Education administrators and managers cannot improve student achievement just with talented people, high expectations, and random acts of good practice.

Even the most talented individuals must be professionally managed within a well-designed educational improvement strategy—a strategy that enables them to turn their aspirations and talents into instructional practices shown to boost student learning to high levels.

UW-Madison education professor Allan Odden and colleague James Kelly have begun a new project to help education leaders strategically improve the way human capital is managed. They refer to it as Strategic Management of Human Capital, or SMHC. Odden says that the strategic management of human capital deserves to be a high-priority reform movement in U.S. education. Only when that goal is addressed can classroom instruction be improved, and student achievement increase.

Odden and Kelly are working in concert with a 31-member national task force, chaired by Minnesota Governor Tim Pawlenty and focusing initially on the nation’s 100 largest public school districts. Kelly is founding president and CEO of the National Board for Professional Teaching Standards (NBPTS). He also serves on the boards of many educational, philanthropic, and civic organizations.

The improvement of student achievement presents the greatest challenge in the country’s largest 100 districts, Odden says, particularly in urban districts with significant concentrations of students from low-income and minority backgrounds. Odden says this challenge deserves the finest talent and management that can be found.

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When it comes to improving education, people are the bottom line: How they are prepared, developed, managed, and relate to one another can make all the difference for schooling outcomes. This issue of Research Highlights features research on the preparation and relationships of both learners and teachers.

Jeffrey Lewis has found that African American children in low-income urban settings respond to classroom characteristics and teaching practices that promote what he calls “solidarity in community.” He describes successful classrooms he has studied.

Tony Milanowski recently mined several occupational databases to identify the occupations that most closely resemble the teaching profession, and how their salaries compare. He found that teacher occupations are rated higher than average on skills including operations analysis, monitoring, and learning strategies.

Mitchell Nathan and Allen Phelps have analyzed curricula intended to prepare students for studies and careers in engineering and other technical fields. They found room for improvement in engineering preparation and education, including potential points of synergy between the curriculum materials used in pre-engineering courses and the content covered in students’ academic courses.

In the area of improving classroom instruction and increasing student achievement, Allan Odden and colleague James Kelly are leading a 31-member national Task Force to help the nation’s 100 largest public school districts improve the strategic management of human capital. Also in this issue you’ll read find an update on WCER’s Value Added Research Center. Researcher Chris Thorn gives us an update on the project’s activity in Milwaukee and elsewhere.

**Getting to the root**

Funded with more than $4 million from the Carnegie Corporation of New York, the Bill and Melinda Gates Foundation, the Ford Foundation, and the Joyce Foundation, the SMHC project aims to improve K–12 instruction and student outcomes by **radically** improving the strategic management of teaching and instructional leadership talent. The word **radically** is important: it descends from the Latin term *radix*, or root. This project aims to identify and nourish the roots of improved student achievement.

In terms of strategically managing human resources, the private sector has long been ahead of the curve, and a USC expert in this area, Professor Edward Lawler, is a member of the SMHC Task Force. Many K–12 education systems continue to employ decades-old methods for hiring teachers, principals, and other leaders. Odden says this first-ever comprehensive campaign can significantly revamp the school staffing system as we know it.

Putting SMHC concepts into practice will require significant change in large districts’ organizational systems, as well as courageous education leadership and plenty of outside political support. Two aspects of SMHC are critical.

The first is **talent**. An initial task is to identify how to recruit and retain the best talent as teachers, principals, and leaders. Large urban school districts need, and deserve, top talent at all levels, from teachers to top district leadership.

The second aspect of SMHC is **strategic management**. The private sector knows that the highest performing organizations not only recruit and retain top talent, but also manage it in ways that support their strategic directions.

Improving talent management in public education will require aligning all aspects of the human resource management system, Odden says. That includes recruitment, screening, selection, placement, induction, evaluation, compensation, promotion into instructional leadership, and ongoing professional development focused on curriculum and classroom practice.
The SMHC project aims to identify strategies, policies, and practices that large urban school districts can use to attract, develop, and retain sufficient top talent in teaching, leadership, and management.

But Odden says we’re only in the beginning stages of measuring teachers’ instructional practice and using the measures as a management tool. Because a key desired outcome of SMHC is to produce better classroom instruction, an important SMHC objective is to advance valid ways of measuring teachers’ classroom instructional practice and designing human capital management systems to ensure that the highest quality instruction is provided in all classrooms.

SMHC researchers are conducting case studies to document the impact of reforms in New York City; Chicago; Boston; Long Beach, California; Fairfax County, Virginia; Minneapolis; and the state of Minnesota. Additional case studies are being conducted of Teach for America, The New Teacher Project, and New Leaders for New Schools.

Key practices and initiatives being examined in these case studies include:

- Instructional improvement strategies
- Uses of student data to help improve classroom instruction
- Recruitment strategies
- Selection processes
- Placement strategies
- Induction and mentoring programs
- Performance evaluation of teachers and principals
- Professional development practices
- Strategic use of compensation for teachers and principals

Odden says one challenge is to use the data from the measurement of student and teacher performance to guide management decisions (including talent recruitment, selection, and placement). Another challenge is to support and reward those who acquire and practice the kinds of instructional practices in classrooms that actually boost student learning.

