SCHEDULED TRIBE GIRL STUDENTS WITH SPECIAL NEED AND ARTIFICIAL INTELLIGENCE

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Article history:		Abstract:
		In overall, disability refers to a physical or mental state that impairs an individual's ability to function in daily life. It suffices to say that disability is a medical-social issue that affects both the family and the nation. In a country like India, where girl children are frequently stigmatised as a burden on society, the condition of girl children with special needs is frequently subject to carelessness, lack of compassion, and illiteracy. Though the situation has improved slightly since the introduction of inclusive education, the situation is critical for tribal girl students with special needs. In a fragile socioeconomic environment, tribal girls are already vulnerable to high dropout rates, early marriage, and an ignorant attitude from family members, but the situation is pitiful for tribal girls with special needs. The tribal girl students with special need suffer quadruple discrimination of being female, being disabled, being ST and being socio economically backward. Here, intervention through artificial intelligence (AI) and AI-assisted devices can be critical in overcoming the barriers encountered by tribal girl students with special needs in the process of inclusion and development.

INTRODUCTION:

In the early 1950s, a kid was denied admittance to a local school due to his blindness. After nearly twenty years of struggle, that boy gained admission to a college and eventually became the Director of the Department of Special Education and Disability Studies in Dheradun[1]. This is the story of Mr. R.S. Chauhan who fought all odds to get education in the traditional institution. In overall, disability refers to a physical or mental state that impairs an individual's ability to function in daily life. It suffices to say that disability is a medical-social issue that affects both the family and the nation. Disability may be by birth or due to sickness or due to accidents. Children, born with a syndrome, cognitive impairment, complex illness, developmental difficulties and learning disabilities, can be termed as children with special need [2]. Some types of disabilities like mental retardation, autism and dyslexia are congenital. Malnutrition oftenly resulted in stunted physical and mental disabilities. From biological point of view the children having biological functioning of their body and mind below or above the prescribed standard can be termed as exceptional children. On the other hand social point of view explains the exceptional children are those whose social, physical, emotional, moral and mental behaviour is beyond or above the society's prescribed standards [3]. It implies that exceptionality has positive and negative implication. But it is unfortunate that the lager group of exceptional children have negative traits as they suffer from many physical as well as deficiencies, incapacities and so on. These children often need institutionalised guidance, care and support to perform. From impairment disability occurs which further lead to the state of handicap.[4] The impairment may be occurred due to accident also, implies that normal persons may be termed as temporarily able. On the contrary children with impairment may be termed as differently able or children with special need who need external intervention by human or machines to perform at desired level. Psycho-physical handicap give rise to social handicap so both are interrelated in one way. We may classify them as

Physically challenged, Mentally challenged, Academically challenged, Socially challenged and challenged in Multiple Dimension [5]. These persons have full right to get education and live with dignity.

OBJECTIVES OF THE STUDY:
The study aims to explain the possibility of use of Artificial Intelligence in education arena as well as educating Scheduled Tribe girl child with special need.

EVOLUSION OF INCLUSIVE EDUCATION FOR CHILDREN WITH SPECIAL NEED:
Inclusive education encompasses educating all students in an environment that fosters equal participation in the learning process. The provision of an inclusive education for students with disabilities is predicated on the belief that individuals with disabilities should not be forced to rely exclusively on specialised services in order to benefit educationally from resources, activities, and practises that are otherwise accessible to all. Inclusion is maintained when all members participate equally. Members of a group are permitted to participate in its activities, implying that the provisions made apply to all members, not just those belonging to specific groups or those with unique abilities, disabilities, and/or needs. As per UNICEF estimation around 93 million children are living with disabilities. These children also have dream and ambition like other children. They also want to contribute in the development of our society and the nation. But oftenly the policies narrow their access in socio-economic and political arena. They often face barrier to access in education, stigmatized, discriminated and kept consciously aloof from main stream education. Around 50 percent children with disability are out of education. Denied and often deprived of their basic right they further fail to get involved in policy making and participation in work force which may affect them most[6]. The concept of inclusive education is very instrumental in bringing all category of children under the sacred light of education to learn and develop skill they need to thrive. Inclusive education is general based on two major pillars: all children in same classroom and in same school. This system also ensures participation of students of minority language group. The basic principle of inclusive education is growth and development of all students from all diversified group by making participation in same learning environment.

