

## Differentiating Curriculum for Children with Hearing Impairments in Nepal: Exploring Realities and Challenges\*

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### 네팔의 청각장애 아동을 위한 교육과정 차별화: 실제와 과제\*

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#### ABSTRACT

**[Purpose]** This study aimed at exploring the ways that teachers have been using to differentiate the general education curriculum in integrated schools of Nepal to meet the special learning needs of students with hearing impairments. **[Method]** Qualitative research paradigm followed by descriptive research design was applied to collect and analyze data. Six teachers and three sign language interpreters were chosen as study sample by using purposive sampling method to collect information regarding the realities and challenges of differentiating curriculum in an integrated educational setting. In-depth interviews, classroom observations, and document analysis were used to collate information on a required basis. **[Results]** Study results revealed that several techniques and strategies like recruiting sign language interpreters, grouping based on ability, placing students in the front row of classroom, residential educational services, etc. were applied to differentiate the general education curricula. Regardless of these efforts, there are a number of challenges that have been facing by teachers while differentiating curriculum such as, over responsibilities of the teachers, lack of instructional materials, inadequate sign language interpreters, limited sign language vocabularies, and inflexible curriculum etc. **[Conclusion]** Even though teachers have been making various attempts to differentiate the curricula, students with hearing impairments do not have full access to curricular contents.

**Key words :** Curriculum differentiation, access to curriculum, sign language, integrated educational setting, limited resources

#### 요약

**[목적]** 이 연구는 네팔의 교사들이 통합학교에 재학 중인 청각손상을 지닌 학생의 특별한 학습 요구를 충족시켜주기 위해 이용하는 교육과정 차별화 방법을 탐색하는데 그 목적이 있다. **[방법]** 이 연구는 자료를 수집·분석하기 위해 질적 연구 패러다임에 근거한 기술적 연구 설계를 하였다. 연구 대상은 통합교육 상황에서 교육과정의 차별화에 대한 실제와 과제에 관한 정보를 수집하기 위해 6명의 교사와 3명의 수어 통역사가 각각 의도적으로 표집되었다. 이들을 대상으로 심층면접을 실시하고 학급 관찰, 문서 분석을 추가로 실시하여 관련 자료를 수집하였다. **[결과]** 연구 결과에 의하면 일반교육과정의 차별화를 위해 수어 통역사의 채용, 능력 중심의 집단화, 학급의 앞줄에 학생 앉히기, 기숙제 교육 서비스 등이 이용되고 있는 것으로 나타나고 있다. 교사들은 이와 같은 교육과정 차별화를 위한 노력에도 불구하고 자신들에 대한 지나친 책임, 교수 자료의 부족, 수어 통역사의 부족, 수어 어휘의 제한, 교육과정의 유연성 부족 등의 문제에 직면하고 있는 것으로 밝혀졌다. **[결론]** 교사들이 다양한 방식으로 교육과정 차별화를 위해 노력하더라도 청각 손상을 지닌 학생들은 교육과정 내용에 충분한 접근을 하지 못하고 있는 것으로 나타났다. 따라서 앞으로 교육과정 차별화를 위한 다양한 노력이 보다 적극적으로 이루어져 청각손상을 지닌 학생들이 일반학교에 통합되어 그들의 독특한 교육적 요구를 충족시켜줄 수 있도록 최적 교육 환경 조성을 위한 노력이 뒤따라야 할 것을 시사하고 있다.

**주제어:** 교육과정 차별화, 교육과정의 접근, 수어, 통합 교육 환경, 한정된 자원

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## Introduction

All children have equal rights to receive quality education in Nepal [1, 2] irrespective of their class, caste, gender, religion, socio-economic backgrounds, and the like. Acknowledging the constitutional provision, Nepal Government has been endorsing various acts, policies, and legislations [3] for years to ensure the access of all children, including those with hearing impairments from pre-primary to university level education. Consequently, about 75,000 students with disabilities have been receiving educational services [4, 6] in special, integrated, and general schools established across the country. Out of 79,307 people with hearing impairments [5], 10,734 persons have been receiving their school level education in Nepal [6]. Although students with hearing impairments have distinct needs, interests, abilities, and learning styles, they have to share common learning environment under an integrated educational setting [7]. These students have to achieve similar learning outcomes under different subject curricula alongside their normal peers, but these students cannot get sufficient benefits from the general education curricula without differentiating them as per their peculiar learning needs. Ample opportunities for learning should be provided to each learner [8] including those with hearing impairments for their access to curricular contents to a fuller extent possible.

