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**Remarks of Dr. Linette Branham
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**Before the Education Committee
Raised Bill 6666
An Act Concerning Teacher Certification**

March 16, 2009

Good afternoon Senator Gaffey and Representative Fleischmann,
and members of the Education Committee.

My name is Linette Branham, and I'm an Education Issues Specialist for the Connecticut Education Association. I'm here to comment on what we believe is a major flaw in Raised Bill 6666 pertaining to teacher certification. Section 1 would allow a person who applies for certification to teach in a subject shortage area to achieve what is referred to as "*an excellent score, as specified by the Commissioner of Education*" in lieu of meeting the subject area requirements currently in place for certification. We believe there are two major flaws in this idea.

First, the bill takes the authority from statute to determine what the standard for certification should be and puts it in the hands of the Commissioner of Education. We have to question the wisdom of giving up that collective responsibility and putting it in the hands of only one person.

Second, and more importantly, it waters down the standards for certification. On the one hand, Connecticut boasts of having some of the highest standards in the country, but the other hand, in the form of this bill, would drop those standards for some. Let's take a practical look at how this might play out.....

Joe Brown, for example, has a bachelor's degree in biology, and has worked in the private sector for 8 years. He's always been good in math, and took three or four math courses while he was in college. He'd like a change, and has decided he'd like to teach high school math. Under the current certification system, Joe has met the general requirement of having a bachelor's degree to be eligible for certification, but would need to supplement his math background so he has a total of 30 credits in math in order to be eligible for a certificate to teach that subject. He'd also have to take and pass the Praxis II exam in math. If Raised Bill 6666 were to become law, Joe could bypass taking additional math courses and simply pass the Praxis II math exam to meet the content area knowledge requirement for certification.

In another scenario, John Smith is a student at a Connecticut university, planning to enter the teacher preparation program in the hopes of becoming a math teacher. As an undergraduate, he has to have a major of at least 30 credits in math in order to do so, must complete the university teacher preparation program, and then also take and pass the Praxis II exam in math before becoming certified. John Smith doesn't have the option to simply take the Praxis II exam in math and bypass having a major in math in order to complete the teacher preparation program.

These two scenarios illustrate two significantly different standards for becoming certified in CT, and a lowering of standards in the first situation. This is a mistake, and a disservice to our students. For many years, CT has had high standards for the content-area preparation for teachers, requiring a subject area major, or 30 credits in the subject area, for teachers to be eligible for certification in that field. This requirement is rooted in the belief that a strong background in the subject is necessary in order to fully understand how to teach it.

Over the past several years, a number of studies and research reviews have been conducted to try to determine how much content area

knowledge teachers should have to be effective, and how that is best learned. This is a very difficult aspect of teaching and learning to measure, since there are so many variables that affect student learning. However, one thing *is* generally agreed-upon by teachers in our classrooms and those who prepare teachers for the classroom : teachers, especially on the secondary level, must have deep knowledge of the subject they teach and how to teach it. With the availability of information to students today, especially via the Internet, this requirement is more important than ever. Teachers can't challenge students to think and perform at high levels in the content area unless they, themselves, have a strong background in the subject, the connections among its topics, and how those connect to other fields. Studies have shown the following:

- Elementary teachers need to have deep knowledge of reading/language arts and math;
- Data from the National Assessment of Educational Progress (NAEP) indicate that achievement in math was higher among fourth and eighth grade students whose teachers had a major in math;
- Data from five other studies (1994, 1994, 1995, 1997, 2000) showed that student achievement in math was greater when the teacher had a major in math;
- Data from five other studies (1994, 1994, 1995, 1997, 2000) showed that student achievement in science was greater when the teacher had a major in science; one of these studies also concluded that courses in earth and physical science contributed to higher student achievement in science;
- A study conducted as long ago as 1983 concluded that student achievement in science is positively related to the number of biology courses and science courses in general the teacher had, and that when a teacher had more advanced levels of science courses, the students' cognitive outcomes were greater.

Gaining deep content knowledge needed for the first level of certification comes most appropriately, we believe, through subject area coursework. When designed properly a program of subject area study begins with basic content knowledge and builds in complexity. This helps the student understand the root of the knowledge, how it branches from there, and how those branches connect. It includes a study of the facts, concepts, principles, and skills of the subject area, and gives the student opportunities to apply those in real-world situations. In a teacher preparation program, this program continues with how to teach those elements to students

through the use of the content. We believe this type of preparation can't be adequately achieved without vigorous coursework.

This type of deep knowledge and skill in the content area also can't be demonstrated only by passing a subject-area exam. As an example, let's look at the Praxis II exam for mathematics required in CT. This exam is composed of 50 multiple-choice questions covering five content areas; each content area contains a certain number of topics, with the total number of questions in the content area covering all of the topics, as follows:

- *algebra and number theory* - nine topics covered by eight questions;
- *measurement* - three topics covered by three questions; *geometry* - seven topics covered by five questions; and *trigonometry* - five topics covered by four questions;
- *functions* - six topics covered by eight questions, and *calculus* - nine topics covered by six questions;
- *data analysis and statistics* - seven topics covered by five-six questions; and *probability* - four topics covered by two-three questions;
- *matrix algebra* - five topics covered by four-five questions; and *discrete mathematics* - six topics covered by three-four questions.

In short, taking only an exam to demonstrate deep content knowledge, when there may not even be one question asked about each topic covered *doesn't* assure that the exam-taker has deep knowledge. This is why CT has required 30 credits (generally ten courses) or a major in the content area AND the passage of the Praxis exam for certification.

Some will argue that there are many people who *do* have strong content area knowledge, although perhaps not 30 credits or a major, and *would* be attracted to the teaching profession if they didn't have to spend the time or money to take the few additional courses they would need to meet our current course requirement for certification. How can these people be served? We already have mechanisms in place for that. Prospective teachers can take content-specific CLEP exams, administered through the College Board, for which they can earn college credit. For example, the CLEP exam in College Algebra covers material that is taught in a one-semester course in algebra. It contains 60 questions involving solving routine and nonroutine questions; four topics (operations, equations and inequalities, functions and their properties, and number systems and operations); and between four and six areas within each topic. Another mechanism is through Charter Oak College's alternate ways of earning college credit for on-the-job learning

and life experience. Between these options, and that of taking coursework on line, there already exist a variety of ways a prospective teacher can meet the standards for certification.

No matter where a teacher teaches - a rural, suburban, or urban district - students deserve teachers who have demonstrated in more than one way that they have deep content area knowledge. Lowering that standard *might* attract people into the profession in shortage areas such as math and science, but students deserve more than teachers who have met lower standards. If we need to lower academic standards to draw people into our profession, we run the risk of attracting people who won't help students learn at high levels, and who may do more harm than good. The public trusts that we will provide students with high-quality teachers, and we can't risk our students' future, and hence, our own futures, by violating that trust. I urge you to consider these factors seriously, vote no against Raised Bill 6666, and help maintain our high standards for teachers.

