Brain Imaging May Hold Clues to Help Children Improve Grammar

Also: PRE-K LEARNING LEAPS
Fall 2011 finds Vanderbilt’s Peabody College deeply engaged with critical issues confronting both educators and schools of education.

On questions of policy, educational neuroscience, or learning and instruction, the Peabody faculty is making valuable contributions to discovery, dissemination and public discourse. We are similarly involved with questions about the role, performance and future of schools of education. The scale of our efforts is evidenced by the approximately $40 million we expended last year in funds for sponsored research.

Our federally-funded National Center on School Choice, National Center on Performance Incentives, and National Center on Scaling Up Effective Schools are continuing at full bore. In early childhood education, researchers with the Peabody Research Institute are conducting an evaluation of Tennessee’s Voluntary Pre-K initiative with potentially far-reaching funding ramifications.

In special education, we recently learned that from 2005-2009 our faculty contributed more papers than any other institution in the country. We are also pleased by having enrolled the second class of master’s students in our partnership with Metropolitan Nashville Public Schools to strengthen teaching in middle school math, science and literacy.

Initiatives like those above show that schools of education are doing invaluable work to improve the practice of education in the U.S. We are proud to play a leading role in this effort.

Camilla P. Benbow
Patricia and Rodes Hart Dean of Education and Human Development
VANDERBILT PARTNERS WITH FORT WORTH TO AID LOW-PERFORMING STUDENTS

Fort Worth Independent School District is the latest partner in a national center at Vanderbilt University’s Peabody College that aims to identify programs, practices, processes and policies that make some high schools more effective at reaching low-performing students.

Fort Worth Independent School District, or FWISD, officially joined the National Center on Scaling Up Effective Schools April 18. Other center partners are Florida State University, the University of Wisconsin-Madison, the Education Development Center, headquartered in Newtown, Mass., and Broward County Schools in Florida.

“FWISD is working to improve student learning and achievement by improving the rigor and quality of instruction in classrooms rather than relying on short-term strategies and gimmicks to improve test scores,” Thomas Smith, center director and associate professor of public policy and education at Peabody, said. “We are thrilled to team up with them in this effort.”

The center’s goal is to design a model in which researchers, developers and school and district practitioners co-design methods of transferring effective practices from one school to another, taking into account the unique characteristics of each individual district.

While practitioners and researchers generally agree on the essential components of a successful urban school, such as quality instruction, a rigorous curriculum and systemic use of data, less is known about the ways educators implement and sustain those good practices. That is what the researchers seek to identify, providing a framework for less effective schools to “scale up.”

The researchers will use a combination of models, interviews, surveys and observations to uncover what the effective high schools in FWISD and Broward County are doing that contributes to their success in improving achievement in English language arts, mathematics and science among traditionally low-performing students that distinguish them from less effective high schools in the same district.

They will also examine what these schools are doing to decrease dropout rates and increase traditionally low-performing student enrollment in advanced courses.

The center will then work to involve district leaders and participants from both the effective and less-effective high schools to collaborate on the design and implementation of a process to transfer practices from effective schools to less-effective schools.

The next step will be to implement this process in six less-effective high schools in the two districts. The implementation designs will then be assessed and analyzed, with a focus on sustaining those practices once the project has ended.

“By the conclusion of the center’s work, we will have developed, implemented and tested new processes that other districts will be able to use to scale up effective practices within the context of their own goals and unique circumstances,” Smith said.

NCSU is funded with a five-year, $13.6 million grant from the Institute of Education Sciences. NCSU is one of three national research centers funded by IES, a research arm of the U.S. Department of Education, located at Peabody. The others are the National Center on Performance Incentives and the National Center on School Choice.

To learn more about NCSU, visit www.scalingupcenter.org.

PEABODY RANKED NO. 1 FOR THIRD CONSECUTIVE YEAR
For the third straight year, Peabody College was rated the No. 1 graduate school of education in the nation, according to U.S. News & World Report rankings released in March.

