



**REIMAGINING BRAILLE LITERACY IN INCLUSIVE SCHOOLS:  
SPECIAL EDUCATORS' REFLECTIONS ON INTRODUCING BRAILLE  
AS AN ELECTIVE SUBJECT FOR SIGHTED STUDENTS**

**Shruti Pandey<sup>1</sup>,**

**Sheelu Kachhap<sup>2i</sup>**

<sup>1</sup>Assistant Professor,

Faculty of Education,

Banaras Hindu University,

Kamachha, Varanasi, Uttar Pradesh,

India

<sup>2</sup>Assistant Professor,

Department of Education,

University of Allahabad,

Prayagraj, Uttar Pradesh,

India

**Abstract:**

Elective subjects in Indian schools have long focused on the local or foreign language (e.g. Sanskrit, French, or German) to enhance the linguistic and cultural understanding of the students. Braille on the other hand gives a different form of an elective one that transcends learning language to be included and change the social condition. Being a universal literacy system, Braille, in addition to serving the visual impaired, can potentially develop empathy, awareness and responsibility in the mind of sighted learners. This paper analyses the possibility and worthiness of making Braille an optional course in standard education. In particular, the paper will dwell on how special educators view the potential impact of such an elective on both the empathy and the perception of visual impairment among sighted students, and on its practical consequences for creating collaborative learning conditions. It will also discuss how such a program can enhance the rate of braille literacy among students with the visual impairment by exposing them to more levels of exposure and encouragement by the rest of the sighted community, thus, closing the gap in educational opportunities and social inclusion. A qualitative research design was applied to choose special educators and teachers purposely in schools, universities, and rehabilitation centers in the region of Delhi NCR. The sample was different in terms of professional role and specialization i.e., in visual impairment, hearing impairment, developmental disabilities, deaf blindness, and specific learning disabilities, hence the subjects were aged between 23 and 38 years. The data collection

---

<sup>i</sup> Correspondence: email [sheelukachhap@allduniv.ac.in](mailto:sheelukachhap@allduniv.ac.in)

used a bilingual (English-Hindi) open-ended questionnaire, which was complemented by telephone interviews done to clarify the answers, which were then analysed in a thematic way in line. Results indicated that there was widespread support of the introduction of Braille as an optional program among teachers amongst the sighted students. They underlined its possibilities to create empathy, enhance peer relationships, and build positive attitudes about disability and inclusion. Cognitive benefits were also reported by teachers, such as improved concentration, pattern recognition, tactile awareness, and problem-solving abilities, and it was also indicated that early exposure would help foster a career in education, rehabilitation and assistive technology in future. In addition to these advantages, practical issues revealed by the respondents include the absence of qualified teachers, the unavailability of Braille materials, and a misunderstanding that diminishes its significant role in comparison to other electives. To implement it successfully, the participants emphasized that policy support by the National Education Policy (2020) and the Rights of Persons with Disabilities Act (2016) and investment in training, materials, and collaboration between schools, NGOs, and government bodies were required. In summary, the research emphasizes on Braille as more than a literacy alternative; it is a skill that has an academic, personal and social value as well as a valuable progress toward the Indian objective of comprehensive and equitable learning.

**Keywords:** Braille literacy, inclusive education, in-service teachers, accessibility, social inclusion

## 1. Introduction

Braille has traditionally been known all over the world as the foundation of literacy and independence in visually impaired individuals, strongly intertwined with education, working opportunities, and contributions to social life (Koenig & Holbrook, 2000). National curricular bodies like NCERT (2006) and CBSE (2019) have always prioritized inclusive education and the incorporation of disability-specific learning provision to allow children with disabilities to actively engage in regular classes. It has also been found that early and dual-media instruction in Braille is effective, although there are still current problems about teacher training gaps and teaching resources (Koenig & Holbrook, 2000; Stanfa & Johnson, 2015). Concurrently, research indicates a worrying trend in the world towards falling out of Braille literacy, even though it is essential in empowering persons with critical vision handicaps to read, write, and gain literacy. Universal education International momentum towards inclusive education was greatly influenced by the Salamanca Statement (1994) of UNESCO, which recommended the restructuring of ordinary schools to receive inclusive learners. The principle remains a part of the Indian education policy; however, the issues of translating policy into practice in the classroom are found to be quite involved. The views of teachers are a key to this

process. Research demonstrates that teachers tend to be supportive of inclusive education, but the lack of training, absence of resources, and big classes are the factors that appear to be obstacles to inclusive education (Das *et al.*, 2013; Sharma, 2015). The discrepancy between principles in policy and realities in classroom was also noted by Singal (2008). These results are parallel to the ones of the international evidence, which indicates that the willingness of the teachers to implement an inclusive practice is heavily dependent on local settings (IIEP-UNESCO & UNICEF, 2019). Braille literacy also forms the basis of academic success, societal engagement, and autonomy in individuals with visual impairments, and is one of the critical entry points to information and the acquisition of the necessary literacy skills (Argyropoulos *et al.*, 2019). In fact, braille can be considered a life-saving device to blind people as they can become literate and gain confidence in themselves because they can acquire new skills. Still, in the context of technological progress, the braille is an inexhaustible learning tool for a person with complete vision loss, which supports its further usage in learning programs (Vaijyanthi, 2021).