These actions will require deep-seated changes in the ways most district operate, Odden says. Based on past experience, he thinks the changes are likely to generate controversy. Success will require strong education leadership, aggressive performance management, and broader political support.

The project has developed a Web 2.0 site—www.smhc-cpre.org/—that they hope becomes a digital meeting place for the community of individuals interested in changing strategic talent management in public education.

Odden says one way to understand SMHC reform is to think of five elements as the “river that runs through it.” They are: talent, management, instruction, achievement, and data. These five elements are constants that require relentless focus and transparent procedures and metrics. SMHC reforms must be aligned with and coordinated across these elements.
Students Respond to Solidarity in Community

Recent efforts to close the gap in achievement between African American and White students have produced disappointing results.

But some classrooms are quite successful in helping young students succeed. How do they do it? That question has driven WCER researcher Jeffrey Lewis and colleagues to pinpoint the characteristics of interactions in these classrooms. Working with Eunhee Kim, Angel Gullón-Rivera, and Lauren Woods, Lewis analyzed two urban classrooms where teachers seemed particularly successful in working with African American children from low-income families.

“Solidarity in community” seems to be the key.

Jeffrey Lewis is a professor in the UW-Madison School of Human Ecology. He uses the phrase solidarity in community to refer to the collective classroom characteristics, teaching practices, and disciplinary practices that promote positive school outcomes for African American children in low-income urban settings. The concept combines insights from studies of social cohesion, belonging, teacher-learner relationships, and culturally relevant teaching.

“Children in a classroom form a unique community,” Lewis says. “Research has found a two-way relationship between community members’ sense of belonging and their morale.” Lewis says a sense of belonging is an important feature of productive classrooms, and especially for African American children.

When teachers offer nurturing care to early-grades students, they help to integrate students’ social, emotional, and intellectual development into their general school experiences. Lewis says five teacher practices appear to support positive development in children’s behavior:

- cultivating a sense of “we-ness” and shared interests;
- creating opportunities for all children to participate and develop skills;
- nurturing positive classroom identities through teacher-student interactions;
- integrating children’s ideas, interests, and experiences into the curriculum; and
- helping children to maintain their integrity and feel comfortable in the classroom.

Solidarity in community develops as teachers encourage children to identify with and support one another in the classroom. In the successful classrooms Lewis and colleagues observed, teachers rarely isolated children or allowed children to isolate one another, either for praise or
Successful teachers cultivate a sense of connection through a shared positive identity, despite differences in students’ academic abilities. They do not allow children to create social and academic hierarchies. Education is both science and art, Lewis says, and it’s misguided to reduce education to the “science of education.” Successful teachers attend to children as whole people, as members of complex social systems. They address children’s need for connection to each other, their families, and the places where they live.


The research reported in this paper was supported by a subcontract from the Claremont Graduate School on a Field Initiated Studies grant from the U.S. Department of Education Office of Educational Research and Improvement; and by a Vilas Life Cycle Professorship from the Women in Science and Engineering Leadership Institute at the University of Wisconsin.

Learning Through Teaching

Lewis’s study was part of a larger project titled “Learning Through Teaching in an After-School Pedagogical Laboratory” (L-TAPL). His colleague Michele Foster developed L-TAPL as a teaching laboratory to link community-nominated master teachers in urban elementary schools with teachers who wanted to improve their effectiveness with urban children from low-income families.

L-TAPL documented and analyzed the processes by which children learned and by which inexperienced teachers learned to teach. The program met 3 days a week for 2 hours after school. The curriculum included language arts, math, and science. The teachers were permitted to develop their own curricula, with the condition that they include those basic skills. The program lasted 16–20 weeks.
Teacher salaries have historically been modest. In other words, nobody goes into teaching to get rich. But exactly how do K–12 teacher salaries compare with those of similar occupations? The trick lies in defining similar. Does one compare level of formal education? Level of literacy? Job content?

WCER researcher Tony Milanowski has been studying teacher compensation and has published widely on the subject. He recently mined several occupational databases to explore how information about work activities and skill requirements might be used to identify the occupations that most closely resemble the teaching profession and to determine how salaries for those occupations compare to teacher salaries.

The study used data from O*NET, the U.S. Department of Labor’s database of information on the characteristics of more than 1,100 occupations. O*NET includes 17 sets of descriptors covering worker characteristics, worker requirements, occupational requirements, and occupation-specific knowledge and skills. Each occupation in the database is rated on the level, importance, and/or frequency of the job content represented by each of more than 300 descriptors. Milanowski’s study concentrated on two sets of descriptors, basic and cross-functional skills and generalized work activities.

Among other things, Milanowski found that teacher occupations are rated higher than average on skills like learning strategies, monitoring, and operations analysis. They also rate higher on activities like thinking creatively, developing objectives and strategies, and judging qualities of things, services, and people.

Milanowski says this finding suggests that teachers use lots of analytical skills. This analytic dimension to the profession may often be overlooked, he says, within the education policy community and beyond.