Peabody is only the second education school in the last decade to have received the top honor spanning consecutively.

“Peabody College is currently celebrating its 225th anniversary, so being ranked No. 1 for a third time feels very gratifying,” said Camilla P. Benbow, Patricia and Rodes Hart Dean of Education and Human Development.

“In the end, the work done by our faculty and by our graduates in their professions is the most important thing. It is rewarding to see their efforts repeatedly recognized.”

Among specialty rankings, Peabody’s programs in Educational Policy and Human Development ranked No. 1. Also recognized were Peabody programs in Educational Psychology (No. 4), Elementary Education (No. 4), Education Policy (No. 5), Curriculum/Instruction (No. 8), and Higher Education Administration (No. 9).


PREPARING TEACHERS FOR DIVERSITY
Research from Peabody College faculty members Donna Ford and Rich Milner about historically persistent yet unresolved issues in teacher education was featured in Studying Diversity in Teacher Education, released by the American Educational Research Association (AERA) in January.

In the book, Ford and co-author Michelle Trottman Scott of the University of West Georgia examine how to prepare teacher education candidates to work with students with disabilities and gifts and talents.

“Too few teachers are prepared to work with African-American students in need of special education or gifted education services,” said Ford, a professor of special education who focuses on gifted education with an emphasis on minority children and youth. “When students with special or unique needs fail to have teachers who are culturally responsive—non-discriminatory, equity-minded, and committed to their students—a lose-lose situation ensues in which students, teachers and the larger society pay a hefty price.”

“Teacher educators must equip their students to be culturally competent,” Ford continued. “I don’t think we have a choice to do otherwise.”

Milner shared his research on successful efforts in teacher education to diversify teachers.

“As the nation’s schools become increasingly diverse with parents, teacher education programs are challenged and diversified in their teaching force,” Milner, an associate professor of education who studies urban education, teacher education and race and equity in society and education, said.

“Teachers in the U.S. remain overwhelmingly white and middle class, and research suggests that students’ social and academic performance improves when they are taught by a diverse group of practices,” Milner said. “The urgency is needed to diversify teachers is well-known, moderate progress is being made. Students

Donna Ford

Thomas Smith

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Vanderbilt researchers from the Department of Pediatrics, Peabody College and the Divinity School joined with parent advocates for a panel discussion on the ethical considerations of “curing” disabilities on April 5. The event was sponsored by the Vanderbilt Kennedy Center to inform the university community about ethics related to conducting research, especially issues involving individuals with disabilities.

While some parents of children with disabilities cling to the concept of a cure for their child’s disability, others express dismay at the apparent lack of acceptance that a cure implies. The panelists explored differing viewpoints within disability communities on finding and implementing “cures.”

The discussion specifically focused on autism and Down syndrome as examples, and a parent of a child with each disability participated in the conversation. "There is tension within the disability community between curing the disability and living with the disability," said Robert Hedapp, professor of special education and director of research for the VKC University Center for Excellence in Developmental Disabilities.

He explained that with Down syndrome, the general emphasis is to celebrate the strengths of the syndrome, whereas with autism, the focus is often on finding a cure.

John Shouse, father to a 15-year-old child with autism, concurred but noted that many autism organizations are increasingly focused on quality of life issues and are advocating for societal acceptance and understanding. Upon receiving her son’s diagnosis at 27-months-old, Shouse said he wanted to know “what happens, how do I fix it, and what can I do to help my child cope.”

Parent advocate Sheila Moore, mother to a 21-year-old with Down syndrome and executive director of the Down Syndrome Association of Middle Tennessee, explained that the path of a family who has a child with Down syndrome is much different than that of a family facing autism because the diagnosis is at birth.

There is a meaningful need for work to find cures for disabilities, but we don’t want to go changing people to fit our world," Brothers said. "We currently structure the world for typical kids. We should be structuring the world so that we do everything we can to make the lives of children with disabilities easier.”