Braille reading and writing are one of the primary needs of blind children in the course of their education, as it allows them to interact with the curriculum and communicate with each other. Therefore, its teaching is one of the major elements of special education with children having visual impairments, but it is frequently met with difficulties, such as the absence of appropriate teacher training or the inability to implement teaching flexibly. The need for building an inclusive environment of education has generated the need for innovative pedagogical approaches that will help reduce the disparity among the sighted and the visually impaired students. Against this backdrop, incorporating the lessons of braille language as an option for sighted students is an area worth considering in order to enhance the development of empathy and universal design for learning along with promoting an understanding of diverse means of communication (Erdem & Yakut, 2022; Roe *et al.*, 2014). The incorporation of such pedagogy does not only contribute positively to the learning of sighted students, but also enhances the inclusivity of the school by making braille an important form of language (Allotey *et al.*, 2025). It should be noted here that the proposed pedagogy will address the issue of inefficient utilization of special educators in teaching braille as well as refute the notion that it is wasteful to teach braille to the visually impaired (Habulezi, 2018).

Besides, this approach can help counteract problems that come with the low literacy rate of braille in visually impaired persons through the normalization of braille as a multifaceted form of communication (Swaminathan & Naik, 2025, p. 12). This can be useful in building skills of future special education teachers who will learn how to use braille to educate their visually impaired pupils (Argyropoulos *et al.*, 2019, p. 44). It is possible that the adoption of this strategy can result in more profound society-wide appreciation of braille, going from mere functional literacy in braille among the visually impaired population to appreciating braille as an important skill for future education.

The introduction of braille classes to sighted children can also bring about a shift in their attitude toward the problem of blindness and visually impaired people in general.

Although the advantages of braille literacy are unquestionable, there are still difficulties in its successful introduction, one of which is the lack of specific funding and training of teachers on braille systems. These challenges commonly result in a lack of support for visually impaired students in general classrooms, which once again adds to the necessity of new solutions to the problem of braille instruction (Alsamiri, 2025).

The new Education Policy (NEP, 2020) also reinforces the nation's commitment to equity, accessibility and barrier-free teaching-learning environment by adopting assistive technologies and universal design approaches in schools (Government of India, 2020). The Right of Persons with Disabilities Act (RPwD, Act, 2016) further mandates accessibility and reasonable accommodation across educational institutions, requires more curricular and infrastructural reforms to support true inclusion (Government of India, 2016). In addition, complementary guidelines developed by UNICEF (2016, 2019) threw light on the importance of accessible and barrier-free infrastructure, teacher training and provision of accessible learning materials. At the pedagogical level, the Universal Design for Learning (UDL) framework offers a systemic approach to reframe curriculum design that accommodates the needs of diverse learners (CAST, 2018). The cumulative effect of this framework creates a strong policy foundation for considering Braille as an elective subject for sighted learners. The extensive research on Braille pedagogy for students with Visual Impairment showed how it gave impact on early literacy, fluency and comprehension (Koenig & Holbrook, 2000; Stanfa & Johnson, 2015). However, there is a scarcity of research on teaching Braille to sighted students as an elective subject for creating inclusive literacy cultures.

Braille pedagogy used with visually impaired students has been extensively researched, including its impact on early literacy, fluency, and comprehension (Koenig & Holbrook, 2000; Stanfa & Johnson, 2015). However, relatively low amounts of research have focused on the teaching of Braille to sighted learners as an intentional and elective approach to developing inclusive literacy cultures. There are a few studies that focus on the opinion of in-service teachers regarding the possibility and relevance of such an initiative in the Indian school environment (Das *et al.*, 2013; Singal, 2008). The wider study of inclusive education in general recognizes teachers to be the central change agents; however, they are limited by a lack of training, resources, and time (Sharma, 2015). Additional reviews on the region by UNICEF and UNESCO (2019) underline further the bottlenecks in the system and the necessity to unite the efforts across the sectors. The introduction of Braille in regular classrooms provides implications beyond literacy to the visually impaired students. Studies have shown that when a normal student is introduced to the Braille, even on a low level, it creates empathy, comprehension, and cooperation in the learning process (Wittenstein, 1994). Peer support and a community feeling is common in the classroom where Braille is practiced (Sharma & Puri, 2018). Kamei-Hannan and Ricci (2015) noted that sighted students with joint Braille projects

were more aware of accessibility issues and had more positive perceptions of inclusion. This exposure helps sighted students to experience the lived experience of their visually impaired peers, and to make accessibility a shared responsibility and enforce peer relations (Das *et al.*, 2013). This is in line with the inclusive education models, which emphasize the social aspect of education in addition to academic success (UNESCO, 1994; Government of India, 2020). The perceptions of teachers with respect to Braille literacy are critical in influencing the extent to which it is successfully incorporated in inclusive schools. Even though the importance of Braille in the academic and social progress of visually impaired students is generally recognized by teachers, most of them believe they are unprepared to implement this educational method because of a lack of training, resources, and institutional support (Das *et al.*, 2013; Sharma, 2015).

