WINTER 2005-06
Vol. 17, No. 3

WCER RESEARCH highlights

WISCONSIN CENTER FOR EDUCATION RESEARCH • SCHOOL OF EDUCATION • UNIVERSITY OF WISCONSIN–MADISON • WWW.WCER.WISC.EDU

Home-School Relations Are Crucibles of Culture

Teachers-to-be enter their professional programs with strongly held ideas about home-school relations. Their early family experiences shape their notions of good parenting, roles and responsibilities, and their future involvement with families once they enter the teaching profession. Despite the importance and complexity of home-school relations, however, teacher preparation rarely addresses this subject. The gap is puzzling, says UW–Madison education professor Beth Graue.

Graue interviewed students preparing for careers as elementary school educators to find out how their personal biographies of home-school relations shaped their orientations toward working with families. She drew from cognitive, cultural, and narrative approaches to teacher development to understand the power of teacher beliefs in teacher education.

Students said they valued teacher knowledge over parental knowledge. In their view, parents' knowledge lacked professional status. They saw it as having a limited foundation and as being inherently biased in favor of individuals. In contrast, students viewed teacher knowledge as built on all the tools they hoped to gain through education and experience. Through their work with large numbers of children, early career teachers expected that they would become objective; through their professional training, they would develop the clinical tools of teaching; through experience, they would develop a teaching self that made them professional.

These prospective teachers recognized the value of listening to parents' views, yet they considered their own professional opinions inherently more objective, valid, and equitable than those of parents. They saw their status as professionals as the key to their authority, distancing them from parent-partners through everything their teacher education promised—knowledge and experience.

Graue says prospective teachers must cross traditional cultural boundaries of race, class, and gender. They also must move from being a child in a family and a student in school to being a professional teacher in the classroom. The role of teacher education, Graue says, is to manage the "identity work" necessary to integrate the tools of biography and the process of learning to relate to others in a new role.

(continued on next page...)

CONTENTS

WCER
WISCONSIN CENTER FOR EDUCATION RESEARCH

Adam Gamoran

Context of Interaction

Barbara Foorman, Director of the Center for Academic and Reading Skills at the University of Texas Houston Health Science Center and, for 2005, National Commissioner of Education Research in the Institute of Education Sciences, will speak at a public forum during a February 23 conference cosponsored by WCER, UW–Madison's Institute for Research on Poverty, and the School of Education. We're looking forward to hearing and reacting to her talk, "Standards-Based Educational Reform is One Important Step Toward Reducing the Poverty Gap."

In this issue of Research Highlights, you'll read about a sixth-grade math teacher who examined, then changed, her classroom practices in light of her beliefs about the value of classroom discussion and interaction.

You'll read about how paraprofessionals received training to facilitate more interactions between students with behavioral disorders and other students in the classroom.

Beth Graue discusses preservice teachers' personal experiences of home and school interactions, and how those early experiences shape their orientations as teachers in training who contemplate their careers.

Geoffrey Borman discusses academic resilience and school-based initiatives that shield disadvantaged children from the risks and adversities within their homes, schools, and communities.

Adam Gamoran
WCER Director
Professor of Sociology and
Educational Policy Studies

New tools for knowing families

Students must learn to analyze critically their own experiences as students within families in home-school relationships, with attention to the relational identities that provided access to some resources and outcomes and not others.

Home-school relations can be addressed in multiple parts of a teacher education program. One approach—using the theater as a model—would be to have prospective teachers create the "backstory" for their conception of home-school relations. Backstories provide the history behind a story, the past events that set the stage for today's "script." Creating, sharing, and critiquing backstories across the professional development program could heighten attention to the ways the past shapes practice.

Prospective teachers also would benefit from experiences in understanding other identities. Key to this process is understanding how roles are located in social, cultural, and historical frameworks. Even an act as simple as thinking as a parent rather than as a teacher can offer a new perspective on the imagined world of schooling. This was traceable in the views of prospective teachers who participated in Graue's study and were parents themselves.

