

Arguments and Evidence: The Debate over Collective Bargaining's Role in Public Education

Nathan Burroughs

VOLUME 6, NUMBER 8, FALL 2008

CONTENTS

Introduction.....	1
The Collective Bargaining Debate ...	1
Teacher's Unions and Reform.....	3
Collective Bargaining and Student Achievement	5
Policy Perspectives	
<i>Sally Sloan</i>	6
<i>John Ellis</i>	7
<i>Nate Schnellenberger and Warren Williams</i>	8
<i>Frank Bush</i>	9
New Research Agenda	11
Other Contributors to Student Achievement	12
The Indirect Effect of Collective Bargaining on Student Achievement	14
Collective Bargaining, Education Policy, and Student Achievement: The Case of Indiana	15
Conclusions and Recommendations.....	16
Author	17
Acknowledgements	17
End Notes.....	17
References.....	18
Web Resources	20

UPCOMING POLICY BRIEFS . .

- ✓ *The Research on Single-Sex Education*
- ✓ *The Excellence Gap Examined*
- ✓ *The Advantages and Disadvantages of Multi-Age Classrooms in the Era of NCLB Accountability*

INTRODUCTION

*"The collective bargaining law and the absurdity of teacher protections at-law combine to present untold losses in time and efficiency."*¹

*"I would never give up my continuing contract rights. I have seen too many parents and administrators make unfounded accusations that could ruin a career."*²

The role of collective bargaining in K-12 education inspires sharply different perspectives and heated debate. As evidenced by the quotes above, teachers and administrators bring profoundly different points of view to the discussion — a division which has colored much of the conversations on school reform.

Specifically, school administrators and many educational reformers have generally been critical of the role of teacher's unions in public education. They have contended that teacher collective bargaining agreements have blocked education reforms and increased the costs of running schools without resulting in greater educational performance. Furthermore, they have argued that the mission of teacher's unions is not student achievement, but benefits for its membership. More sympathetic critics have suggested that teacher's unions are wedded to an outdated industrial model of education and that collective bargaining agreements must change to reflect new social and economic realities. The new movement towards accountability in K-12 schooling also has the potential to re-shape the role of teachers in public education.

Conversely, defenders of teacher's unions have responded by arguing that the costs associated with collective bargaining

agreements come with substantial benefits. According to this point of view, higher teacher salaries and benefits and smaller class sizes have led to improved teacher quality and student achievement, along with greater morale among teachers. Proponents also argue that educational institutions without collective bargaining protections, on the other hand, have higher levels of attrition and turnover, and weaker credentials and experience. It is also unclear whether, controlling for other factors, non-unionized schools deliver greater educational performance.

In this Policy Brief, we will explore the arguments on both sides of this lively debate. Our intention is not just to lay out the strongest case for each side, but also to critically examine the empirical evidence on the direct and indirect effects of collective bargaining on public education.³

THE COLLECTIVE BARGAINING DEBATE

Organized and legally permissible collective bargaining is a relatively recent phenomenon. Until World War II, school administrators and school boards had wide latitude on personnel and budgetary decisions. Inspired by the success of organizing efforts in other sectors, teachers began to push for greater negotiating rights. Complaints about working conditions, treatment by administrators, and low wages led to a series of teacher strikes in the 1960s and 1970s. The most important of these was the strike in New York City, led by Albert Shanker, which resulted in the creation of the United Federation of Teachers (UFT). Gradually, teachers organized unions across the country, and in the major-

interpreted to mean the limitations on administrative decision-making that are commonly included within union-negotiated contracts. According to Hess and West (2006a), many union contracts are overly restrictive, in that most collective bargaining agreements have rigid personnel procedures (such as the single salary scale and seniority rule) and overly lavish benefits packages. A long and inefficient application process makes it difficult to hire good teachers in large urban school districts (Levin & Quinn, 2003) and staffing rules protect weak and senior teachers at the expense of newer teachers (Levin et al., 2005). Furthermore, a study of the nation's 50 largest school districts indicated that the poorest districts tended to have the most restrictive contracts, and that the collective bargaining agreements of large districts lacked flexibility with respect to work rules and pay bonuses for hard-to-staff subjects (Hess & Loup, 2008).⁶ The perceived restrictions that collective bargaining places on administrators is such that in Indiana, school superintendents rated the elimination of collective bargaining rights as their second most important ambition for deregulation, just behind repeal of No Child Left Behind (Spradlin et al., 2006).

It has also been suggested that the political power of teacher's unions gives them undue influence over school boards and state policies (Hess & West, 2006a; Moe, 2007), and that there is insufficient public attention or accountability during the bargaining process (Fuller, Mitchell, & Hartmann, 2000). The engagement of teacher's unions in electoral politics and their alignment with the Democratic Party has come at a price, however, as in some states teacher's political and material positions have been undermined by hostile Republican governors. In Michigan and Pennsylvania, for example, Republicans in the 1990s reduced the scope of bargaining and the ability of school districts to raise revenues (Boyd et al., 2000).

The influence of teacher's unions is not restricted to those states where it is legally mandated or permissible. Even in states prohibiting collective bargaining, local meet and confer processes tend to result in contracts very similar to those in other states (Hess & West, 2006a; Winans 2006).

Concern about the system of collective bargaining does not exist solely on the politi-

cal right or those ideologically opposed to labor unions. Rotherham (2006), for example, takes a more balanced perspective on the responsibility for educational challenges, acknowledging that the flaws in teacher contracts are a symptom, not a cause, of the problems in the educational system. Critics of the current contract regime believe that administrators may also bear some of the blame. They are partners in the contract negotiation process, and have been both overly willing to agree to union demands and too passive in the exertion of the management privileges they do possess (Hess & West, 2006b).

The debate over the role of collective bargaining is not a one-sided one, however. Much of the critique of collective bargaining appears to be inspired by neoclassical economics, which generally has a dim view of labor unions. However, Freeman and Medoff (1984), among others, suggest that unions foster more efficient organizations, with greater productivity and less turnover, and serve an important function in communicating with management. It is important to disentangle arguments against labor unions in general from teacher's unions in particular. Casey (2006) argues that the interests of teacher's unions are coincident with those of students. According to Casey, most teacher's unions do not adhere to a strict "industrial" model of bargaining focused exclusively on questions of compensation, but are interested in playing a greater role in policy formulation. Administrators and school boards are partly responsible for the level of involvement by unions, since they have rebuffed efforts by teachers to take a stronger role in policy questions. In addition, it should be noted that the management of school districts is a party to contract negotiations — they have, after all, agreed to the contracts. Furthermore, there is evidence that not all negotiations are confrontational and that considerable "continuous" and cooperative bargaining takes place (Duffett et al., 2008; Johnson et al., 2007).

While the principal objective of teacher's unions is certainly material benefits for their members, they are not exclusively focused on such concerns. A study of teacher contracts selected from across the country indicates the unions' primary function is in securing greater compensation. Once compensation matters are resolved, unions then move on to negotiating for bet-

ter working conditions, job security, and influence over policy (McDonnell & Pascal, 1979).

The degree of unions' success in achieving their bargaining objectives might have been overstated by critics. McDonnell and Pascal (1988) suggest that unions have only achieved some of their bargaining objectives. A study of Florida contracts (Cohen-Vogel & Osborne-Lampkin, 2007) revealed that administrators had considerable autonomy with respect to personnel decisions such as reassignment and transfers. Districts in areas that were more urbanized or had a greater proportion of low-income and minority students (contra Hess & Loup, 2008) did not exhibit greater contract restrictiveness but instead tended to have greater administrative flexibility. Hess and Loup's study was also directly criticized by American Federation of Teachers (AFT) representatives, who questioned the lack of strong evidence on the effects of contract restrictiveness (Sawchuk, 2008).

Placed in an international context, American union practices in education are anomalous. Most other industrialized democratic nations practice national or provincial level bargaining rather than local negotiations (Cooper, 2000). Unlike other nations, there is no national or state union negotiation process (Johnson et al., 2007). Compared with other Organization for Economic Cooperation and Development (OECD) countries, American teacher's unions do not appear prohibitively strong, nor contracts unduly restrictive. U.S. schools' administrators have much more autonomy, particularly over budgets, salaries, and personnel decisions. U.S. schools are also more likely to use achievement data for accountability purposes (PISA, 2007).

TEACHER'S UNIONS AND REFORM

Much of the opposition to teacher's unions in general or collective bargaining agreements in particular is based on a belief that they are impediments to needed educational reforms. Many of the proposed reforms would weaken or eliminate protections that unions view as their greatest achievements. Even when the reforms are not manifestly intended to cripple unions,

union leaders have expressed qualms about an approach to educational reform that seems distinctly at odds, if not overtly hostile, to their deeply held interests. They also challenge the practicality of some reform proposals. For example, although 55% of teachers surveyed agreed with critics that some contracts do too much to protect “bad” teachers (Duffett et al., 2008), Kaboolian (2006) notes that the difficulty in identifying what to do with poor teachers would remain whether unions exist or not.

While there are innumerable variants of educational reform that would impinge on unions, they tend to share common features: the abolition of the single salary schedule, the institution of performance pay, a greater use of public and/or private choice and charter schools, and the granting of greater budgetary powers to principals.⁷ Additional features are the use of arbitration, greater competition and transparency, the strengthening of school boards, and a greater focus on students (Hess & West, 2006a, 2006b). Each of these reforms cut directly against the material interests of teacher’s unions under the prevailing collective bargaining regime, and predictably the unions have usually opposed them. As a consequence, those who believe that these reforms are necessary to improve student performance have come into repeated conflict with teacher union advocates.

The evolution of federal education policy under the No Child Left Behind (NCLB) Act also plays a vital role in these debates, a role that will likely grow in the future. The reliance of the law on standardized tests has inspired passionate opposition from the teacher rank-and-file (Manna, 2006), and the prospect of school improvement plans for “failing schools” has potentially serious consequences for teacher’s unions. However, the language of NCLB does not explicitly override collective bargaining agreements (Keller, 2006). It is therefore debatable to what degree NCLB-based reforms and collective bargaining rights are in conflict, and, if so, which will ultimately predominate.

There have been instances in which teacher’s unions have supported educational reforms sought by their critics. While the National Education Association (NEA) has strenuously resisted school voucher programs (while accepting public

school intra-district choice programs), beginning in the 1990’s the organization has become more supportive of charter schools (Cibulka, 2000). In Denver, teacher’s unions worked with the city to develop a pay-for-performance system (replacing the traditional single salary schedule). The results of this system are being closely watched as a potential model for reform and may provide clues as to the feasibility of such a system (Mead, 2006). The Milken Family Foundation’s Teacher Advancement Program also features differentiated positions and pay for teachers, and is being used by over 200 of districts around the U.S.

