

Dear Committee Members,

I want to thank you for your work on SB 144. I have prepared mathematics teachers through Miami University for over 17 years. Prior to that, I worked as a seventh-grade mathematics teacher for 7 years. I hold a teaching license to teach secondary mathematics (7-12) in Michigan, and I **support this bill**.

Having taught middle school mathematics, I can testify to the need for strong mathematical preparation that links the arithmetic of upper elementary with the algebraic reasoning needed in secondary mathematics. Further, in the middle grade years, students experience conceptual geometry in a way that, if done well, can form a bridge between studies of shape and space, proof and justification, and measurement.

Preparing teachers to teach middle school mathematics requires that we spend time linking concepts taught in upper elementary school courses with those taught in high school. It is essential that they are strong in the nuances of proportional reasoning, the development of algebraic thinking, and the multiple representations of rational numbers (fractions, decimals, percents). This specialized knowledge allows a teacher to diagnose student misconceptions and intentionally build the conceptual bridges necessary for success in high school mathematics.

In contrast, preparing teachers to teach early elementary mathematics requires a deep understanding of early number concepts. Learning to count is more than just practicing the number song—it's understanding that the last number counted represents the total number of items in the set (cardinality), that numbers are composed of other numbers (part-whole relationships), and that quantities can be compared. These are complex, foundational concepts that must be taught deliberately and with specialized pedagogical techniques.

I'd be the first to tell you that I think all teachers need this broad specialization in mathematics, but that kind of preparation takes time. Given the generalist nature of the current elementary license, I simply do not have that kind of programmatic real estate—it is important for all teachers to have specialized knowledge of literacy, science, and social studies, too. I absolutely cannot teach this volume of content WELL without adding significantly to the required courses for our programs, which would increase the time to graduation and make it harder to complete degrees.

The move to creating a specialized license for middle school teachers solves this problem and creates one other important benefit. SB 144 supports the continued professionalization of middle school teachers. Teaching students at this important developmental stage also requires that they are committed to and knowledgeable about the unique social and emotional milestones that middle school students achieve. They are experts in teaching and have chosen to specialize at this grade level. Middle school teaching IS NOT just like teaching bigger elementary school students, just as Early Elementary teaching is NOT just teaching miniature adults.

By passing SB 144, you are empowering universities to develop focused, expert-level preparation for these critical grade levels. This will result in teachers who are more confident, more effective, and better equipped to meet the unique academic and developmental needs of their students. I strongly urge your support for this bill.

Sincerely,

Dr. Dana C. Cox