Making attention to home-school relations part of field placements would be another way of addressing the gap in teacher preparation identified by Graue. Field curricula might be situated in nontraditional locations frequented by parents (e.g., after-school programs). Assignments could focus attention on teacher practices that link home and school.

Without more explicit attention to building relationships with families, teachers have little to draw on besides their own experiences. Graue encourages teacher educators to develop educational components to their programs that provide broader awareness of the issues families face in schooling, theoretical perspectives for understanding interaction between home and school, and focused attention to developing strategies for improved home-school relations.

Graue hopes that the insights provided by her study might help generate greater understanding—even beyond the teacher education community—of the fragility of home-school relations and the need for a more permeable boundary between home and school.

Material in this article appeared in different form in the paper, "Theorizing and Describing Preservice Teachers' Images of Families and Schooling," in *Teachers College Record*, vol. 17, No. 1, January 2005, pp. 157-185.

Beth Graue

Increasing Peer Interactions for Students with Behavioral Disorders

Almost half of all school-age children receiving special education services are served in general education settings for most of the school day. But students with emotional behavioral disabilities (EBD) have difficulty with interpersonal relationships and social adjustment. That makes the movement toward inclusive settings more difficult.

The emotional and behavioral qualities associated with this disability demand that educators attend to the social and emotional needs of this population to increase their chances of success in all settings.

Students with EBD are often included in general education classrooms with one-on-one support from a paraprofessional. But the presence of a paraprofessional can present both a physical and a symbolic barrier that interferes with students' peer relationships. As more paraprofessional are hired to support students with disabilities in classrooms, it's important to provide them with training and tools to successfully support students with EBD in inclusive settings.

UW–Madison education professor Kimber Malmgren evaluated a training program designed to increase the number of facilitative behaviors displayed by paraprofessionals assigned to provide one-on-one assistance to individual students with EBD. Facilitative behaviors are intended to encourage students to interact with others in the classroom.

Malmgren's research questions were: Does participation in a one-on-one training for paraprofessionals result in an increased rate of facilitative behaviors displayed by those paraprofessionals? And, does this training increase rates of peer interaction for the students whom those paraprofessionals support?

This study involved three student-paraprofessional pairs in two elementary schools in a mid-sized, Midwestern school district. They were in a kindergarten classroom, a grade 3 classroom, and a grade 5 classroom.

The intervention consisted of a 3-hour, individual paraprofessional training conducted by Malmgren's colleague Julie N. Causton-Theoharis. It consisted of four activities aimed at enhancing perspective, establishing the importance of interaction, and increasing the paraprofessionals' knowledge of strategies for facilitating peer interaction in the classroom.