***“. . . those who believe
that these reforms
are necessary
have come into
repeated conflict with
teacher’s unions.”***

While there are two diametrically opposed pro- and anti-union camps with respect to school reform, Johnson and Kardos (2000) have pointed to a “third way” that would implement reforms through greater management-labor cooperation; an approach that would likely expand the influence of teacher’s unions. The “reform unionism” enunciated by Al Shanker called for peer review and board certification, a greater emphasis on public school choice and student achievement, and support for the emerging standards-based reform movement (Kahlenberg, 2006). Ballou and Podgursky (2000) have examined the possibility of creating a national teacher licensing system, which could create more flexibility in hiring across states, increase salaries, and decrease attrition. They also identify potential risks, such as a prolonged teacher training process (which could hurt recruitment), a reduction in the diversity of teachers, and a concern about the sustainability of smaller education programs. Kerchner and Koppich (Kerchner et al., 1997, Kerchner & Koppich 2007) have

sought to balance the need for a flexible system more in keeping with current economic trends, while protecting teacher rights with proposals for broader management-labor cooperation and school-based professional development, evaluation, and negotiation. In addition, they have called for amending the labor law to include student achievement. At present any management-labor cooperation could be used to re-classify teachers as management (vitiating labor rights), and in many cases is simply illegal.

The success of reform unionism has been limited, however (Hess & West, 2006a, 2006b; Koppich, 2006; Moe, 2006). Kerchner and Koppich recognized the many obstacles to such an agenda (Kerchner & Koppich, 2000). Reformers have lost union elections, and court decisions have made it more difficult to expand the role of collective bargaining (Koppich, 2006). While simple institutional inertia may be partly to blame, there are additional reasons for reform unionism’s difficulties. There is great reluctance to negotiate away hard-won privileges. McDonnell and Pascal (1988) suggest that reform cannot replace the protection of working conditions and teacher status — rather they are preconditions for reform. The opposition of teacher’s unions is not simply a case of union leaders preserving their personal power; their membership has at best a very qualified acceptance of reform. A recent survey of teachers sponsored by Education Sector (Duffett et al., 2008) suggests support for some reform proposals, such as financial incentives for teaching in low-performing schools and stricter evaluation for new teachers. There is much less support for the weakening of tenure. In the last several years there has also been a surge of support for teacher’s unions by newer teachers, presumably as a response to the implementation of NCLB. In addition, teacher attitudes about reform are diverse: longer-serving teachers want to focus on traditional “bread and butter” economic issues, and more recent hires place greater emphasis on professional development and improvements in student performance (Johnson et al., 2007).

COLLECTIVE BARGAINING AND STUDENT ACHIEVEMENT

The debate over collective bargaining in education is essentially a process debate. The disputes are not over teacher's unions as such (or at least not always), but about the effect that the process and outcomes of collective bargaining have on the structure of public educational institutions. All sides rely on assumptions that are not always explicitly stated. Critics of teacher's unions assert that the behavior of teacher's unions, and the most common provisions of teacher union contracts, unnecessarily tie the hands of administrators with respect to budgets and personnel. Defenders of unions respond that, in light of past abuses, administrator's hands need to be tied. What often remains unspoken is that each side presumes that their favored proposals will result in higher student achievement. Those advocating reform of collective bargaining agreements believe differentiated salaries can be used to improve the quality of teachers and the quality of teaching, and that poor teachers can be identified and removed. Those defending the role of teacher's unions believe that greater resources within the existing system will improve student achievement, whether through more teachers, better-paid teachers, or better-supported teachers, and that any attempt to weaken unions would lower morale and drive good teachers out of the profession.

Ideally, the proper role of collective bargaining in public education could be settled by a consensus in the research literature. Regrettably, no such consensus exists. While a body of research exists suggesting that collective bargaining results in greater student achievement (usually measured through standardized test scores, most commonly the SAT), another body of work suggests the opposite. To complicate matters, both veins of research generally employ different analytical and statistical methods, making a clear-cut comparison somewhat elusive. In addition, there is a limited number of quality research studies dedicated to the effects of collective bargaining on student achievement. Following is a brief description of the body of research.

Studies Indicating Positive Effects of Collective Bargaining

Eberts and Stone (1987): Eberts and Stone employed a national survey and standardized test study to track the change in student test scores of Grade 4 students at the individual level with data collection from the late 1970s. They developed a union/non-union educational productivity differential that controlled for teacher, student, and school characteristics. Regression analysis indicated that students performed better in union than non-union schools, with students in unionized schools' scoring 3% higher on tests than those in non-unionized schools. Unionized schools appeared to give greater advantage to average students than gifted or below-average students, with the former scoring 7% better in unionized than non-unionized schools and the latter roughly the same in both types of schools. Eberts and Stone hypothesized that unionized schools' greater standardization might work to the advantage of average students.

Kleiner and Petree (1988): The authors examined state-level measures of teacher salaries, graduation rates, and SAT and ACT scores to determine the effects of unionization. Controlling for changes in state unionization over time and background characteristics, Kleiner and Petree found that states with higher unionization rates had higher average SAT scores but that there was no relationship between unionization and ACT scores or graduation rates. State licensing requirements were also associated with higher SAT scores.

Grimes and Register (1990): In a study of the effects of unionization on student achievement on a test of economic literacy, Grimes and Register found that students in unionized schools received higher test scores than those in non-union schools. Per-pupil spending, teacher content training and enthusiasm, student SAT scores and math courses, and the educational attainment of the students' fathers' education were also positively associated with student achievement.

Grimes and Register (1991): The second Grimes and Register work focused on minority achievement, this time examining

SAT scores by African-American students in 1987. African-American students in union schools received higher SAT scores than those in non-union schools.

Nelson and Rosen (1996): Nelson and Rosen's study looked at standardized test scores aggregated at the state level, examining 1995 SAT scores and 1994 NAEP (National Assessment of Educational Progress) scores for Grade 4 students. The measure of unionization was the percentage of teachers covered by collective bargaining. The chief negative influence on SAT scores was the proportion of test takers, and the major positive influence was unionization. For NAEP scores, lower class sizes and collective bargaining agreements resulted in higher student achievement, while the proportion of private school students in the state and the absence rate were associated with lower average scores.

Milkman (1997): Following Eberts and Stone (1987), Milkman examined the union/non-union productivity differential, with a specific emphasis on the performance of minority students. Controlling for student, parent, and teacher factors, minority students received higher post-test scores on a standardized mathematics exam in union schools, with a union/non-union differential of .24. However, the pool of all students had an even higher differential of .39. Minority students also did relatively better at majority minority schools than in majority white schools. Milkman suggested that these results supported the Eberts-Stone hypothesis of the effects of greater standardization in unionized schools.

Steelman et al. (2000): In a study of the determinants of state-aggregated SAT scores in 1993, Steelman et al. indicated that state SAT scores exhibited a nonlinear relationship with the student participation rate. Steelman et al. demonstrated that the bulk of inter-state variability (85%) was caused by the proportion of students taking the SAT. The percentage of teachers covered by collective bargaining or meet and confer agreements had a powerful and positive effect on state SAT scores. The lower rates of student achievement in the South were caused by that region's lower rate of unionization.

(continued on page 10)

Policy Perspective

TEACHER COLLECTIVE BARGAINING AND POSITIVE STUDENT ACHIEVEMENT

Sally Sloan



There have been limited studies seeking to find if there is a link between teacher collective bargaining agreements and student achievement. Much of this research indicates that collective bargaining agreements do in fact foster improved student learning.

In their study, “Are Teachers’ Unions Hurting American Education?”¹ Nelson, Rosen, and Powell reveal, “The results of this study demonstrate clearly that student performance on the tests is significantly better in states with high levels of unionization with all other variables held constant.” Supporting collective bargaining, the authors learned that “Furthermore, when collective bargaining is removed from the analysis, scores drop in all states.”

The Indiana teacher collective bargaining law passed in the 1973 session of the Indiana General Assembly. It is safe to assume that nearly all Indiana teachers have worked their entire career having the right to bargain collectively under this law and having a collectively bargained agreement. First, consider some of the givens of Indiana’s law. Teachers, by majority, select their union (exclusive representative). Membership in the union is voluntary. The mandated subjects of bargaining are: salary, wages, hours, (salary and wage-related) fringe benefits (IC 20-29-6-4). A “contract...may contain a grievance procedure culminating in final and binding arbitration of unresolved grievances” (IC 20-29-6-5). In addition to mandated subjects of bargaining, the law provides that “A

school employer shall discuss with the exclusive representative” (IC 20-29-6-7) a list of subjects that includes working conditions, curriculum development, etc. The law does not require agreement on these subjects of discussion. Nor does it prohibit agreement. It does require discussion with meaningful input.

Fortunately many collective bargaining agreements go beyond the mandated subjects of bargaining to include issues relative to student achievement, professional development, education reform, and more.

In the contract between the Anderson Federation of Teachers and the Anderson Community School Corporation, professional development is mutually supported by the parties. The corporation provides release time and space to teachers for on-going training and skills development in many areas including reading comprehension, math/algebra, and even parental involvement. The union provides the materials and trainers. Together they have created a resource center. The union has embraced the American Federation of Teachers’ award-winning research-based professional development program called Educational Research and Dissemination (ER&D) that the American Research Association has recognized as “an exemplary program that ‘bridges the gap between research and practice.’”² Students are the real winners of collaborative efforts secured in collective bargaining agreements when continuing professional development is provided to teachers.

Carini’s research validates the basic premise of teacher unions and collective bargaining, i.e., salary, wages, wage related fringe benefits that they, in fact, do enhance student achievement. He notes that “While the higher costs associated with teacher unionism are confirmed ... ,”³ the benefits to students are gained by recruiting and retaining superior teachers, providing teachers a forum for decision-making and ownership, and creating an environment conducive to high morale and job satisfaction.

Beyond the nuts and bolts/salary and benefits aspect of teacher unionism, professional collaboration secured by a collective bargaining agreement gives teachers and school districts what they need to insure commitment and provide the conditions for quality teachers so that learning is facilitated. In this environment there is an increased likelihood that student achievement will grow.

In school districts where there is a collaborative relationship between the teachers and the administration, the relationship does not have to be the focus. Student achievement becomes the focus. Given that Indiana schools have the good fortune to have a collective bargaining relationship, why not make the best of it to make it work for students as well as for teachers.