In a more advantageous international environment, educators are more likely to feel confident, especially with the help of systemic professional development. On the other hand, in a lot of low- and middle-income settings, inclusion is still equated to physical location other than pedagogical accommodation (Singal, 2008). When teachers can see the more positive results of using Braille, like the development of cognitive functions and the ability to develop empathy in both blind and sighted students (Wittenstein, 1994; Sharma & Puri, 2018), positive changes in perception can take place. Combined, the above insights demonstrate a major gap in the literature: although the impact of Braille on the life of visually impaired learners is quite clear, the potential of this subject to be an elective one among sighted students remains unknown. To fill this gap, the given study will concentrate on the in-service teachers' voice with the aim of investigating the validity and importance of the implementation of Braille as an elective in Indian schools.

## 2. Research Question

- What are the observations of special education teachers regarding the possibility and necessity of introducing Braille as an optional subject to the sighted learners?

## 3. Methodology

### 3.1 Research Design

The current research was conducted on the basis of the qualitative research methodology, which emphasized the perspectives of in-service teachers regarding teaching Braille as an alternative mode of learning for sighted children enrolled in schools in India. The qualitative research methodology assisted in achieving deep insights into the perspectives of the teachers regarding inclusive education.

### **3.2 Population and Sample**

The population for this study was made up of in-service teachers employed in inclusive schools falling under the jurisdiction of the Delhi Subordinate Services Selection Board. Purposeful sampling technique was used for the selection of participants for the study. Teachers having experience and knowledge related to inclusive or special education were selected as participants for the study. Overall, fifty participants were selected for this research. However, out of those fifty participants, only eighteen teachers participated in all phases of the research process. Those eighteen teachers were both male and female between the ages of twenty-three and thirty-eight years holding qualifications like B.Ed., M.Ed., and D.Ed./D.El.Ed. in Special Education.

### **3.3 Data Collection Instrument**

Data were collected using an open-ended questionnaire, English and Hindi alike, devised by the researcher himself. This instrument was crafted to receive in-depth answers from the respondents, divided into five themes, including (i) awareness and knowledge about Braille writing, (ii) importance of education, (iii) role in schools, (iv) inclusion, and social importance, and (v) policy perspective. The reliability and validity of the tool were ensured by three experts, who validated the questionnaire while being administered to five teachers for a pilot test.

### **3.4 Method of Collecting Data**

Once the questionnaire was finalized, it was handed out through Google Forms as well as in printed format, wherever applicable. Additionally, telephone interviews were conducted to obtain further information. Follow-up telephone interviews were conducted to receive more thorough responses from the respondents. This entire process of collecting data took place over a period of one month, during which each respondent took around 20-25 minutes to complete the questionnaire.

### **3.5 Data Analysis**

The collected data was analyzed following the six-stage thematic analysis approach described by Braun & Clarke (2006). The stages involved were familiarization with the data, coding, generation of themes, theme review, theme definition, and lastly interpretation of the themes. The approach aided in identifying the key themes in the data.

### **3.6 Emergence of Themes**

The themes in this study were generated through a systematic process of qualitative analysis; was conducted systematically based on the answers given by special educators to open-ended questions about the role of Braille as an optional subject among sighted students. The data was collected, transcribed, and sorted out, after which all the responses were read and re-read several times with the aim of familiarizing oneself with

the content. This data-dipping enabled the detection of common themes, trends and issues raised by the participants. A first step of open coding was undertaken where keywords, phrases and sentences that contained important understanding were noted. As an example, the statements that include: it will contribute to empathy and awareness, students may experience some challenge in memorizing codes or middle school is the stage to introduce Braille, were observed as the significant indicators of the perspectives of the participants. These codes were then classified into categories which represented more conceptual ideas. The codes that touched on empathy, inclusiveness, and awareness were grouped under the benefits to Sighted Learners, whereas the codes that spoke of challenges in learning or a shortage of resources were grouped under the challenges in learning Braille. Categories were examined by developing connections between them through a process of axial coding. It was evident at this stage that responses naturally focused on particular areas: the necessity of Braille as an elective, the perceived benefits and challenges, and the right level of schooling, resources, attitude toward inclusion, peer relationships, policymaker roles, practical usefulness and implementation recommendations.