Differentiation is a broad term generally applied to tailor curricula, instructional practices, and learning environment to provide appropriate learning experiences to students with different learning profiles [9, 10]. It works as an alternative to address classroom diversity by avoiding the pitfalls of curriculum having notion of one-size-fits-all [11, 12] and provide a range of opportunities to all learners including those with hearing impairments to practice the behaviors intended to make them successful under general education curriculum [13]. Curriculum differentiation links subject matters to be studied with experience, interests, and/or talent of learners [14] in one hand and lifts the professional level of teachers by providing them both the opportunity and tools to chart pathways that need to be followed to reach in the destination intended by curriculum [13, 15] on the other. Curriculum differentiation, therefore, can be taken as a comprehensive approach to increase the access of all learners, including those with hearing impairments, to curricular contents under integrated educational settings.

Students with hearing impairments can be benefitted from general education classrooms with instructional accommodations [9, 16]. Since the degree of hearing impairments ranges from slight hearing loss to profound hearing loss, all students with hearing impairments cannot get benefits from similar types of instructional accommodations and modifications. Generally, curricular contents, teaching materials,

instructional activities, assessment procedures, and environmental setting of the classroom need to be adapted as per the individual learning needs of students with hearing impairments to maximize their access to the curriculum [9, 10]. Children with hearing loss can learn concrete words (pen, bench, etc.) more easily than abstract words (emotion, interest, etc.). Generally, children with hearing impairments feel more difficulty in learning vocabulary, grammar, word order, and other aspects of verbal communication than children who have normal hearing [16]. Many deaf students have difficulty in differentiating questions from statements and conceptualizing sentences either written or explained in passive voice and relative clauses. They typically compose short, incomplete, or improperly arranged sentences [10] that finally diminish their academic achievement under formal education system.

All learners, including those with hearing impairments, enrolled at a particular grade neither accomplish curricular goals to a fuller extent nor learn prescribed content at the same pace. They can neither be benefitted from common instructional activities nor answer the questions asked in an exam to a similar extent [9, 11, 12]; if there is no differentiation of the curricula as per their distinct learning needs. Even though both students with and without hearing impairments study general education curriculum together under an integrated educational setting, they are different from each other in terms of their cognitive abilities, learning needs, maturity level, and styles of learning. Some children are deaf and cannot receive educational information from their auditory sense. In such case, school teachers and other responsible persons should first identify their individual needs, unique characteristics, and learning styles. After this, the teachers should be engaged in accommodating and modifying general education curriculum to maximize the access of all type of learners to the curriculum.

### **Problem Statement**

Some studies [16, 17] indicate that children with hearing impairments are not significantly different than other children while executing performance-based activities. Academic achievement of these children tends to be highest in those areas that rely relatively little on language skills and lowest in those areas that depend heavily on language proficiency. Deaf students with normal intelligence suffer from severe academic retardation because of limited vocabularies and inadequate knowledge of grammatical structures to make sentences [18]. Most students with hearing loss have difficulty especially in reading and mathematics. The gap of academic achievement between children with normal hearing and those with hearing loss in these areas usually widens as they get older [10, 19]. These learners have fewer vocabularies as compared to their normal counterparts. Consequently, academic achievement of these

students is significantly delayed than students without disabilities [10, 16, 19]. This happens primarily in those conditions where the curricula have not been differentiated in the appropriate manner based on their variegated educational needs. When educational services provided to them are differentiated as per their individual learning needs, then these children can have maximum access to the curricular content resulting into enhanced academic achievement [17]. General education curriculum, therefore, should be differentiated as per the special learning needs and styles of students with hearing impairments to boost up their learning to the maximum level.

