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Preparation in and Use of the Nemeth Braille Code for Mathematics by Teachers of Students with Visual Impairments

L. Penny Rosenblum and Sheila Amato

Abstract: This study examined the preparation in and use of the Nemeth braille code by 135 teachers of students with visual impairments. Almost all the teachers had taken at least one course in the Nemeth code as part of their university preparation. In their current jobs, they prepared a variety of materials, primarily basic operations, word problems, tactile graphics, and fractions.

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Instruction in mathematics is part of the school day for the vast majority of children in the United States. All children must learn to use mathematical skills in a practical way to solve problems (Krebs, 2001). Children who are blind use the Nemeth Code for Braille Mathematics and Science Notation (Nemeth code) (Nemeth, 1972) to gain access to and produce mathematical work. There are several concerns related to instructing blind students in the Nemeth code. First, students often do not have access to textbooks that are produced in braille (Kubiak & Kubiak, 1997). If they do, there are often discrepancies between the print version and the braille version (Rapp & Rapp, 1992), or they are not given the books in a timely manner (Corn & Wall, 2002). The amount of time that is necessary to produce Nemeth materials and to instruct students in their use is considerably longer than the time needed to provide print materials and instruction to sighted students (Rapp & Rapp, 1992). Second, teachers of students with visual impairments often do not have the skills and knowledge to prepare the materials (DeMario & Lian, 2000) or to teach the Nemeth code (Kapperman & Sticken, 2003). Yet, skills in the area of Nemeth code were rated as important by 40 professionals in visual impairments in a Delphi study (Koenig & Holbrook, 2000). Thus, there is concern that teachers of students with visual impairments often do not have the skills or resources to meet their students' educational needs in this area.

"Without the ability to read and write the symbols that represent mathematical concepts, the field of mathematics is closed to persons who are visually impaired" (Kapperman & Sticken, 2003, p. 110). Furthermore, many jobs for which mathematics is an integral function (for example, bookkeeper or electrical engineer) may be closed to individuals who did not have access to and instruction in mathematics. Thus, it is imperative that teachers of students with visual impairments receive appropriate preparation in the Nemeth code—in both how to prepare materials and how to instruct students in using the code.

Amato (2002) surveyed university programs that prepare teachers of students with visual impairments and found that the university braille instructors in 25% of the programs believed that their graduates were not competent in the Nemeth code because of limited instructional time. Kapperman and Sticken (2003, p. 111) advocated that "personnel preparation programs for training teachers of students who are visually impaired should place a greater emphasis on training in braille mathematics." To do so effectively, we believe, the field must have a clear understanding of what materials these teachers prepare and what resources they use to do so.

Method

Development of the instrument

Both authors teach courses in the Nemeth code in university programs that prepare teachers of students with visual impairments in the United States. Each has questioned what should be included in these courses to prepare future teachers to meet the needs of students who use the Nemeth code. Thus, we developed an instrument to answer the following questions:

1. How were teachers of students who are visually impaired prepared in the Nemeth code, and how effective do they think their preparation was?

2. How many users of the Nemeth code do the teachers serve, and what types of materials do they prepare for the users?

3. What resources do the teachers use in preparing materials in the Nemeth code?

4. How do the teachers support the acquisition of mathematical skills by users of the Nemeth code?

The instrument was divided into four sections and contained primarily multiple-choice items, with space allocated for responses that were not covered in the given choices. The first section included demographic information (for example, gender, job role, number of Nemeth code users in one's career, and the amount of time spent in preparing materials in the Nemeth code). The second section sought information about how their university programs prepared the participants in the Nemeth code. The participants were asked to complete

the third section only if they were currently working with a user of the Nemeth code. This section gathered information about the types of materials that the teachers prepared and the frequency and usefulness of the resources they used in preparing the materials. The final section included five open-ended questions on such issues as the strategies used in working with general education teachers, the information that the participants believed preservice teachers of students with visual impairments should receive, and how beginning users are instructed in the Nemeth code.