"Parents of children with Down syndrome simply want to increase the quality of life for our children," Moore said. "I wouldn’t change [my son] for anything because without Down syndrome he wouldn’t be the same person, and he has such beautiful, loving qualities. But, if I could cure his medical issues, help him find a good job, or do anything to make his quality of life better, I would.”

Kyle Brothers, instructor in the Department of Pediatrics, says while it is right to work towards cures for disabilities, he would like to see more effort put towards lightening the burdens faced by families who have a member with a disability.

“[We] have to be realistic while never stepping on hope.”

Kevin Anderson, Oberlin Alumni Professor of Christian Ethics, discussed the historical but often still prevalent confusion of disabilities and cures within religious communities.

“There is a dire need in the religious culture in America to have intense education on disabilities and faith,” Anderson said. “We need to have more honest conversations on faith and healing related to disabilities.”

Shouse stressed that with any child, it is important to “ever believe” in their abilities and have the highest expectations for them.

“What is the prospect for curing a brain-based disorder? I don’t know what that looks like for my son,” he said. “We try to be realistic while never stepping on hope.”

Douglas Perkins was promoted from associate professor to professor of human and organizational development.

Bethany Rittle-Johnson, associate professor of psychology, received the Peabody Award for Excellence in Research.

Sharon Shields, professor of the practice of health promotion and education, was named a Fellow of the North American Society of Health, Physical Education, Recreation, Sport and Dance. She also received the Honor Award from the American Alliance of Health, Physical Education, Recreation, Sport and Dance.

Marybeth Shinn, professor of human, organizational and community development, was appointed to the Social Sciences and Population Studies Section of the National Institutes of Health Center for Scientific Review.

Claire E. Smrekar, associate professor of leadership, policy and organizations, was invited by Fudan University (China) to serve as a Distinguished International Lecturer.

Naomi Tyler was promoted from research assistant professor to research associate professor of special education.
and education. “The problem is that we have yet to find a better way.”

The new study, co-authored by Matthew Springer, director of NCPI, examined teacher compensation in the United States K-12 public school system and is featured in the March issue of the National Tax Journal, a quarterly publication by the National Tax Association.

In the article, the authors also summarize recent literature on compensation reform with an emphasis on studies using rigorous experimental designs to evaluate the impact of programs on student achievement and teacher outcomes.

Matthew Springer

Although several international studies report generally positive effects on student achievement, it is less clear whether performance pay policies have actually promoted learning gains in the United States, the researchers say. Only a handful of rigorous studies have been reported, all of which focus on the motivational effect of incentive pay programs and not whether these programs help recruit and retain the profession’s highest performers.

The authors conclude that an integrated and coherent compensation policy is the central core of an efficient human resource policy. In private and many public organizations, the compensation package is considered as a strategic whole and carefully designed to get the most human resource return per dollar of compensation. By contrast, in public K-12 education, the compensation system is fragmented and uncoordinated, with provisions often determined by means not based on systematic assessment of the overall incentive effects.

Springer’s research focuses on education policy with a particular focus on the impact of policy innovations on resource allocation decisions and student outcomes. His current research includes studies of the impact of teacher pay for performance on student achievement and teacher turnover, mobility and quality.

Understanding causes of mortality among infants with Down syndrome

An analysis of the amount, timing and causes of infant mortality among newborns with Down syndrome is the focus of new research by Vanderbilt Kennedy Center investigators Robert Hodapp and Richard Urbano and recent Peabody graduate and Kennedy Center trainee, Samantha Goldman.

The findings, reported in the Journal of Intellectual Disability Research, conclude infants with Down syndrome experience high rates of mortality at three distinct times in the first year. These groupings are tied to specific, different causes of death.

Those who died during the first year were separated into three groups – first day death, neonatal mortality (2-27 days) and post-neonatal mortality (28-364 days). Data from the birth and death records were used to compare the three death groups and the survival group on correlates of mortality.

