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CHILDREN WITH DISABILITIES IN DIGITAL ERA: A PERSPECTIVE FOR PHYSICAL **EDUCATION**

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ABSTRACT

This study critically analyzes the prospect of physical education for children with disabilities in a digital era. A qualitative design was used to explore the in-depth information. Both primary and secondary data were applied. This study covers blind, deaf and physically disabled students. Altogether 22 key informants and participants were selected for the first-hand information. The data are analyzed and interpreted based on themes by using critical discourse analysis and narrative techniques. The study found that digital technology as the main cause of physical inactivity. Physical activities are essentially needed for children with disabilities especially those who tend to be less physically active and are at higher risk of inactivity complications for coping with the challenges posed by the technology. The study further recommended teachers and parents of children with disabilities to increase outdoor activities so that they can be physically active.

Keywords: digitization -physical activity - disability- inclusion - prospect

INTRODUCTION

Physical activity is a key element of every child's development and well-being. Research reports (CBS 2011, Thapaliya 2016, Clemente 2017) show that the global population of people with disabilities is increasing. The census data of Nepal (2011) reports 1.94% disability rate (CBS 2011). Nevertheless, the genuine number may be larger than that. For instance, World Bank's report (2000) shows that the global disabled population is about 10% (World Bank, 2000 as cited in Thapaliya ,2016). Children with disabilities are prone to be more physically idle than children without disabilities (Clemente, 2017). A research finding shows that about 75% of people with disabilities across their lifespan do not participate in physical exercise for their health benefits (Armstrong *et al.* 2010).

A comparative study conducted in Canada about health risk behaviours shows that in each of the three age groups (11–12, 13–14, 15–16 years), youth with disabilities had a 4.5 times higher rate of sedentary life style in comparison with youth without disabilities. Children with physical disabilities were found more engaged in watching television than youth without disabilities (Clemente, 2017). The study identified that the social barriers imposed on youth with disabilities were the primary cause for the lack of involvement in physical exercises. Youth Risk Behavior Survey (YRBS) conducted in 2010 in the USA, also found that the number of children who spend more time in sedentary activities (i.e. video/computer games) hours/ school day was higher (p<0.05) for children with disabilities (26.6%) contrasted to those without disabilities (20.4%) behaviours (Jamesa, Rimmer & Rowland 2007). The study found that being not able to participate in sports competitions, students with disabilities intentionally stay away from more energy required exercises and consequently they tend to spend much time in sedentary activities (Jamesa, Rimmer & Rowland 2007).

Various studies indicate that the lower rate of involvement of adolescents with disabilities in physical exercises is of greater concern since the health behaviour of the youth tracks adulthood. Researchers further argue that lower physical activity during a lower age leads to a high probability of obesity and several other health problems in later stage (Clemente, 2017). Rimmer *et al.* (2007) reported that youth with disabilities have a greater chance to be obese compared to youth without disabilities and consequently they would susceptible to health problems in adulthood.

Research into disability groups have found children who participate in physical activities regularly experienced three main improvements. These are physical improvement- improved physical health, well-being and physical fitness, mental improvement- self-confidence, critical thinking and efficacy, and behavioural improvement- adaptability and social skills. These factors are interrelated. Improvement in these aspects is a prerequisite for the further development of the children (Shields and Synnot 2016).

With the unprecedented development of the newest form of technology, people without disabilities will benefit from the various opportunities and they will likely be superhumanly empowered by algorithms. In contrast, people with disability will not be able to benefit enough from technology and then they will remain under class of disempowered sapiens (Harari 2018). Several policies on right to education for children with disabilities can be found. Very limited policies discuss on the right to sports and physical education for children with disabilities. Moreover, several researches were found conducted on how technology does support students in the learning process and how students with disabilities can benefit from advanced technology. In Nepal, there are very few scientific research found conducted in physical education for children with disabilities in regard to technological association. This study uncovers the dark side of using technology, specifically, how technology is provoking children with disabilities to not participating in physical activities. Hence, the study intends to critically examine the prospect of physical education for children with disabilities in Nepal in the digital age.