A draft of the survey instrument was reviewed by six individuals who are involved in mathematics education of students who are visually impaired: a high school mathematics teacher at a specialized school for visually impaired students; a braille adviser for the National Library Service for the Blind and Physically Handicapped; the director of a state instructional media center; two faculty members who teach courses in the Nemeth code at their respective universities; and Abraham Nemeth, the inventor of the Nemeth code, who provided valuable suggestions for preparing the final survey instrument. (The survey can be read in the online edition of this article, available at <www.afb.org/jvib.asp>.)

Administration of the survey

In January and February 2003, we mailed copies of the survey and stamped return envelopes to the

membership of the Division on Visual Impairments (DVI) of the Council for Exceptional Children (*n* = 612) and the membership of Division 10 (Education Curriculum) and Division 16 (Itinerant Personnel) of the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER) (*n* = 668). In March 2003, we distributed additional copies and stamped return envelopes to some attendees at the annual conference of the California Transcribers and Educators of the Visually Handicapped (CTEVH) (*n* = 75), and in April 2003, we left copies at an exhibitors' table at the international convention of the Council for Exceptional Children's (CEC), with a sign inviting teachers of students with visual impairments to participate (the number distributed through this method is not known). At both conferences, we announced the availability of the survey questionnaires at sessions and meetings.

All the participants were instructed to complete the questionnaires independently and to return them in the envelopes that were provided. They were offered the option of receiving the questionnaires in accessible formats. Two participants requested and received the survey electronically. Responses to the questionnaires were entered into a computer statistical software program. Descriptive statistics are reported for each item on the basis of the number of individuals who responded to the item. Open-ended questions were entered into Microsoft Word, and themes were identified for each question.

Results

Number of surveys returned

A total of 262 surveys were returned: 143 (23.3% of 612) from the DVI, 116 (17.3% of 668) from AER, and a total of 3 from the CTEVH and CEC conferences. Many of the surveys returned were not fully completed because the respondents were not employed as teachers of students with visual impairments (*n* = 77) or were not certified teachers of students with visual impairments (*n* = 50). Thus, the data reported in this article are from 135 respondents who completed all four sections of the survey and were working as teachers of students who are visually impaired.

The participants and their caseloads

The questionnaires were completed by 135 teachers of students with visual impairments from 41 states, the largest number being from New York (*n* = 14), California (*n* = 12), and Texas (*n* = 10); 92.5% were female, and 99.2% were Caucasian. See Table 1 for the demographic characteristics of the participants. The majority of the participants were itinerant teachers.

The participants were asked how many students they had in their caseloads and how many were academic students—that is, students who were within two grade levels of the typical grade for their age. They were also

asked how many functional students were in their caseloads—that is, students who needed a life-skills or hands-on approach to learning. Then, the participants were asked how many academic students and how many functional students were users of the Nemeth code. These data are reported in Table 2.

The participants were asked how much time they spent preparing mathematical materials for their Nemeth code users. Of the 128 participants who answered, 60.9% reported 0% to 10% of their time, 21.1% reported 11% to 25%, 10.2% reported 26% to 50%, 7% reported 51% to 75%, and .8% reported more than 75% of the time. The final question in this section asked the participants how much of their instructional time was spent teaching mathematics to their students who use the Nemeth code. Of the 130 participants who answered this question, 48.5% reported 0% to 10%, 35.3% reported 11% to 25%, 13.1% reported 26% to 50%, 2.3% reported 51% to 75%, and .8% reported more than 75% of the time.

Participants' university preparation

Of the 135 participants, 128 reported that they had received their preparation at a total of 36 universities, with the highest number, 11, from the University of Northern Colorado, followed by Northern Illinois University (n = 10), San Francisco State University (n = 9), and the University of Arizona (n = 8). The year in which the participants completed their university

preparation ranged from 1966 to 2003, with 32.0% prepared between 1966 and 1979, 26.6% prepared in the 1980s, and 41.4% prepared between 1990 and 2003. Of 134 participants who responded, 19.4% had bachelor's degrees, 49.3% had master's degrees, 26.1% had certification as teachers of students with visual impairments in addition to their teaching degrees, and 5.2% reported other options. With regard to the level of Nemeth code preparation they received in their university programs, 39.6% of the 134 participants had taken a course in both literary braille and the Nemeth code; 33.6% had taken one course that covered both codes; 13.4% had taken a course in literary braille but not in the Nemeth code; 0.7% had no instruction in braille; and 12.7% reported other methods of instruction in braille as part of their university preparation, such as having the Nemeth code infused in one or more courses, taking some courses as part of a bachelor's degree program and others as part of a master's degree program, and attending workshops.