References:

- ¹ Nelson, F. H., Rosen, M., & Powell, B. (October, 1996). *Are teachers’ unions hurting American education?* Milwaukee, WI: The Institute for Wisconsin’s Future. Available at <http://www.weac.org/Resource/1997-98/Dec97/iwf.htm>
- ² American Federation of Teachers Web site: <http://www.aft.org/topics/teacher-quality/erd.htm>
- ³ Carini, R.M. *Teacher unions and student achievement*. Education Policy Studies Laboratory, Arizona State University. Available at <http://eps.asu.edu/epru/documents/EPRU%202002-101/Chapter%2010-Carini-Final.pdf>

Sally Sloan is the Executive Director of the Indiana Federation of Teachers (IFT)

Policy Perspective



Collective bargaining and the debates surrounding it predate the 1973 passage of Public Law 217. In the late 1960's ISBA, ISTA, and IFT worked to reach agreement on collective bargaining procedures, but were unsuccessful. During the 1969 General Assembly, IAPSS and ISBA first supported a bill to provide a procedure for bargaining salaries with an exclusive representative of teachers. While large school corporations and those in northern Indiana had actively negotiated for several years and did not strongly oppose a law, there were still those superintendents (especially those in smaller districts) adamantly opposed to collective bargaining.

The paradox of the 1973 passage of the bargaining bill is that it was accompanied by Governor Bowen's tax reform efforts, which froze a school district's ability to raise funds for bargaining and the growing operational costs of schools. One major concern was if the tax reform package failed to provide sufficient replacement revenue for schools, the state had only a \$20 million reserve to support the legislation. So Indiana embarked on collective bargaining with legitimate concerns regarding funding to support decisions reached at the bargaining tables.

COLLECTIVE BARGAINING

John Ellis

Although the new bargaining bill didn't eliminate conflicts between teachers and school district leadership, it did provide a uniform framework for negotiations, which were limited to salaries and fringe benefits. It upheld the rights and responsibilities of school boards to establish policy, and included teachers in decision-making through discussion of educational issues.

As one of the first superintendents to have served both sides at the bargaining table, I remember very clearly how some of the emotions played out during those first years. As a member of the teachers' team in 1974, I still recall my first bargaining session.

Five of us sat in folding chairs against the back wall of the boardroom. A chalkboard covered the entire 20-foot sidewall of the room. With all board members and the superintendent present, the assistant superintendent walked to the back of the room, and began writing on the board directly next to the only place we had to sit. We were told that we could have a \$100 raise across the board if we agreed to abandon the salary index schedule. I have equally goofy examples from the other side of the table, but my point is some of the silliness that accompanied the beginnings of the bargaining process were two sided.

Fortunately, many district and teacher representatives' teams have discovered that bargaining can be an open process. Teachers found that no one was hiding money in Jack Benny's vault (we can determine the age of readers by those who can glean an image from that reference), and collaboration on real issues that impact student learning has more merit in a discussion than does posturing.

Good bargaining begins with everyone at the table understanding how the district receives the funding it will collect over the budget year. The need for maintaining cash balances needs to be understood by both interests represented at the bargaining table. Both sides must examine the long-term implications of any actions considered, and need to be protective of the future, not just focused on the current year's salary schedule.

Collaborative bargaining practices in many districts are finally beginning to realize the potential of what has been sought since the late 1960's. Honest, respectful negotiations concerning how best to use the district's resources can lead to new solutions to a corporation's challenges. District teams can realize instructional objectives and provide salaries and benefits to retain high performing professionals. This evolution towards collaboration must permeate all school district bargaining, or the process will turn on itself and self-destruct.

John Ellis is the Executive Director of the Indiana Association of Public School Superintendents (IAPSS)

Policy Perspective

WHY INDIANA EDUCATORS JOIN ISTA

Nate Schnellenberger and Warren Williams



Public school teachers and public school employees join the Indiana State Teachers Association (ISTA) to secure representation for their concerns and to establish a collective voice to improve not only the economic welfare of school employees, but also the public education of students in Indiana.

ISTA is a statewide organization of active and retired public school teachers and education support professionals including instructional assistants, maintenance and cafeteria employees, bus drivers, nurses, and school secretaries. More than 50,000 education employees in 271 of Indiana's 292 public school corporations voluntarily join ISTA.

The best method to establish a collective voice and to secure effective representation is collective bargaining. In Indiana, only public school teachers have an affirmative legal right to collectively bargain with local school boards. Other public school employees can bargain only at the discretion of the local school board.

Authorized by the Indiana General Assembly in 1973, the teacher collective bargaining law has led to dramatic and positive improvements, including:

- Procedures to guarantee the fair treatment of teachers.
- Equitable pay for elementary teachers versus high school teachers.
- Equitable pay for female teachers vs. male teachers.
- Health insurance benefits, including family health insurance plans.
- Protections for teachers to express opinions different from administrators or school boards.
- Supplemental retirement benefits.



In business, the best companies to work for are ones that respect their employees and involve their employees in the planning, operation, and performance of the company. Similarly, the best schools involve teachers in planning effective curriculum and instruction and engage all other school employees in assuring a caring, disciplined, and a safe learning environment. Research has documented that many teachers base their decisions to remain in the profession on their opportunities to have a positive impact on the conditions of teaching and learning.

Likewise, the best employee organizations are ones in which the members expect and strive to improve themselves and their institutions. ISTA, through both its collective bargaining and government relations initiatives, strives to improve the effectiveness of school employees and the performance of public schools, including:

- Requirements to pass a rigorous test in order to receive an initial teaching license.
- Requirements for continuing professional development to improve teaching skills and instructional knowledge.
- Higher student academic standards.
- Stronger school accountability measures.
- Efficient school resource spending practices.

ISTA has also supported a state law that requires each school to have an improvement committee consisting of teachers, administrators, and parent and community representatives. Each school improvement committee develops a plan to make the school a better place to learn.

ISTA is serious about helping every child succeed. Some children — those living in poverty, those with a disability, and those for whom English is not their native language — need and want extra learning opportunities. Because the state legislature and the Education Roundtable have yet to fulfill their promise to identify and fund instructional support programs necessary for all children to succeed, ISTA and the Indiana Federation of Teachers have organized a lawsuit against Indiana's system of funding public education. We are seeking fair, equal and sufficient learning opportunities for all children.

There remain some administrators, school board members, business leaders, and politicians who oppose collective bargaining and the rights of teachers and other school employees to form organizations to secure representation rights. They often raise false allegations about unnecessary protections of the rights of school employees and impediments to the improvement of public schools. In some school corporations, contract settlements have been delayed as long as four years, despite the best efforts of state mediators to resolve the disputes.

The opposition to school employee collective bargaining rights often serves as a cover for the real objection to school employee organization — our efforts to elect pro-public education legislators and government leaders. Organizations of teachers and other public school employees are the only public school-related organizations which actively participate in political campaigns. Public school administrator organizations and school boards do not support political candidates. Our efforts on behalf of both Democrats and Republicans who support public education are troublesome to some individuals and organizations, particularly those who want to divert public tax dollars to fund private school education.

Limiting collective bargaining will not improve public education. The challenge is for school employee organizations, school administrators, school boards, parents, community organizations, business organizations and Republicans and Democrats to work together to improve public education, not for themselves, but for the students and the future of Indiana.

Nate Schnellenberger is President of the Indiana State Teachers Association (ISTA), and Warren Williams is Executive Director of ISTA

Policy Perspective

TEACHER COLLECTIVE BARGAINING: ASSESSMENT AND EXPECTATION

Frank A. Bush



In 1973, the Indiana General Assembly enacted Public Law 217 enabling collective bargaining for public school teachers, a law that has generated a variety of discussions over the past 35 years. These debates have strayed from the original intent of the legislation, however, resulting in strained relationships between and among school officials and teachers. And in several instances, these strained relationships have thwarted school improvement initiatives. This, in turn, poses a challenge to public school officials and teachers. That is to dissipate the negative climate and work toward more open communications and trust because Indiana public schools need the joint expertise of administrators and teachers to counteract indictments leveled at public schooling.

There is an urgent necessity: Indiana public schools need to be in a position to meet the multiple challenges of educating youth in the 21st Century. Some of the most salient challenges are and will be to heighten student achievement, close the achievement gap, meet the needs of minority students, and implement meaningful staff development activities. The attainment of public school successes with such critical education issues will be better assisted with efforts to re-establish the legislative intent of collective bargaining rather than fostering climates of quasi-1900's labor relations' practices.

For clarity, the state's collective bargaining intent in IC 20-29-1-1 is:

"Sec. 1. The general assembly declares the following:

- (1) The citizens of Indiana have a fundamental interest in the development of harmonious and cooperative relationships between school corporations and their certificated employees.
- (2) Recognition by school employers of the right of school employees to organize and acceptance of the principle and procedure of collective bargaining between school employers and school employee organizations can alleviate various forms of strife and unrest...
- (4)(B) The obligation to educate children and the methods by which the education if effected will change rapidly with:
 - a. increasing technology;
 - b. the needs of an advancing civilization; and
 - c. requirements for substantial educational innovation."

Since public school teachers have achieved numerous employee rights in collective bargaining contracts over the years, there is a distinct possibility that what should only remain is the continuous negotiations on wages and wage-related fringe benefits. Therefore, teachers' and administrators' time could be more focused on student needs assessments and program development. Refocusing Section 5 Discussion in the law could do this by encouraging a focused dialogue on education issues that directly impact on student achievement. This would better serve the image of public education, as well as the productivity of public schooling. Such an approach could be supported by coordination with the School Improvement Committees (PL 221-1999). Essentially, then, it is now time to refocus the bargaining energies and efforts on what is best for students. But this may be too idealistic considering the difficulty with ensuring state-wide consistency of these discussions. If the time is not now, however, when will it be?

The image of the public schools has deteriorated progressively during the last few decades because of changing demographics, pinpoint media coverage, and microscopic legislative initiatives. There have, as a result, been unfair perceptions that public schools are failing, that the solution to failure is competition such as charter schools and/or vouchers, and that the public school bureaucracy does not permit parental involvement or accountability for student failures. If these perceptions are allowed to fester and are not approached with demonstrated public school successes, the ridicule will not cease. And although there are several public relations endeavors that public school officials have utilized to offset the barrage of negative finger-pointing, one that needs further attention is a proactive, positive collective bargaining approach that establishes a "Win-Win" atmosphere and leads to participatory management of instruction and learning.

State law can protect teachers from being evaluated by student test scores; school boards can agree to lower class size; administrators can provide staff development programs; and teachers can serve on committees to improve instruction. But none of these efforts will improve the image of the public schools until there is a recognized collaborative attitude that focuses attention on student needs rather than employee rights. Therefore, it appears that a reasonable expectation could be to use the intent of the collective bargaining law to enhance dialogue on student achievement and spend the time on discussing instruction and curriculum rather than working conditions and rights.

