

## BRAILLE COMPETENCY AMONG BLIND LEARNERS: MATERIALS AND TEACHER FACTORS IN THIKA AND MERU, KENYA

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### Abstract

Braille remains the main medium of reading and writing among persons with blindness the world over. This study aimed at establishing factors that have continued to affect Braille competency among young beginners in Kenya. The study was carried out at Thika school and St. Lucy School, both of which are among the largest schools for learners with visual impairment in Kenya. The study adopted a descriptive survey design which involved asking questions to a sample of participants representative of the population. The study revealed that a significant number of teachers teaching Braille had not undergone any training in Braille. Resources and facilities used in teaching Braille were not adequate.

**Key Words:** Medium of communication; Reading and writing Braille; Slate and Stylus; Persons with Disabilities Act, Kenya.

### Introduction

Braille remains the main medium of communication for persons who are blind. Kenya adopted Braille's code which is made up of six dots. Braille writing equipment includes Perkins brailers and slate and stylus. Perkins brailers are quite ideal for writing but are rather expensive. The slate and stylus are a cheaper alternative. However, when using the slate and stylus, the child writes from right to left, thus contradicting the left-right eye orientation. The child turns the paper when it comes to reading what has been written. This makes the process rather slow. This is also cumbersome and more so to the young children who are blind (Sharon & Rosanne, 1998).

A review of the Koech Report (1999) confirmed that majority of children in schools for children with visual impairment in Kenya used crude, outdated writing equipment, thus did not perform as expected. This situation has hardly improved. Production of reading materials in a form usable by persons with visual impairments is usually slow, tedious and costly business.

The Disability Act (2003) on its part, stipulated that Learning Institutions should take into account the special needs for persons with disabilities with respect to the entry requirements, pass marks, curriculum, examinations, auxiliary services, use of school facilities, class schedules and other similar considerations. It also emphasized that provisions should be made in all districts for an integrated system of special and non formal education for persons with all forms of disabilities, and the establishment where possible of Braille and recorded libraries for persons with visual impairments. Materials should not only be relevant but also adequate so as to ensure that students who used Braille were not disadvantaged.

It is in the light of the above that the study explored the relevance of the materials used in teaching reading and writing Braille. The specific objectives of the study were to establish the academic level and professional experience of teachers who taught Braille reading and writing; and to identify the resources and facilities available for teaching Braille to young beginners.

### **Differences Between Braille and Print Reading: Tactile Versus Visual Reading**

Various research studies (Kosman & Castellano,1997; Harley, Truqan & Sanford,1987; Holbrook & Koenig, 1992) agreed that in the absence of vision, it was important to provide sensory training to the remaining senses like the sense of touch and the sense of hearing so that they might be used as sources of information. There are three general reasons why reading is important, the first being that it is a tool for learning. Once a child is able to read, he can do much more learning on his own. On the other hand, a child with a reading problem will be handicapped in all other subjects and will continue to do poorly until the problem is rectified. Secondly, reading is an indispensable skill in terms of entertainment for the child can experience ideas, adventures, feelings and situations that are expressed in form of print and are not available in everyday life. Reading is also an important means by which people obtain information about the environment and make use of it (Brunner, 1996).

The most basic and obvious way in which reading Braille differs from reading print is the sensory modality used. Braille readers read tactilely and print readers read visually. Kusajima (1974) conducted a comprehensive investigation of both tactile and visual reading. His findings are still valid and they are important for teachers of reading to consider in understanding the two processes. Kujasima summarized the different characteristics of efficient visual and tactile reading as follows:

Good visual reading is characterized by a small number of short regular pauses, no regressive movements and well-adjusted return sweeps combined with a deep and accurate understanding the meaning of a text. Good Braille reading is characterized by few zigzag, up-and-down, or

fluttering movements, uniform pressure of the finger on the page, non-regressive and well-adjusted movements between lines with the help of both hands combined with a deep and accurate understanding of the meaning of the text.