The research showed 56 percent of deaths among infants with Down syndrome occurred during the post-neonatal period, while 27 percent occurred during the first day. Newborns who died on the first day had significantly lower birth weights, APGAR scores and gestational ages, whereas those who died in the post-neonatal period had significantly more heart related causes of death.

“Our findings help us understand why mortality during the first year is so high in this group,” said Hodapp, a professor of special education who focuses on intellectual disabilities and families of children and adults with disabilities. “By identifying specific causes of mortality at distinct time periods over the first year, our work alerts parents and physicians to different life-threatening issues at each age, leading to more targeted treatment approaches.”

Urbano, a research professor of pediatrics who focuses on developmental epidemiology, said: “This study shows how large-scale birth and death datasets can help us to understand a variety of health issues among children with Down syndrome. Even though these children have many severe health issues, they have until now received far too little research attention.”

Hodapp, Urbano and their colleagues are currently extending this work to examine deaths of older individuals with Down syndrome, as well as determining when and why hospitalizations occur.

They are also looking at parental divorce, caregiving by adult siblings and other issues related to families of children and adults with Down syndrome.

Down syndrome is the most prevalent chromosomal cause of intellectual disability and the most common congenital disorder associated with intellectual disability, occurring in an average of 1 out of every 700-1000 births.

For more on research at the Vanderbilt Kennedy Center, visit http://kcvanderbilt.edu
TURNAROUND

A Conversation with Joseph Murphy

“...this is not an apology for schools that aren’t helping kids. But to solve the problem you need a large-scale societal attack. Not just an educational attack.” —Joseph Murphy

Through its School Improvement Grants, the Obama administration has funneled $3.5 billion to turn around schools in all 50 states and the District of Columbia. More than 15,000 schools, or 16 percent of schools nationwide, were eligible for the grants. According to Department of Education data, SIG-awarded schools tend to be high-poverty (75 percent), high-minority (86 percent) schools concentrated at the high school level in urban areas.

SIG funding permits four different intervention models: transformation (the most flexible, but requiring replacement of the principal), turnaround (requiring replacement of the principal and at least 50 percent of staff), closure, and restart (transformation (the most flexible, but requiring replacement of the principal), turnaround (requiring replacement of the principal and at least 50 percent of staff), closure, and restart (the most aggressive, but requiring replacement of all the staff). Then the definition of failing got tied into NCLB, and a failing school is now defined as a school that doesn’t meet NCLB criteria.

IA: Secretary of Education Duncan has said that this year 82 percent of schools could be failing under NCLB.

JM: It tells you on the surface that kids aren’t helping. But to solve the problem you need a large-scale societal attack. Not just an educational attack. And we found a significant body of work. We can’t swear that it’s all applicable, but if everyone else is doing it and they seem to be getting success, it does seem foolish not to consider it.

IA: What led you to look outside of education for comparisons?

JM: We were to the point where people were talking about turnarounds and there was no empirical evidence. We studied all the other turnaround industries that had been involved—corporations, churches, political parties—to see what we could learn that we could apply to education. And we found a significant body of work. We can’t swear that it’s all applicable, but if everyone else is doing it and they seem to be getting success, it does seem foolish not to consider it.

IA: Are there comparisons with non-business sectors?

JM: ‘The New York Police Department is a great example—a guy named William Bratton. It was right in the period where people didn’t even want to go to New York because they thought they were going to get mugged in the street. He looked at it and the first day there, he said, “We’ll have a 25 percent reduction in crime in two years.” He didn’t have a committee. He said, “This is where we’re going. This is the benchmark. The boat’s leaving, right now.” And I think that’s what turnarounds situations require. They need someone to get up and put the stake in the ground about where the new vision is or what’s going to happen. They need to do it fast, and they need to do it from the top.
"Almost all turnarounds fail. Why would we assume that we’re in an industry where 100 percent of turnaround situations are going to work? I don’t find any logic to it."