Frank A. Bush is the Executive Director of the Indiana School Boards Association (ISBA)

(continued from page 5)

Studies Indicating Negative Effects of Collective Bargaining

Kurth (1987): In examining the decline in state SAT scores between 1972 and 1983, Kurth's regression model indicated that SAT scores were lower in those states with a greater proportion of students taking the test and with a higher percentage of teachers within collective bargaining agreements. The prevalence of newspaper-reading, urbanization, and students in private schools was associated with higher verbal and math scores. Additionally, higher teacher salaries led to higher math scores, and per-pupil spending led to higher verbal scores.

Peltzman (1993): Like Kurth, Peltzman attributed the national decline in SAT scores in part to teacher's unions. In an analysis of change in state SAT scores between 1972 and 1981, Peltzman indicated a difference between the two major national unions, with the proportion of teachers in the AFT associated with lower SAT scores, and those in the NEA with higher test scores. Peltzman's measure of "real" per-pupil spending (per-pupil spending minus average teacher salary) was associated with higher test scores.

Hoxby (1996): Hoxby's study of the change in district dropout rates suggests that school districts with stronger unions and collective bargaining agreements have higher drop-out rates when controlling for district demographic and economic characteristics. In addition, unionized districts tended to be less efficient with the use of key resources, such as teacher-student ratios, per-pupil spending, and teacher salaries.

Moe (2007): A study of California school districts indicated that the restrictive collective bargaining agreements resulted in lower student achievement, measured by the change in test scores on state standardized tests for both elementary and high school students, with a particularly strong negative effect in larger schools. Counter-intuitively, smaller class sizes and higher district spending also resulted in lower elementary test scores (see the discussion

below for more on this result). Ethnicity, English language proficiency, the level of education in the district, and the proportion of students on free and reduced lunch also influenced student achievement.

There are several distinctions to be made within the research literature on collective bargaining and student achievement. The first regards the level of analysis. Studies have analyzed student achievement aggregated at the individual, school district, and state levels. The second distinction involves the operationalization of student achievement, with some studies examining student performance cross-sectionally (at one point in time) and others looking at changes in student performance over time. See Table 1 for a description of how each study is situated with respect to these categories.

Similar methodological strategies tend to produce similar results. Studies that examine the change in student achievement over time at both the state and district level (Hoxby, 1996; Kurth, 1987; Moe, 2007; Peltzman, 1993) suggest that stronger teacher's unions result in lower student achievement. Examining student achievement at a single point in time, however, suggests that collective bargaining improves student achievement (Grimes & Register, 1990; Grimes & Register, 1991; Kleiner & Petree, 1988; Nelson & Rosen, 1996; Steelman et al., 2000). In addition, either method of analysis produced a positive relationship between collective bar-

gaining and performance when the study is conducted at the level of the individual student (Eberts & Stone, 1984; Eberts & Stone, 1987; Grimes & Register, 1990; Grimes & Register, 1991; Milkman, 1997), although the gains tend to be small. No studies could be found that examined the effect of collective bargaining at the district level using a cross-sectional sample using valid scientific techniques.

These methodological decisions remain in dispute. With respect to the level of aggregation, Hanushek (1996) argues that state-level studies lead to aggregation bias, while Steelman et al. (2000) assert that the increasingly centralized character of state policymaking and the contextual role that state laws have on education make states the appropriate level of analysis. It could be argued, however, the diversity of results within states is masked by state-level aggregation. Educational structures remain essentially localized in the United States, such that district-level studies might be more appropriate. However, as with states, information on individual teacher-student relationships could be lost through district aggregation (or even school aggregation). Ideally, a study should combine state, district, school, teacher, and student level data so that the contextual effects of each can be captured.

Other than the possibility of aggregation bias, the employment of state-level cross-sectional studies generates other potential concerns. The fact that studies of change in

TABLE 1. Collective Bargaining and Student Achievement

Study	Level of Analysis	Achievement Measure	Result
Kurth, 1987	State	Change	Negative
Peltzman, 1993	State	Change	Negative
Kleiner and Petree, 1988	State	Cross-section	Positive
Nelson and Rosen, 1996	State	Cross-section	Positive
Stelman et al., 2000	State	Cross-section	Positive
Hoxby, 1996	District	Change	Negative
Moe, 2007	District	Change	Negative
Eberts and Stone, 1987	Student	Change	Positive
Milkman, 1997	Student	Change	Positive
Grimes and Register, 1990	Student	Cross-section	Positive
Grimes and Register, 1991	Student	Cross-section	Positive

student performance lead to different results than cross-sectional studies could be due to the existence of additional variables that the cross-sectional models fail to address. Alternatively, the fact that schools in less unionized states or districts tend to improve more than unionized schools could be explained if non-unionized schools were also lower achieving schools. If so, their relative improvement may be a result of more strenuous efforts to improve test scores. It is also likely that schools with higher scores will find it more difficult to produce additional improvements. Finally, the degree to which “change” studies adequately address change in collective bargaining provisions is unclear.

“ . . . the research literature on the effects of collective bargaining on student achievement is limited, ambiguous, and incomplete.”

The majority of the studies on collective bargaining and student achievement use collective bargaining coverage of teachers or union membership rates as a measure of the effects of bargaining. In state-level studies and the Hoxby district-level study, researchers use the percentage of teachers covered under collective bargaining provisions, or who are members of unions, in the entire state. In individual-level studies, students are classified as to whether they are in a union/collective bargaining school or not. The results of these works do not, then, test the effects of specific contract provisions on student achievement, only unionization as such. As a consequence, research that indicates that collective bargaining helps or hurts student achievement speaks to the effect of teacher’s unions in general, not whether the single salary schedule or personnel rules in particular are improving or hurting student test scores. Given the great variety in contract provisions even in heavily unionized states (Ballou, 2000), the failure to account for contract variability raises serious questions about the validity of these works.

A New Research Agenda to Examine the Effects of Collective Bargaining

Due to the limitations of the current body of research on the effects of collective bargaining as suggested in this Education Policy Brief, CEEP proposes a new research agenda that could result in a more complete understanding of the effects of collective bargaining.

- **Combination of policy measures from all administrative levels.**

Educational policy is developed and implemented at multiple administrative levels. As a consequence, legal and financial constraints and policy directives at both the state and local level should be incorporated into analytical models. The effects of collective bargaining can also be analyzed at the classroom and individual level.

- **Examination of both change and cross-sectional measures of student achievement.**

The method of measuring student achievement results in different determinations of the role of collective bargaining. It is not readily apparent whether the change in achievement or achievement at a particular point in time is the more appropriate measure. Future studies should use both methods while attempting to resolve differing results.

- **Make use of new data sources to include student and teacher-level data and analyze the effects of collective bargaining on demographic subgroups.**

Reporting requirements under NCLB now make more detailed data available. Teacher quality can be measured more precisely by using classroom level data. Studies of the structural influences on student achievement should also be performed for key subgroups, including gender, income, racial and ethnic, special education, and ELL classifications.

- **Study of the effects of specific contract provisions.**

Rather than simply using the percentage of teachers covered by collective bargaining or the favorability of state laws to unionization, the effects of particular contract provisions, including salary dispersion and personnel policies, should be evaluated. In addition, a more complete analysis should be performed to determine whether restrictiveness is a unitary or multidimensional phenomenon.

- **Development of a causal model that tests the direct and indirect effects of collective bargaining.**

Path analysis, structural equation modeling, and other causal models should be used to explore both the direct effect of collective bargaining on student achievement, as well as the indirect effect through class size, school resources, teacher characteristics (quality, attrition and recruitment, pay, and morale), and other structural factors.

- **Consideration of the effects of collective bargaining in an international context.**

A sample of U.S. school districts should be compared with schools from other developed democracies, such as Canada or the United Kingdom. Important policy differences must be accounted for, but such a study could indicate the degree to which collective bargaining is responsible for differences in student achievement.

The only study that did analyze the effect of contract restrictiveness (Moe, 2007) found a negative effect on student achievement. However, there are some potential difficulties with Moe’s study. First, the study is focused on only one state, California, and does not analyze the diversity of contract rules. A more complete study that samples districts from around the country is required to have sufficient confidence in the results. Second, there is a large degree of multicollinearity that Moe admits produces odd results in his model. Larger class sizes and lower district spending appear to improve student test scores, a result

directly at odds with most of the literature on these questions. Moe discounts these results as statistical anomalies, which is hardly a sufficient response given that the negative relationship between contract restrictiveness and student achievement could also be a statistical illusion. Despite these qualms, however, Moe’s study does give the strongest evidence to date that restrictive contracts might harm student achievement.

In sum, the research literature on the effects of collective bargaining on student achievement is limited, ambiguous, and

incomplete. What all of these studies have in common, however, is that each examines the direct effect of collective bargaining on academic performance. Other factors affecting achievement are treated as controls. In many areas of research this is the correct approach, but it is a questionable strategy in evaluating collective bargaining. Contracts do not educate students. It is not the contracts and/or unions themselves that are claimed to help or hurt student achievement, but the consequences of collective bargaining. Teacher's unions bargain over the levels and structure of salary, working conditions, class size, and other institutional features. Union leaders claim that these features help both teachers and students. Reformers skeptical of teacher's unions claim that restrictive contracts negatively affect students, but the alleged harm operates through the means of personnel and budgetary policy. Collective bargaining is therefore most likely an indirect, rather than direct, causal factor. Models incorporating the indirect influences of collective bargaining on achievement (teacher salaries, etc.) could generate very misleading estimates of the effect of contracts, by absorbing much of the statistical power that would otherwise be exhibited by the direct effects of collective bargaining. With these controls included, what remains is a portion of the indirect effect of collective bargaining, rather than the total effect.

Assuming this understanding of collective bargaining's influence on student achievement is correct, the appropriate model for studying the subject is not straightforward regression analysis (the most common statistical technique), but a causal model that uses path analysis to determine the total effects of collective bargaining directly through contract restrictiveness and indirectly through the resource and personnel policies over which teacher's unions bargain. Unfortunately none of the studies reviewed employed this technique. To examine the potential for the alternative approach, we will discuss structural factors other than collective bargaining which have been claimed to influence student achievement, as well as the effect collective bargaining has on each of those factors.