Government of Nepal has established 16 special schools, five integrated schools, and 176 resource centers (resource classrooms are opened within general schools to provide special academic support to students with disabilities including those with hearing impairments) across the country to provide special education services to students with hearing impairments [6]. Furthermore, The Constitution of Nepal 2015 has ensured free education to the students with hearing impairment in Sign language up to higher and university level. [2]. Nevertheless, 3.6 percent primary school age children are still deprived of school education [20] and a number of children with disabilities including those with hearing impairments quit their school education in earlier grades because of poor instructional delivery process [21], limited physical facilities, inflexible curricula, and lack of proper support [22, 23]. Furthermore, the instructional techniques used in the class are not interactive, participatory, and meaningful to the learners [24]. Due to these reasons, students with hearing impairments have limited access to general education curriculum and perform poorly as compared to their peers without disabilities. In this regard, curriculum differentiation can be a solution to improve their academic performance by optimizing their access to curricular contents to the maximum level.

### **Objective and Research Questions**

Since students with hearing loss have special needs, interests, and learning styles, they cannot get sufficient benefits from general education curricula without differentiating them as per their distinct learning characteristics. In this regard, main objective of this study was to identify the ways of differentiating general education curriculum that teachers have been enacting in integrated schools to meet the peculiar learning needs of students with hearing impairments. To achieve the objective, this research answered two research questions such as: How do teachers teaching to students with hearing impairments differentiate general education curriculum to meet their special learning needs? What types of problems have been encountering by teachers while teaching students with hearing loss under integrated educational setting?

## Research Method

This study was based on qualitative research paradigm followed by descriptive research design [25, 26]. Following the study design, an integrated school from Kathmandu Valley was chosen by using purposive sampling method where a significant number of students with hearing impairments were receiving their school education alongside their peers without disabilities. Out of 1,286 students, 74 students with special needs were receiving educational services from the sample school and 70 general education teachers, six special education teachers, and three Sign language interpreters were working there. The school located in Kathmandu Valley was more accessible and researchers could get entry easily into school to approach information required for the study since some teachers working there were familiar. Six teachers (four general and two special) and three Sign language interpreters were also chosen by using purposive sampling method because these teachers were expected to have more information as compared to others; as they were directly involved in teaching to students with hearing impairments. They can, therefore, provide information regarding curriculum differentiation that was made to meet special learning needs of students with hearing impairments. The size of sample has been clarified in the following table:

**<Table 1> Size and Nature of the Sample**

Informants Participated in the Study		Gender		Nature of Training		
		Male	Female	General Education	Special Education	Sign Language
General Education Teachers	4	3	1	4	-	-
Special Education Teachers	2	2	-	2	2	1
Sign Language Interpreters	3	2	1	-	-	3

Note: Special education teachers had received two or more than two types of training

Different qualitative data collection methods namely in-depth interviews, classroom observations, and document analysis were used to collect information for the purpose of exploring instructional techniques the teachers were employed to differentiate general education curriculum for addressing learning needs and interests of these students. Each sample teacher including Sign language interpreter was interviewed approximately half-an hour and various information techniques of differentiating instructional activities, instructional resources using by them to make the general education curricula more accessible, attempts to accommodate assessment procedures based on special learning needs of students with hearing impairments, challenges facing by them while delivering and translating curricular contents under an integrated

learning setting, etc. were garnered to answer the research questions formulated in advance. Furthermore, three classes were observed from forty to forty-five minutes for each to collect data related to teachers' efforts on classroom diversity management, time allocation for each student to complete his/her instructional activities, teachers' encouragement to the students in grasping curricular contents etc.