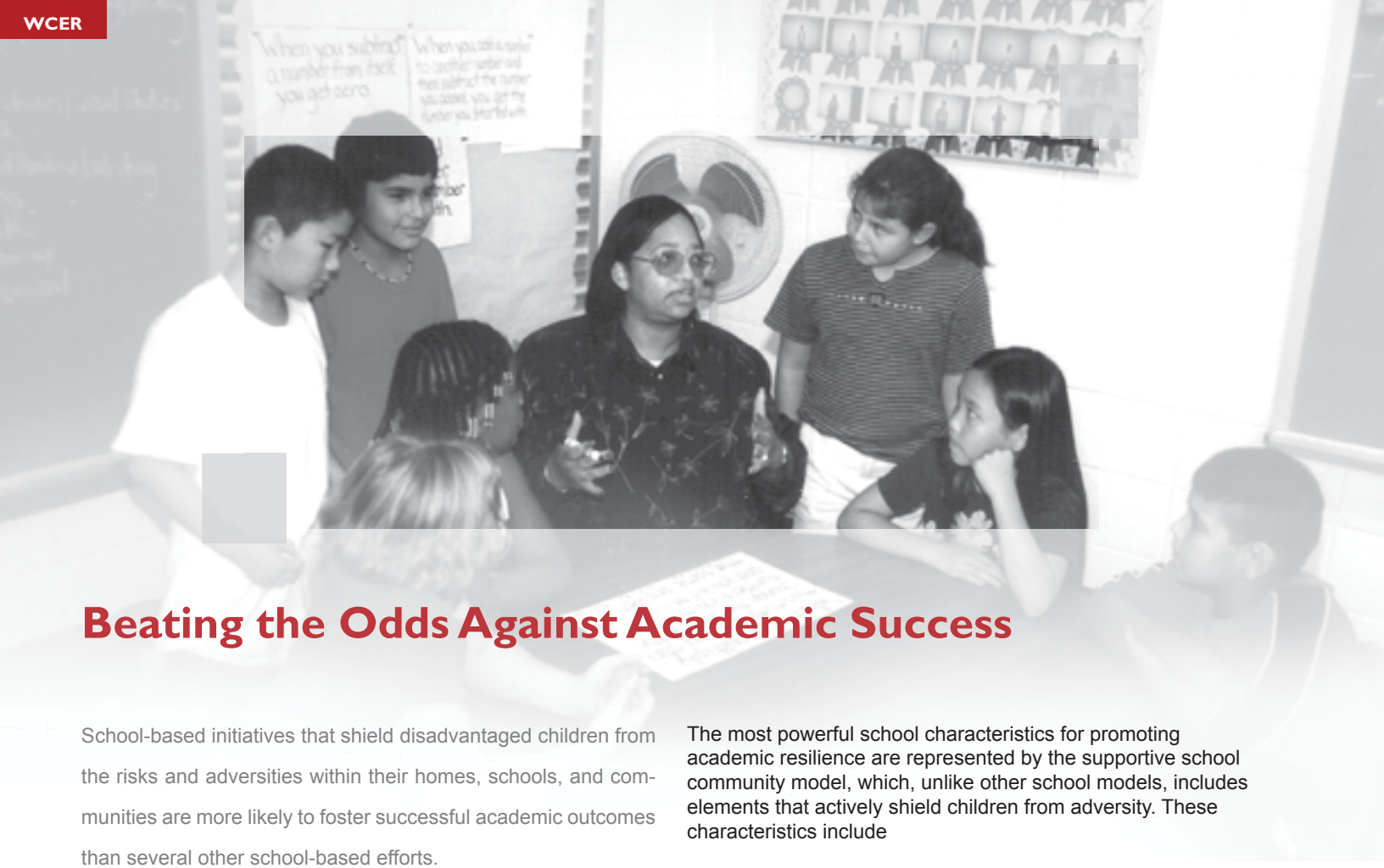
The trainer prompted the paraprofessional to describe strategies or situations that would fall into four broad categories of facilitative behavior:

1. teaching or modeling interaction skills,
2. highlighting similarities between students or strengths of the target students,
3. interpreting peer behaviors for the target student or a peer, and
4. locating students to work in close physical proximity to one another.

Other strategies discussed included "fading" assistance over time, and reducing paraprofessional proximity to the target student. They could be used in combination with strategies from any of the above four categories.

After the intervention, rates of facilitative behavior increased markedly for one paraprofessional, but only slightly for the other two. Overall, 55% of the facilitative behaviors observed were considered successful, resulting in an interaction for the target student. Rates of peer interaction were recorded as the number

(continued on page 5)



Beating the Odds Against Academic Success

School-based initiatives that shield disadvantaged children from the risks and adversities within their homes, schools, and communities are more likely to foster successful academic outcomes than several other school-based efforts.

This finding results from a recent study of academic resilience among students from families of low socioeconomic status (SES) conducted by UW–Madison education professor Geoffrey Borman and colleague Laura Overman at Johns Hopkins University. They also found that there may be as much to learn by studying the characteristics of "effective students" as by studying the features of "effective schools."

In a longitudinal study, Borman tracked the mathematics progress of children from low-SES families from third through sixth grade. The study looked at these risk factors and resilience-promoting features of schools: (a) peer group composition; (b) school resources; (c) effective schools; and (d) supportive schools.

The study contrasted academic outcomes for three groups—African American, Hispanic, and White students—and found that, regardless of race, students from low-income families who achieve resilient mathematics outcomes have

- greater engagement in academic activities,
- an internal locus of control,
- a more positive outlook toward school, and
- more positive self-esteem.

