Teacher Education & Induction in the US

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The Policy Context

- Teacher education and professional development has been influenced by the implementation of the No Child Left Behind (NCLB) Act of 2001 that was implemented in 2002.
- NCLB contains a “teacher quality” component that mandates that each teacher be “highly qualified” to teach the subjects they teach.
- A highly qualified teacher is defined as one who has at least a bachelor’s degree in each subject area they teach and/or who has passed a test of subject matter knowledge. Each state gets to decide which competency test to use, and they are allowed to select from existing nationally-normed tests or create their own assessment.
- Different rules exist for prospective teachers and teachers who began teaching before NCLB was adopted. States have greater latitude regarding experienced teachers than with new teachers, and the expectations experienced teachers must meet to be considered highly qualified vary considerably across states.
Elementary School Teachers
Grades 1 - 4,5,or 6

• Under NCLB, elementary school teachers must have a BA and pass the state’s licensing exam to be considered highly qualified.

• Since elementary teachers teach multiple subjects, but cannot major or minor in so many subjects, questions have arisen regarding what they teachers should study in order to be highly qualified.

• Elementary teachers typically complete the general liberal arts curriculum and major in elementary education. Increasingly, education majors are expected to minor on one or more subject areas in addition to the education major to meet certification requirements.

• Elementary teachers typically do not prefer to minor in mathematics. The humanities are most popular, but interdisciplinary science minors are growing in popularity.
Middle School Teachers
Grades 4,5 or 6 – 8 or 9

• Under NCLB, middle school teachers must be highly qualified in each subject they teach. Most middle grades teachers teach only one subject (e.g. mathematics), but might teach arithmetic, algebra, and/or geometry.

• Currently, most states do not offer specific certificates for teaching the middle grades, and most education programs do not offer separate programs for prospective middle grades teachers.

• Depending on the state, middle school teachers may hold either a K-6 or K-8 elementary certification, but some states require them to hold a secondary (grades 9-12) education certificate in the subjects they teach.

• In some states, teachers become certified to teach in the middle grades by majoring in elementary education, with or without subject area minor(s). In other states middle grades teachers must double major in a subject area and secondary education, or major in secondary education with double minors in two subject areas (e.g. mathematics and chemistry).

• Certification requirements may involve passing the elementary licensing exam only, or the elementary exam plus subject area exams, or the secondary licensing exam plus subject area exams.
• Under NCLB, high school teachers must major in the subject area(s) they teach and pass a licensing exam in those subjects to be considered highly qualified.

• Practicing teachers who do not meet this standard must either complete additional coursework to earn the equivalent of a bachelor’s degree, or pass state content area exams in each subject they teach.
Other Policy Guidelines

• Organizations such as the Mathematical Association of America (MAA) have produced recommendations regarding the preparation of elementary and secondary mathematics teachers.

• The Conference Board of the Mathematical Sciences have produced recommendations for the mathematical education of teachers (MET) that influence the structure and content of teacher preparation programs.

• Included among these recommendations are the expectation that:
  – elementary teachers complete at least 9 credit hours / 3 courses in mathematics that are typically worth 3 credits each;
  – middle school teachers complete the equivalent of a mathematics minor, which typically includes 15-20 credit hours / 3-5 college level mathematics courses (worth 3 or 4 credits each);
  – high school teachers complete a mathematics major, which typically involves about 30 credit hours / about 7-10 mathematics courses (worth 3 or 4 credits each) at the level of calculus and beyond.
In additions to the number of courses prospective teachers should take, the MET recommendations also specify content areas and the types of learning experiences that should be provided. These can be reviewed or downloaded at:

The NCTM also provides standards for teachers, students, and assessment that guide mathematics teacher educators efforts to prepare K-12 teachers to teach standards-based mathematics. These can be accessed via: http://www.nctm.org/
Teacher Education Programs

- States set policy for teacher education, certification, induction, and professional development. Districts may set policy in addition to or in lieu of state policy.
- Local colleges and universities use these policy guidelines to organize their teacher education programs and their induction and professional development activities.
- There are many similarities between teacher education programs across states, but there are also many differences. Major differences exist regarding the number of mathematics courses required and the length of student-teaching.
Teacher Induction

• In districts and school that offer induction programs, teachers with less than 3 to 5 years of experience are eligible or required to participate.
• Induction often involves mentoring and other support to help new teachers cope with challenges of classroom teaching.
• The goal of induction is to address
  – lower effectiveness of novice teachers when compared to teachers with 5 or more years of teaching experience
  – high turnover of new teachers during the first 5 years of teaching