OTHER CONTRIBUTORS TO STUDENT ACHIEVEMENT

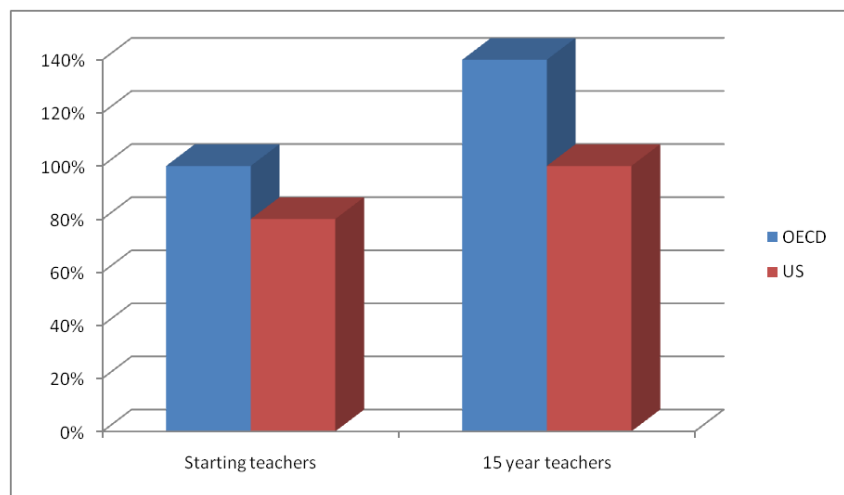
There are a number of factors that potentially influence student achievement. Unlike narrow questions of collective bargaining's role in educational performance, there is voluminous literature dedicated to identifying the causes of student performance. While background demographic characteristics such as socioeconomic status have a very strong influence on educa-

tional outcomes, in this section we focus specifically on structural factors that are the product of educational policy. Three major policy areas that have been proposed to exert positive effects on student achievement include: class size, school resources/teacher salaries, and teacher quality.

Class Size

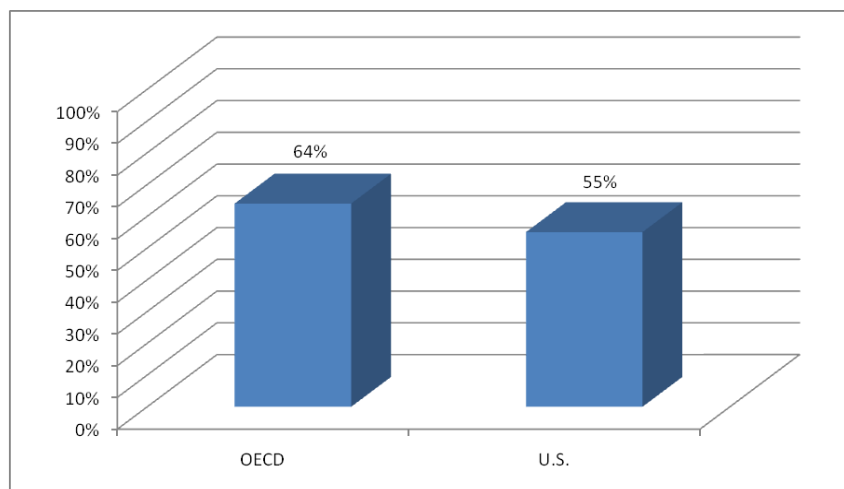
Many states have reduced class sizes in an effort to improve educational productivity. Work by Nelson and Rosen (1996) and Powell and Steelman (1996) and a meta-

Figure 2. Average Teacher Salaries Relative to GDP Per Capita



Source: OECD PISA Report (2007).

Figure 3. Teacher Salaries as a Share of K-12 Spending



Source: OECD PISA Report (2007).

analysis by Krueger (2002a, 2002b) suggests that students do better as the student/teacher ratio declines. The most important recent study on class size was the STAR program in Tennessee. Using a quasi-experimental design, researchers demonstrated that a student-teacher ratio of 15 to 1 increased student performance (Krueger, 2002a, 2002b). However, in studies conducted by Betts et al. (2000), Hanushek et al. (1998), Hanushek (2002), and Hanushek's meta-analysis (2003), class sizes were only modestly related to student achievement. Some studies suggest that smaller classes actually result in lower student achievement. Barber and Mourshed's (2007) comparison of OECD nations suggested an inverse relationship between class size and achievement, supporting the work of Kleiner and Petree (1988) and Moe (2007). While these results are surprising, it is possible that smaller class sizes could be associated with a decline in teacher quality (through the hiring of weaker teachers in order to reduce class sizes) or cuts in other important services.

School Resources/Teacher Salaries

It is commonly asserted by teacher union advocates that U.S. schools are under-resourced, and specifically that teacher salaries are too low. According to the argument, lower teacher salaries mean that talented teachers do not enter or remain in the teacher profession. According to Allegretto et al. (2008), teacher salaries are low compared to other professionals with similar training, and the gap has been growing over the last 10 years. He identifies a "teacher penalty" of around 12%, i.e., that teachers make roughly 12% less than similarly trained workers in other professions. Barber and Mourshed (2007) suggest that teachers in the U.S. make less than teachers in other OECD nations relative to average earning power.

As displayed in Figure 2, the average beginning teacher salary is 100% of GDP per capita among all industrial democratic nations, and senior (15-year) teachers typically make 140% of per capita income. American teachers earn substantially less, with starting teachers making 80% of GDP per capita and senior teachers 100% of per capita income.

Similarly, data from the OECD indicates that while teacher salaries typically consume 64% of current K-12 expenditures in most OECD nations, in the U.S. teacher salaries constitute only 55% of current expenditures (see Figure 3). Finally, while Roza (2007) claims that teachers' benefit packages are generous compared with the private sector and are an unnecessary drain on school budgets, Allegretto et al. (2008) criticizes her methodology and data sources.

There is evidence to suggest that teacher salaries and school resources have a substantial effect on student achievement, with studies demonstrating a link between the two at every level of analysis. Grimes and Register (1990) found that individual students did better in classes with better-paid teachers. A study of California school districts indicated that more resources led to higher test scores (Betts et al., 2000). State-level studies also suggest that higher teacher salaries and per-pupil expenditures improve student scores on standardized tests (Kurth, 1987; Peltzman, 1993; Powell & Steelman, 1996). Finally, Barber and Mourshed (2007) assert that the relatively lower salaries in the U.S. are partly to blame for lower test scores. It is important to note that analyzing raw salaries alone may lead to incorrect results. Loeb and Page (2000) and Stoddard (2005) state that once relative amenities (school safety, length of school year, parental involvement, etc.) and labor market opportunities are accounted for, higher teacher salaries result in higher student achievement. A failure to correctly specify compensation can dramatically underestimate the effects of relative wages and benefits.

Not all research indicates a positive relationship between teacher salaries and student achievement. According to Berger and Toma (1994), higher per-pupil spending results in lower average state SAT scores, and teacher salaries have no statistically significant effect. Similarly, Kleiner and Petree (1988) found that non-wage expenditures per pupil had little effect on student achievement. Hoxby (1996) states that greater resources have a very weak effect on performance in school districts. In a series of meta-analyses of school achievement studies (from 1981 through 2003), Hanushek argues that resource-based strategies lead to very modest improvements in student achievement at

best. However, his method has been challenged by Greenwald et al. (1996), whose alternative meta-analysis indicates that greater resources are associated with increases in student performance.

As with collective bargaining, the role of teacher salaries is fundamentally an indirect one. The logic underlying any relationship between higher teacher salaries and student achievement is that higher salaries will attract gifted educators to the teaching profession (recruitment), and make it more likely that they will remain teachers (retention). The strategy of improving recruitment and reducing attrition has been asserted both in a general sense — the profession as a whole — and in the ability of specific school districts to attract high quality teachers to their particular school. A number of studies suggest that higher salaries reduce teacher attrition (Eberts & Stone, 1984; Krieg, 2006; Mont & Rees, 1996; Murnane & Olson, 1989). Imazeki (2005) found that while relative salaries influence transfers, they do not generally determine exit from the profession.

Teacher Quality

Teacher quality may have declined over the last generation as a by-product of the gains of females elsewhere in the workforce. With job opportunities now available outside of teaching, talented women are foregoing a career in education in favor of more lucrative professions. Corcoran et al. (2004) and Hoxby and Leigh (2004) found that higher aptitude women are less likely to become teachers than previously. This has led to an overall decline in teacher aptitude, measured by college performance (Corcoran et al., 2004). The decision of talented women may be shaped in part by wage compression within the educational profession, as well as salary levels (Hoxby & Leigh, 2004).

A wide variety of measures has been used as indicators of teacher quality. Research suggests that teachers who have demonstrated content knowledge (Clotfelter et al., 2007; Grimes & Register, 1990; Wayne & Young, 2003) improve student performance. The idea that teachers with more experience should be able to raise student achievement has mixed support. Betts et al. (2000), Eberts and Stone (1984), and Moe (2007) found a relationship between teacher experience and student perfor-

mance, but Grimes and Register (1990) found a negative relationship and Hanushek et al. (1998) only a weak gain in student test scores from experienced teachers. Surprisingly, some studies suggest students do worse when their teachers have graduate degrees (Eberts & Stone, 1987; Berger & Toma, 1994; Clotfelter et al., 2007). Finally, Hanushek et al. (1998) has developed a “fixed effects” measure of teacher quality that matches student test scores and individual teachers while controlling for environmental factors in a study demonstrating a positive effect of teacher quality on student achievement.

THE INDIRECT EFFECT OF COLLECTIVE BARGAINING ON STUDENT ACHIEVEMENT

Arguments in favor of stronger teacher’s unions and in defense of the current system of collective bargaining are dependent on a causal relationship between teacher contract provisions and educational productivity. While teacher’s unions obviously have an incentive to negotiate for higher salaries and more teachers, self-interested demands for material goods would be unpersuasive unless they were tied to educational achievement — particularly since, as public agencies, all additional resources ultimately derive from taxation. Teacher union advocates justify their claim on greater public resources by claiming that teacher salaries increase student achievement by attracting and retaining highly qualified teachers. A smaller student/teacher ratio could enhance student achievement through individualized attention. Critics of the collective bargaining status quo, on the other hand, assert that the current contracts block needed reforms that would improve student learning. They argue that the single salary scale, the seniority and personnel system, the bureaucratic protection for teachers in disciplinary matters, and negotiated budgets prevent reforms that would improve teaching, such as merit pay and differentiated salaries, while protecting bad teachers and creating perverse incentives that have the least experienced educators teaching the most at-risk students.

As discussed earlier, there is little conclusive evidence on either side of the debate

with respect to the direct effects of collective bargaining on educational productivity. However, research suggests that a number of factors may improve student achievement. There is some evidence that smaller class sizes improve student performance, and that higher teacher salaries and greater per-pupil spending has both a direct effect on achievement as well as an indirect effect through teacher quality by attracting and retaining good teachers. What remains to be considered is what influence, if any, collective bargaining has over these factors.

