

New study links job stress in teachers to student achievement

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Teachers use the i-Pod Touch to monitor their stress at work. Credit: Courtesy of University of Houston

After 17 years of researching traumatic stress with war-afflicted populations (veterans and civilians) and job stress in the medical profession, Teresa McIntyre, a research professor in the department of

psychology and the Texas Institute for Evaluation, Measurement and Statistics (TIMES), at the University of Houston (UH), decided to study another high risk occupation, middle school teachers in seventh and eighth grade.

"Teaching is a highly stressful occupation," McIntyre said. "Teacher [stress](#) affects various aspects of teacher health and may influence how effective teachers are in the classroom, with potential consequences for their students' behavior and learning.

"I started to research the literature on stress and teachers in the U.S. and found very little information. There was no comprehensive study of teachers' stress or even an audit of the percentage of teachers who are stressed. I saw a void here and a need to study."

McIntyre serves as primary investigator for a \$1.6 million grant funded by the Institute of Education Sciences (IES), U.S. Department of Education, titled, "Using Longitudinal and Momentary Analysis to Study the Impact of Middle School Teachers' Stress on Teacher Effectiveness, Student Behavior and Achievement."

The research study starts at the beginning of this coming school year and follows 200 seventh-and eighth-grade social studies, science or [math teachers](#) in 20 [middle schools](#) in H.I.S.D. and thousands of students over a three-year period. The research team intends to identify predictors and outcomes of job stress in middle school teachers, linking teacher stress to student behavior and achievement via teacher effectiveness. The results of the data can be used to guide further development of interventions to mitigate teacher stress and, consequently, improve teacher effectiveness and student behavior and learning.

"Middle school is probably the most difficult level to teach because student-teacher interactions are more difficult during this time, and this

kind of difficulty in teacher-student interactions is a major source of stress for teachers at this level," McIntyre said. "For students it's a time of adolescence and many changes developmentally, and that is going to affect the dynamics of learning, as well as the social relationships and climate in the classroom. It's going to affect the teachers as well. Our premise is that if the teacher is stressed, their behavior will be different with students, and they will perform differently with students."

McIntyre conducted a pilot study in the Greater Houston area in 2010 that indicated that at least one third of middle school teachers may be significantly stressed.

The UH research team will combine an innovative multi-method approach to assessing stress and teacher effectiveness, which involves ecological momentary assessment or real-time assessment, concurrent physiological measurements that will monitor blood pressure and heart rate, and in-classroom observational ratings. The researchers will use the most current technology to assess stress, which includes self-report on a Teacher Stress Diary using an iPod Touch platform, and teacher effectiveness ratings on an iPad. Data will be collected on students in the teachers' classroom using teacher stress diaries, archival school records and observational ratings. The innovative software programs are being developed by Sean Woodward at TIMES and the novel statistical methodologies required to analyze the intensive longitudinal data generated by real time assessment will be provided by TIMES and the UH department of psychology faculty Paras Mehta. The methodological and technical support provided by the UH's TIMES, directed by David Francis, as well as its expertise in education research, are key to the implementation of this type of study.

"With this study we will be able to get a more dynamic picture of how teachers respond to stress in real time," McIntyre said. "And that's what this ecological momentary assessment does – it assesses stress through

the person's diary report of stress when things are happening, very close to the event. Teachers will be able to report their emotions – positive, negative; how their cognitive functions are affected by stress; and what's happening at the moment in terms of social interactions, social conflict, demands on the job, the time pressure and whether they feel they are in control of their situation. They also report on effectiveness in instruction and classroom management, and on their student's behavior in the classroom"

McIntyre notes the larger contribution of the study is to take the pulse of the educational system and see what's happening in challenging economic times and to evaluate what impact this has on teachers and students, "The study addresses a key issue in contemporary education: how to improve teacher quality in the face of increasing demands in the education system; it is all about supporting teachers, students and school administrators at a time of depleted resources."

The results of the study may be used to guide further development of interventions to mitigate teacher stress and, consequently, improve teacher effectiveness and student behavior and learning. The data collected will be useful for school administrators and principals to know, such as what factors are causing [teachers](#) to be more stressed and less effective, and what resources can be arranged to change that trajectory into a positive one.

Provided by University of Houston

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