The next question asked of the participants was how well their university programs prepared them to do their jobs. Of the 128 who responded, 28.9% said that "It provided almost all the information I needed to do my job," 36.7% said that "There were many gaps I had to fill in by myself once I began my job," and 34.4% said that "My preservice training in the Nemeth code was so rudimentary that I learned most of what I need to know while on the job." Of the 52 participants who had been prepared since 1990, there was almost an

even split among the three answers, with 34% indicating "It provided almost all the information I needed to do my job," 37% reporting "There were many gaps I had to fill in by myself once I began my job," and 29% reporting "My preservice training in the Nemeth code was so rudimentary that I learned most of what I need to know while on the job."

With regard to the books or other resources they used during their university preparation programs, 78 participants listed none, and others listed from one to three resources. The *Braille Handbook for Nemeth Code of Braille Mathematics and Scientific Notation* (Laudenslager, 1972) was reported by 30 participants, *New Programmed Instruction in Braille* (Aschcroft, Henderson, Sanford, & Koenig, 1994; 2001) was used by 13 participants, and *Learning the Nemeth Braille Code: A Manual for Teachers and Students* (Craig, 1987) was used by 8 participants. Of the 30 participants who used Laudenslager's (1972) handbook, 27 had completed their university preparation prior to 1990. The participants were given a list of Nemeth code activities and asked what additional activities they had done since they had completed their university preparation programs. Ninety-seven participants had done at least one thing on the list, and others had done as many as three. Eight had taken additional courses in the Nemeth code through a university, 60 had attended workshops on the Nemeth code, 68 had attended conference sessions on the Nemeth code, and 32 had asked questions about the

Nemeth code and its use on listservs.

The 135 participants were also asked if they were certified by the Library of Congress as literary braille transcribers, and 8 reported that they were. Only 1 participant was certified by the Library of Congress as a Nemeth braille transcriber.

Preparation of materials

The third section of the instrument focused on how the participants prepared materials in the Nemeth code for their students. To assist in the preparation of materials, a transcriber was available to 37 participants, and a teaching assistant was available to 33. When asked how frequently they consulted their students' textbooks for a model, the responses of 107 of the participants were as follows: almost always (18.7%), frequently (22.4%), often (21.5%), rarely (29.0%), and never (8.4%).

With regard to the frequency with which the participants prepared mathematical materials for students during the 2002–03 academic year, the three most frequent types of materials prepared were basic operations, tactile graphics, and word problems (see Table 3). Advanced mathematics materials (for example, calculus, trigonometry) were rarely prepared by the participants.

The remainder of this section asked the participants to

rate the frequency of use and usefulness of the books and other resources they used in preparing materials in the Nemeth code on 4-point scales (frequency—4 = very frequently, 3 = frequently, 2 = not very frequently, and 1 = do not use—and usefulness—4 = very useful, 3 = useful, 2 = not very useful, and 1 = do not use). In each case, when the data were coded, "do not use" was dropped. The means reported in Table 4 range from 1 (not very frequent or not very useful) to 3 (very frequent or very useful). Technology in the form of computer programs, such as the Duxbury Braille Translation Software (by Duxbury Systems) and Scientific Notebook/DBT WIN = 10.3 (by MacKichan Software) were the most frequently used resources in the preparation of materials in the Nemeth code. The most useful resource was the *Braille Handbook for Nemeth Code of Braille Mathematics and Scientific Notation* (Laudenslager, 1972), followed by reference sheets, such as the *Nemeth Code Reference Sheet* (American Printing House for the Blind, n.d.).

Responses to the open-ended questions

The participants were asked five open-ended questions. The first asked about the participants' concerns related to supporting Nemeth code users in general education classes. In response to this question, the most frequent comments were in the area of "time for preparation"; other areas included the teacher's knowledge of the Nemeth code and mathematics in general, use of technology, preparation of graphical material, and

working with general education teachers. An itinerant teacher from Virginia summed up a concern of many when she said, "Being sure my braille conveys what the problems are really asking."

