

ABL Alliance for Braille Literacy

Christopher Gray, President

5453 Chippewa Street, St. Louis, MO 63109

chris@moblind.org

www.all4braille.org

November 2014

Subject: Call to action: Prevent educational harm to braille readers

To: US Department of Education

State and local departments of education

Members of Congress

Members of state and local legislatures

School administrators

Teachers, especially special education teachers

Parents of blind children

Advocates of equal opportunity, especially for math and science education

As you may be aware, there are efforts under way to make significant changes to the braille notation currently used in the United States. You may have received a letter from the Braille Authority of North America (BANA), an organization that proposes braille standards within the U.S. BANA is not an official governing body of braille standards and has no legal authority over which braille codes schools should or should not use.

The centerpiece of the proposed change is a switch of braille notations to "Unified English Braille" (UEB). Although it may be adequate for general literature, UEB is a major step backwards for math and science materials. Because it is very different from current braille notations, it will be confusing to braille-reading students and will interfere with their educational success.

Braille notation has critical impacts on the performance of braille-reading students. The educational consequences of the proposed changes should be afforded the same level of scrutiny as would be employed if equivalent changes to English spelling and mathematical notation were proposed for sighted students. The Alliance for Braille Literacy (ABL) has studied braille literacy in general and UEB in particular and is gravely concerned about the adverse effects that switching to UEB would have. The most detrimental consequence would be that braille users would be required to read and write a more complicated mathematical notation, thereby inhibiting their ability to learn math and science concepts. At a time when an increasing number of jobs require advanced skills in science, technology, engineering, and mathematics (the STEM fields), it is essential that braille-using students not be placed at such an unnecessary disadvantage compared with their sighted peers. The goal of equal opportunity requires you to be alert to the adverse impact.

Currently, braille notation is handled by several "codes": there exists a code for plain literary text, a code for math and science, a code for music, plus multiple specialized braille codes including codes for the study of foreign languages. Students today learn the literary code and the math code, often in first or second grade. The system works, although in theory having a single code would be desirable.

The term "unified" in UEB stands for the merging of literary and math codes as well as for the standardization of braille throughout the English-speaking world. Unfortunately, the result of this effort of unification is that the math aspect of UEB is completely different from what students use now.

It is so cumbersome for all but elementary math that it will hinder learning. This is why switching to UEB will harm the educational success of braille-using students. Moreover, while a world standard sounds attractive at first, it is basically irrelevant to education when one considers that textbooks used in other countries would not be used in the United States. Even worse, the international standardization led to unnecessary changes to braille spellings in UEB that were made to conform to certain braille practices of other countries.

The solution is simple: for the moment, braille in the United States should not change. The educational setbacks from switching to UEB outweigh its benefits. We urge all decision makers and stakeholders to advocate the following actions:

1. Retain the current use of the "Nemeth Code for Mathematics and Science Notation" (Nemeth). It has been successfully used at all grade levels for the past six decades. The math component of UEB is an entirely different system that is less than adequate for higher level mathematical concepts such as those taught in middle and high school.
2. Stipulate that textbooks on mathematically-oriented subjects continue to be produced entirely in Nemeth. BANA is considering mixing UEB and Nemeth throughout a textbook, a practice that would likely result in numbers, simple operation signs (such as plus and equals), and other symbols appearing in two different notations on the same page. Such a conglomerate of symbols would render math and science materials unnecessarily complicated and confusing.
3. Ensure that students be taught Nemeth when they are first introduced to math. This is the current successful practice. BANA is reportedly deliberating the idea that students first learn the new UEB mathematics notation and later, when math concepts increase in complexity, either switch to, or worse, do without, the proven Nemeth notation.
4. Refrain from implementing any part of UEB. One of the goals of the developers of UEB was to make braille easier to learn and use. However, the result of 23 years of effort has become a notation that is actually less intuitive and slower to write than the current system. Also, UEB changes the braille spelling of approximately 9% of all English words and requires students to learn many new mathematical and special symbols. With so many disadvantages, there is no merit in the educational disruption of switching to UEB or the extra monetary expenditures.
5. Should significant changes such as those currently proposed ever be implemented in schools, ensure that all tests, especially standardized tests, continue to be available in the current braille notation until students have reached high proficiency in reading and writing the new braille system in all subject areas. BANA has designated January 4, 2016, as the date after which all new braille materials are to be produced in UEB. In the short time remaining, however, students and their braille teachers will not be sufficiently trained in the new code, and most students will not encounter textbooks in the new notation before the 2015/16 school year at the earliest. The ultimate decision on the readiness of each individual student should lie solely with each student's IEP team.

In summary, ABL regards the changes being pursued by BANA to be educationally harmful to braille users, particularly with regard to math and science. ABL, therefore, urges you to prevent the implementation of UEB. In today's knowledge economy, where employment prospects of all students hinge upon a fundamental understanding of scientific concepts, braille users cannot afford a setback.

Very truly yours,



Chris Gray