METHODS AND MATERIALS

In this research, qualitative research design, particularly critical discourse analysis was applied. Both primary and secondary data were used to collect and correlate the data with other researches. Primary data were collected from the field using participatory techniques whereas secondary data were collected through available information and sources i.e. books, research reports and articles.

The participants of this study were students with disabilities, teachers teaching children with disabilities and members of the Disabilities People's Organizations (DPOs). So, this study covers blind, deaf and physically disabled students of Damakada Ma Vi., Palpa (school for the blind students), Rampur Ma Vi, Jorayal, Doti (school for the deaf), and Khagendra Nawajeewan Special School, Jorpati (school for the physically disabled children) were purposively selected for the study. 3 students, 1 head teacher (Key informant), 2 teachers (Key informant) from each school were selected purposively as the research participants and key informants. Moreover, 2 persons, working in inclusive education (Key informants) from DPOs and 2 parents (1 from Palpa and 1 from Kathmandu) were selected deliberately. So, altogether 22 Key informants and participants were selected.

In this study, in-depth interview guidelines and Key Informant Interview guidelines were used as the data collection tools to explore the multiple realities and experiences of participants in their own words. Moreover, Critical discourse analysis (CDA) (Asgar 2013), was also used to critically analyze the phenomenon. The obtained data were analyzed by using CDA and narrative design. The data were analyzed manually and interpreted critically by taking support of theoretical and empirical evidences.

This research was quite sensitive as some confidential data were required to be explored by the participants. Participants were well-informed about the research projects and objectives of this study. Ethical consent was taken from the participants for the interview and its record. The real name of the participants has not been exposed to maintain privacy and trustworthiness. Interviews have been taken separately and the views of the participants were not exposed to other participants, however, for the cross-checking purpose, some ideas and thoughts of some of the participants were indirectly shared with respective participants. To ensure the quality of the data, cross-check was made. To explore quality information, I encouraged participants to share their hidden ideas and experiences. Indirect and informal questions were also asked to check their answer. To ensure the credibility of the research, triangulations were made. Basically, to triangulate the information, interviews were conducted with head teachers, teachers, parents, students and experts.

The paper is based on the idea of post-humanism. The post-humanist study is largely concerned with biology as well as techno-science. Dinna Haraway a prominent researcher working in this area, argues that human bodies are like machines and open to technological modifications (Wiley, 2016). Prominent post-human philosopher Rosi Braiditti, in her influential book, writes that post-humanism is an understanding of postmodernism. It supports the idea of subjectivism and non-universalism (Briaditti 2013). In this study, I have tried to explain the status of using technological devices by children with disabilities and how technology brings changes in the daily life of them. Moreover, I have given a subjective value to the issue mostly focusing on blended (biology and technology) perspective.

RESULTS AND DISCUSSION

Policy underpinning

After the Second World War, global concern over the right of disabled people grew strongly. UN declared the right of people with disabilities focusing on their social, political and economic rights (Thapaliya, 2016). UN charter of physical education and sports (1978)

assured the right to physical education and sports for all irrespective of disabilities and other social values. The World Education Forum held at Jomtien in Thailand in 1990, recognized education as a key factor in helping to ensure a safe, healthy, prosperous and environmentally sound world (Kafle, 2002). In 2000, the summit of World Education Forum was held in Dakar, Senegal which emphasized education as a fundamental human right and further recognized education as a key to sustainable development (UNESCO, 1990). In 2006, the UN Convention for the right of a person with disabilities declared that people with disabilities shall have the right to general education regardless of disabilities (UNICEF, 2006). Goal no 4 of sustainable development is about education that reaffirmed that education is a universal right for all' (UNESCO, 2015).