The second question asked what information the participants thought that preservice teachers of students with visual impairments should have. Over half the comments related to the provision of a course in the Nemeth code at universities. Other comments involved knowledge of references and resources, knowledge of mathematics, and knowledge of technology. An itinerant teacher from Ohio commented, "They must have an understanding of math themselves, so that Nemeth code makes sense to them. Nemeth is not really difficult if you understand the mathematics it conveys."

With regard to the strategies the participants used when assisting general education teachers to understand the unique needs of Nemeth code users, over half the comments focused on providing in-service training and conferencing with mathematics teachers. Team teaching, preteaching, and preparing accurate materials were also mentioned. An itinerant teacher from Arkansas stated:

> In-services prior to school starting have worked well for me. I use this time to demonstrate equipment or materials that may be used by the student and specifically how she or he will complete assignments. It tends to alleviate fears and help the teacher become aware of the importance of

preplanning.

The next question asked what instructional strategies the participants used when they have a student who is just beginning to learn the Nemeth code. The responses were split between following the general education curriculum and providing specific instruction in the Nemeth code that differs from the general education curriculum. Comments in favor of following the general education curriculum were similar to this one by an itinerant from Indiana:

> Nemeth should be taught in the same manner as numbers and numerical signs are taught to sighted children. It should be gradual, sequential, and follow the same general path as any other students. Nemeth should be treated just as it is—a method of notating mathematical concepts—nothing more, nothing less.

Those who thought that direct instruction was needed made comments, such as this by an itinerant teacher of students with visual impairments from California that the best method of instruction was "one-on-one instruction by myself and my well-trained assistant. The assistants in our district have a lot of knowledge about Nemeth."

The final question asked the participants who in their personal networks could support them when they had a question related to preparing materials in or teaching the Nemeth code. Over half the participants mentioned the support of another teacher of students with visual impairments. Others listed transcribers, adult users of

the Nemeth code, university faculty, and electronic discussion groups. Some participants said that they did not have anyone to ask. A typical comment was this one, from an itinerant teacher from New York: "If I cannot find the answer in a text, I contact other TVIs or use the Internet (electronic discussion groups, etc.)."

Discussion

This study examined the experiences of 135 teachers of students with visual impairments from 41 states in regard to their learning the Nemeth code and using it to teach students with visual impairments who are tactile learners. The study had several limitations that must be acknowledged. First, mailing lists from two professional organizations, DVI and AER Divisions 10 and 16, were used as the sample pool. It is highly probable that members of these organizations are not representative of the larger population of teachers of students with visual impairments in the United States. Second, since 50% to 75% of children with visual impairments have additional disabilities (Silberman, 2000), many are not learning the Nemeth code. Thus, teachers of students who have users of the Nemeth code in their caseloads are a small subset of the population of teachers of students with visual impairments in the United States. Third, teachers of students with visual impairments who were using the Nemeth code with their students or who had a strong interest in it were probably more likely to complete the survey than were those who did not use the code or had

no interest in it. The final limitation is that the data were self-reported; it is possible that the participants did not provide accurate responses to some of the questions.

Furthermore, the fact that the vast majority of the participants were female and Caucasian indicates the continued need to recruit men and minorities into the profession. The size of the participants' caseloads varied considerably, with an average of 6.9 academic students and 4.5 functional students receiving direct instruction. The average caseloads of the participants appeared to be small, which may reflect the amount of additional time a braille student often takes for instruction and preparation of materials.

That the participants attended a total of 36 university programs indicates that good representation of the universities that prepare teachers of students with visual impairments was achieved. Only 18 participants reported receiving no instruction in the Nemeth code at the university level. However, 45 had taken only one course that combined both literary braille and the Nemeth code, both of which are complex and take considerable time to learn. Only 37 participants thought that their university preparation in the Nemeth code provided them with the information they needed to do their jobs. An itinerant teacher from Delaware with more than 20 years of experience, who received her bachelor's degree in the 1970s, commented: "When I graduated, I was not well prepared to meet the

Nemeth needs of my students. Hours of self-study and hours of brailling have changed that. We need to make our young TVIs more braille- and Nemeth-literate." On the basis of comments such as this and the findings of Amato (2002), we question the thoroughness of a university course that combines both codes in one semester. We urge university preparation programs to explore options for offering two separate courses—on the braille literary code and the Nemeth code—to preservice teachers of student with visual impairments.