Finally, policy provisions regarding instructional differentiation and practices in real classroom situations were also reviewed through document analysis to get deeper understanding of research problem under the study. And then collected information was analyzed in a descriptive way by generating some themes under the research questions based on the nature of data obtained throughout the research process. All of the data obtained from multiple sources were transcribed, edited, coded, categorized, and thematized to draw meaningful results and conclusions. Different techniques namely triangulation of research data and member checking [27, 28] were also used to ensure the reliability and validity of the research data. While doing so, data collated from multiple sources were cross-checked and consistency among them was identified to make the research work more reliable and valid. Finally, results of the study were also consulted with three key respondents (two teachers and one Sign language interpreter) after analyzing the data to make minor corrections and detect trustworthiness with references to their inputs to ensure the reliability and validity of this study.

## Results

Students with hearing impairment cannot get sufficient benefits from specific curriculum without accommodation and modification considering their individual needs, preferences, abilities, styles, and pace of learning. In this regard, the research was carried out to identify the techniques that teachers had been using to differentiate general education curriculum to make it accessible for those students. The results found from the study are mentioned below:

### Techniques Used to Differentiate the Curriculum

Students with hearing impairments cannot have proper access to content taught in integrated schools as their classmates without differentiating curriculum as per their special needs and learning styles. Considering the reality, general education curricula enacted in sample school had been differentiated to a moderate extent to optimize the access of students with hearing loss to information organized into different subjects as

a part of educational program. The techniques generally used to differentiate the curriculum under an integrated educational setting are given below:

### ***Recruitment of sign language interpreters***

Study results show that sign language interpreters were recruited in the sample school to maximize students' access to the general education curriculum especially from grade-six to grade-ten. But such interpreters were not recruited for those students who were studying at pre-primary and primary levels. Each class from six to ten, where students with hearing impairments were getting general education used to have an interpreter who was playing a supportive and conducive role in translating the contents conveyed by subject teachers through sign language to make the curriculum more accessible mainly for students with hearing loss. In this regard, a teacher indicated, "*three sign language interpreters have been recruited at grade seven, nine, and ten to clarify curricular content delivered by subject-teachers to students with hearing impairments* [Special Education Teacher-1]." Furthermore, another teacher stated,

*There are only two special education teachers in school who cannot support all students individually because of high student-teacher ratio. Therefore, Sign language interpreters are recruited in each class where students with hearing impairments are receiving education by following general education curricula* [Special Education Teacher-2].

Classroom observations also depicted that each classroom, where students with hearing impairments were receiving education, had a sign language interpreter actively involving in translating all lessons taught by general teachers. The translation was made either in Nepali or English language into Sign language to increase the accessibility of these students to curricular contents as their peers with normal hearing.

### ***Grouping based on ability***

Since students with hearing impairments have distinct needs and learning styles, they require special educational interventions to optimize their access to knowledge and skills encompassed within a curriculum. These students cannot properly hear curricular content delivered by general education teachers through oral modes. Considering the reality, separate group of students with hearing impairments were made in each class to provide intensive support based on their peculiar learning needs especially with the help of Sign language interpreters. The results found from classroom observation also showed that these students were kept together at the first rows of all classes and Sign language interpreters were providing regular supports throughout each school day to

make curricular content comprehensible. In this regard, a participant said, “*all students with hearing impairments are seated together in the class that makes it easy to translate almost all content taught by each subject teacher into Sign language as per their peculiar learning needs* [Sign Language Interpreter-2].” The study results also reveal that Sign language interpreters not only translated curricular content but also taught different subject matter either individually or in a small group on a required basis primarily to boost up the learning of students with hearing impairments.

#### ***Additional supports by special teachers***

Results of the study also depict that students with hearing impairments could also get academic support from special teachers working in resource rooms of integrated schools. Special education teachers attending in the sample school had competency on sign language and they could provide content support to learners with hearing impairments on a required basis. A teacher participated in the study indicated, “*I usually worked in resource rooms to provide targeted support to all students with disabilities and any special child including those with hearing impairments could receive educational support into specific subject area* [Special Education Teacher-2]. But students with hearing loss had limited time to consult their queries with special education teachers because of their swamped school routine. There was not separate time schedule for special education teachers to provide targeted and intensive interventions for addressing the peculiar learning needs of students with hearing impairments in resource rooms. These students had to miss lesson(s) delivered by general education teachers in general classroom while taking special supports from special education teachers during school hours except leisure time.