A major breakthrough occurred in 2006 when UNO adopted, the Convention on the Rights of Persons with Disabilities and its Optional Protocol (CRPD). It was in enforced in 2008 with 164 signatory countries [7]. It was watershed in the human rights movement for disabled person. Before this convention all disabled persons are treated as objects of empathy, apathy, charity and social protection .Now the paradigm is shifted to treat them as subjects with rights who can claim their rights and make decisions of their live based on their consent. The convention firmly established that persons with disabilities should enjoy all sort of human rights and fundamental freedom. CRPD-2016 defines as, "Disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others" [8].

Article 24 of UNO aims to provide education to all. With the historic CRPD convention now inclusive education is the fundamental human rights of all the children irrespective of their ability. The basic principle of educating the people also evolved over time. Earlier students with disabilities were denied access to school. With the scientific and social development separate schools are established for the students with disabilities but they were isolated from the other students. Further integrated education system is introduced but without incorporating required basic infrastructural and teaching resources. Most awaited and desired system introduced as inclusive education system which adapts design, structure, teaching method, curriculum , culture, policy and practice to include all types of students to fulfil human and social needs. So the process can be summed up as Exclusion----Segregation----Integration------Inclusion. Inclusive education involves total transformation of design, delivery and monitoring of curriculum, policy, legislation and systems [9]. It promotes and guarantees participation in public life, work and ensures meaningful standard of life.

INDIAN SCENARIO:
As per the Census 2011, there are 14.9 million men with disabilities as compared to 11.9 million women in the country. The total number of differently-abled people is over 18.0 million in the rural areas and just 8.1 million enumerated in the urban settings. The percentage of men with disabilities is 2.41 per cent as against 2.01 in women. Social group wise analysis shows 2.45 per cent of the total disabled population belong to the Scheduled Castes (SC), 2.05 per cent to the Scheduled Tribes (ST) and 2.18 per cent to other than SC/ST [10]. It is very shocking that ST population of the country is one third of SC population but the disability percentage is almost equal for both the category. It implies the gravity of the problem

The Indian constitution's Article 41, Article 243-G, and Article 243-W all guarantee social welfare, access to education, and standard of living. With the introduction of the Mental Health Act, 1987, the Government of India established the Rehabilitation Council of India in 1986 as a pioneering research and training institute in this field. The 1995 Act on the Equality of Opportunities, Protection of Rights, and Full Participation of Persons with Disabilities was a watershed moment in ensuring the equal opportunity and involvement of differently abled persons in national development. Further progress has been made with the enactment of Rights of Persons with Disabilities (RPWD) Act, 2016. It fulfills the obligations to the United Nations' Convention on the Rights of Persons with Disabilities (UNCRPD), to which India is a signatory. According to the Rights of Persons with Disabilities (RPwD) Act, Disability has been considered as an evolving and dynamic concept. The types of disability have been raised from 7 to 21. According to

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the Rights of Persons with Disabilities Act, 2016, 'Person with disability' means a person with long term physical, mental, intellectual or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society equally with others [11].

The Census 2011 revealed that, in India, 20% of the disabled persons are having disability in movement, 19% are with disability in seeing, 19 % are with disability in hearing and 8% has multiple disabilities. Percentage distribution of disabled population by age-group (0 to 39 years) is shown in Fig-1
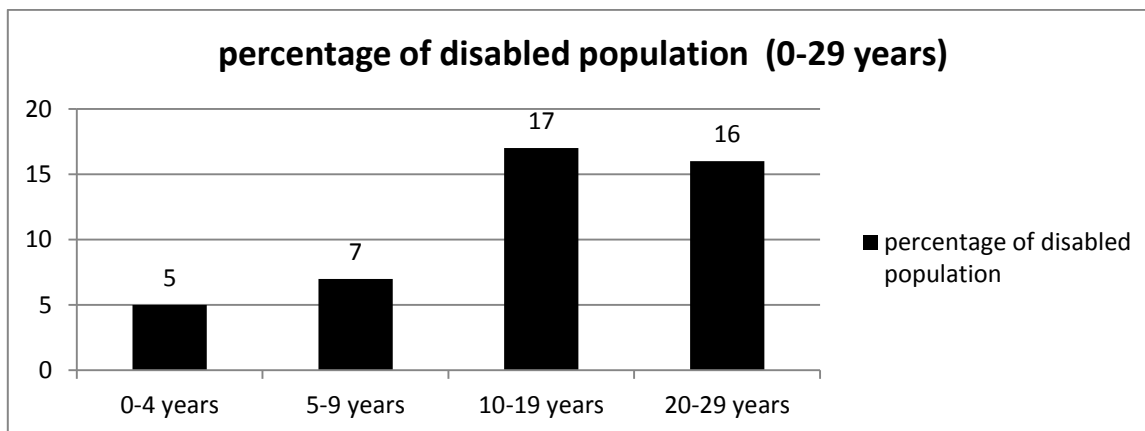