It is imperative that teachers of students with visual impairments have resources and supports to do their jobs effectively. One resource is the students' mathematics textbooks in braille. However, less than half the participants frequently or almost always used the students' textbooks as a model. Furthermore, only 33 participants had teaching assistants who aided in the production of materials, and only 37 had access to transcribers. Students who are braille users need a considerable volume of materials that are prepared in both the literary and Nemeth braille codes. Thus, skilled transcribers and teaching assistants can be valuable resources to teachers of students with visual impairments.

The types of materials that teachers of students with visual impairments are asked to prepare in the Nemeth code range from basic operations to calculus. The most frequently produced materials are basic operations, word problems, tactile graphics, and fractions. Thus,

university preparation programs should focus on preparing their students to produce materials in these areas and to expose students to higher-level materials (for example, geometry and algebra), as well as to give them the resources to produce these types of materials.

University programs must also provide their students with access and skills in using tools to produce materials in the Nemeth code. Duxbury Braille Translation Software and MegaDots MegaMath Mathematics Translator (by Duxbury Systems) and Scientific Notebook/DBT WIN = 10.3 (by MacKichan Software) were the most frequently used tools by the participants. Additional resources included the *Nemeth Code Reference Sheet* (American Printing House for the Blind, n.d.), *Learning the Nemeth Braille Code: A Manual for Teachers and Students* (Craig, 1987), and the *Braille Handbook for the Nemeth Code of Braille Mathematics and Scientific Notation* (Laudenslager, 1972). Amato (2002) reported that 42% of the university programs that she surveyed used *Learning the Nemeth Braille Code* (Craig, 1987) in their courses. Yet, when Kapperman and Sticken (2003) analyzed this text, they found that it did not provide adequate information on higher-level mathematics.

In regard to usefulness, the participants rated four of the six most frequently used resources as useful. In addition, they mentioned the *Nemeth Reference Sheet* (Bennett & Osterhaus, 2000) and the manipulative tool, *Nemeth Tack-Tiles* (by Braille Systems). Thus,

future teachers of students with visual impairments should have knowledge of and be familiar with using a variety of resources to prepare materials in the Nemeth code and to instruct their students. An itinerant teacher from Arkansas noted, "I feel that more emphasis should be given to the Nemeth code (and the abacus) in university programs. Many TVIs do not feel comfortable, or competent, in these areas."

This study presented further data to support the need for instruction in the Nemeth code at the preservice level. One of our key concerns is that no textbook is available to university programs that will provide future teachers of students with visual impairments with information on how to prepare materials in and how to teach students the Nemeth code. Additional research is needed to determine how students who are tactile readers learn the Nemeth code most efficiently—through introduction of the code as it occurs in the general education curriculum or through one-on-one instruction with a qualified teacher of students with visual impairments. Questions such as this need to be explored in future research.

References

Amato, S. (2002). Standards for competence in braille literacy skills in teacher preparation programs. *Journal of Visual Impairment & Blindness, 96* , 143–153.

American Printing House for the Blind. (1972). *The Nemeth braille code for mathematics and scientific notation.* Louisville, KY: Author.

American Printing House for the Blind. (n.d.). *Nemeth code reference sheet* . Louisville, KY: Author.

Ashcroft, S. C., Henderson, F., Sanford, L. D., & Koenig, A. J. (1994). *New programmed instruction in braille* (2nd ed.). Nashville, TN: SCALARS.

Ashcroft, S. C., Henderson, F., Sanford, L. D., & Koenig, A. J. (2001). *New programmed instruction in braille* (3rd ed.). Nashville, TN: SCALARS.

Bennett, G., & Osterhaus, S. (2000). *Nemeth reference sheet.* Austin: Texas School for the Blind and Visually Impaired.

Braille Authority of North America. (1997). *Braille code for chemical notation.* Louisville, KY: American Printing House for the Blind.

Braille Authority of North America. (2000). *Code for computer braille notation.* Louisville, KY: American Printing House for the Blind.