**Table 1: Coding Process with Participant Responses**

<b>Open Codes (Sample Responses)</b>	<b>Axial Codes</b>	<b>Selective Codes (Themes)</b>
<i>"Introducing Braille will create respect and awareness in schools"</i> (P1) <i>"Even limited exposure can help inclusion"</i> (P6)	Perceived need and feasibility	Theme 1: Feasibility and Need for Braille as an Elective
<i>"Learning Braille sharpens memory and concentration"</i> (P4) <i>"It builds patience and problem-solving"</i> (P9)	Cognitive and social benefits	Theme 2: Benefits for Sighted Learners
<i>"Sighted students may find codes difficult to memorize"</i> (P3) <i>"The pace is slow compared to print"</i> (P11)	Learning difficulties	Theme 3: Challenges in Learning Braille
<i>"Middle school is best as students are curious"</i> (P5) <i>"Secondary school can be suitable for advanced learners"</i> (P12)	Developmental suitability	Theme 4: Appropriate Stage of Schooling
<i>"We need trained Braille teachers"</i> (P2) <i>"Braille books and embossers are necessary"</i> (P8)	Resource requirements	Theme 5: Resources Required
<i>"It changes stereotypes about disability"</i> (P6) <i>"Encourages inclusive attitudes among students and teachers"</i> (P14)	Attitudinal change	Theme 6: Impact on Attitudes toward Inclusivity
<i>"Braille helps sighted and blind students bond"</i> (P10) <i>"It encourages collaboration and respect"</i> (P13)	Peer collaboration and bonding	Theme 7: Peer Relationships
<i>"Government must frame clear guidelines"</i> (P15) <i>"Schools should provide resources and training"</i> (P16)	Policy and institutional role	Theme 8: Role of Policymakers and Schools
<i>"Braille may not be used in daily life"</i> (P17)	Perceived utility	Theme 9: Practical Usefulness of Braille for Sighted Learners

<i>"But it is valuable for careers in teaching and advocacy" (P18)</i>		
<i>"Start gradually in middle school" (P9)</i> <i>"Workshops, role models, and awareness campaigns needed" (P12)</i>	Implementation strategies	Theme 10: Suggestions for Implementation

These categories were narrowed down to ten themes that best described the scope of participant opinions without overlapping one another. Lastly, the key topic of the study, comprehending the importance of Braille as an option in inclusive schools using the voices of special educators, was reconsidered within the themes during selective coding. All the themes were cross-verified with raw data so that it reflected the stories of the participants. The bilingualism of answers (English and Hindi) was also duly taken into consideration, and translations were done to make sure that the meaning and tone of the original statements were not lost. Therefore, the ten themes were not formulated through previous assumptions but inductively through lived experiences and reflections of the participants. Such a step-by-step approach of coding, categorizing, and refining was sufficient to make the analysis loyal to the voices of special educators, as well as generating consistent results that can be added to the discussion on inclusive education.

#### 4. Results and Findings

The results of the study are presented and analyzed from the perspectives of the special educators about the incorporation of Braille as an optional subject among children who are not visually impaired. The results have been classified with regard to the objectives of the study, and the results are interpreted with reference to the literature review on inclusion.

##### **Theme 1: Why and Whether it is Viable to Have Braille as an Elective**

Most of the respondents had robust support for the concept of making Braille an optional subject among sighted students, with the argument that it could be crucial in promoting inclusivity and equity at schools. They indicated that through such an initiative, the sighted learners would gain a better insight into the experiences and challenges faced by their visually impaired counterparts, and through this, they would have a mutual understanding of each other, creating an atmosphere of mutual respect and understanding. The elective nature of Braille was regarded as especially crucial by a number of interviewees, as it would allow students to make a decision, and they will not feel pressed but still have the chance to be engaged in the activity of inclusive practices. Nevertheless, a small group of teachers were rather cynical as they did not see Braille as potentially beneficial in the everyday life of sighted children and thought it would be an extra academic load for them. Cost-effectiveness and the presence of trained teachers and materials were also issues of concern. Nevertheless, these reservations notwithstanding,

it was generally agreed that even a small dose of exposure to Braille would be able to assist in achieving greater societal objectives of inclusion and availability.

### **Theme 2: Advantages to Sighted Learners**

The respondents emphasised the vast scope of knowledge that sighted students could obtain when learning about Braille, which is not limited to the ability to learn literacy. At the cognitive level, it was claimed that learning Braille increases memory, concentration, tactile awareness, and fine motor skills because it involves a special form of writing and reading through touching. Participants also stressed its worth on problem solving capacity and patience, which can be applied in both academic and personal spheres. Socially, teachers thought Braille would make people less self-centred and more inclusive, enabling sighted students to understand the obstacles that blind students have to overcome and encouraging them to be champions of accessibility. Also, according to the respondents, Braille might have practical academic uses (mathematics, music, science, etc.), where tactile representations are especially helpful. In the professional context, some of the participants observed that the knowledge of Braille might lead to career opportunities in teaching, rehabilitation, assistive technology, and social work. Concisely, the learning of Braille was regarded as not only a scholarly exercise but also a whole-person developmental experience for the sighted students.