Kusajima's findings demonstrated that perception is tied to movement in Braille reading. In fact, without movement, perception cannot occur. Subsequent research also demonstrated the key importance of an individual reader's tactile perceptual abilities in developing good Braille reading skills, such as how the reader moves his or her hands (Mangold, 1978; Wormsley, 1978). This difference in perception from print reading has significant implications for the skills Braille readers need to learn, and teachers must make sure that their instructional strategies are consistent with the way Braille readers process information (Rex, Koenig, Wormsley, & Baker, 1994). In print reading, the teacher pays little attention to the mechanics of reading, that is, the movements of the eyes but the Braille teacher must help students develop good hand movements if they are to become efficient readers. Teachers must also be able to recognize inefficient hand movements and learn how to eliminate them and replace them with efficient ones. Many teachers think that they can teach tracking or the ability to follow a line of Braille across the page and down to the next line, by itself. When the task goes from tracking a line of dots to actual reading, however, tracking cannot be separated from the perception of the Braille characters. As a general rule, therefore, teachers should pay close attention at the beginning of Braille reading instruction to teaching the child how to move his or her hands on the Braille materials and to constructing materials that allow for movement across lines and characters in the manner of the most efficient readers (Kusajima, 1974). The study sought to establish whether teachers are well trained to be able to efficiently teach Braille to young beginners.

### **Complexity of the Code**

Another difference between learning to read and write in Braille and in print that affects the development of the instructional programmes is the fact that Braille readers have more symbols to learn than print readers, and they do not learn all the elements of the code until long after print readers have learned theirs. Generally, all of the print symbols, with the exception of certain standardized marks such as the ampersand (&) and certain punctuation signs such as the semi-colon, are introduced by the end of first grade.

However, the vocabulary in children's reading materials will not contain all of the Braille contractions until they have reached third grade reading level. Conversely, providing materials at a first, second or third grade reading level may not ensure that the child will be able to recognize or interpret the Braille symbols that do appear. And in addition to the symbols themselves, Braille readers must learn rules of usage of the Braille symbols that print readers do not have to contend with. This means that Braille readers have an extended period of time during which they are still learning their literacy medium, while their sighted classmates have moved on beyond learning their code.

## **Theoretical Framework**

As Fitt in Patrick (1992) postulated, the development of any skill progressed through three phases or stages. These phases were; the cognitive phase; the fixation or associative phase; and the autonomous phase.

Cognitive phase was concerned with the initial intellectualization process involved in learning a new task. In that task, both the trainer and trainee attempted to verbalise what had to be learned. In Braille both the teacher and the learner touched and verbalised dot positions, that is dot 1 up to dot 6. While the trainee was given some expectation about the nature of the task, and any procedures involved, initial performance was error prone and further advice or demonstration had to be provided by the trainer (Patrick, 1992). In the fixation or associative phase, correct patterns of behaviour were slowly established by practice with errors being gradually eliminated. Correct holding of reading/ writing materials and correct positioning of the hand and fingers in reading and writing Braille was paramount. Generally, that phase lasted longer than the preceding cognitive one. Patrick (1992) gave us some idea of the envisaged duration of that phase for typing. In the case of a typist, it would extend from the point at which the student had learned the position of different keys and how the fingers were used in striking them to the point where he/she had perhaps graduated from his/her first typing course and reduced the typing errors to less than one percent. Typing speed is an important element here. That was comparable to Braille since Braille just like typing involved striking keys whose various positions had to be mastered. Braille speed, just like typing increased with time. Errors of spelling, punctuations, spacing and others were gradually eliminated with time. The final autonomous phase of skill had two main features (Patrick, 1992). Gradually increasing speed of performance in tasks where it was important to improve time or accuracy and also increasing resistance to stress and to interference from other activities that may be performed concurrently. During this phase, skill became more automatic and required fewer psychological resources such as memory and attention. The trainee relies less and less on verbal mediation of the skill and indeed might be quite unable to verbalise how or what had been performed. At this stage the person could have extra capacity to perform other tasks simultaneously. The everyday intuition of for example, typing illustrated those points. A skilled typist could engage in a conversation simultaneously with apparent ease. Similarly, a skilled brailleist had no problems engaging in conversation as he/she brailled. To reach that stage though, learners of Braille had to practice frequently under the guidance of a competent teacher.