The Education Act of Nepal became effective in 1971 which ensured that children with disabilities also had the right to free education (Nepal Law Commission, 1971). Meanwhile, in 1971, the Special Education Council was established aiming to promote special needs education programs in Nepal. In 1982, Disabled and Welfare Act of Nepal became effective that paved the way for promoting and protecting the universal rights to equality and free education for children with disabilities (Kafle, 2002). Several policies and legislations were formulated for providing a ground for ensuring the right of persons with disabilities. The Children's Act (1992), came into force in 1992 and identified the rights to survival, protection and development. The Nepalese Labour Act (1992) became effective in prohibiting child labour (Nepal Law Commission, 1992). The Nepalese Disabled Person Protection and Welfare Rule (1994), came into force which tries to address the issue of accessibility for people with disabilities in public places such as transportation, buildings, employment, and other services. Sports Development Act (1992) ensured that disabled people also had the right to sports and physical exercises. Besides, National Youth Policy (2015) declared that participating in sports and physical activities is a fundamental right of youth with disability. The Constitution (2015) promulgated that "there shall be no discrimination in the application of general laws on the grounds of religion, race, origin, caste, tribe, gender, sexual orientation, physical conditions, health conditions, physical impairment/conditions, and matrimonial status, pregnancy, economic condition, and language or geographical region" (Constitution of Nepal, 2015, p.35).

The paralympics like the Olympics is a big and comprehensive international sports competition for people with disabilities (except

intellectual disabilities). This competition was started in 1948 after Sir Ludwig Guttmann organized a sports competition for the veterans of the Second Word War specifically for British Armies. With athletes from the Netherlands joining British competitors, a follow-up competition took place in 1952. In 1960, the first formal Olympic-style Games for athletes with disabilities were organized in Rome (Legg, Fay, Wolff & Hums, 2015). After that, the Paralympics have been held at the Olympic venues using the same facilities. Like Olympics, the Paralympics have also been split into two types- winter and summer games. Winter and summer Paralympics are held alternatively every two years. In this competition, athletes are divided into six groups based on the nature of their disabilities and compete accordingly (Bailey, 2008).

Special Olympic is another largest international sports competition among athletes with intellectual disabilities. More than 172 countries have come together to organize the Special Olympics (Mysliwiec, 2015). The Special Olympics started in 1962 after Euniee Kennedy organized a summer camp for young children with intellectual disabilities. However, the first formal international Special Olympics was held in 1968 in Chicago (Bailey, 2008). The main aim of the Special Olympics games is to encourage athletes with intellectual disabilities to highlight their abilities rather than their disabilities. Like Olympic Games, special Olympic Games are also organized as summer games and winter games alternatively every two years. As Special Olympics is a movement, competitions are held every day all around the world (local, national and international). It is estimated that more than 5.7 million athletes from all over the world are engaged in Special Olympics (Mysliwiec, 2015).

Technology: A causative factor reducing participation in physical activities

All the participants agreed that digital technology is the main cause of physical inactivity. Headteacher of Doti, says, "If we give them a choice between games and digital devices, they choose digital devices, not games". All the teachers said that 90% of children with disabilities are creative. Digital technology has become a good means to use their mental ability, but physical inactivity has increased among them. The teacher (Male, 52 years old) of Doti said,

Children with disabilities (Deaf) cannot write a sentence correctly but they are perfect in new technology like computers and mobile. They learn fast

word processing, drawing pictures, painting, hardware etc. They teach us how to use YouTube, Messenger, Facebook etc.

These technologies are used without moving our body that leads to a sedentary lifestyle. A resource teacher (Female 49 years old) from Doti said,

Deaf students used to be very strong 10 and 12 years ago but now they are not so physically fit. I think there may be a cause of digital technology and TV. We can see that they spend most of their time in a TV room and watching videos.

Head teacher of Doti further added, "How can they have physical fitness without physical activities? We can observe a significant reduction in participation in physical activities of children with disabilities.