There is a consensus in the research literature that collective bargaining agreements increase total educational costs (Duplantis et al., 1995; Eberts & Stone, 1986; Gallagher, 1978; Hoxby, 1996; Roza, 2007; Stone, 2000). The magnitude of the total increase in education spending in unionized schools is in the range of 15-19%. Hill (2006) argues that precise estimates are difficult to generate because of measurement difficulties, but the relationship seems clear: unionization increases the costs of public education. The consequences of this fact are less clear. On the one hand, Roza (2007) argues that the money is spent inefficiently, with 19% of education spending being used in areas that she claims are only weakly related to student achievement, including salary increases based on experience and education, professional development, smaller class sizes, days off, support personnel, and benefits (but see Allegretto et al., 2008). This is consistent with the claims of Hoxby (1996) that unions are simply rent-seeking institutions — that their market and political power is used to maximize gains to their members, with only incidental attention paid to educational performance. On the other hand, there is a case to be made that the additional spending has beneficial results, with some researchers asserting a relationship between higher per-pupil expenditures and student achievement (Kurth, 1987; Peltzman, 1993; but see Hanushek et al., 1998).

As the essential task for teacher’s unions is negotiating salaries and benefits on behalf of their members, it should not be surprising that strong unions tend to generate higher average salaries. Baugh and Stone (1982) claim a linear relationship between unionization and teacher compensation. Teachers in unionized schools tend to make

between 5% and 10% more than teachers in non-unionized schools (Cooper, 1982; Duplantis et al., 1995; Zwerling & Thomason, 1995; see also Gallagher, 1978; Stone, 2000). Stronger contracts also tend to narrow wage differences among teachers and reduce the gap between male and female wages (Holmes 1979; Hoxby & Leigh 2004).

Critics of collective bargaining agreements as they are presently constituted accept that unions have been effective in increasing compensation, but they also claim that the structure of compensation is flawed. Most agreements tie salary increases to credentials, education, and (most especially) seniority, and most contracts prohibit differential pay among subjects. In short, while teacher salaries are higher in unionized schools, the salary structure negatively affects teacher quality. The list of critiques is long. Wage compression among educators may drive talented women out of the profession (Hoxby & Leigh, 2004). Furthermore, the complicated and prolonged hiring process common in large urban school districts with restrictive contracts cause talented teachers who might have been willing to work at struggling schools to seek employment elsewhere (Levin & Quinn, 2003). Protections for weaker teachers mean that they are simply shifted from school to school, and seniority privileges mean that less experienced teachers are also the first to be fired, whatever their comparative quality (Levin et al., 2005). Finally, the seniority system and poor records create financial and qualitative inequities within school districts that lead to misleading statistics about per-pupil expenditures and teacher salaries (Roza & Hill, 2004).

It is possible, however, that stronger union protections create positive incentives as well as negative ones. For example, Nelson (2006) found that unionized urban schools with strict contracts tended to have lower transfer rates, particularly when compared with charter schools. Similarly, in a study of California school districts Koski (2006) determined that strict seniority rules actually increased the percentage of credentialed teachers. It may be that experienced teachers find stronger union protections attractive. Additionally, there is evidence that working conditions are an important component in the decision of a teacher to remain at a school (Hanushek et al., 2004;

TABLE 2. Education in Indiana: Inputs, Policies, and Outputs in Relation to the Nation⁸

Category		Indiana	Ranking	National	Year
Collective Bargaining Strength	Index of State Bargaining Laws	1.3	15th	1.12	2008
Class Size	Pupil/Teacher Ratio	17.1	43rd	15.7	2003-04
	Average Elementary Class Size	21.3	14th	20.4	2003-04
	Average Secondary Class Size	25.3	13th	24.7	2003-04
Teacher Salaries	All	\$48,447	19th	\$50,379	2005-06
	% State Per Capita Income (PCI) - All	157%	11th	145%	2005-06
	Bachelor's	\$34,600	32nd	\$39,200	2003-04
	% State PCI - Bachelor's	116%	28th	118%	2003-04
	Master's	\$49,760	15th	\$49,440	2003-04
Teacher Experience and Education	% State PCI - Master's	166%	3rd	149%	2003-04
	% Master's	56.3%	2nd	40.9%	2003-04
Staff Assignment	% Over 20 yrs Experience	35.9%	4th	26.5%	2003-04
	% Teachers	45.5%	48th	51.2%	2005-06
NAEP Student Achievement	% Instructional Aides	14.9%	8th	11.4%	2005-06
	4th Grade Reading	222	27th	220	2007
	% Proficient in 4th Grade Reading	33%	28th	32%	2007
	8th Grade Reading	264	25th	261	2007
	% Proficient in 8th Grade Reading	31%	25th	29%	2007
	4th Grade Math	245	8th	239	2007
	% Proficient in 4th Grade Math	46%	9th	39%	2007
	8th Grade Math	285	19th	280	2007
	% Proficient in 8th Grade Math	35%	19th	31%	2007
	4th Grade Science	152	21st	149	2005
	8th Grade Science	150	24th	147	2005
	SAT - Reading	497	40th	502	2006-07
SAT - Math	507	35th	515	2006-07	
SAT - Writing	483	40th	494	2006-07	

Source: U.S. Department of Education Common Core of Data; National Assessment of Educational Progress (NAEP).

Mont & Rees, 1996; Tabs, 2004). It is likely that unionization has an effect on working conditions, and thus the attractiveness of a particular school or school district.

COLLECTIVE BARGAINING, EDUCATION POLICY, AND STUDENT ACHIEVEMENT: THE CASE OF INDIANA

The state of Indiana presents an instructive example of a state with relatively strong collective bargaining rights, varied academic performance, and a mix of policy successes and challenges. A brief profile of Indiana's K-12 achievement status is presented in Table 2.

It is important to note that the data in Table 2 is from multiple years, due to restrictions on the availability of data. Table 2 should therefore be read with a view to general

tendencies, rather than focus on specific statistics.

During the period 2003 to 2008, the academic achievement of Indiana students ranked near the middle of students in all states. While SAT scores in Indiana were ranked between 35th and 40th in the nation, they were relatively close to the national average. There is unfortunately no consensus on how to rank Indiana's graduation rate relative to other states. According to the NCES common core of data, the graduation rate of freshmen was 73.2% in 2004-05, ranked 36th among all states compared with a national average of 74.7%. Other reports have suggested a higher graduation rate or ranking. Green and Win-

ters (2005) rank Indiana 30th with a graduation rate of 72% in 2002 (U.S. average 71%), while the state of Indiana reported a 76.5% graduation rate in 2006-07. The differing results could be the result of different methods of calculating graduation rates (see Stanley et al., 2008) or because the studies measure different years. Overall the data suggests that Indiana ranks somewhere near the middle of all states.

While 4th grade math scores were better in Indiana than in most states (ranked 8th to 9th), other metrics of test scores were near the middle of states, including 4th and 8th grade reading scores, 8th grade math scores, and 4th and 8th grade science scores. The basic academic indicators suggest that although there is considerable room for improvement, Indiana does not appear to have an especially troubled educational system relative to other states.

While stronger than average, the strength of Indiana teacher's unions in negotiations is not exceptional. An index of collective bargaining provisions (drawn from the National Council on Teacher Quality database of state laws) was created in order to develop a rough approximation of the relative power of teacher's unions in each state. The index indicates that Indiana ranks in the top third of states with respect to collective bargaining rights (15th in the U.S.). From a more general perspective, Indiana teachers have a mandated right to bargain collectively but do not have a right to strike, unlike teachers in eight states (see Figure 1).

As should be expected from the research literature, it is unclear whether there is a direct relationship between collective bargaining and academic achievement in Indiana, at least using very general indicators. Turning to indirect contributors to student achievement, the pupil/teacher ratio in Indiana was among the highest of states in 2003-04, at 17.1 (ranked 43rd), compared with a national average of 15.7. Teachers also made up a much smaller proportion of total educational staff than in other states. Only 46% of all staff were teachers, compared with the national average of 51%. Only two other states (Alaska and Kentucky) had a smaller proportion of teachers. However, the average class size in Indiana was well below the national average in the bottom third of all states. The reason for the discrepancy between pupil/

teacher ratio and average class sizes is not obvious and warrants further investigation. One possibility is that Indiana teachers teach more classes on average than those in other states, which would reduce average class sizes while not resulting in larger number of teacher staff.

Laying aside concerns about the number of teachers, the quality of Indiana teachers appears to be exceptional, by the most common measures of teacher quality. Indiana ranks 2nd in the nation in the percentage of teachers with Master's degrees (56% as opposed to a national average of 41%). Indiana also ranks 4th in teacher experience, with 36% of teachers having 20 or more years of experience — a full 10 percentage points over the national average. Indiana ranks near the middle of states in overall teacher salaries (19th) and somewhat higher in salaries for those with Master's degrees (15th). Teacher salaries relative to average state incomes might be a better method for evaluating the attractiveness of a job in teaching, and by this measure Indiana does considerably better. The average Indiana teacher makes 157% of state per capita personal income (ranked 11th in the nation), and those with Master's degrees make 166% of per capita income (ranked 3rd in the nation). However, those teachers with Bachelor's degrees fare less well, with an average salary of \$34,600, 116% of state per capita income, ranked 32nd and 28th among all states, respectively.

However, there are a number of caveats to what appears to be a relatively well-paid, well-educated, and experienced Indiana teacher workforce. First, the percentage of teachers with Master's degrees and their relatively high salaries could simply be a function of longevity. Although the data on starting salaries for those with Master's degrees is not available for Indiana, teachers with the advanced degree who have between 6-10 years of experience have an average salary of only 127% of state per capita income (ranked 24th in the nation). Second, the evidence that experience and higher educational attainment result in greater student achievement is mixed. Third, the experience of Indiana teaching staff comes at a price. Experienced teachers are much more likely to be closer to retirement, suggesting that Indiana will have a challenge in attracting a large number of equally qualified teachers in the future. As Indiana's teachers retire, the

state will have to develop strong teacher recruitment policies in order to encourage experienced teachers from other states to move to Indiana, as well as persuade talented students to enter the teaching profession. A complimentary approach would be emphasize retention and training of the current pool of educators.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The intensity of the debate over the role of collective bargaining has obscured the fact that empirical evidence supports either side of the discussion. There can be no verdict on whether collective bargaining in public education is "bad" or "good," because there is insufficient evidence to warrant a definitive judgment. Much of the research on the effects of collective bargaining focuses on only one or two elements of the question, or has results that appear dependent on a particular methodological strategy. Future research should aim to build a more complete model that recognizes that any effects on student achievement are likely do so only through other factors like teacher quality. Furthermore, researchers should consider the contextual influences of state, district, school, and teacher influences, and should develop measures that directly test collective bargaining provisions, rather than on blanket unionization rates.