#### ***Placing students at the front row of classroom***

Study results showed that the students with hearing impairments were placed at the front row of classroom to make lectures accessible. Classroom observations also revealed that all students with hearing impairments were seating at the first row by which some students with hard of hearing could hear lectures given by different subject teachers to some extent in one hand and sign language interpreters could also translate all curricular contents delivered by different subject teachers exactly in the same amount to maximize their access to information accumulated within different subjects. In this regard, a teacher stated, “*students with hearing impairment can see both interpreter and their subject teacher when they sit in the first row of class. Not only this, they can receive some information through lip-reading* [Special Education Teacher-1].” Thus, students with hearing loss could get a number of benefits by sitting in the first row of class to maximize their access to the curricula teaching in an integrated school.



### ***Writing key points on the chalkboard***

A significant number of students with hearing impairments cannot hear the contents delivered by subject teachers but they can easily see the text, pictures, charts, etc. written on the chalkboard. It means, visual materials are more beneficial to them as compared to audio materials to have access to the knowledge and skills encompassed within general education curricula. Study results also show that all teachers, especially general education teachers, wrote key points in each lesson on the chalkboard as much as possible to make them accessible to all learners including those with hearing impairments. A teacher teaching to these students indicated, *“I always try my best to write key points of each lesson on the chalkboard to make curricular content more accessible primarily to students with hearing impairments [General Education Teacher-3].”* Classroom observations also showed that general education teachers generally used to write down some key points and formulas on the chalkboard. However, the points written on the chalkboard were not enough to get complete access to curricular content for students with hearing loss as compared to their normal hearing peers.

### ***Residential educational services***

Some students with severe and profound hearing impairments were pursuing their school education through residential services. Study results depicted that twenty-three students were receiving residential education services in the school out of twenty-seven students with hearing loss. Those students who got residential facilities were receiving more conducive and supportive learning environment than those learners who did not get such facilities especially in their off-school-hours. In this regard, a teacher informed, *“some students with hearing impairments getting residential facilities in school are really good in their academic performance as compared to those who are deprived of such services [Special Education Teacher-1].”* Those students who live in hostel could get continued academic support from their teachers even in off-hours time but other could not receive such services at home by their parents. Consequently, those who did not get proper learning environment at off-hours time had limited access to general education curriculum and performed poorly as compared to other students receiving education under residential services.

### ***Priority to written test***

Different types of tests, mainly oral, written, and performance-based are held under formal education system to assess academic achievement of all students. But some students including those with hearing impairments cannot demonstrate their knowledge learned from specific curriculum through oral test due to their own learning profiles. Considering the reality, all teachers either general or special were giving priority to

written test to assess the actual learning progress of students with hearing impairments in sample school. But teachers were also posing some oral questions to these students to detect whether they have adequately learned curricular contents during classroom instruction. While doing so, interpreter was playing a decisive role for translating teacher's questions to students and students' answers to teacher to make the communicated information accessible. A teacher opined,

*Oral test is mainly used to assess language competency of those students who can use it but the students with hearing impairments cannot use verbal language. Therefore, written and performance-based tests are better options for them rather than oral test to assess their academic progress [General Education Teacher-2].*

Thus, different attempts were made through adjusting the tests to maximize the access of students with hearing impairments to general education curriculum by the side of teachers teaching in integrated schools of Nepal. But these endeavors were not enough to develop mastery of contents within all students including those with hearing loss as intended by the general education curriculum.