Figure 1: Percentage of Disabled Population (0-29 years)
Source: Cencus of India, 2011.

The figure 1 shows that the percentage of disabled is highest in the age group 10-19 years followed by age group 20-29 years for both the male and female disabled persons. The types of disability by the age group 0-19 years are given below in figure 2-
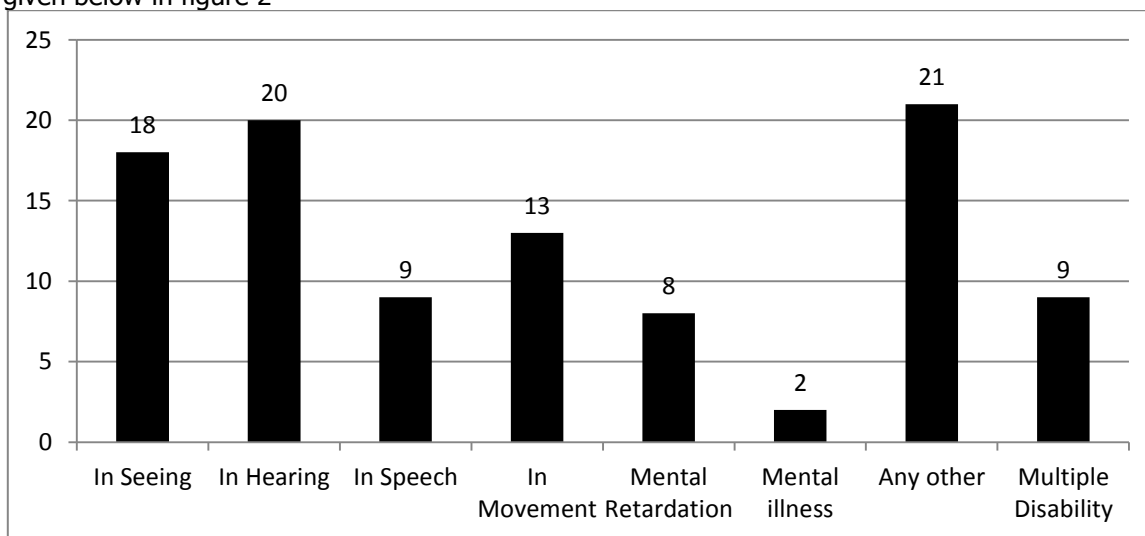

Figure 2: Types of disability in percentage by the age group 0-19 years.
Source: Census of India,2011.

Figure 2 shows that among the specific category the highest disability is in hearing (20%) followed by in seeing (18%) and then in movement (13%).

The Census 2011 showed that 61% of the disabled children aged 5-19 years are attending educational institution. Moreover it is a matter of grave concern that even in 21st century, about 54 per cent of the disabled children were with multiple disabilities and 50 percent of the children with mental illness never attended educational institutions. The status of school attendance of disabled population 5-19 years in India is shown in figure 3.
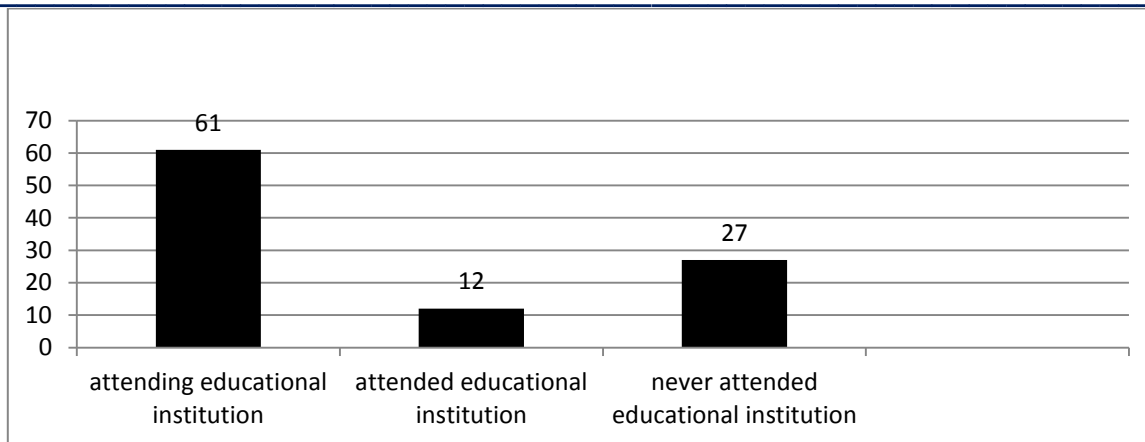
Figure 3: The status of school attendance of disabled population 5-19 years in India, 2011.
Source: Census of India, 2011.