Resilience is a developmental process occurring over time. Resilient students grow into good psychosocial and behavioral adaptation despite developmental risk, acute stressors, or chronic adversities.

The most powerful school characteristics for promoting academic resilience are represented by the supportive school community model, which, unlike other school models, includes elements that actively shield children from adversity. These characteristics include

- caring and supportive teachers,
- a safe and orderly school environment,
- positive expectations for all children,
- opportunities for students to become meaningfully and productively involved and engaged in the school, and
- efforts to improve partnerships between the home and school.

The potential risks associated with attending schools with high concentrations of underachieving, economically disadvantaged, minority students were found to have little bearing on students' resilience. This finding was mainly consistent across racial and ethnic groups. Additionally, conventional indicators of school resources—such as class size, teacher experience, and the availability of basic instructional supplies—were not important distinguishing features of the schools attended by academically resilient students.

The study found that low-SES African American students were less likely than their White counterparts to attend schools with the characteristics associated with the effective schools model. This inequity may be of special importance because of evidence that the resilience of low-SES minority students depends more on attending an effective school than that of low-SES White students.

With respect to overcoming achievement gaps, the study found some evidence indicating that effective schools characteristics may be more important for African American students' aca-

(continued on next page...)

demic resilience than for White and Latino students' resilience. This finding is consistent with earlier research on effective schools. The effective schools research tradition was built on a model of "what works" for disadvantaged African American students. Thus, it seems appropriate, Borman says, that the effective schools model had somewhat greater predictive strength for the low-SES African American subsample than for the other subsamples.

In general, though, the results from the study support the applicability of uniform individual- and school-level models of academic resilience to all low-SES students, regardless of their race or ethnicity.

Borman's findings provide a clear profile of the individual characteristics of elementary students who achieve resilient mathematics outcomes. They have greater engagement in academic activities, an internal locus of control, a more positive outlook toward school, and more positive self-esteem. The profile appears to apply to children placed at risk from all racial backgrounds. The relative strength of student engagement in differentiating between resilient and nonresilient students also provides evidence consistent with that presented by others, suggesting that students' active participation and interest in the classroom and school are important factors for counteracting academic risk.

Borman's analysis lends support to the communitarian model of school organization.

In contrast to the emphasis that the academic press model places on individualism and instrumental motivation, the more recent communitarian model of school organization cites community, democracy, and an ethic of caring as indicators of successful schools.

Most important, the analysis of the supportive school community model reveals that resilient students tend to develop much stronger and more supportive relationships with their teachers than do nonresilient students.

A safe and orderly school environment and positive teacher-student relationships were the characteristics that mattered most. However, low-SES White students attended schools with safer and more orderly environments than did their low-SES African American and Latino peers. These differences between the schools of minority and White children could in part explain the frequently noted achievement gaps between minority and majority students.

Funding for this research was provided by the College Board Task Force on Minority High Achievement and the Center for Research on the Education of Students Placed at Risk.

Material in this article appeared in different form in the article, "Academic Resilience in Mathematics Among Poor and Minority Students," in *Elementary School Journal*, vol. 104, No. 3, 2004, pp. 177-195.

Geoffrey Borman

INCREASING PEER INTERACTIONS FOR STUDENTS WITH BEHAVIORAL DISORDERS

(continued from page 3...)

of observed interactions per minute. Rates of peer interaction increased for all three student participants.

At the same time, rates of paraprofessional facilitative behavior increased only slightly with the increases observed in rates of peer interaction. The majority of interactions observed for the target students following the intervention were noted to be "spontaneous," i.e., not immediately preceded by an adult-initiated facilitative behavior.

However, there was evidence that the strategies covered in the training intervention did have an effect. For example, embedded in the four facilitative behavior strategies was the idea that paraprofessionals should fade their assistance once it is given. Conscious attention to the need to fade individual support as a way of serving students more effectively resulted in all three paraprofessionals actually spending more time farther away from their assigned students. The time that each paraprofessional spent within arm's reach of the target students decreased for all three paraprofessionals following the intervention.