### **Theme 3: Problems with Learning Braille**

Although they were supportive of the introduction of Braille as an elective, the respondents were also aware of the fact that sighted students might have problems with learning it. One of the most frequently discussed issues was the inability to develop tactile sensitivity that is essential to identify the raised dots that constitute the characters of the Braille. The teachers observed that the sighted students may find it difficult to memorize and remember the Braille codes without getting practiced on them on a daily basis or an immediate need in their lives. It was noted by many participants that the reading and writing of Braille is, per se, a slower process than print literacy, which might be frustrating, especially for a student who is not used to in-depth tactile learning. There was also the perception issue, which pointed to the fact that the sighted learners may view the braille as not relevant to their academic development, therefore, lowering their motivation. These issues indicate that new instructional practices, interactive tools and conducive conditions are necessary in order to make sure that learning Braille is accessible and meaningful to sighted learners.

### **Theme 4: Stage of the Schooling**

Most respondents, when questioned on the most appropriate stage of the introduction of Braille as an elective, were in agreement that it was in middle school (classes 6-8). To them, students in this age group tend to be inquisitive and flexible and not so stressed by the high-stakes exams that come with secondary and higher school education. Middle

school was considered to be an early stage, whereby learners are receptive to new skills and concepts and is therefore a good opportunity to introduce Braille. This was also supported by some respondents who added that secondary or higher secondary school might be a good idea, especially when students have career goals in special education, accessibility or social work. There was, however, an agreement that an early introduction would be made in middle school, which would provide a solid base, and higher levels could be provided later to those who have an interest or ability. This was seen as an adequate developmental strategy and a practical one.

### **Theme 5: Resources Required**

One thing that arose in a number of responses involved the significance of proper resources to teach Braille. Respondents emphasized the importance of human resources, especially professionals who are trained special educators and trainers of the Braille language because they have both subject and pedagogical knowledge. Braille slates, Styluses, embossed paper, and tactile charts were also mentioned as essential material resources. The respondents reported that the unavailability of Braille textbooks and practice resources may affect the success of the program, and that it should be provided systematically. Besides the old items, technology was also identified as one of the critical enablers, with teachers pointing out the utility of Braille embossers, electronic displays, screen readers, and Braille learning applications. Lastly, the respondents stressed the importance of the learning environment, and the need to ensure the existence of inclusive classrooms where people have time to practice, to become curious and to eliminate the stigma of disability-related matters. Without these, they contended, the advantages of adopting Braille as an option would not be realised.

### **Theme 6: Effect on the Attitudes to Inclusivity**

The participants were always associated with Braille learning and the possibility of changing the attitude to inclusivity and accessibility in education. Their rationale was that by introducing Braille, students might not only get beyond the shallow sympathetic response to the visually impaired students, but they would also gain a deeper insight into them and feel not only welcome but also included by them. Teachers indicated that when the sighted students are taught Braille, they become more inclusive of the barriers to access and are more inclined to promote inclusive practices. Teachers as well would benefit as they would be more sensitive about the needs of all learners, and they would be encouraged to embrace the concept of inclusive teaching. Some respondents pointed out that learning Braille might also force society to overcome its stereotypes related to disability. Instead of concentrating on the deficit-oriented approach, people should learn to value the special abilities and strengths of the visually impaired. In general, the respondents did not see Braille as a topic but as a driver of cultural transformation in schools, which fostered the objectives of inclusive education in practical and long-term terms.

### **Theme 7: Peer Relationships**

The argument that an alternative to the Braille as the elective choice could improve peer relations between sighted and visually impaired students was one of the best arguments in favor of Braille. The respondents believed that through the study of Braille, the sighted students were in a position to interact with their blind counterparts more efficiently, thus lessening the feeling of isolation and developing respect for one another. This common language was even referred to as a bridge, which had the potential to change the situation in the classroom so that collaboration, trust, and empathy would be promoted. Some of the respondents indicated that these relationships would not remain academic and would affect social life and friendships. They felt that sighted students could feel more at ease when they can experience, first-hand, the literacy system in use by their peers, and they can view them as equals and not as those who rely on them, and so the barriers to full inclusion will be broken. Therefore, Braille was seen not as a literacy tool one way or another but as a path to stronger peer networks that were more equal.