Since there are many points of similarity across occupations, and no completely objective way of deciding where to set boundaries, it’s not really possible to produce definitive salary comparison groups, Milanowski acknowledges. But the results from his recent analysis do suggest some interesting implications for teacher pay comparisons.

For example:

- Elementary, middle, and high school teaching all appear to require about the same level of basic and cross-functional skills.
- Teaching requires many generalized work activities at about the same level of complexity as the average bachelor’s degree–requiring occupation. Milanowski says this supports the practice of comparing teaching to other occupations requiring at least a bachelor’s degree, and especially to the average for such occupations.

His study points to three occupational groups as good comparisons for K–12 teachers: (a) counselors, psychologists, and social workers; (b) postsecondary teachers; and (c) health care professionals.

Similarities with some other occupations were unexpected—for example, optometry, dentistry, and fire investigation. Those clustered near teaching because of the similar overall skill level as well as similarities in the specific skills required or activities performed. These results emphasize teaching’s multidimensional nature and demonstrate that teaching shares similarities with a number of jobs outside the “helping professions.”

Milanowski cautions that he has not identified “a canonical set of comparison occupations.” He does hope, however, that this study shows the feasibility of using job content as a basis for salary comparison. And he says that these results suggest that we can broaden our thinking about which occupations are comparable to K–12 teaching.

The research reported in this paper was supported by a grant from the Carnegie Corporation to the Consortium for Policy Research in Education (CPRE).

**Value-Added Research Center Works With TIF Grantees**

WCER’s Value-Added Research Center (VARC) develops, applies, and disseminates value-added and longitudinal research methods for evaluating the performance and effectiveness of teachers, schools, and educational programs and policies. Directed by Rob Meyer, the staff of scientists, researchers, and education professionals apply cross-disciplinary expertise to ground-breaking work on value-added systems and evaluation models. Researcher Chris Thorn gives us an update.

**Research Highlights:** VARC recently began providing technical assistance to recipients of Teacher Incentive Fund grants from the U.S. Department of Education.

Thorn: Right. There are 34 grantees across the U.S. They get a total of $95 million annually to support pay for performance systems. We’re collaborating with Vanderbilt University to provide technical assistance to the Department of Education and to individual grantees as they develop and deploy their programs. We’re also working with staff from the Consortium for Policy Research in Education (CPRE) to provide support for teacher and principal evaluation. That’s a major component of pay for performance systems.

**Research Highlights:** You’re continuing to develop and implement the value-added model.

Thorn: We now have three years of test data, and down to the classroom level. We’ve developed production value-added models for Madison Metropolitan School District, Milwaukee Public Schools, and Chicago Public Schools. We’re also doing a prototype model for Wisconsin’s Department of Public Instruction (DPI) to demonstrate the use of value-added at the state level. This work will compare the use of state data at different district sizes, using data from Milwaukee, Madison, and CESA 2 (a cooperative educational services agency).

There’s a strong research component to this work. We traditionally develop model options and complex diagnostics to best address the unique conditions the exist in different districts. Differences in the dates and frequency of testing, test design, and the psychometric properties of tests and test scales, can have a large impact on model design. This is particularly true for districts and states that assess students annually during the middle of the school year, rather than at the beginning or end. In the case of mid-year testing, value-added models must address the fact that achievement growth cuts across two school years and typically two different sets of teachers. We invite district staff and other stakeholders to participate in the design of the value-added model so that it best meets their needs.

**Research Highlights:** What is the project doing with data structures, data systems, and data quality?

Thorn: Many districts and states find that their data systems might be adequate for annual compliance reporting, but they’re not up to the task of real longitudinal assessment for students and adults. We work with staff and vendors at State Education Agencies and Local Educational Agencies to examine the technical tools and human process used to collect, manage, analyze, and report out information. Often, the primary task is making clear how the requirements of longitudinal analysis test assumptions of data quality across all information systems. We share solutions deployed in other settings and work with local teams do develop fixes for unique contexts.

**Research Highlights:** What’s going on in Milwaukee?

Thorn: We’ve been working in Milwaukee on a variety of evaluation projects to determine the effectiveness of several programs. We’re about to launch a new project that would require senior leadership to develop an "evaluation impact statement" for every major initiative. All interventions would be evaluated for effectiveness. They would also be deployed in ways that maximize the district’s ability to judge effectiveness, including random assignment studies.

**Research Highlights:** Professional development is also an important part of what you do.

Thorn: Yes. We’re helping Milwaukee build a professional development (PD) cadre. We’ve developed a core PD curriculum for a train-the-trainer model. This curriculum includes training about the uses of assessment data and it compares and contrasts the different uses for attainment and value-added outcome measures. We’re likely to begin similar work in Chicago.

WCER’s Value-Added Research Center receives funding from several sources including the U.S. Department of Education’s Institute of Education Science, National Center for Education Statistics, Joyce Foundation, Spencer Foundation, and the Chicago Community Trust. Research partners include the Milwaukee Public School System, the Wisconsin Department of Public Instruction, Chicago Public Schools, Dallas Independent School District, Madison Metropolitan School District, Minneapolis Public Schools, and Teacher Incentive Fund grant recipients.