In terms of the facilitative behaviors that were observed post-intervention, the paraprofessionals employed "teaching or modeling skills" most often. This is likely because the strategy encompassed the widest rage of behaviors, and because the behaviors that fall into this category are familiar to the paraprofessionals.

Comments from the paraprofessionals and teachers provided additional evidence of the intervention's success and value. For example, one paraprofessional, Ms. Taylor, noted that she had never thought of herself as a "bridge" for interactions and that she may have unintentionally blocked student interactions without realizing that they might be desirable. She also commented that she now recognized the educational value in providing students with more physical space and time to independently interact with peers. The general education teacher who worked directly with another paraprofessional, Mr. Aron, commented that she noticed a difference in the way Mr. Aron interacted with the student with a disability after the intervention. This teacher also commented that she thought a similar training could be beneficial to all professionals working with students with EBD.

Malmgren says future research in this area should focus on the feasibility of large-scale implementation of this kind of training and on the relative utility of the specific facilitative skills covered by the intervention.

Kimber Malmgren

Classroom Discourse and Teacher Change

Education reform practices encourage student-led discourse and student-to-student discourse about curricular content. Such 'socially mediated' construction of knowledge is considered to promote deep and sustained learning.

Many teachers recognize the potential for such interactions but they also wrestle with how to provide that environment while ensuring that the ideas presented relate to the curricular agenda.

Students' original contributions are important for productive classroom discourse. But teachers need to monitor where the discourse is going, and should develop some criteria for deciding when the class has reached the goal. Teachers need to learn the 'stepping in and out' that's so important to promoting productive discourse. Mathematical talk is a skill unto itself that deserves instructional attention, according to UW–Madison education professors Mitchell Nathan and Eric Knuth.

Teacher education programs and professional development programs should provide preservice teachers and practicing teachers with experience participating in, and facilitating, productive mathematical discourse, they say.

Nathan and Knuth recently published their work with a sixth grade mathematics teacher, Ann (a pseudonym), to analyze the nature of whole group discourse that occurred in her classroom. Over the course of a two-year collaboration, Ann changed her classroom practice to better reflect her vision of reform-based mathematics instruction.

Nathan and Knuth videotaped Ann's classroom teaching. Then they all reviewed the tapes, observing how Ann used analytic scaffolding and social scaffolding. Examples of analytic scaffolding include a teacher describing student contributions to a discussion in more precise mathematical terms, or a teacher highlighting particular aspects of student contributions in light of their potential use in introducing more advanced mathematical ideas. Social scaffolding aims to encourage classroom interactions, for example, asking students to explain their solutions to problems or eliciting contributions to whole-class conversations from all students.

Ann wanted her students to value all of the opinions expressed in class. She also wanted her students to learn that mathematics problems could be solved by many methods. Ann was convinced that many students inappropriately looked for a solitary method when solving mathematics problems. Ann's beliefs about student learning and development can be summarized by two statements: (a) students learn best from other students, and (b) students learn best through class participation. Ann solicited a wide range of opinions on mathematical ideas and asked students to state their agreement and disagreement with ideas presented by her and other classmates.

But despite her belief that students prefer to learn from their peers, and despite her favorable evaluation of the level of participation in many of her lessons, very little student-to-student talk was evident during Year 1. The majority of analytic information flowed vertically, either from the teacher to the class (71.4% of the time) or from students to the teacher (27.1%).

Ann's actions did not successfully promote much horizontal information flow among the students. She was the central player in all class interactions. Students rarely participated in exchanges unless called on. They relied much more on the teacher for information rather than other students. They rarely used discourse to construct their own conceptions, test hypotheses, or question other students' ideas.

During professional development sessions in the summer following Year 1, Ann and the researchers reviewed the classroom videos, evaluating information flow and scaffolding. Ann began to reconsider some of her classroom tactics as she realized that some of her most important goals for peer interaction and learning through participation were not being met.

