

Date of Hearing: May 9, 2018

ASSEMBLY COMMITTEE ON EDUCATION  
Patrick O'Donnell, Chair  
AB 3223 (Grayson) – As Introduced May 1, 2018

**SUBJECT:** Special education: visually impaired pupils: braille: Unified English Braille

**SUMMARY:** Changes the definition of braille, as used regarding the individualized education programs (IEPs) for visually impaired students, from “Standard English Braille, American Edition” to “Unified English Braille.” Specifically, **this bill:**

- 1) Changes the definition of Braille, as used in the Education Code, from “Standard English Braille, American Edition” to “Unified English Braille,” for purposes of the article regarding the IEPs of visually impaired students.
- 2) States that nothing in the act shall be construed to prohibit the use of Nemeth Math Code for the teaching of mathematics.

**EXISTING LAW:**

- 1) Defines “braille” to mean the system of reading and writing through touch commonly known as “Standard English Braille, American Edition.” (EC 56350)
- 2) Requires local educational agencies (LEAs) to provide opportunities for braille instruction for students who, due to a prognosis of visual deterioration, may be expected to have a need for braille as a reading medium.
- 3) Authorizes an LEA to reinforce braille instruction using a braille instructional aide who meets specified criteria, under the supervision of a teacher who holds an appropriate credential, to teach pupils who are functionally blind or visually impaired. Requires this instruction to be in accordance with the IEP of the pupil.
- 4) Requires a braille instructional aide to demonstrate to the supervising teacher that he or she is fluent in reading and writing grade 2 braille and possesses basic knowledge of the rules of braille construction.
- 5) Requires an LEA which employs a braille instructional aide to provide the aide with information regarding teaching credential programs, including the Wildman-Keeley-Solis Exemplary Teacher Training Act of 1997 and the Teacher Education Internship Act of 1967.
- 6) Requires the Superintendent of Public Instruction (SPI) to form an advisory task force to develop standards for the mastery of the braille code as a child progresses through kindergarten to grade 12, inclusive. (EC 56351.7)
- 7) Requires, by June 1, 2006, the state board of education (SBE) to adopt braille reading and mathematics standards.
- 8) Requires LEAs and Special Education Local Plan Areas (SELPA) to provide pupils with opportunities for instruction to master the braille reading and mathematics standards.

- 9) Requires that a functional vision assessment be used as one criterion to determine the appropriate reading medium or media for a pupil.
- 10) Requires an assessment of braille skills for functionally blind pupils who have the ability to read. States that an LEA may provide pupils with low vision the opportunity to receive assessments to determine the appropriate reading medium or media, including braille instruction.
- 11) Requires that braille instruction be provided by a teacher who holds an appropriate credential, as determined by the Commission on Teacher Credentialing (CTC), to teach pupils who are functionally blind or visually impaired.
- 12) Requires the SBE to make available copies of adopted textbooks and other state adopted print materials in large print and other accessible media for pupils enrolled in the elementary schools whose visual acuity is 10/70 or less or who have other visual impairments making the use of these textbooks and alternate formats necessary, and textbooks in braille characters for pupils enrolled in elementary schools whose corrected visual acuity is 20/200 or less. (EC 60312)
- 13) Requires a publisher to provide to the state, at no cost, computer files or other electronic versions of each state-adopted literary title and the right to transcribe, reproduce, modify, and distribute the material in braille and other forms. (EC 60061)
- 14) Requires the SPI to maintain a central clearinghouse-depository and duplication center for the design, production, modification, and distribution of braille, large print, special recordings, and other accessible versions of instructional materials. (EC 60313)

**FISCAL EFFECT:** This bill has been keyed non-fiscal by the Office of Legislative Counsel.

**COMMENTS:**

*Need for the bill.* The author's office states: "On November 2, 2012, the United States members of the Braille Authority of North America (BANA) voted to adopt Unified English Braille (UEB) to replace English Braille American Edition (EBAE) in the U.S. and established January 4, 2016, as the date of implementation. As a result, UEB, a revised code and set of rules for teaching and reading braille for students who are blind, became the official literary code in the U.S. While UEB is not regulated by law, all transcribing agencies were authorized to begin providing braille in the new code across the United States in January 2016. While the California Department of Education has begun transitioning to the UEB standard, the state's Education Code still references the outdated EBAE standard."