JM: The issue that people need to be sensitive to is that these situations are going to work. I don’t find any logic to it. The notion that all turnaround schools are going to be saved is completely unsupportable. Almost all turnarounds fail. Why would we assume that we’re in an industry where 100 percent of turnaround situations are going to work? I don’t find any logic to it.

IA: Where do you see current turnaround efforts leading?

JM: My sense is it’s going to collapse. You can’t have a situation where the majority is failing and no one is going to hit the targets. That’s not sustainable. I don’t have any empirical knowledge that reconstitution works. We don’t have any evidence that turning schools over to private management companies or making them charter schools works. I like charter schools, but there’s no widespread empirical evidence that they’re going to solve the problem. And I don’t think we have any evidence on the school improvement strategy. So I don’t think any of the current turnaround strategies has a deep empirical base.

One turnaround strategy that does seem to have promise, if it could be done, is actually closing the school. The problem is when we close schools in education, it closes on a Friday and it reopen six or seven battalions to the hill. To send just the education battalion is not wise. It’s a big hill, a tough hill, and to ask one battalion to win that battle—even if it’s a big battalion—it’s still not a wise social policy.

IA: What is it that needs acknowledging?

JM: That an awful lot of the cause of the failure is outside of the school. And I don’t say that as an apologist. Schools are culpable. But the point is a lot of the failure is explained by variables outside of schooling. It seems to me a lot of the solution has to extend beyond what schools historically have done. If poverty is a critical issue, we need a broader social attack on these schools. Health policy, welfare policy, social policy and transportation policy are all critical dimensions of helping kids in schools that need to be turned around. I don’t get a sense that the education powers that be have been as forthright as they should be about this reality.

You’ve got to attack poverty. If it’s anchored in issues of race, than you have to address issues of poverty, not just a new reading program or a new math program. Again, this is not an apology for schools that aren’t helping kids. But to solve the problem you need a large-scale societal attack. Not just an educational attack. You need six or seven battles to take the hill. To send just the education battalion is not wise. It’s a big hill, a tough hill, and to ask one battalion to win that battle—even if it’s a big battalion—it’s still not a wise social policy.

IA: That doesn’t sound promising.

JM: I think the question that educators don’t acknowledge. In the rest of the world, once you’re in a turnaround situation, somewhere between 75 and 90 percent go out of business. The notion that all turnaround schools are going to be saved is completely unsupportable. Almost all turnarounds fail. Why would we assume that we’re in an industry where 100 percent of turnaround situations are going to work? I don’t find any logic to it.

IA: So are bad schools here to stay?

JM: I think that argues again for the liquidation strategy, if you can find reasonable places to put these kids. I wonder if we’re in just another chapter in a well-intentioned shell game. We have had comprehensive school reform, we have had effective schools, we have had restructured schools, and we’ve got turnaround schools. None of these have made a significant dent in improving troubled urban schools.

I believe people care about kids. I believe they work hard. This isn’t the problem—that people don’t care, they don’t invest resources, they don’t try. So why don’t they turn around really seems to be the big issue. And if you get to that question, I think you do very quickly come back to issues of poverty, race, and community.

IA: How would this work in education?

JM: I think your first move is to get a new principal. I think your second move is to get control of the budget and figure out what gets cut quickly, and those resources get pulled back to what you want to accomplish. I think the third thing is you unilaterally and very quickly put a stake in the ground about what the future will be. And in one sentence: “This is where we are, and this is where we will be in two years.” Then you have a platform for action.

IA: Don’t principals face a lot of budget constraints?

JM: You don’t want to use a budget that is determined centrally as an excuse. So you look at the budget you do have and you figure out where your degrees of freedom are. It’s a lot easier to turn around if you are in a supportive environment where the superintendent and the district are saying, “Yes, we will support you to make these kinds of moves. You don’t have to hire a librarian next year. You can use that money for creating an afterschool tutoring program. Or you can eliminate night custodians and put the money into a Saturday program for at-risk kids.” If the district can support those kinds of moves it certainly makes life a lot easier.

