



August 24, 2015

SENT VIA EMAIL

RE: Need for states to maintain the Nemeth Braille Code as the national standard for mathematics when implementing Unified English Braille

Dear States' Departments of Education:

It has come to the attention of the National Federation of the Blind that as a part of implementing Unified English Braille some states intend to phase out the use of the mathematics Braille code that has been the standard in the United States for more than forty years (the Nemeth Code for Mathematics and Science Notation). The National Federation of the Blind writes in opposition to any such decision and in support of the need for a continued nationwide standard.

The Braille Authority of North America (BANA) has voted that as of 2016 the official codes to be used in the United States include Unified English Braille (UEB) and the Nemeth Code for Mathematics and Science Notation (Nemeth Code). To reach the implementation goal, BANA announced it "is providing guidance on how to incorporate the Nemeth Code into UEB context with the intent that the Nemeth Code will continue to be integral to Braille in the United States." Each state may create a customized plan for implementation of UEB.

Some states, acting under an impression that part of the implementation process involves setting at the state level the standard for how mathematics Braille will be produced and taught in that state, have indicated an intent to move to the use of only UEB symbols for the teaching and production of Braille math in their state. This is problematic on several levels. First, Braille production does not occur in isolation within each state, but rather is done to a great extent by a nationally connected network of Braille transcribers and producers. It is sometimes a struggle to obtain a math book or test in Braille, much less to produce the very same math textbook or test in two different ways as would be required if there is not a single standard for Braille mathematics in this country. There exists in the United States a well-established network of certified Nemeth code transcribers, but there is no training or credential to ensure the qualification of transcribers producing technical materials using UEB symbols only.

During the transition to Unified English Braille, some duplication of effort will be unavoidable even in non-technical material to minimize disruption to the education of Braille readers. However, to add a further variant to the standards for math will make the transition exponentially more chaotic, costly, and confusing for all concerned.

The strong support for the use of Nemeth Code for mathematics is based in Nemeth Code being a known quantity, used successfully for decades, and found to be efficient and agile for reading and working mathematics problems because of its use of lower numbers distinct from letters, its one-cell representations of many mathematical symbols, its compact spacing, and other features that make it especially suited to mathematics. Although the benefits of the update to Unified English Braille for non-technical material are demonstrable, theories are unproven that abandoning the Nemeth Code in favor of the use of UEB symbols for technical contexts will improve Braille readers' access to and performance in math.

The differences between the presentation of mathematics in Nemeth Code and math using UEB symbols are so fundamental that a blind child moving to a state with a different math standard could find his or her math books and tests inaccessible even though they are in Braille.

The National Federation of the Blind calls upon state departments of education to eliminate needless confusion and unnecessary cost by using the Nemeth Code for Mathematics and Science Notation, with BANA's guidance for Nemeth in UEB contexts, as the standard for math Braille.¹

The National Federation of the Blind, with 50,000 plus members around the country, includes individuals of all ages and walks of life—parents, teachers, students, those working in the fields of science, technology, engineering, and math (and those who aspire to do so), and numerous others who use Braille throughout our daily lives. Our ultimate goal is the complete integration of the blind into society on an equal basis with our sighted peers. High-quality and consistent Braille instruction in all curricula is integral towards that effort.

This is an issue of utmost importance to the National Federation of the Blind. Should you have any questions regarding Nemeth and UEB, please do not hesitate to contact Steven Booth, Braille Specialist, at 410-659-9314, extension 2412, or sbooth@nfb.org.

Sincerely,



Mark A. Riccobono, President
National Federation of the Blind

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cc: Michael K. Yudin, Assistant Secretary for Special Education and Rehabilitative Services, U.S. Department of Education, michael.yudin@ed.gov

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¹ See https://nfb.org/2015%20Resolutions#resolution_2015-29.