Recommendations

1. It is unlikely that the existence of collective bargaining agreements by themselves have a strong direct effect, either positive or negative, on student achievement. Instead, future research should focus on the indirect effects of collective bargaining on student performance through the mediating influence of other factors such as class size, teacher quality, and resources.
2. The appropriate model of student achievement remains in dispute, with important implications for the study of collective bargaining. The research literature reaches contrary results depending on the measurement of student

achievement. Cross-sectional studies have suggested a positive role for collective bargaining, yet some studies that measure the *change* in student achievement have yielded negative results.

3. Similarly, most studies have used one level of analysis, whether at the state, district, or individual level, with competing results. Given that the different levels of government have exerted their own distinct influence on educational policy, a more comprehensive approach incorporating each level is advisable.
4. The advent of NCLB has resulted in the creation of an unprecedentedly rich universe of data. Future analyses of the role of collective bargaining in student achievement should make use of the detailed student, teacher, and district data. In particular, it might be possible to develop new measures of teacher quality that isolate the effects of education and experience.
5. International comparisons of the effects of teacher's unions have been comparatively neglected. Western Europe and Canada have far higher rates of unionization, different bargaining structures, and (by some measures) superior academic performance. Research attempting to understand the positive or negative effects of collective bargaining must take these differences into account. A single-minded focus on the educational context in a single country, whether the U.S. or another country, could lead to false conclusions.
6. The centralization of state education policy and finances presents major challenges to the process of bargaining, which has remained at the district level (unlike other countries). Both case studies and other forms of research should be used to determine what effects the disjuncture of resources and bargaining will have on school district finances and educational output.

Conclusion

The debate over the effects of collective bargaining in public education has intensified in recent years. For example, U.S. Secretary of Education Margaret Spellings recently blamed teacher's unions for blocking needed reforms, inspiring an

aggressive rebuttal from AFT President Randi Weingarten (*Education Daily*, 2008). The limited evidence and potential for agreement does not warrant the ferocity of the public debate.

Recommendations

1. Reformers critical of collective bargaining agreements, as well as teacher union advocates, should recognize the valid perspectives of both sides. The pressure for reform in public education is unlikely to abate, and although more research is needed to validate the feasibility and effects of proposed reforms, some sort of reform is inevitable. On the other hand, reformers must recognize concerns by teachers that the reform agenda is a pretext for breaking unions, which could lead to a revival of the very abuses that led to unionization in the first place.
2. Given the inconclusive nature of the research, policymakers would be advised to move cautiously, pursuing incremental reforms that could win the support of both critics and advocates of teacher's unions, not least because any reform will require the willing participation of teachers to be implemented (Johnson & Donaldson, 2006). There are a number of areas of potential agreement. There is some evidence that smaller class sizes improve student achievement, and that better working conditions improve the recruitment and retention of quality teachers. In addition, while the effects of pay for performance plans are unclear, there is support among teachers for greater pay for those educators working in underachieving schools.

AUTHOR

Nathan Burroughs

(nburroug@indiana.edu) is a visiting research associate at the Center for Evaluation & Education Policy.

ACKNOWLEDGEMENTS

The author would like to thank the following for their assistance in the creation of this brief: At the Center for Evaluation and Education Policy, Director **Dr. Jonathan Plucker**; Associate Director **Terry Spradlin, Amy Beld, Kelly Cable, Steven Hiller, Kristin Hobson, Michael Holstead, Kim McCormick, and Myrna Slaubaugh**. Thanks also to **Dr. Kim Rueben** of the Urban Institute, **Amy Matthews**, Director of Research at the Indiana Education Employment Relations Board, and **Daniel Clark** of the Indiana State Teachers Association. Finally, special thanks to the contributors to this brief, **Sally Sloan, John Ellis, Nate Schnellberger, Warren Williams and Frank Bush**.

END NOTES

1. Quote from a superintendent in the Superintendent Deregulation Survey (2005).
2. Quote from a teacher in Duffett et al., 2008.
3. For other instructive analysis of the research literature on collective bargaining in education, see Goldhaber, 2006; Hess & Kelly, 2006; and Johnson & Donaldson, 2006.
4. For a summary of the history of teacher collective bargaining, see Kahlenberg (2006).
5. Information displayed in this chart is drawn from the National Council on Teacher Quality (2008).
6. Also see also Ballou (2000).
7. See the Committee for Economic Development (2004) report for one example.
8. Other than the Collective Bargaining Strength measure, all data is from the U.S. Department of Education Common Core of Data. Test results are NAEP scores.

REFERENCES

- Allegretto, S.A., Corcoran, S.P., & Mishel, L. (2008). *The teaching penalty*. Washington, D.C.: Economic Policy Institute.
- Ballou, D. (2000). *Teacher contracts in Massachusetts*. Boston, MA: Pioneer Institute for Public Policy Research.
- Ballou, D., & Podgursky, M. (2000). Gaining control of professional licensing and advancement. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp. 69-109). Washington D.C.: Brookings Institution Press.
- Barber, M., & Mourshed, M. (2007). *How the world's best-performing school systems come out on top*. London: McKinsey & Company.
- Baugh, W. H., & Stone, J.A. (1982). Teachers, unions, and wages in the 1970's: Unionism now pays. *Industrial and Labor Relations Review*, 35(3), 368-376.
- Berger, M., & Toma, E. (1994). Variation in state education policies and effects on student performance. *Journal of Policy Analysis and Management*, 13(3), 477-491.
- Betts, J.R., Rueben, K.S., & Danenberg, A. (2000). *Equal resources, equal outcomes? The distribution of school resources and student achievement in California*. San Francisco, CA: Public Policy Institute of California.
- Boyd, W.L., Plank, D.N., & Sykes, G. (2000). Teachers unions in hard times. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp 174-210). Washington D.C.: Brookings Institution Press.
- Casey, L. (2006). The educational value of democratic voice. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 181-202). Cambridge, MA: Harvard Education Press.
- Cibulka, J.G. (2000). The NEA and school choice. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp. 150-173). Washington D.C.: Brookings Institution Press.
- Clotfelter, C.T., Ladd, H.F., & Vigdor, J.L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review*, 26, 673-682.
- Cohen-Vogel, L., & Osborne-Lampkin, L. (2007). Allocating quality: Collective bargaining agreements and administrative discretion over teacher assignment. *Education Administration Quarterly*, 43, 433-461.
- Cooper, B.S. (1982). *Collective bargaining, strikes, and financial costs in public education*. Washington, D.C.: National Institute of Education.
- Cooper, B.S. (2000). An international perspective on teachers unions. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp. 240-280). Washington D.C.: Brookings Institution Press.
- Corcoran, S.P., Evans, W.N., & Schwab, R.M. (2004). Changing labor market opportunities for women and the quality of teachers, 1957-2000. *The American Economic Review*, 94(2), 230-235.
- Duffett, A., Farkas, S., Rotherham A.J., & Silva, E. (2008). *Waiting to be won over*. Washington, D.C.: Education Sector.
- Duplantis, M.M., Chandler, T.D., & Geske, T.G. (1995). The growth and impact of teachers' unions in states without collective bargaining legislation. *Economics of Education Review*, 14(2), 167-178.
- Eberts, R.W., & Stone, J.A. (1984). *Unions and public schools*. Lexington, MA: Lexington Books.
- Eberts, R.W., & Stone, J.A. (1986). Teacher unions and the cost of public education. *Economic Inquiry*, 24(4), 631-643.
- Eberts, R.W., & Stone, J.A. (1987). Teacher unions and the productivity of public schools. *Industrial and Labor Relations*, 40(3), 354-363.
- Freeman, R.B., & Medoff, J.L. (1984). *What do unions do?* New York: Basic Books, Inc.
- Fuller, H.L., Mitchell, G.A., & Hartmann, M.E. (2000). Collective bargaining in Milwaukee Public Schools. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp. 110-149). Washington D.C.: Brookings Institution Press.
- Gallagher, D.G. (1978). Teacher bargaining and school district expenditures. *Industrial Relations*, 17(2), 231-237.
- Goldhaber, Dan (2006). Are teachers unions good for students? In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 141-158). Cambridge, MA: Harvard Education Press.
- Greene, J.P., & Winters, M. (2005). *Public high school graduation and college-readiness rates: 1991-2002*. New York: Center for Civic Innovation at the Manhattan Institute.
- Greenwald, R., Hedges, L.V., & Laine, R.D. (1996). The effect of school resources on student achievement. *Review of Educational Research*, 66(3), 361-396.
- Grimes, P.W., & Register, C.A. (1990). Teachers' unions and student achievement in high school economics. *Journal of Economic Education*, 21(3), 297-305.
- Grimes, P.W., & Register, C.A. (1991). Teacher unions and black students' scores on college entrance exams. *Industrial Relations*, 30(3), 492-500.
- Hanushek, E. A. (1981). Throwing money at schools. *Journal of Policy Analysis and Management*, 1, 19-41.
- Hanushek, E.A. (2002). Evidence, politics, and the class size debate. In L. Mishel & R. Rothstein (Eds.), *The class size debate* (pp. 37-66). Washington, D.C.: The Economic Policy Institute.
- Hanushek, E.A. (2003) The failure of input-based schooling policies. *The Economic Journal*, 113, 64-98.
- Hanushek, E.A., Kain, J.A., & Rivkin, S.G. (1998) Teachers, schools, and academic achievement. Working Paper 6691. Cambridge, MA: National Bureau of Economic Research.
- Hanushek, E.A., Kain, J.F., & Rivkin, S.G. (2004). Why public schools lose teachers. *The Journal of Human Resources*, 39(s), 326-354.
- Hanushek, E.A., Rivkin, S., & Taylor, L.L. (1996). Aggregation and the estimated effects of school resources. Working Paper 5548. Cambridge, MA: National Bureau of Economic Research.
- Hess, F.M., & Kelly, A.P. (2006). Scapegoat, albatross, or what? In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 53-88). Cambridge, MA: Harvard Education Press.
- Hess, F.M., & Loup, C. (2008). *The leadership limbo*. Washington, D.C.: Thomas B. Fordham Institute.
- Hess, F.M., & West, M.R. (2006a). *A better bargain: Overhauling teacher collective bargaining for the 21st century*. Cambridge, MA: Program on Education Policy and Governance.
- Hess, F.M., & West, M.R. (2006b). Strike phobia. *Education Next*, 6(3), 38-48.
- Hill, P.T. (2006). The costs of collective bargaining agreements and related district policies. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 89-110). Cambridge MA: Harvard Education Press.
- Holmes, A.B. (1979). Union activity and teacher salary structure. *Industrial Relations*, 18(1), 79-85.
- Hoxby, C.M. (1996). How teachers unions affect education production. *The Quarterly Journal of Economics*, 111(3), 671-718.
- Hoxby, C., & Leigh, A. (2004). Pulled away or pushed out? Explaining the decline of teacher aptitude in the United States. *The American Economic Review*, 94(2), 236-240.
- Imazeki, J. (2005). Teacher salaries and teacher attrition. *Economics of Education Review*, 24(4), 431-449.
- Indiana State Teacher' Association. (2004). *Advancing the cause of education: A history of the Indiana State Teacher's Association, 1854-2004*. West Lafayette, IN: Purdue University Press.
- Johnson, S.M., & Donaldson, M.L. (2006). The effects of collective bargaining on teacher quality. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 111-140). Cambridge MA: Harvard Education Press.
- Johnson, S.M., Donaldson, M.L., Munger, M.S., Papay, J.P., & Qazilbash, E.K. (2007). *Leading the local: Teachers union presidents speak on change, challenges*. Washington, D.C.: Education Sector.
- Johnson, S.M., & Kardos, S. (2000). Reform bargaining and its promise for school improvement. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp 7-46). Washington D.C.: Brookings Institution Press.
- Kaboolian, L. (2006). *The case for collaboration*. *Education Next*, 6, 14-17.
- Kahlenberg, R.D. (2006). The history of collective bargaining among teachers. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 7-26). Cambridge MA: Harvard Education Press.