### **Theme 8: School and Policymaker Work**

Respondents highlighted the twofold role of the policymakers and the schools in the success of implementing Braille as an elective course. They argued that policymakers should be at the forefront, develop clear guidelines, and include Braille in the national or state curriculum, and provide enough funding to train teachers and to provide them with the necessary resources. The respondents pointed out that individual efforts at the school level could not be sustainable unless supported by such a system. Simultaneously, schools were supposed to be proactive by making sure the trained teachers are present, availing Braille materials and technology, and creating awareness among students, staff, and parents. Other teachers also emphasized the aspect of constant monitoring and assessment to determine challenges and implement changes in how they are carried out. Policymakers and schools were regarded as playing a very important role in institutionalizing Braille education to place it as an aspiration concept to a tangible practice.

### **Theme 9: Visual Practical Utility of Braille to Sighted Learners**

There were mixed views regarding the practical utility of Braille among the sighted learner but the majority of the respondents did recognise its indirect usefulness despite limited use of the same in daily life. Other respondents have claimed that Braille would not have much practical applicability in the personal life of sighted students, as they depend on print and digital technologies. Some of them, though, emphasized the fact that the advantages were not limited by functional literacy. They remarked that the study of Braille would enable the sighted students to become proficient in helping the visually impaired students and engage in integrative pursuits, as well as become sensitive to the issue of accessibility in their lifetimes. In terms of profession, the knowledge of Braille was considered to be beneficial in the areas of teaching, rehabilitation, the design of

accessibility, and social work. Even in personal life, the ability to read the Braille signs or help one in need was considered to be meaningful. In this way, its direct usefulness may not be great among a large number of students, but it was also believed that its social, emotional, and professional consequences are very important.

### **Theme 10: Implementation Recommendations**

A variety of feasible recommendations on how to introduce Braille as an elective subject in schools were given by the respondents. It was suggested to take it in stages and start with the middle school and then go to higher levels with the desire students. The training of teachers was also a regular focus and continuous professional development was demanded so that the teachers are sure about teaching Braille. The availability of materials like slates, styluses, embossed papers and the availability of readily available text books was perceived as fundamental and the use of digital tools to ensure interactive learning. Most participants also supported experiential and practical methods of teaching such as workshops, exhibitions, peer teaching, and touch activities that would capture the attention of the students, and keep them interested. Some of the respondents also proposed that they should invite speakers and role models who are visually impaired so that the learners can be inspired and put the significance of the Braille in perspective. Parents and community awareness campaigns were identified as required to create support and understanding. These recommendations underscore that there is a need to have a proper implementation process that must involve material preparation as well as cultural sensitization in order to achieve the success of the Braille elective subject.

The current paper emphasized that the Braille course was selected as the elective course of the sighted learner, laid out with alternative access to information, and curiosity, and it is important to note that these motivations are consistent with the basic principles of skill development and inclusive learning. In retrospect, respondents cited the difficulties and approaches in learning of Braille. Although most of them favoured learning by typing in Braille numbers, a significant percentage found the task challenging, and a greater number had difficulties in reading Braille. This deviation is representative of a larger fallacy of believing that Braille can be learned in just under 30 to 60 hours of instructional time. According to Heller and Ballasteros (2006), orienting, recognizing dots, scanning and detecting symmetry are all the processes required in reading Braille, which are quite different from the processes involved in visual recognition of words and sentences in sighted readers (Koenig & Holbrook, 2000). Students were, in fact, re-initiating the process of learning to read anew, which is in line with the stages that Chall (1983) puts reading development, with decoding being an early and challenging stage in the developmental process.

Similar to any qualitative investigation, the given study has some limitations. To begin with, the sample was very small, and only 18 respondents gave answers out of the 50 teachers who were first contacted. As much as that made it possible to explore in depth. Second, the research was also geographically constrained to a small set of states

and urban centers, and that might not completely reflect the views of educators in rural or poorly-resourced districts. Third, the data were based on self-reported responses and the data were collected through telephonic interviews, thereby presenting a possibility of social desirability bias. Finally, there is no student and parent perspectives, thus the findings present only one dimension of the school ecosystem.

## 5. Conclusion

This research examined the issue of the introduction of Braille as an optional subject among the sighted students in Indian schools, which is a voice of the special educators. The results indicate that the support among teachers is high as they perceive Braille as an instrument for not only literacy, but also a means to create empathy, inclusiveness, and social consciousness in classrooms. A significant number of respondents believed that mastering Braille would help improve their abilities to memorize, focus, and solve problems, improve their relationships with peers, and decrease the level of stereotypes associated with disability. Nevertheless, the research also highlighted the key issues. Teachers identified training gaps and deficits, lack of materials and technology, and inaccessibility, the slowness of Braille compared to print, and a lack of understanding about its usefulness with sighted learners. It may transcend the literacy level to become an agent of inclusion to allow the sighted and visually impaired students to interact with one another and cultivate an ethos of inclusiveness and equality. This study should be followed up by some future researchers who would remove the limits on the size and diversity of the participants and examine the views of students, parents, and policymakers. Long-term academic, social, and professional gains of Braille literacy with sighted learners might also be traced with the help of comparative and longitudinal studies. These insights will be critical towards informing policy and practice in the continued struggle in India towards inclusive and equitable education. The introduction of Braille as an elective would be more comprehensively studied by comparing the experiences and opinions of students, parents, and policymakers. Longitudinal studies may investigate the long-term cognitive, social and professional performance of sighted learners having been exposed to Braille. Moreover, pilot projects or experiments in a few schools might produce feasible evidence on implementation models, resource needs and student engagement. Lastly, cross-cultural comparisons to other states and nations that have incorporated disability-related electives may be useful policy and practice lessons in India.