According to Hill (1994), teachers' qualification should focus on the specialized knowledge, understanding and skills required to enable them to meet the specific additional learning needs of pupils arising from their visual impairment. These standards should apply to the person who is providing direct, on-going instruction in Braille reading and writing for children and youth. The study aimed at establishing how well teachers of Braille were prepared to impart the skill to their learners in Kenya.

### **Methodology Used in the Study**

The study adopted a descriptive survey design. The study was carried out at Thika school and St. Lucy School both being among the largest schools for learners with visual impairment in Kenya. The study adopted a descriptive survey design which involved asking questions to a sample of participants who were presumably representative of the population. A random sample of 30 girls was selected from a population of 52 girls. Another random sample of 30 boys was selected from a population of 53 boys. 5 out of the 8 teachers teaching reading and writing of Braille were selected for the study. Head teachers from both schools participated in the study. Two English lessons were observed in progress in each of the schools under study. Data were analyzed along text-based themes.

#### Availability of Books and other Materials

The study sought to establish the degree of availability of learning materials since availability of teaching and learning materials correlates highly with scholastic success as confirmed by (Maundu, 1988). Unfortunately, the study revealed that provision of learning and teaching material needed a lot of attention since all the respondents (100%) agreed that the materials for learners who used Braille were not enough. Findings from both the interview and observation carried out also supported the above findings. One of the head teachers interviewed had this to say,

the process of putting print books bought through the Free Primary Education (FPE) programme was usually slow and quite costly. Thus, more often than not, children who used Braille had to do without most Braille materials.

The same head teacher further observed that,

learners who used Braille materials were disadvantaged since materials available for them usually reached them long after the sighted learners had received theirs. That was because of the process involved in putting print materials into braille.

During the English lesson observed, learners using print had each a copy of the text book used in the lesson. Only one pair of those using Braille had a Braille copy that was being shared. The other three learners using Braille did not have copies. Pictures in the print text book were constantly referred to by the teacher as they acted as the teaching/learning aid for the lesson. There was no equivalent of the same in Braille. That further disadvantaged the learners using Braille. Charts displayed on the classroom walls were for visual readers while there was practically nothing for tactual readers, yet it was expected that for every teaching/learning aid for those who used print, there should be an equivalent one for those who used Braille. A study by (Kosman & Castellano, 1997) emphasized the use of tactile materials for any effective teaching. The study established that the two main writing equipment i.e. braille and slates and stylus were solely got from donors. That did not auger very well since it meant

that the schools had to wait for donors to come by and save the situation. The equipment was very vital since it was comparable to pens and pencils which were inevitable in any learning process. So it was very important that they were available and adequate for the young learners at any given time.

**Table 1: Sources of Braille equipment**

Source	Frequency	Percentage of respondents (%)
Donors	2	100
Government	0	0
Parents' contribution	0	0
Total	2	100

### **Appropriateness of the Writing Equipment**

Among the respondents, 90% agreed that the writing equipment was rather cumbersome particularly for young learners with weak fingers. That was because some force was needed to press on the stylus so as to perforate on the hard Braille paper. Writing was done in reverse. That was from right to left thus contradicting the left-right orientation. Most teachers (90%) agreed that a braille would be much better than a slate and stylus but then its cost was prohibitive.

Apart from the teaching/learning resources, it was evident from the observation carried out that furniture was neither enough nor suitable. Learners were sharing small tables which were not matching with the chairs. The tables were quite high where as the chairs were low. That made it very uncomfortable for the young learners who had to raise their hands almost above shoulder level to navigate the materials. Persons with visual impairments usually had poor posture and gait particularly if skills in orientation and mobility were not imparted on them early enough. A study by (Harley, Truan, & Sanford, 1987) suggested that furniture should help maintain good posture while reading or writing.