This study found that parents of children with disabilities encourage their children to use technology as they want their children updated with innovations and to become independent. A parent of blind child from Palpa, says, "I want him (her son) to be perfect in a computer so that he can do a job without physical mobility because he is blind." Excessive use of digital technology gradually develops techno-addiction. She further adds,

Techno-addiction is high. Every time he needs a mobile. Physical mobility is almost stopped. His friends are also blind; they listen to the audio and play games on their mobile. He is gradually gaining weight now a day. I am worried about his health "

All the teachers and parents reported that there is a strong association between technology use and physical inactivity. They repeatedly said that excessive use of technology leads likelihood of obesity in children with disabilities. They reported that they had experienced metabolic, physical and psychological problems among the children who were heavily engaged with technological devices. Meanwhile, HPE teacher from Kathmandu says, "due to the COVID-19 pandemic, we started online classes. Online classes helped students to learn technology on the one hand and made them idle on the other hand." All the participants (Teachers, Parents) reported that they could observe restlessness, obesity, laziness, and poor stamina in children with disabilities due to the overuse of screen-based technology.

Various studies have found that increased dependency on digital technology is strongly associated with an increased level of psycho-social disorders such as anxiety, depression, and aggression. A study conducted

in 2020 among school children in the USA has found that opportunity to interact physically in groups is reduced due to the over use of technological devices. Consequently, it affects the normal development of healthy social skills. Because increased screen time reduces the daily physical activities of children and it eventually results in abnormal social behavior (Oswald, Rumbold, Kedzior & Moore 2020). The present study also found a similar result according to the participant's perspective, children with disabilities who spend much time watching TV and videos were physically inactive. Teachers and parents of children with disabilities reported that when their children spend much time with technological devices, they remain idle.

Above mentioned issues and arguments reveal that increased screen time of children with disabilities is one of the determining factors for physical inactivity. The finding of research conducted by Kenney and Gortmaker in 2019 shows that "over use of smartphones, tablets, computers, and video games was positively associated with a sedentary lifestyle. Moreover, television time was found to be a factor limiting a child's physical activity time" (Kenney & Gortmaker 2017, p. 34). The result of this research shows quite a similar scenario in children with disabilities. Participants reported that children with disabilities are more engaged in TV and less engage in physical activities. Based on his experience, DPO's member (male 45 years old) said that "children with disabilities and those with high technology use are less active and more likely to have sedentary lifestyles."

Modern philosopher and historian Yuval Noha Harari (2018), illustrates the dark side of unprecedented development of new technology. According to him, human beings are susceptible to be hacked due to the merging of biotechnology and information technology. Since most of the things-including individual information, are digitized and stored in big data centres, computer algorithms will know us better than we do. Big data algorithm is being like a god as it is able to solve the complex problems (Harari 2018). The President of the Centre for Humane Technology Tristan Harris (2020), says "technology has intentionally, and through unintended consequences, manipulated human weakness. You can view most of the harms that we are now experiencing as rooted in this: addiction, distraction, mental health issues, depression, isolation, polarisation, conspiracy thinking, deep-fakes, virtual influencers, our inability to know what is and isn't true" (Harris 2020, p. 25). The result of the present study is consistent with these findings. However, this study did not try to identify the deeper level impact of digital technology on human ability.

Prospective of physical education in a digital era

Human beings are unique creature in this universe. They have combined abilities of physical strength, mental flexibility, sharp intelligence and consciousness. Now, technology is gradually downgrading these abilities. The machines have surpassed the physical strength of human being. Artificial intelligence and algorithms are extraordinarily efficient and accurate than humans to calculate data and solve the complex problems (Harari, 2018). To save people from catastrophic situation in the future, physical education (practical activities) will be essentially required. All the participants agreed that there is an increased importance of physical education for children with disabilities in the days to come. The fact is that children themselves want to play games but technology is unconsciously blocking them to participate as technology is easy to use and it gives immediate satisfaction. In some cases, school environment is not suitable for physical activities for children with disabilities. A teacher from Doti said,

Deaf students want to visit outside but we are not able to manage such programs. I think it would be better if we can manage visiting programs twice a month. They can learn fast from visiting the field because they can directly observe the situation. The importance of such visiting programs is increasing day by day as technology has become a means of making children lazy.