### Creative Commons License Statement

This research work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0>. To view the complete legal code, visit <https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode.en>. Under the terms of this

license, members of the community may copy, distribute, and transmit the article, provided that proper, prominent, and unambiguous attribution is given to the authors, and the material is not used for commercial purposes or modified in any way. Reuse is only allowed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

### **Conflict of Interest Statement**

The authors declare no conflicts of interest.

### **About the Author(s)**

**Dr. Shruti Pandey** is an accomplished academician and researcher in the field of Education, currently serving as an Assistant Professor in the Faculty of Education at Banaras Hindu University (BHU), Varanasi, India. Her academic and research interests encompass Visual Impairment, Science Education, Inclusive Education, Special Education, and Differentiated Instruction, with a focus on creating accessible and equitable learning environments for diverse learners. She is committed to integrating innovative teaching strategies and research-based practices into classroom instruction.

**Dr. Sheelu Kachhap** is an academician and researcher in the field of Education, currently serving as an Assistant Professor in the Department of Education at the University of Allahabad, Prayagraj, India. She is actively engaged in teaching, research, and academic mentoring, with a sustained commitment to advancing inclusive, equitable, and research-driven educational practices. Her research and professional interests include Visual Impairment, Concept Mapping, Science Education, Special Education, Inclusive Education, and Universal Design for Learning, with a focus on advancing equitable, accessible, and learner-centered pedagogical practices for diverse learners.

### **References**

- Alsamiri, Y. A. (2025). Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study. *Frontiers in Psychology*, 16. <https://doi.org/10.3389/fpsyg.2025.1651597>
- Allotey, G. A., & Benedetto, D. P. (2025). Beyond Braille: A Systematic Review of Assistive Technologies and Inclusive Pedagogy in STEM Higher Education for Students with Visual Impairments. *African Journal of Educational Studies in Mathematics and Sciences*, 21(1), 83–104. Retrieved from [https://iris.unipa.it/retrieve/5187dbff-1431-4cb3-b4ea-d4b41c118e32/ajol-file-journals\\_295\\_articles\\_311198\\_692627574f42a.pdf](https://iris.unipa.it/retrieve/5187dbff-1431-4cb3-b4ea-d4b41c118e32/ajol-file-journals_295_articles_311198_692627574f42a.pdf)
- Argyropoulos, V., Hathazi, A., & Nikolarazi, M. (2019). Undergraduate student education programs regarding braille literacy: A transnational comparative study. *Higher Education Studies*, 9(4), 44. <https://doi.org/10.5539/hes.v9n4p44>