Ann decided to remove herself from the role of conversational "hub" more often in Year 2, staying out of class discussions to leave more room for students to think, ask questions, and publicly express their own ideas. During Year 2 Ann frequently invited students to speak. Students responded positively to Ann's overtures and held up the mathematical end of the discussion. In response to this shift in practice, Ann saw tremendous growth in student-to-student mathematical talk. She was aware of the greater amount of class time these interactions took. Still, from Ann's perspective, students were learning that mathematics included forming and expressing one's ideas, not simply asking the teacher or doing calculations.

In Year 2 Ann's analytic scaffolding dropped to about 50% of all whole class exchanges. Social scaffolding remained relatively unchanged, however, at around 20%. Thus, Ann continued to guide student talk and manage the classroom, while stepping aside to let the math talk happen around her. Ann relied on students to compensate for her relative analytic absence. The proportion of analytic scaffolding students provided each other during classroom exchanges increased more than 15-fold over the 2-year period.

The increase in students' social role suggests that, as students took over the discussion in the mathematical realm, they also recognized a need to help direct the classroom social interactions to conduct these conversations. Students who participated more frequently in discussions also realized the need to reinforce accepted rules and establish new norms.

In her role as class discussion facilitator, Ann kept discussions going, got students involved, solicited views, and reminded students of the classroom's social norms. This shift succeeded in stimulating student-to-student talk.

Patterns of whole-classroom interactions changed substantially. Students frequently addressed one another directly or spoke to the class as a whole. Ann's statements to the class during Year 2 were more often social in nature than in Year 1, emphasizing management issues and the social facilitation of student-driven discussions.

Although students interacted more frequently, discussions often lacked rigorous argumentation and evidence, and lacked convergence toward acceptable mathematical ideas and conventions. With no clear mathematical authority participating, student ideas were offered publicly for others to pick up, refute, or ignore, often with no basis for evaluation other than opinion.

On the surface, Ann realized her goals of discourse-based teaching. Yet under deeper inspection, she questioned whether students were learning the mathematical content. Even though students were more vocal, Ann felt less certain of where individual students stood in their understanding of new concepts. That may be due to two things. Ann's large shift to emphasizing social scaffolding led to a shift in her attention away from the specific mathematical talk among students. Also, Ann no longer used prompted discourse to ascertain student knowledge.

Students showed they can fill the conversational void, but they may not, and often cannot, serve as the analytic authority necessary to promote correct understanding about all of the content matters.

Nathan and Knuth say discourse of this nature does not come about simply because the teacher creates space for it. There is still a need to mathematically support students' learning of content during classroom interactions. Ideally, teachers provide such support as they strike a balance between the social and analytic demands, that is, when students' own social constructions of mathematical ideas are also connected to the ideas and conventions of the mathematical community.

Eric Knuth

Mitchell Nathan

WCER RESEARCHhighlights

Director Adam Gamoran
Editor Paul Baker
Editorial Consultants Rebecca Holmes & Cathy Loeb
Production Instructional Media Development Center

WCER Research Highlights is published by the Wisconsin Center for Education Research, School of Education, University of Wisconsin–Madison. WCER is funded through a variety of federal, state, and private sources, including the U.S. Department of Education, the National Science Foundation, and UW–Madison. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the funding agencies. Fourth-class, bulk-rate postage is paid at UW–Madison, Madison, WI. Send changes of address to WCER, 1025 West Johnson Street, Madison, WI 53706 or call (608) 263-4200. Include the address label from this issue.

WCER Research Highlights is available on the Web at *http://www.wcer.wisc.edu.*

ISSN 1073-1822
Vol. 17, No. 3
WINTER 2005-06

News from WCER is available in these additional media:

WCER's website: www.wcer.wisc.edu

WCER Today, a monthly email newsletter reaching more than 1370 readers at 750 organizations. For a sample, or to subscribe, contact the editor at pbaker@wisc.edu

RSS feed for your newsreader: http://facstaff.wcer.wisc.edu/pbaker/RSS/RSSfeed.xml

Weblog: www.wcer.blogspot.com/

WCER
Wisconsin Center for Education Research
School of Education • University of Wisconsin–Madison
1025 West Johnson Street • Madison, WI 53706

Nonprofit
Organization
U.S. POSTAGE
PAID
Madison, Wisconsin
Permit No. 658