IA: What about the argument that there are factors beyond even district control?

JM: The issue that people need to be sensitive to is that these failing districts are places of high poverty and high minority status. This is a not a condition in the rest of the turnaround world. If there’s a company that’s failing in the chemical industry, it’s not related to these kinds of issues. When you look at turnaround districts in the U.S.—real turnarounds—they are overwhelmingly poor places and very heavily minority places. That requires an acknowledgment up front and an additional set of intervention strategies that go beyond normal turnaround.

IA: What is it that needs acknowledging?

JM: That an awful lot of the cause of the failure is outside of the school. And I don’t say that as an apologist. Schools are culpable. But the point is a lot of the failure is explained by variables outside of schooling. It seems to me a lot of the solution has to extend beyond what schools historically have done. If poverty is a critical issue, we need a broader social attack on these schools. Health policy, welfare policy, social policy and transportation policy are all critical dimensions of helping kids in schools that need to be turned around. I don’t get a sense that the education powers that be have been as forthright as they should be about this reality.

The question is, you have to be pretty strategic about where you put the kids. Just to send them to another school of mediocrity is not going to do the trick. If you’re in a city like Detroit where the entire system is failing, where are you going to send them? You don’t have a lot of alternatives.

IA: That doesn’t sound promising.

JM: Here’s the question that educators don’t acknowledge. In the rest of the world, once you’re in a turnaround situation, somewhere between 75 and 90 percent go out of business. The notion that all turnaround schools are going to be saved is completely unsupportable. Almost all turnarounds fail. Why would we assume that we’re in an industry where 100 percent of turnaround situations are going to work? I don’t find any logic to it.

Turning Over Turnaround

Unlike No Child Left Behind, the U.S. Department of Education’s School Improvement Grants take a targeted approach to identifying low-performing schools and providing funding to turn them around. The grants permit four different interventions intended to improve the academic achievement of the lowest performing five percent of schools. To date, $3.5 billion has been awarded, with another $546 million slated for disbursement. A Department of Education database now includes 1,247 SIG awarded schools in 49 states and the District of Columbia.

Of the various interventions possible, actually closing a failing school and sending its students elsewhere would appear to be the most extreme solution, and in fact, it is the intervention least chosen by districts receiving SIG funding. The independent think tank Education Sector in “A Portrait of School Improvement Grantees,” calculated that 73 percent of SIG schools are pursuing a transformation intervention, 21 percent are implementing a turnaround model, and 4 percent have chosen to restart as charter or privately managed schools. Only 2 percent of SIG schools are slated to be closed.

Whether such a large number of consistently low-performing schools can be turned around remains to be seen. Past turnaround efforts suggest optimism is not warranted. In 2010, the Thomas B. Fordham Institute published a study, “Are Bad Schools Immortal?” The study’s author, David A. Stuit, Ph.D ’09, a Vanderbilt alumnus, examined the effects of turnaround efforts in a group of 2,025 low-performing schools in 10 states. Both charter schools and district schools were included and were tracked from 2003-04 to 2008-09. After five years, 80 percent of the district schools and 72 percent of the charter schools remained low-performing. Only 10 percent made moderate improvement, while only 1 percent improved dramatically. Only 19 percent of the charters and 11 percent of district schools were closed.

Writing in the report’s executive summary, Stuit concluded, “It is easier to close a low-performing school than to turn around. Rather than pushing dubious turnaround efforts, charter authorizers and education policy-makers alike should ramp up their efforts to close bad schools, particularly in cases where higher-performing schools are nearby.”
Understanding how quickly children process speech is key to understanding why some struggle with language, but accurately measuring this speed has been difficult. Vanderbilt University researchers have found that by using brain imaging they can not only accurately measure children's language processing speed, but also predict how well the children will respond to intervention.