According to Census 2011, among the total disabled persons, 45% are illiterates. 13% of the disabled population has metric/ secondary education but are not graduates and 5% are graduates and above. Nearly 8.5% among the disabled literates are graduates. Among the female disabled persons, 55% are illiterates. 9% of the disabled female population has metric/ secondary education but are not graduates and 3% are graduates and above. Nearly, 7.7% among the female disabled literates are graduates.

The plight and difficulties faced by women with disabilities in India's patriarchal society are far more complex than those faced by men. Not only are they discriminated against because of their disabilities, but they also face sexism and are frequently denied social status as wives and mothers. This is brushing and is detrimental to their dignity and self-esteem. The most shocking picture is 98 percent of the disabled women are illiterate. Four States namely, Uttar Pradesh (20.31%), Bihar (14.24%), Maharashtra (10.64%), and West Bengal (6.48%) together have the burden of more than 50% of the disabled children. Among these women with disabilities, tribal girls with special need are in most disadvantageous position. They are subjected to quadruple discrimination, shown in figure-4:
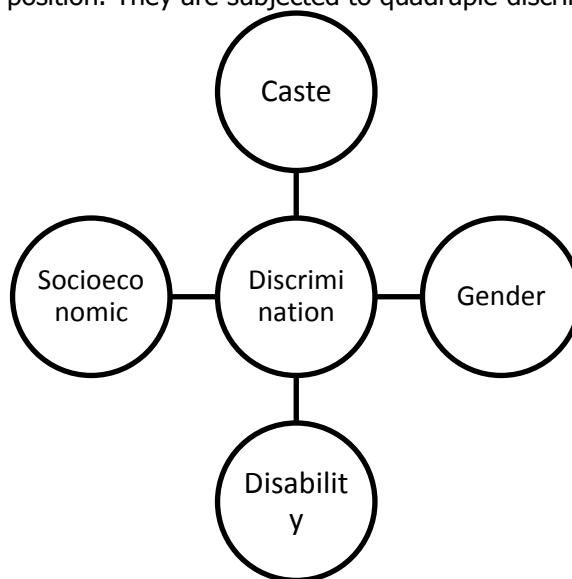

Figure 4: Incidence of Discrimination of tribal girls with special need.
Source: Author.

In third world countries like India development is not universal and humanly inclusive because the notion of development and empowerment is of western origin and patriarchal in nature. The asymmetric participation of tribal women in developmental process excluded them from the notion of development and further causes under development. In case tribal women with disability, the world appears before them as dark as our outer space. So educating tribal girls with disabilities should be the prime objective to attain the goal of inclusive education and further sustainable development.

We are in the age of big data. The Global Education 2030 Agenda aims to "ensure inclusive and equitable access to high-quality education and to promote opportunities for lifelong learning for all"[12] Here, artificial intelligence will be extremely beneficial in achieving the goals of equity and quality in higher education. Artificial intelligence will be a critical tool in achieving another critical objective: lifelong learning. Educational data mining is one of the important components of AI. Educational data mining enables artificial intelligence (AI) to analyze data collected during teaching and learning. Learning analytics (LA) is the most critical and integral component of AI.

Learning analytics elicits information about a learner's habits, responses, and also provides feedback. It aids in realistic assessment and monitors the learners' personal progress [13].