### **Challenges of Differentiating the Curriculum**

Even though both general and special education teachers had been making some attempts to differentiate general education curriculum as per the peculiar learning needs of students with hearing impairments, these students did not have complete access to curricular contents as their peers without disabilities. Based on the study results, the major problems encountered by teachers under integrated educational setting are discussed below:

#### ***Over responsibility***

Study results showed that both general and special education teachers had to bear different responsibilities (teaching, checking homework, preparing questions for exams, examining answer-sheets; for example) during school hours. Consequently, they could not give sufficient time to students with hearing impairments to provide academic supports into different subject areas on a required basis. In this regard, a sample teacher said, "*I have swamped time schedule in each school day. Therefore, I cannot give additional time to students with hearing impairments as per their individual learning needs [General Education Teacher-3].*" As indicated in the above narrative, most of general education teachers working in integrated schools were busy in their daily routine either in teaching or in assessing classwork and homework of students including

those with hearing impairments. On the other hand, same condition was found in the case of special education teachers. They were also busy in resource rooms to support students with disabilities including those with hearing and visual impairments. These teachers invested most of their time in teaching Braille and translating assignments submitted by blind students in Braille into Nepali or English language. As a result, they could not give sufficient time for providing academic support to students with hearing impairments as per their unique needs and learning styles.

### ***Insufficient instructional materials***

Since students with hearing impairments need more instructional materials to maximize their access to general education curricula. But study results showed that very limited instructional materials (visual aids, video with captioning; for example) were available in sample school. Another reality was that available teaching materials (globe, pictures, charts; for example) were not sufficiently used by teachers while delivering curricular content in the classrooms. Although students with hearing impairments could get benefits from pictorial instructional materials to have access to an official curriculum, these materials were not properly used during classroom teaching to boost their learning. Supporting the fact, a teacher replied, *“school does not receive separate budget to purchase instructional materials and assistive technologies as per the learning needs of students including those with hearing impairments [General Education Teacher-4].”* Thus, each integrated school had to spend most of its budget on staffs’ salaries. Consequently, they could not provide sufficient instructional materials and equipments to meet the learning needs of students with hearing impairment hence making the curriculum more accessible.

### ***Inadequate sign language interpreters***

Study findings showed that sample school had a limited number of Sing language interpreters. When an interpreter was absent in school due to some reason, there was no alternative to work in his/her substitution. In that situation, students with hearing impairments often have to face difficulties in grasping the contents taught by their teachers. In this regard, a teacher stated, *“teachers could not convey all curricular content to students with hearing impairments in the absent of interpreter [General Education Teacher-1].”* Furthermore, another teacher indicated, *“I often used to write as much as key concepts and points related to specific lesson on the chalkboard to make them accessible especially when interpreter was not in the class [General Education Teacher-3].”* Thus, general education teachers were trying their best to communicate curricular contents in an accessible form in the absence of sign language interpreter but students with hearing impairments could not have been benefitted adequately from that lesson as compared to the lesson(s) assisted by interpreter.

### ***Sign language vocabulary with limited words***

Almost all teachers participated in the study indicated that there has been a limited number of words in Nepali Sign language vocabulary. Teachers and Interpreter, therefore, could not convey what he/she intended to communicate curricular contents; especially in the subjects like science, mathematics, and social studies to the students with hearing impairment. Consequently, these students had limited access to the curriculum as compared to their normal counterparts. Supporting the bitter reality, an interpreter said, “*we cannot communicate all information especially from a set of subjects viz. science, math, and social studies because of limited sign language vocabularies* [Interpreter-3].” As a result, deaf students might not understand the contents that teachers intended to communicate. The lacking of sign words in sign language vocabulary has posed a challenge to satisfy the learning needs of the deaf and profoundly hearing impaired students.

### ***Lack of flexibility in curriculum***

School level curricula are developed at the central level by Curriculum Development Center (CDC) and then implemented all over the country. Study results indicated that teachers teaching in integrated schools could neither modify nor change the prescribed curriculum based on the special learning needs of students including those with hearing impairments. Each student had to learn all knowledge, values, and skills encompassed within curriculum to get mastery on it to the maximum level. Similarly, the teachers also had to teach all content within assigned time schedule following strictly to the curricula. In this regard, a teacher said, “*a large number of students with hearing impairments cannot learn curricular contents to a fuller extent because of their slow pace of learning but we must complete the assigned courses within stipulated time* [Special Education Teacher-2].” Thus, teachers working in integrated schools had to enact school curriculum without making any accommodations. Literally, there were no rooms for adjusting or making even a minimal change on some contents which carry abstract and difficult concepts. Thus, enhancing the access of students with hearing impairments to the curriculum to an optimum level has become a challenging job for teachers.