*Visually impaired students in California.* Current law defines "visually impaired" students as those who are functionally blind or who have low vision. The California Department of Education (CDE) reports that as of December, 2016, there were 3,565 visually impaired students in California aged 0-22 years, representing about 0.5% of all students with disabilities in California. CDE reports that in the 2006-07 school year there were 4,697 visually impaired students in the same age range. Because state assessment scores for students with disabilities are not disaggregated by disability category, there is no published state data about the academic

proficiency of visually impaired students (or any other group of students with disabilities) on state assessments.

***Development and use of braille.*** Braille was invented in 1824 by Louis Braille, who was blinded at the age of three, while a student in Paris. His system was inspired by the “night writing” system used by the military to read messages on the battlefield at night without the use of light.

Braille is a system of raised dots that can be read by people who are blind or who have low vision, using their fingers. Braille is not a language, but an independent writing code which allows many languages to be written and read. Braille symbols are formed by one to six raised dots which appear within cells, which can produce sixty-four combinations. A cell can be used to represent a letter of the alphabet, a number, a punctuation mark, or a whole word. While braille can be written as a letter-to-letter match of English words (known as the “uncontracted” form), braille makes use of many “contractions” which function like abbreviations for words or parts of words, allowing braille to be read more quickly and easily. According to the American Foundation for the Blind, contracted braille is considered the standard in the United States, and it is used on signs in public places and in general reading material. There are grades of braille use, ranging from basic one-to-one letter correspondence (grade 1), to the frequent use of contractions (grade 2), to an individualized shorthand form (grade 3). Braille can be read and written in several forms. It can be manually written using a slate and stylus or by using a braillewriter which has six keys, and can be read using a refreshable braille display which turns text on a computer screen into braille using raised pins.

***Unified English Braille vs. Standard English Braille, American Edition.*** Following the introduction of braille, numerous forms developed in different countries and for different purposes. Standard English Braille, American Edition, became the official braille used in the United States in 1959. Other English speaking countries, including the United Kingdom, used different versions of English braille. In 1991, an effort began to create a unified form of English braille, and in 2012 the Braille Association of North America resolved to make UEB the standard code for reading materials as of January 4, 2016 (the birthday of Louis Braille). At least seven English-speaking countries have adopted UEB: Australia, Canada, New Zealand, Nigeria, South Africa, United Kingdom, and the United States.

The effort to create UEB arose from concern about the erosion of braille usage among children and adults, blamed in part on the “complexity and disarray into which the Braille system [had] evolved.” The varied codes used for different purposes, which were developed independently and which involved many conflicting rules and symbols (for example, several distinct ways to represent a dollar sign) was viewed as posing “a danger that Braille will become a secondary means of written communication among the blind, or that it will become obsolete altogether.” (Cranmer and Nemeth, 1991)

UEB is a revision and extension of prior code which is intended to make braille quicker, easier, and more efficient to use by, among other features, simplifying the system, unifying the code used across English-speaking countries, and reducing the number of different coding systems used. According to BANA, some significant differences between English Braille, American Edition include:

- UEB has fewer exceptions and is less ambiguous than current code.

- UEB is more computable for transcribing from print to braille, and better for "backtranslation" from braille to print.
- UEB eliminated nine contractions from current code, changed some symbols, and added others so it more closely reflects the original print text without ambiguity.
- UEB changed some contraction rules so they are simpler to use and have fewer exceptions.