It is no secret that a healthy lifestyle depends on physical activities. Physical activities and sports provide significant benefits for children with disabilities in all developmental stages of life. Physical activities are essentially needed for children with disabilities especially those who tend to be less physically active and are at higher risk of inactivity complications. All the participants were cognizant that physical activities enhance physical fitness, control weight, improve motor skills, improve cognitive health, increase self-esteem and reduce the risk of diseases linked to sedentary behaviour. However, a vast gap was found between knowledge and practice.

Inclusive sports activities (involving children with disabilities and without disabilities) were to be found essential for better socialization for the children with disabilities as digital technology is promoting individual lifestyle. This study found that separate activities extend the gap between children with disabilities and without disabilities. In the case of Doti, there used to be a gang fight between deaf students and general students.

According to the head teacher, after organizing the inclusive games, that problem was solved. It shows that inclusive sports activities can be a good means to socialize children. Moreover, where assembly and extracurricular activities were organized commonly, students were found to be more socialized.

Participants of this study perceive that physical education is a viable means to safe new generation from being downgraded, since physical education offers children with practical physical activities which make them active. All the participants in this study agreed that participation in sports and physical activities decreases screen time of children. They strongly suggested to incorporate the portion of physical education in curriculum of all level. A participant suggested that regular physical activities should be made compulsory in every school as modern technology is gradually degrading human abilities. He further says "there are no any alternative means except physical exercise to get rid of the challenges posed by technology specifically in the era of digitization." The results show that the significance of physical education in this era is increasing.

Several studies have found that unnecessary use of technology inhibits the daily physical exercise of students. It is estimated that around 3.2 million people died per year due to the lack of necessary physical exercise (WHO, 2017). Physical exercise helps us to stabilize blood pressure and glucose levels. It is also required to maintain normal body weight, improve sleep patterns, and improve immune response and metabolism (Connell, Lauricella & Wartella 2015). According to the World Health Organization (WHO), "the developing child needs at least one hour per day of moderate to vigorous intensity physical activity" (WHO 2017, p. 25). The present finding is quite similar to these previous findings as all the participants expressed that physical activities are inevitably required for children with disabilities tobe able to cope with the challenges posed by technology.

Figaji and Philips (2010) recommend that concerned people (parents, teachers, and friends) should encourage children to exercise daily. They further, argue that who spends a considerable time in screen-based technology needs more physical exercises. Moreover, technology use among children with disabilities is one of the most influencing factors for physical inactivity (Figaji & Phillips 2010). The present study also found that students spending more time using television, social media, video games, the internet, and portable devices had reduced children's time

for physical activities. In this context, all the participants suggested that physical activities should be performed to cope with the problems created by the new technology.

CONCLUSIONS

With the exponential development of digital technology, unprecedented problems have been experienced by children with disabilities. Children with disabilities are more susceptible in specifically two folds compared with children without disabilities. These are: They hardly get participation in physical activities and most of their activities are supported by assistive devices (technology) so that they do not have to engage in physical movements. Technology use is directly associated with physical inactivity. Looking at the pace of development of new technology and its use, we cannot predict what the situation would look like shortly. Since children with disabilities rarely get participation in physical activities, they are at high risk of degrading their abilities.

This is a time to be more serious about the health of children with disabilities. Policymakers, teachers, parents and students should be well aware to reduce the negative impact of technology use and should create a conducive (disabled-friendly) environment for regular physical activities to cope with the challenges posed by the technology. The future of physical education seems viable as its need is mounting due to the threat posed by emerging digital technology. Teachers and parents of children with disabilities are suggested to increase outdoor activities so that they can be physically active.

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