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Dilemma of Teaching in Mathematical Science

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Abstract
Science teachers are leaving their profession. They feel overwhelmed by the expectations and scope of the job and isolated and unsupported in their classrooms. They also feel that expectations are unclear. The statistics on turnover among new teachers are startling. School administrators, science teacher leaders, and teacher education programs can do much more to promote better preparation of science teachers and to recruit new teachers into science teaching. In particular, the author focuses on relevant research and on recommendations for educational researchers and policymakers interested in improving and retaining qualified science teachers in classrooms.

Keywords: Science, Statistics, Education, Program, Teaching, Research

Introduction
A huge turnover is taking place in the teaching profession. While student enrollments are rising rapidly, more than a million teachers are nearing retirement. There is a huge need to bring more young teachers into the science teaching profession. On the other hand, little attention has been given to the effort to retain the quality science teachers already hired-first-year teachers as well as more experienced and seasoned ones.
Too many new teachers become initiated into a profession that too often sets them up to fail. The system seems to neglect the fact that new teachers are exceptionally vulnerable to the effects of unsupportive workplace conditions, precisely because, never having taught before; they lack the resources and tools to deal with the frustrations of the workplace. Job satisfaction is often equated with work conditions, which appear to play a key role in keeping teachers in the field. It was found that teachers highly involved in their work attributed their decision to stay in teaching more too supportive work conditions than to pay. Teachers who left reported unsupportive workplace conditions as the main reason. It shows that administrative support and teacher autonomy play a large part in shaping teachers' attitudes toward teaching; and those teachers who control the terms of their work are more likely to feel committed to the teaching field.

Implications
It was noticed that turnover of teachers resulting from two demographic trends-increasing enrollments and increasing teacher retirements-will lead to problems staffing schools with qualified teachers and, in turn, to lower levels of educational performance. These researchers suggest, however, that the turnover of science teachers is not solely due to either increases in enrollment or increases in teacher retirement. In actuality, the overall amount of turnover accounted for by retirement and increasing enrollments is relatively minor when compared to the amount of turnover resulting from other causes, such as job dissatisfaction and the pursuit of better jobs or other careers.
The way to improve science teacher retention is to improve the working environment for science teachers, especially new teachers. Instead of increasing the supply of teachers, school administrators must decrease the demand for new teachers by decreasing turnover.

Recommendations
Recommendations for Practice and Policy in Science Teaching which are intended to help meet the crisis in science education are based on these professional experiences in science teaching.

Conclusion

The long-term solution is to get more and better students in the profession of science teaching. By working as a team, the school administration, the science teachers, and the teacher education programs, in particular, can organize seminars and workshops to study and propose viable solutions to the critical problem of the shortage of qualified science teachers in the middle schools and high schools. It is time that the school administration, the science teachers, and the teacher education programs do more than just "talk" about the problems described in the present article and elsewhere. These key players in the science reform process must not take the attitude that they will just sit back, relax, and see who shows up in the science teacher education programs in the colleges. Science teacher recruitment needs to involve a variety of approaches. The process of building collegiate athletic programs provides a good analogy. Recruitment in athletics begins in elementary school and sometimes much earlier. To be effective, key players in science reform must use a similar approach. It would be a grave mistake to wait until someone sets foot on the college campus and only then try to talk that person into becoming a science teacher. Schools must use caution when hiring teachers who are not fully certified in teaching science, or who are alternatively certified, because the quality of these teachers may be an issue. School must develop policies and practices that require these teachers to engage in stringent professional development activities and in-service training in order to fully develop their skills as competent teachers.

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