Buntrock, G. (1993). *Common Nemeth symbols reference sheet* . Rochester, NY: National Braille Association.

Castellano, C., & Kosman, D. (1997). *The bridge to braille: Reading and school success for the young blind child.* Baltimore, MD: National Organization of Parents of Blind Children.

Corn, A. L., & Wall, R. (2002). Training and availability of braille transcribers in the United States. *Journal of Visual Impairment & Blindness, 96* , 223–252.

Craig, R. H. (1987). *Learning the Nemeth braille code: A manual for teachers and students.* Louisville, KY: American Printing House for the Blind.

DeMario, N. C., & Lian, M. J. (2000). Teachers' perceptions of need for and competency in transcribing braille materials in the Nemeth code. *Journal of Visual Impairment & Blindness, 94* , 7–14.

Dixon, J., & Gray, C. (1993). *The computer braille code made easy.* Boston: National Braille Press.

Fosdick, N. L. (1992). *Nemeth at your fingertips: A teacher's guide for understanding and utilizing the Braille math code.* Austin, TX: Author.

Kapperman, G. (2001). *Nemeth code tutorial for the Braille Lite* [Computer software]. Sycamore, IL: Research and Development Institute.

Kapperman, G., Heinze, A., Henry, G., Huang, J., & Hawkins, B. B. (1995). *The computerized braille*

tutor [software tutorial]. Sycamore, IL: Research and Development Institute.

Kapperman, G., Heinze, A., & Sticken, J. (1997). *Strategies for developing mathematics skills in students who use braille.* Sycamore, IL: Research and Development Institute.

Kapperman, G., Henry, G., Cortesi, M., Heinze, A., & Sticken, J. (1997). *The computerized Nemeth Code tutor* [software tutorial]. Sycamore, IL: Research and Development Institute.

Kapperman, G., & Sticken, J. (2003). A case for increased training in the Nemeth code of braille mathematics for teachers of students who are visually impaired. *Journal of Visual Impairment & Blindness, 97* , 110–112.

Koenig, A. J., & Holbrook, M. C. (2000). Ensuring high-quality instruction for students in braille literacy programs. *Journal of Visual Impairment & Blindness, 94* , 677–694.

Kubiak, D., & Kubiak, E. (1997). Issues and aids for teaching mathematics to the blind. *The Mathematics Teacher, 90* , 344–348.

Krebs, C. S. (2001). Learning to solve word problems in a middle school vision class. *Journal of Visual Impairment & Blindness, 95* , 757–760.

Laudenslager, E. (1972). *Braille handbook for the Nemeth code of braille mathematics and scientific notation.* San Francisco: San Francisco State College.

Nemeth, A. (1972). *The Nemeth braille code for mathematics and science notation, 1972 revision.* Louisville, KY: American Printing House for the Blind.

Pesavento, M. E. (1993). *Braille codes and calculations: A self-study workbook for teachers, parents, and paraprofessionals who wish to learn the literary and mathematical braille codes.* Redmond, WA: Pesavento Press.

Rapp, D. W., & Rapp. A. J. (1992). A survey of the current status of visually impaired students in secondary mathematics. *Journal of Visual Impairment & Blindness, 86* , 115–117.

Roberts, H., Krebs, B., & Taffet, B. (1978). *An introduction to braille mathematics.* Washington, DC: Library of Congress.

Silberman, R. K. (2000). Children and youths with visual impairment and other exceptionalities. In M. C. Holbrook & A. J. Koenig (Eds.), *Foundations of education: History and theory of teaching children and youths with visual impairments* (Vol. 1, pp. 173–196). New York: AFB Press.

L. Penny Rosenblum, Ph.D., *adjunct assistant professor, Department of Special Education, Rehabilitation, and School Psychology, University of Arizona, P.O. Box 210069, Tucson, AZ 85721–0069; e-mail: <rosenblu@u.arizona.edu>.* ***Sheila Amato, Ed. D.,*** *special education teacher, teacher of students with visual impairments, Eastport–South Manor High School; adjunct assistant professor of education, Teachers College, Columbia University and Dominican College, New York; mailing address: 72 Aster Street, Massapequa Park, NY 11762; e-mail: <brltrans@optonline.net>.*

Previous Article | Next Article | Table of Contents

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