SCOPE FOR USE OF ARTIFICIAL INTELLIGENCE (AI) FOR EDUCATING TRIBAL GIRL STUDENTS WITH SPECIAL NEED IN INDIAN CONTEXT:

Sustainable Development's primary objective is to ensure equitable and high-quality education. Additionally, it emphasizes the importance of lifelong learning opportunities for all. AI technologies can be used to educate people who live in remote areas with limited access to human resources, those who are not enrolled in school, disabled people, children with special need and members of marginalized groups, all of whom deserve equal access and opportunity [14]. AI is extremely beneficial in collaborative learning scenarios involving asynchronous groups of students. AI enables teachers to monitor the learning process, learners' discussions, and to provide guidance and progress monitoring. Educators will almost certainly concur that meeting the individual needs of each of these students is near impossible. The application of artificial intelligence has the potential to make it easier to meet the unique needs of individual students, thereby contributing to inclusiveness of education [15]. Thus, the learning difficulties encountered by disabled tribal girl students can be addressed more effectively. As early as possible, children must be screened for learning and language disabilities. Despite manual techniques that allow for the diagnosis of learning and language disabilities, machine learning algorithms can be used to formulate an expert system for identifying these disabilities [16]. In a country with a low pupil-teacher ratio and a high proportion of students from marginalized communities, where women, particularly tribal women, are frequently disparaged, stigmatised, and grossly disregarded, AI can pave the way by providing competency education to empower scheduled tribe girl students with disabilities to escape the abyss of darkness.

AI can be used to translate sign languages, allowing for the resolution of communication difficulties. AI can detect muscle movement associated with speech, enabling silent speech. This is advantageous for students who have speech-related disabilities, motor limitations, or are soft-spoken or non-verbal. Machine learning has enormous implications for students who are blind or visually impaired when it comes to accessing math content in digital formats.

Natural Language Processing (NLP) may enable the development of tools capable of automatically translating between these various representations, allowing students to access math in their preferred format. Additionally, it may assist tribal students in overcoming frequent language barriers. NLP is capable of translating instructional language into any language via audio video, enabling it to play a comprehensive role in guiding and monitoring the progress of tribal girl students with disabilities. Moreover, machine learning (ML) is complemented by a second type of AI, called human-computer symbiosis (HC symbiosis), which aims to assist different teaching methods, specifically those that support peer collaboration in the classroom. Google has shown that it can transcribe speech while multiple speakers are talking at the same time [17].

Technology is truly pervasive throughout all aspects of life, work, and society. We believe that society will benefit from a trusted technology that people can rely on. People with and without disabilities can be empowered through the technology platforms and tools. Thanks to the latest technologies, Microsoft has shown the ability of AI to help people with disabilities, such as children with dyslexia, by providing them with educational tools [18]. AI Infobots would be a life-changing tool for students with disabilities, as they would deliver information in the format they require. For instance, if a student with a hearing impairment visits a website and views a video, the Infobot will display the video's transcription and enable closed captioning. Numerous computer-based tools have been developed as educational technologies to assist children with dyslexia. The term 'Phonological Awareness Educational Software' (PHAES) refers to a type of tool that aids the reader in developing Phonological awareness. It is easily navigable and understandable thanks to simple graphics that obviate the need for cognitive load. Further, Robotic assistance is been implemented for managing the children suffering from Autism Spectrum Disorder (ASD) so that they can learn social skills understand the emotions [19]. AI powered smart teacherbot can provide required information to the students on institute and courses offered by them, necessary documents etc. Total automation of library can be done very effectively with the help of AI thus tribal girl students with special need can access the learning resources without physical presence and for enhancement of efficacy and for skill development AI can be used. In both the cases tribal female student with special need will greatly be benefitted. Educational institutions can broaden their horizon to become grand engine for lifelong learning. Thus with the help of AI equity and quality in education can be achieved.