“We would like to understand the source of a child's language impairment and then select a grammatical treatment that will help,” Paul Yoder, the study's lead author and professor of special education, said. “Once we know it’s a speed issue, we can target the treatment and we can also predict how well the treatment will work.”

“To our knowledge, this is the first time that speed of speech processing has been shown to predict how effective different treatments will be in helping preschoolers with language impairments improve their grammar,” Yoder said.

MISSING THE MIDDLE
Some children process what is said to them too slowly, which causes them to miss what's in the middle of a sentence or causes them to miss word endings. For example, they may only comprehended “go” instead of “goes.” As a result, children who struggle with language often have specific trouble with grammar. However, measuring this speed has been difficult, particularly in very young children who can be easily distracted in the midst of a test.

Yoder and his colleagues set out to measure speech processing speed directly from children’s brain activity, eliminating the distraction problem. The method they used is called event-related potential, or ERP. ERPs are a noninvasive way of measuring the brain’s response to stimuli within milliseconds through electrodes placed on the scalp.

The researchers then used an analysis method called electrical neuroimaging analysis, or ENA, to evaluate the ERP data from across the entire scalp, not just from a single region or electrode.

Using these methods, the researchers measured speech processing speed in 48 preschoolers with language impairments and 57 typically developing preschoolers. They found the typically developing children processed language faster than the children with language impairments.

Both methods have been shown to be effective at helping children with a variety of disabilities improve their grammar.

After six months of either of these treatments, processing speed improved in both groups of children. Those who began treatment with particularly slow speech processing learned more grammar through Milieu Language Teaching than Broad Target Recasting.

The researchers also found that though all of the children made improvements, those who still had grammar trouble were also still processing language more slowly than their peers.

PREDICTING TREATMENT'S IMPACT
The extent of the child’s language processing delay before the intervention predicted how well the child responded to the intervention, Yoder explained.

“It is not difficult to imagine a future in which an individual child’s brain responses are assessed and compared to normative data to identify the extent to which their speech processing is slow for their age, which can then be used to inform clinical decisions,” he continued.

The research is under review in the journal Developmental Neuropsychology.

Yoder’s co-authors were Alexandra Key, Vanderbilt University; Dennis Molles, University of Louisville; and Micah Murray, Vaudois University Hospital Center and University of Lausanne in Switzerland.

Yoder is an investigator in the Vanderbilt Kennedy Center for Research on Human Development. The research was funded and supported by the National Institute on Deafness and Other Communication Disorders, the Vanderbilt Kennedy Center and the Swiss National Science Foundation.

By Melanie Moran
The second study also found that children enrolled in state-funded pre-k classes scored significantly higher on emergent literacy and math assessments than the children who had not yet attended pre-k once the age difference was accounted for.

Children who attended Tennessee state-funded prekindergarten classes gained an average of 82 percent more on early literacy and math skills than comparable children who did not attend, researchers from the Peabody Research Institute have found.

For the study, 23 schools in 14 Tennessee school districts randomly admitted children to their pre-k program. All of the schools received applications from more students than they could accommodate. The children admitted to pre-k were then compared to the children whose families applied but were not admitted. A total of 303 children were involved in this phase of the study.

Assessments at the beginning and end of the prekindergarten year found that the pre-k children had a 98 percent greater gain in literacy skills than children who did not attend a state pre-k program, a 345 percent greater gain in vocabulary, and a 109 percent greater gain in comprehension. They also made strong, but more moderate, gains in early math skills (33 percent to 63 percent greater gains). Overall, the average gain across the board was 82 percent more than for the children who did not attend state pre-k.

SECOND STUDY PRODUCED SIMILAR FINDINGS

Results from a second study using a regression-discontinuity design corroborated the findings of the first. The second study compared 682 children who attended 36 pre-k classes in rural and urban middle Tennessee schools to 676 children who had to enter a year later because of the birth date cutoff for pre-k eligibility.