In addition to equipment and materials, teachers are very vital in helping learners acquire the necessary skills. For them to impart the skills, they needed proper training to ensure that learners benefitted fully from their expertise. In the light of this, the study sought to establish the training level of the teachers teaching Braille. Among the teachers under study, 42.85% were trained PI teachers. A similar percentage had diploma Education while a further 14.28% had a first degree. None had reached masters level. That showed that quite a number of the teachers were quite above the expected teaching training level of a Primary I teacher Education. Although Primary Teacher Education did not have much of Special Needs Education component, the experience most of those teachers had made them better placed to work with learners who had visual impairments.

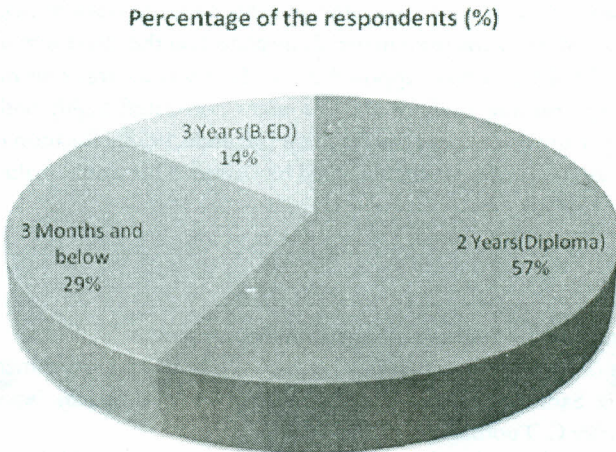
**Table 2: Teachers' Academic Qualifications**

Professional Qualification	Frequency	Percentage of the respondents (%)
PI	3	42.85
Diploma	3	42.85
B.ED	1	14.28
M – Ed	0	0
<b>Total</b>	<b>7</b>	<b>100</b>

### Training of Teachers in Special Needs Education

On training in SNE, 57.14% of the teachers held a diploma in Special Needs Education; Another 28.57% had some training whose duration was three months and below where as a smaller percentage of 14.28% had done a bachelors degree in the area. As observed, the level of training differed significantly from a training duration of less than three months to Bachelors level as indicated below.

**Figure 1: Training of Teachers in Special Needs Education**



From the findings, it was clear that a number of teachers (28.57%) working with learners with visual impairments had only attended in service courses whose duration was three months and below. Another 57.14% had done a diploma course while a further 14.28% had done Bachelors Degree in SNE. Special Needs Education was quite extensive. Thus, three months training was not really likely to equip the teachers with the necessary skills considering that only a very small

component of the same was covered by the Primary Teacher Education Curriculum. Training undertaken did not focus on Braille reading. A study by Moor (2005) suggested that teachers of Braille reading and writing must of necessity know all the symbols and rules of the Braille code. Thus the need for an intensive teacher training in the same.

### **Conclusion**

In view of the purpose of the study and research questions, the general findings were that teaching of Braille in Kenyan schools for learners with visual impairments was wanting. There was no criterion used or any guidelines on which category of teachers to be posted to those schools in regard to their special training to teach Braille. Although some of the teachers under study had some training in special needs education, the duration of the training differed significantly ranging from three months certificate course to Bachelors degree level. There were no Braille courses specifically organized for those teachers as it was the case in the western countries. There is need for the government to come up with very clear policy on who taught Braille. This is to ensure that the subject was handled by competent personnel.

Regarding the appropriateness of the writing equipment, the interview revealed that slates and stylus were not the best; nevertheless, they were the most widely used. Braille writers which would have been better for writing were rather expensive and thus unaffordable.

The classroom observation indicated that furniture in one of the schools was neither appropriate nor adequate. Learners with visual impairments were also disadvantaged when it came to Braille materials. Most of the print materials displayed on the classroom walls did not have their equivalent in Braille as it was supposed to be. That was an area that need support considering that teaching/learning facilities and resources correlated highly with scholastic success as confirmed by many researchers among them (Maundu, 1988). Taxation on materials and equipment used by students who are blind should be waived. This would make them more affordable.

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