Similarly, inadequate training to teachers, limited infrastructure of schools, stereotyped attitude towards children with disabilities, and poor collaboration between general and special teachers were also found in the study as other considerable challenges. Therefore, both general and special education teachers are struggling with the challenges posed by inflexible curriculum for differentiating the curricula to meet diverse learning needs of students with hearing impairment.

## Discussion

Proper accommodation in existing general curriculum is essential to increase the access of students with hearing impairments just like their peers without disabilities under an integrated educational setting [38]. But it is difficult in making the general education curriculum accessible to students with hearing impairments in Nepal because of poor physical infrastructure and limited instructional materials [39]. However, some attempts were made in sample school to accommodate instructional activities as per the special learning needs and styles of these learners to make the curriculum accessible. Students with hearing impairments must be taught by well trained teachers; and they also require audiological intervention, language lessons, assistive hearing devices, equipped schools, and modified curricula [9, 29] for their better educational growth and development. Furthermore, curriculum, teaching methods, physical setting of the classroom, and assessment procedures should be adapted as per their distinct learning needs and styles to make them successful in their academic career [16, 29]. But most mainstream schools in Nepal lack teachers trained in using accessible instructional materials and testing procedures [7] as per unique learning needs of students with disabilities including those with hearing impairment. Providing adequate and appropriate accommodations for students with hearing impairment at the school level is not easily accomplished [40].

Study results also revealed that teachers either special or general teaching to students with hearing loss were not sufficiently trained. Though some teachers had received formal short-term training from the government entities, they could not differentiate general education curriculum sufficiently as per their special learning needs and preferences and hence are being left behind in the field of education. These students may need Individualized Education Plan (IEP) to maximize their accessibility to the general education curriculum to an expected level [38]. Nevertheless, IEP was not prepared in most of the special schools of Nepal [36], including the sample school for those with hearing impairments. All special education teachers teaching in integrated schools got their educational degrees majoring other subjects rather than inclusive/special education. Therefore, there is the issue of teacher qualifications and competencies in one hand and lack of sufficient instructional materials and assistive devices on the other. As a result, students with hearing loss did not have complete access to curricular contents thereby performing poor in academic activities and related tests as compared to their peers with normal hearing.

The level of skill possessed by an interpreter plays vital role in academic success of students with hearing impairments [10, 30, 31]. Since Sign language interpreter has greater influence on boosting academic activities of students with hearing loss, it is

essential for integrated schools to appoint Sign language interpreter(s) [31, 32] as per their requirement. And also, training should also be provided to general education teachers [32] to impart an organized body of knowledge, skills and dispositions that need to be learned by them so that they could address the diverse needs of all students. Considering the reality, school had recruited Sign language interpreters for especially those students who were studying grade six and higher level but other students who were receiving education below grade six did not get such supports due to limited number of Sign language interpreters.

Furthermore, the students with hearing impairments should be placed at the front row of the classroom to maximize their participation in verbal interactions. For their sake, the amplification system needs to be used by the primary speaker who directly delivers the lesson [16, 33]. It is more effective for students to know directly from teacher rather than through the interpreter. Therefore, the pace of teaching should be slow, natural, and clear to student with hearing impairments [33]. In addition, classroom should also be arranged in such a way where students with hearing impairment can have easy access to interact and grasp information conveyed by their instructors, classmates, and interpreter [34]. Observations also depicted that students with hearing loss were placed at the first desk of each class together and assisted by interpreters whenever it were required. Such setting did only help these students to receive information delivered by their instructors and interpreter but they could not have access to the information shared by their classmates during instructional activities. Moreover, classroom observations also revealed that in most of the cases, general education teachers talk to interpreters rather talking directly to students with hearing impairments, which might jeopardize the opportunities to have direct access of these students to the teachers and ultimately to the curriculum.