- Keller, B. (2006). Report: NCLB law hasn't super-seeded contracts. *Education Week*, 25(30), 8-9.
- Kerchner, C.T., & Koppich, J.E. (2000). Organizing around quality: The frontiers of teacher unionism. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp. 281-316). Washington D.C.: Brookings Institution Press.
- Kerchner, C.T., Koppich, J.E., & Weeres, J.G. (1997). *United mind workers*. San Francisco, CA: Jossey-Bass Publishers.
- Kerchner, C.T., & Koppich, J. (2007). Negotiating what matters most: Collective bargaining and student achievement. *American Journal of Education*, 113, 349-365.
- Kleiner, M.M., & Petree, D.L. (1988). Unionism and licensing of public school teachers: Impact on wages and educational output. In R.B. Freeman & C. Ichniowski (Eds.), *When public sector workers unionize* (pp. 305-319). Chicago: University of Chicago Press.
- Koppich, J.E. (2006). The as-yet-unfulfilled promise of reform bargaining. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 203-229). Cambridge, MA: Harvard Education Press.
- Koski, W., & Hornig, E. (2006). *Curbing or facilitating inequality? Law, collective bargaining, and teacher assignment among schools in California*. Stanford, CA: Institute for Research on Education and Policy Practice.
- Krieg, J.M. (2006). Teacher quality and attrition. *Economics of Education Review*, 25(1), 13-27.
- Krueger, A.B. (2002a). A response to Eric Hanushek's 'Evidence, politics, and the class size debate'. In L. Mishel & R. Rothstein (Eds.), *The class size debate* (pp. 67-88). Washington, D.C.: The Economic Policy Institute.
- Krueger, A.B. (2002b). Understanding the magnitude and effect of class size on student achievement. In L. Mishel & R. Rothstein (Eds.), *The class size debate* (pp. 7-36). Washington, D.C.: The Economic Policy Institute.
- Kurth, M.M. (1987). Teachers' unions and excellence in education: An analysis of the decline in SAT scores. *Journal of Labor Research*, 8, 351-367.
- Levin, J., & Quinn, M. (2003). *Missed opportunities: How we keep high-quality teachers out of urban classrooms*. New York: The New Teacher Project.
- Levin, J., Mulhern, J., & Schunck, J. (2005). *Unintended consequences: The case for reforming the staffing rules in urban teachers union contracts*. New York: The New Teacher Project.
- Loeb, S., & Page, M.E. (2000). Examining the link between teacher wages and student outcomes: The importance of alternative labor market opportunities and non-pecuniary variation. *The Review of Economics and Statistics*, 82(3), 393-408.
- Manna, P. (2006). Teachers unions and No Child Left Behind. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 159-180). Cambridge, MA: Harvard Education Press.
- McDonnell, L.M., & Pascal, A. (1979). *Organized teachers in American schools*. Santa Monica, CA: RAND Corporation.
- McDonnell, L.M., & Pascal, A. (1988). *Teacher unions and educational reform*. Santa Monica, CA: RAND Corporation.
- Mead, S. (2006). *Teachers unions as agents of reform*. Washington, D.C.: Education Sector. Retrieved August 23, 2007, from http://www.educationsector.org/analysis/analysis_show.htm?doc_id=367110
- Milkman, M. (1997). Teachers' unions, productivity, and minority student achievement. *Journal of Labor Research*, 18, 137-150.
- Moe, T.M. (2006). Union power and the education of children. In J. Hannaway & A.J. Rotherham (Eds.), *Collective bargaining in education* (pp. 229-256). Cambridge, MA: Harvard Education Press.
- Moe, T.M. (2007). Collective bargaining and the performance of schools. Retrieved March 10, 2008, from http://politicalscience.stanford.edu/downloads/moeb%20and%20govt%20performance_99single.doc
- Mont, D., & Rees, D.I. (1996). The influence of classroom characteristics on high school teacher turnover. *Economic Inquiry*, 34(1), 152-167
- Murnane, R.J., & Olsen, R.J. (1989). The effects of salaries and opportunity costs on duration in teaching: Evidence from Michigan. *The Review of Economics and Statistics*, 11, 347-352.
- National Commission on Excellence in Education (NCES). (1983). *A nation at risk: The imperative for educational reform*. Washington, D.C.: Author.
- National Center for Education Statistics (NCES). (2008). Common Core of Data. Retrieved July 23, 2008, from <http://nces.ed.gov/ccd/>
- National Council on Teacher Quality. (2008). Retrieved July 21, 2008, from <http://www.nctq.org/p/>
- Nelson, F.H. (2006). *The impact of collective bargaining on teacher transfer rates in urban high-poverty schools*. Washington, D.C.: American Federation of Teachers. Retrieved March 20, 2008, from http://www.aft.org/topics/teacher-quality/downloads/Teacher_Transfer_Rates.pdf
- Nelson, H.F., & Rosen, M. (1996). *Are teachers' unions hurting American education? A state-by-state analysis of the impact of collective bargaining among teachers on student performance*. Milwaukee: Institute for Wisconsin's Future.
- Organization for Economic Cooperation and Development (OECD). (2007). *PISA 2006: Science competencies for tomorrow's world*. Paris: Author.
- Organization for Economic Cooperation and Development (OECD). (2007). *PISA 2006: Science competencies for tomorrow's world. OECD briefing note for the United States*. Paris: Author.
- Peltzman, S. (1993). The political economy of the decline of American public education. *Journal of Law and Economics*, 36(1), 331-370.
- Powell, B., & Steelman, L.C. (1996). Bewitched, bothered, and bewildering: The use and misuse of state SAT and ACT scores. *Harvard Educational Review*, 66(1), 27-59.
- Research and Policy Committee (2004). *Investing in learning: School funding policies to foster high performance*. Washington, D.C.: Committee for Economic Development.
- Rotherham, A.J. (2006). Collective bargaining in education: A new dialogue. Presented to the National Governor's Association, Rhode Island. Education Sector. Retrieved June 6, 2008, from http://www.educationsector.org/analysis/analysis_show.htm?doc_id=525041
- Roza, M. (2007). *Frozen assets: Rethinking teacher contracts could free billions for school reform*. Washington, D.C.: Education Sector.
- Roza, M., & Hill, P.T. (2004). *How within-district spending inequities help some schools fail. Brookings Papers on Education Policy: 2004*. Washington, D.C.: Brookings Institute.
- Sawchuck, S. (2008). Report: Labor contracts restrictive in poorer districts. *Education Daily*, 41(31), 1, 4.
- "Spellings blasts unions, calls for reform." (2008). *Education Daily*, 41(161), 1, 6.
- Spradlin, T.E., Plucker, J.A., Pendergast, K.A., & Bell, B.L. (2006). *Are Indiana's public schools in need of education deregulation?* Bloomington, IN: Center for Evaluation & Education Policy.
- Stanley, K.R., Spradlin, T.E., & Plucker, J.A. (2008) *Calculating high school graduation rates*. Bloomington, IN: Center for Evaluation and Education Policy.
- Stelman, L.C., Powell, B., & Carini, R.M. (2000). Do teacher unions hinder educational performance? Lessons learned from state SAT and ACT scores. *Harvard Educational Review*, 70(4), 437-466.
- Stoddard, C. (2005). Adjusting teacher salaries for the cost of living: The effect of salary comparisons and policy conclusion. *Economics of Education Review*, 24(3), 323-339.
- Stone, J.A. (2000). Collective bargaining and public schools. In T. Loveless (Ed.), *Conflicting missions? Teachers unions and educational reform* (pp. 47-68). Washington D.C.: Brookings Institution Press.
- Tabb, E.D. (2004). *Teacher attrition and mobility: Results of the Teacher Follow-Up Survey, 2000-2001*. Washington, D.C.: National Center for Education Statistics.
- Wayne, A.J., & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational Research*, 73(1), 89-122.
- Winans, D. (2006). *Pay progress in Wyoming: What's behind the story*. Retrieved on August 24, 2007, from <http://www.nea.org/pay/wyoming.html>
- Zwerling, H.L., & Thomason, T. (1995). Collective bargaining and the determinants of teachers' salaries. *Journal of Labor Research*, 16, 468-484.

WEB RESOURCES

National Council on Teacher Quality

<http://www.nctq.org/p/>

National Center for Education Statistics

<http://nces.ed.gov/Programs/digest/>

<http://nces.ed.gov/ccd/>

Fordham Foundation

<http://www.edexcellence.net/issues/index.cfm?topic=2>

NEA Research

<http://www.nea.org/research/index.html>

Education Sector

http://www.educationsector.org/research/research_list.htm?attrib_id=12451

Economic Policy Institute (Education)

<http://www.epi.org/subjectpages/edu.cfm?CFID=3678590&CFTOKEN=70096685>

Education Policy Briefs are executive edited by Jonathan A. Plucker, Ph.D. and published by the

Center for Evaluation & Education Policy

Indiana University
1900 East Tenth Street
Bloomington, IN 47406-7512
812-855-4438

More about the Center for Evaluation & Education Policy
and our publications can be found at our Web site:
<http://ceep.indiana.edu>