Teachers should have access to, control over, management of, assessment of, and evaluation of the AI-powered curriculum. They should have the capability of creating digital content. Thus, teachers' AI competency requires both knowledge expansion and technology literacy. Algorithmic thinking should be incorporated into the curriculum. Students should possess fundamental data literacy skills and the ability to interact with digital technologies. AI should be incorporated into vocational education curricula in response to changing demand.
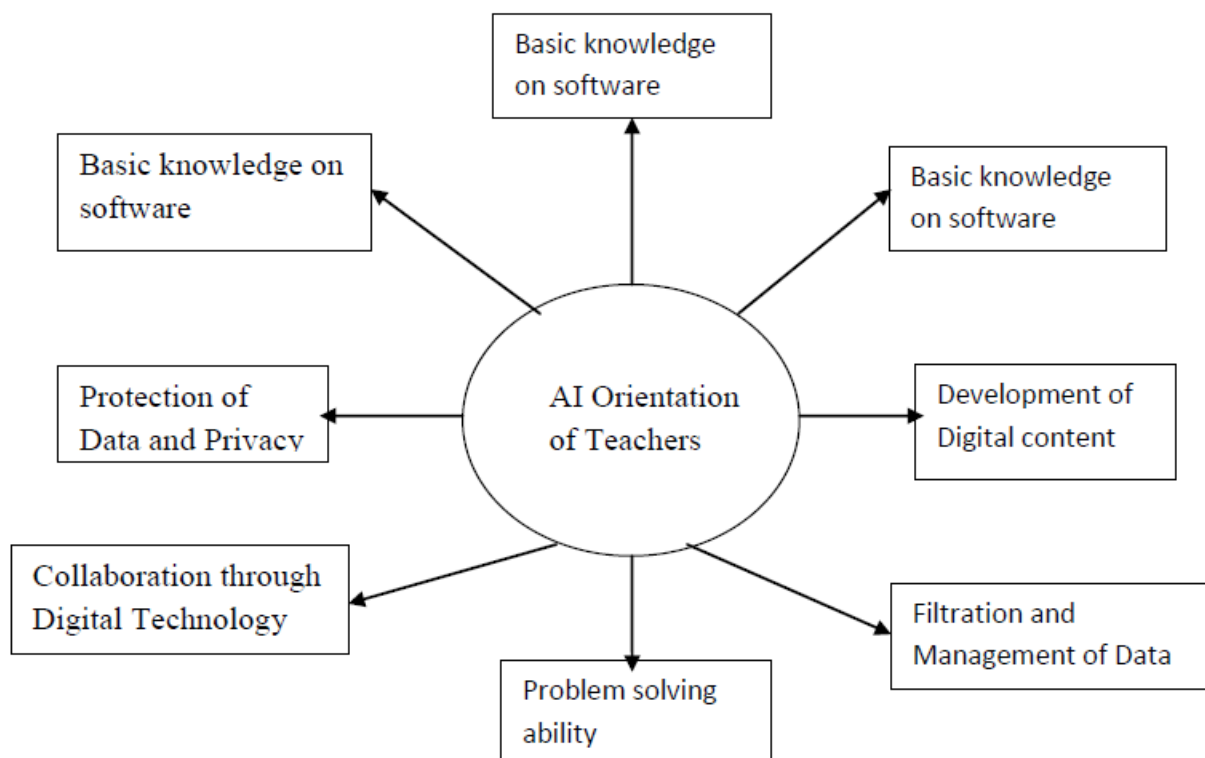
Figure 5:- AI Orientation of the teachers.

The National Education Policy, 2019 has given utmost importance on online learning. The Government of India has developed an online learning platform known as 'SWAYAM' to provide access to thousands of courses. Already 125 universities have signed Memorandum of Understanding for credit transfer. SWAYAM is an ambitious project to make it world largest online learning platform with the application of AI. The 'NITI Aayog' has formulated a five year plan namely Education Quality Upgradation and Inclusion Programme (EQUIP) for attaining inclusion and quality in education with wide use of AI. To measure the learning outcome of the students the Ministry of Human Resource Development has designed a 70 indicators-based matrix called Performance Grading Index (PGI) to grade the percentage of students achieving minimum desired level [20].

CONCLUSION:

In India, AI can play a critical role in providing expertise and capacity to meet global requirements to the world's second largest tribal population. In the country, the infrastructure and educational outcomes for tribal students, particularly tribal girls with special needs, are grossly inadequate. Application of AI will be a masterstroke in achieving the goal of quality and inclusion for tribal girls with special needs. We require a quantum leap forward in order to restructure our curriculum around AI applications. At this point, a well-planned netiquette should be in place to safeguard human ethics and values. We believe that educational technology and artificial intelligence benefits all children with disabilities and accelerates the process of inclusion.

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