***Nemeth Code, Music Braille, and International Phonetic Alphabet Braille.*** In BANA's 2012 resolution making UEB the standard form of braille, it also resolved to maintain several other codes: Nemeth Code for Mathematics and Science Notation, 1972 Revision; Music Braille Code 1997; and International Phonetic Alphabet (IPA) Braille Code, 2008. Each of these forms of braille is used for specific purposes. Nemeth Code is a form of braille used for mathematical and scientific notation. Music Braille Code is used for music notation, and IPA Braille is used for notation of the International Phonetic Alphabet, a standard notation system for sounds of spoken language. Since these forms of braille have official recognition as codes to be used along with UEB, ***staff recommends that this bill be amended*** to add Music Braille and IPA Braille codes to the statement regarding the use of Nemeth Code for mathematics.

***CDE phase-in plan for UEB.*** California, like other states, has been engaged in the transition to UEB for several years, and created a multi-year phase-in plan beginning in 2015. The plan involved topics such as the training of teachers and transcribers, transcription of materials, and the updating of assessments. With regard to textbooks, CDE's plan states that new materials would be transcribed into UEB beginning in 2015, but previously purchased materials do not have to be re-transcribed.

The plan also involved ensuring that the Smarter Balanced assessments in English language arts and mathematics would use UEB once a new contract was approved. The Smarter Balanced Assessment Consortium's 2017 guide to assessment accommodations lists both EBAAE and UEB forms of braille, and UEB with Nemeth Code and UEB Math, in both contracted and uncontracted forms.

***Credentialing for teachers of visually impaired students.*** Current law establishes the Education Specialist Instruction Credentials, which authorize teachers to teach students served in special education programs. These credentials are specific to an area of specialization, such as teaching visually impaired students. The Visual Impairment (VI) specialization authorizes teachers to teach students who are blind, visually impaired, and deaf-blind.

In 2015 the CTC approved revisions to the *Preliminary Education Specialist: Visual Impairment, Standard 4: Braille Competency and Braille Literacy Instruction* standards to update the version of braille to UEB, effectively requiring that teachers of visually impaired students demonstrate proficiency in UEB.

According to the CTC, there are two approved educator preparation programs which offer the VI authorization: California State University, San Francisco, and California State University, Los Angeles. The CTC reported in 2014 that both of these institutions had already integrated UEB into their teacher preparation programs and that both programs require candidates seeking a VI authorization to demonstrate proficiency in all braille codes appropriate to their content area.

***Braille Reading Standards Task Force raises concerns regarding braille use among California students.*** Current law requires the SPI to form an advisory task force to develop standards for the mastery of the braille code. The SPI established the Braille Reading Standards Task Force, which produced standards adopted by the SBE in 2006. In this document, the Braille Reading Standards Task Force convened to develop these standards expressed concerns about the declining use of braille:

Braille, the obvious method of reading for people who are blind, has been de-emphasized throughout the past several decades. Reading and writing for the student who is blind are becoming lost skills. Success depends upon the ability of a child to read and write, be it in print or braille. It is the conclusion of this task force that the child who is blind, in most cases today, is not offered the same opportunity as his or her sighted peer to become a successful and productive citizen. The task force believes that the student who is blind is being denied a basic education right—the right to literacy.

Many reasons have been given for the de-emphasis of braille instruction, including the growing number of multidisabled blind children, audio materials, computers with speech, electronic magnification devices, the shortage of teachers qualified to teach braille, and increased student caseloads for teachers of students who are visually impaired.

Braille instruction for the student who is blind is equivalent to literacy instruction for the sighted student. The teaching of braille is not the teaching of some exotic code or language or extracurricular class. Braille is the most critical and powerful literacy tool in the life of a person who is functionally blind (Ryles, 1996; Schroeder, 1989).

## **REGISTERED SUPPORT / OPPOSITION:**

### **Support**

California Council of the Blind  
California School Boards Association  
Disability Rights California

### **Opposition**

None on file

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