

Qualifications for Teaching Algebra I - Grade

Charles D. Watson



Background

- Qualification for teaching Algebra I - High School
 - Fully certified - major in mathematics
 - Complete teacher preparation program
 - Alternate licensure - based on degree in mathematics
- Same qualification for teaching Algebra I at middle school - Grade 8



Supply and Demand in Secondary Mathematics

- Supply is down -
 - Number of students entering education programs continues to decrease
 - How bad is it?
 - Last year UCA prepared 13 secondary mathematics teachers - that number was greater than the sum total of secondary math teachers trained in all other Arkansas programs combined.



Supply and Demand

- *Graying of secondary mathematics teachers -*
 - Average age of secondary mathematics teachers is approximately 55 years of age
 - Early retirement



Supply and Demand

- Demand is up -
 - State Board of Education increased the mathematics requirement for graduation to 4 years of mathematics with Algebra I as the foundation course.
 - Number of students taking high school mathematics significantly increasing due to the graduation requirement





Supply and Demand

- Demand for Algebra shifted -
 - With the decrease in the number of schools offering courses below Algebra I (Algebra a, b) the trend is to shift student entry into HS mathematics to Grade 8 - Algebra I
 - With the qualification for teaching Algebra I being secondary mathematics the demand for qualified teachers increased



So What

- The **Demand** is up 
- The **Supply** is down 
- Makes for situation that calls for drastic action to cover classes....



Solutions/Options

- Graduate more highly-qualified secondary mathematics teachers
- Move all Algebra I classes to high schools where most certified HS mathematics teachers are employed
- Cause schools to be classified in probationary status based on unqualified teachers - especially middle schools



Solutions/Options

- Decrease the requirement for mathematics thus reducing the needs for more teachers
- *Consider creating a new licensure endorsement specifically for Algebra I in Grade 8*



Actions taken by ADE

- Human Resources/Licensure created task force and gave the assignment to
 - Contact other states to learn what they are doing
 - Create a task force to consider options for meeting the supply and demand for highly qualified mathematics teachers to teach Algebra I



Results from States

- Not much!!!
- A small number of states have created licensure options that specifically address Algebra I - for middle grades
- Most have not addressed this need
- Most have not adopted increased HS requirements



Creation of Task Force

- Thirteen members
 - Representative of middle school, secondary and university instructors
 - Representative of administrators, teachers and content specialists



Work of Task Force

- Reviewed curriculum content of Algebra I
- Reviewed end of course assessment released items
- Studied the content expectation of Algebra I teachers



Work of Task Force

- Reviewed middle level teacher preparation programs for content -
 - Mathematics/Science emphasis
 - Language Arts/Social Studies emphasis
 - Program expectations prior to 2002



Work of the Task Force

- Examined assessment options for licensure/endorsement
 - Secondary Math Praxis
 - Middle Level Praxis - general
 - Middle Level Mathematics - not currently used in AR



Initial Recommendations

- Explore creating a new endorsement just to cover teachers of Algebra I at the Grade 8 level
- Recommend minimum content preparation
- Recommend assessment measure to meet requirement of NCLB - Highly Qualified



Summary of Recommendations from Task Force

- [Task Force Summary Report no 2.docx](#)



Status

- The recommendations of the Task Force were adopted by
 - Department of Education
 - Professional Licensure Advisory Board
 - State Board of Education
- Cut score was set for Middle Level Mathematics Praxis



Status

- Colleges and universities have revised middle grades mathematics curriculum to identify courses to meet required 15 semester hour requirement
- One week training program is nearing completion - reviewed by mathematics community May 8



Status

- One week training program to be offered at UCA first time June 8-12, 2009
- First completers of endorsement expected in classrooms fall 2009



Questions???