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- CAST. (2018). *Universal design for learning guidelines version 2.2*. <http://udlguidelines.cast.org>
- Central Board of Secondary Education. (2019). *Handbook on inclusive education*. [https://cbseacademic.nic.in/web\\_material/Manuals/handbook-inclusive-education.pdf](https://cbseacademic.nic.in/web_material/Manuals/handbook-inclusive-education.pdf)
- Chall, J. S. (1983). *Stages of reading development*. New York, NY: McGraw-Hill. Retrieved from [https://books.google.ro/books/about/Stages\\_of\\_Reading\\_Development.html?id=CPsIAQAIAAJ&redir\\_esc=y](https://books.google.ro/books/about/Stages_of_Reading_Development.html?id=CPsIAQAIAAJ&redir_esc=y)
- Das, A., Kuyini, A. B., & Desai, I. (2013). Inclusive education in India: Are the teachers prepared? *International Journal of Special Education*, 28(1), 27–36. Retrieved from [https://www.researchgate.net/publication/235361764\\_Inclusive\\_Education\\_in\\_India\\_Are\\_the\\_Teachers\\_Prepared](https://www.researchgate.net/publication/235361764_Inclusive_Education_in_India_Are_the_Teachers_Prepared)
- Erdem, H. Ş., & Yakut, A. D. (2022). The lived experiences of teachers with visual impairments in the inclusion of students with visual impairments: A phenomenological study. *Sakarya University Journal of Education*, 12(2), 302. <https://doi.org/10.19126/suje.1028588>
- Government of India. (2016). *Rights of Persons with Disabilities Act, 2016*. Ministry of Social Justice and Empowerment. Retrieved from [https://www.indiacode.nic.in/bitstream/123456789/15939/1/the\\_rights\\_of\\_persons\\_with\\_disabilities\\_act%2C\\_2016.pdf](https://www.indiacode.nic.in/bitstream/123456789/15939/1/the_rights_of_persons_with_disabilities_act%2C_2016.pdf)
- Government of India. (2020). *National Education Policy 2020*. Ministry of Education. Retrieved from [https://www.education.gov.in/sites/upload\\_files/mhrd/files/NEP\\_Final\\_English\\_0.pdf](https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf)
- Habulezi, J. (2018). Aspects that debilitate the quality of braille among learners with visual impairment in Kgatleng district in Botswana. *International Journal of Learning, Teaching and Educational Research*, 17(6), 144. <https://doi.org/10.26803/ijlter.17.6.9>
- Heller, M.A., & Ballesteros, S. (2006). Introduction: approaches to touch and blindness. In: M.A. Heller & S. Ballesteros (Eds.), *Touch and blindness, psychology and neuroscience* (pp. 1–21). Mahwah, New Jersey: Lawrence Erlbaum Associates. Retrieved from <https://psycnet.apa.org/record/2005-12992-001>
- IIEP-UNESCO, & UNICEF. (2019). *On the road to inclusion: Highlights from research and roundtables*. UNESCO. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000372193>
- Kamei-Hannan, C., & Ricci, L. (2015). Collaborative learning and assistive technology: Peer-mediated instruction for braille literacy. *Journal of Visual Impairment & Blindness*, 109(3), 193–206. <https://doi.org/10.1177/0145482X1510900305>

- Koenig, A. J., & Holbrook, M. C. (2000). Ensuring high-quality instruction for students in braille literacy programs. *Journal of Visual Impairment & Blindness*, 94(11), 677–694. Retrieved from [https://moddcouncil.org/wp-content/uploads/2021/12/KoenigHolbrook\\_2000\\_Ensuring-High-Quality-Instruction-for-Students-in-Braille-Literacy-Programs.pdf](https://moddcouncil.org/wp-content/uploads/2021/12/KoenigHolbrook_2000_Ensuring-High-Quality-Instruction-for-Students-in-Braille-Literacy-Programs.pdf)
- Koenig, A. J., & Holbrook, M. C. (Eds.). (2000). *Foundations of braille literacy*. AFB Press.
- National Council of Educational Research and Training. (2006). *Including children with special needs: Primary stage*.
- Roe, J., Rogers, S., Donaldson, M., Gordon, C. E., & Meager, N. (2014). Teaching literacy through braille in mainstream settings whilst promoting inclusion: Reflections on our practice. *International Journal of Disability, Development and Education*, 61(2), 165. <https://doi.org/10.1080/1034912X.2014.905064>
- Sharma, U. and Das, A. (2015), Inclusive Education in India. *Support for Learning*, 30: 55–68. <https://doi.org/10.1111/1467-9604.12079>
- Sharma, R., & Puri, M. (2018). Teaching braille to sighted learners: A pilot study in Delhi and Gujarat schools. *Indian Journal of Inclusive Education*, 34(2), 77–91.
- Singal, N. (2008). Working towards inclusion: Reflections from the classroom. *Teaching and Teacher Education*, 24(6), 1516–1529. <https://doi.org/10.1016/j.tate.2008.01.008>
- Stanfa, K., & Johnson, N. (2015). Improving braille reading fluency: The bridge to comprehension. *Journal of Blindness Innovation and Research*, 5(2). <https://doi.org/10.5241/5-83>
- Swaminathan, M., & Naik, T. (2025). Generative AI for teachers with vision impairments in the global South: A bridge too far? ASSETS '25: Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility, Article No.: 54, Pages 1 – 18. <https://doi.org/10.1145/3663547.3746392>
- UNESCO. (1994). *The Salamanca Statement and Framework for Action on Special Needs Education*. <https://www.european-agency.org/sites/default/files/salamanca-statement-and-framework.pdf>
- UNICEF. (2016). *Making schools accessible to children with disabilities*. <https://www.unicef.org/india/media/1191/file/Making-Schools-Accessible.pdf>
- UNICEF. (2019). *Disability-inclusive education practices in India*. <https://www.unicef.org/rosa/media/16996/file/Country%20Profile%20-%20India.pdf>
- Vaijyanthi, R. (2021). Learning medium for students with visual impairment. *Türk Bilgisayarve Matemati kEğitimi Dergisi*, 12(10), 7327. <https://doi.org/10.17762/turcomat.v12i10.5624>
- Wittenstein, S. H. (1994). The impact of Braille literacy on sighted students: Peer relationships in inclusive classrooms. *Journal of Visual Impairment & Blindness*, 88(5), 413–418.