Distribution of outline of the lesson to be taught or handouts can be a better option for the students to be familiarized and grasp with new and technical vocabularies; thus optimizing [32, 33] their access to information organized as curricular contents. Furthermore, the questions raised by students with hearing impairments should not directly respond by interpreter but be solved by instructor [33]. In this regard, research findings showed that teachers teaching to students with hearing loss did not distribute handouts of specific lesson in advance. Classroom instruction was mainly guided by textbook(s) prepared by the Curriculum Development Center (CDC) based on official curricula. Research [35, for example] shows that textbook-driven instruction could not be the best means for students with disabilities especially to learn science content.

General education curricula were not differentiated sufficiently because of overly responsibilities the teachers have to bear in the school, insufficient instructional materials, and high student-teacher ratio. The school curriculum in Nepal is not flexible

[21, 23, 36] in one hand and curriculum accommodation requires exhaustive amount of time, money, expertise, and instructional supports to implement well [40] on the other. Teachers teaching in integrated schools, therefore, implement the curriculum without accommodating it as per the special learning needs of students with disabilities including those with hearing impairments. Only one-third teachers teaching in the schools of Nepal bear necessary knowledge of classroom diversity management [23]. But they rarely practice their knowledge and skills which they learned during training session in real classroom situation to address diverse needs and abilities of students [7, 37]. Most teacher preparation programs need more endeavor to impart sufficient knowledge and skills to the teacher candidates to cope with the challenges posed by necessities of diverse learners [41]. As a result, children with disabilities suffer from largest challenges in access, participation, and learning outcomes [1] and then repeatedly fail in schools [21, 23]. Due to these reasons, the school curriculum should be differentiated by providing multiple means of representation, engagement, and expression to maximize their access to knowledge and skills incorporated within the general education curricula.

In the light of above discussion, this study provides an impetus to those who are working from policy level to implementation level. Therefore, it will be handy to educational policy makers, training providers, textbooks writers, instructional materials producers, teachers, sign language interpreters, and parents to be acquainted with the educational services. Both general and special education teachers teaching to students with hearing impairment can take benefit to get knowledge required to differentiate the general education curriculum as per the unique needs and learning styles. Finally, non-governmental organizations (NGOs) and international non-governmental organizations (INGOs) working in the field of special/inclusive education can also benefit themselves from this article to formulate functional policies and relevant programs to boost students' learning by maximizing their access to the school curriculum. Even though, unlike South Korea, Nepal is presently on the way to develop special/inclusive education, this article can convey an information to the students and researchers of South Korea on developmental pattern of special/inclusive education in the developing country like Nepal.

These days, a significant number of Korean students have been visiting to Nepal for volunteering in the field of special education; therefore, they can also be benefited from this article to conceptualize the current realities and challenges posed in education system of Nepal to provide better services the students with special educational needs. Korean government has also been investing a large chunk of money through different organizations (KOICA, LUPIC, for example) to promote special/inclusive education in Nepal. In this regard, such types of organizations can also can take this article as reference to set their future programs and strategies to yield more efficient and cost-effective results.

## Conclusions

Since students enrolled at a class are different from each other in terms of their needs, interests, learning styles, abilities, and learning pace, all of them cannot achieve curricular outcomes to a similar extent within specified timeline. Some students including those with hearing impairments studying under integrated educational setting cannot get ample benefits from the general education curricula without differentiating them as per their individual needs and own styles of learning. These students are able to learn any information more effectively through visual mode like graphic organizers rather than through auditory mode. Thus, can show good performance in those subject areas that require lower language skill. Considering the realities, some attempts such as recruiting Sign language interpreters, additional supports by special teachers, providing residential facilities, etc. have been made in integrated schools to optimize the access of students with hearing loss to the general education curriculum as their peers without disabilities. But these endeavors are inadequate for their academic success to an optimum level by ensuring their complete access to knowledge, values, and skills encompassed by the curriculum. The general education curriculum, therefore, should be differentiated by acknowledging individual learning profile of students with hearing impairments to make curricular contents accessible to the maximum level. Exploring the prospects of educating students with hearing impairments in an inclusive setting can be an important area to undertake further research study in this field.

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