The second study also found that children enrolled in state-funded pre-k classes scored significantly higher on emergent literacy and math assessments than the children who had not yet attended pre-k once the age difference was accounted for. The strongest differences were again in the areas of literacy and language skills, with more modest gains in math skills.

Both studies will continue collecting data for the next four years. The second study will continue collecting data in waves across the state until every region is represented.

“These studies were possible only because of a strong partnership with the Division of School Readiness and Early Learning in the Tennessee Department of Education and the commitment of school districts across the state to learning about the effects of pre-k,” Lipsey said.

The research is funded by a $6 million grant from the U.S. Department of Education’s Institute of Education Sciences.

The studies are led by Lipsey, research professor of human and organizational development and Peabody Research Institute director, and Dale Farran, professor of education and psychology. Carol Bilbrey, research associate at the Peabody Research Institute, directed data collection.

The PRI researchers reported on their findings in March at the annual meeting of the Society for Research on Educational Effectiveness in Washington, D.C. A pdf copy of their presentation slides can be viewed at http://peabody.vanderbilt.edu/Documents/pdf/PRI/SREE_presentation_2011.pdf.

Mark Lipsey, who serves as co-principal investigator of the Tennessee Voluntary Pre-K study, was awarded the Earl Sutherland Prize for Achievement in Research at Vanderbilt’s Fall Faculty Assembly for his contributions to educational studies and the design of evaluation studies.

The prize is given annually to a member of the Vanderbilt faculty whose achievements in research, scholarship, or creative expression have had significant critical reception and are recognized nationally or internationally.

“Mark’s work is having a transformative effect on the quality of education in Tennessee,” said Chancellor Nicholas S. Zeppos at the Aug. 25 event. “He has produced seminal social science and public policy research on such topics as early childhood education and risk and intervention for juvenile delinquency and substance abuse.”

In nominating Lipsey for the prize, Peabody Dean Camilla Benbow noted Lipsey’s influence on the fields of program evaluation, research methodology, and meta analysis.

“It is difficult for me to imagine a faculty member at Vanderbilt whose work has such impact—in terms of social interventions, educational advancement, and the advancement of educational and social science research,” wrote Benbow.

The Sutherland award comes with a $5,000 prize.
The researchers examine how communities, districts, and states use choice as a strategy for improving schools and student learning in a manner designed to address common concerns of parents, policymakers, and the broader public.

The newly published studies focus on cities and states with some of the country’s most interesting school choice scenarios, including Washington, D.C., New York, Indianapolis, Chicago and Michigan.

Included in the book are:

• A discussion of the effects of the variety of school choice options and how they operate within districts, cities or states, by Ellen Goldring, principal investigator of NCSC and Patricia and Rodes Hart Chair in the Department of Leadership, Policy and Organizations; Marisa Cannata, associate director of NCSC; and Mark Berends, professor of sociology and education at the University of Notre Dame;

• Findings that students who switched to charter schools in Indianapolis experienced positive gains on standardized tests compared with their gains trajectories in traditional public schools. The authors, Vanderbilt Peabody College graduate students Anna Nicotera and Maria Mendiburo and Berends, speculate that the positive effects might be attributable to unique circumstances in Indianapolis, where the mayor has independent control over charter school authorization and accountability, and business and civic leaders have strongly supported the program;

• An exploration of the behavior of parents around school choice, which finds that while parents indicate academics are a top priority, their actual switching patterns showed little evidence of this preference, by Goldring, Xiu Cravens, research assistant professor of education policy, and Marc Stein, Johns Hopkins University; and

• A report that no evidence exists to show charter schools skim high-achieving students, thereby affecting the racial mix of schools, by Ron Zimmer, associate professor of leadership, policy and organizations, and colleagues.

School Choice and School Improvement is edited by Cannata, Goldring and Berends and is based on papers presented at a national invitational conference on school choice held at Vanderbilt in 2009.


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