in School and Clinic*, 67-75.
- Skinner, B. F. (1987). *Upon further reflection*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

- Stewart, T. L. (2003, February 11). Schools using Saturday sessions as supplement: Districts see extra work as an 'extra boost' for students taking TAKS. *The Dallas Morning News*, pp. 17A, 22A.
- Stutz, T. (2002, November 16). Passing standard on TAKS to be phased in over 2 years: Most students will get break as test debuts; book list also accepted. *The Dallas Morning News*, pp. 35A, 37A.
- Stutz, T. (2004, January 7). Thirty-four low-rated schools could lose students. *The Dallas Morning News*, pp. 1B, 6B.
- Stutz, T. (2004, September 24). More schools to fail: Special ed change likely to hinder campuses in meeting US standards. *The Dallas Morning News*, pp. 1A-2A.
- Task Force on Teacher Tenure* (March, 1998). West Sacramento, CA: California School Boards Association.
- The Education Trust (2003). *Telling the whole truth (or not) about highly qualified teachers*. Washington, DC: The Education Trust.
- Urrieta, L. (2004). Assistencialism and the politics of high-stakes testing. *The Urban Review*, 36, 211-226.
- U. S. Department of Education, Office of Elementary and Secondary Education. (2002). *No child left behind: A desktop reference*. Washington, DC: Author.
- Wiener, R., & Hall, D. (2004). Accountability under no child left behind. *Clearing House*, 17, 17-21.
- Winerip, M. (2003, Fall). Houston's 'zero dropout'. *Rethinking Schools On Line*. Retrieved April 27, 2004, from www.rethinkingschools.org