Open Access Library Journal
2020, Volume 7, e6597
ISSN Online: 2333-9721
ISSN Print: 2333-9705

Achieving Functional Independence of Children with Cerebral Palsy at the Mainstream School: An Overview

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How to cite this paper: Hasan, M.M. and Islam, T. (2020) Achieving Functional Independence of Children with Cerebral Palsy at the Mainstream School: An Overview. *Open Access Library Journal*, **7**: e6597.
https://doi.org/10.4236/oalib.1106597

Received: July 9, 2020
Accepted: August 11, 2020
Published: August 14, 2020

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Abstract

The functional independence of children with cerebral palsy at the mainstream school involves both academic and non-academic activities within the school environment. In order to perform these activities without anyone's support, proficiency such as literacy, cognition, language, social and physical skills is required to achieve at the individual level and the surrounding environment should be compatible according to the student with cerebral palsy needs. An inclusive educational setting in the mainstream school ensures equal and quality education along with need-based learning environment and all way participation for all students regardless of background. It provides necessary components for gaining functional independence in the general school for children with cerebral palsy. The literature review was the key sources of this study. The literatures were collected from many sources such as websites, journals, articles, books, e-books, reports and provisions. Policies, physical structure and facilities, curriculum, teachers, and attitudes as well as health professionals' work in mainstream schools as elements of inclusive education, in other words, facilitate students with cerebral palsy achieving functional independence. Based on several pieces of literatures, this study attempted to provide an overview of the factors that assist in achieving functional Independence of children with cerebral palsy at the mainstream schools.

Subject Areas

Cerebral Palsy, Functional Independence At Mainstream School

Keywords

Cerebral Palsy, Functional Independence, Inclusive Education,

Mainstream School

1. Introduction

Cerebral palsy is a very diverse and complex condition. It is a group of disorders manifesting difficulties in the area of movement, posture, balance, behavior, speaking, understanding, and learning [1]. This disorder is seen in all countries of the world. Although the prevalence of cerebral palsy is 1.5 - 4 per 1000 live births globally [2], it varies from countries to countries. Developing countries like China, Uganda, and Bangladesh show 1.6, 2.7, and 3.4 cerebral palsy children per one thousand live children respectively [3]. It has been estimated that every 1 out of 400 people are affected by cerebral palsy in the United Kingdom [4]. The Centers for Disease Control and Prevention in 2019 in USA has given estimation that 764,000 children and adults in the USA manifest one or more of the symptoms of cerebral palsy, and about 1200 to 1500 school-aged children are diagnosed with cerebral palsy each year [2]. There is no valid research that has been done on the number of students with cerebral palsy so far in Bangladesh, but it is reported that about 76,522 students with various disabilities were studying in the mainstream school in 2014 [5].

Functional independence simply signifies performing daily living tasks without anyone's direct support and it ensures individuals' full participation in life situations that are meaningful and purposeful [6]. In the school settings, students with disabilities' functional performance are assessed through motor performance such as throwing or grasping, walking and balance, participation in the school environment such as classroom, playground, and toilet, cognitive and behavioral tasks, and activities participation like use of materials, written work, functional communication, memory, comprehension, safety, self-care, positive interaction, behavioral control, following rules, obeying adult orders, behavior and task completion [7] [8]. Clark *et al.* (2016) stated that the literacy skills such as reading, writing, listening and speaking require cognition, language, social and physical skills [9]. Considering the above literatures, it is estimated that literacy skills are inter-related with the acquired skills of an individual and its surrounding environment. Similarly, Colver *et al.* (2014) stressed that individuals normal functioning, their confident about themselves, and their participation in environmental context are interrelated [10]. International Classification of Functioning, Disability and Health Framework also measures a person's health and capability on the basis of individual and environment level [11]. Since mainstream school education involves the acquisition of personal skills, environmental adaptation, instruction, evaluation and observation; hence the functional independence of students with disabilities, including cerebral palsy, is involved in many actors, sectors, and policies in addition to the student with cerebral palsy.

A simple dictionary definition of "School" would be a "place where children go to be educated" [12] and on the other hand "Mainstream" signifies "the ideas, attitudes, or activities that are shared by most people and regarded as conventional" [13], thus, "mainstream school" refer to a place that is traditionally designed to educate students with similar characteristics. But the "Inclusive education" philosophy in the mainstream school widens the opportunity to all learners including the person with disabilities to get equal and quality education along with their peers [14] [15]. According to Roth "Inclusive education" is an approach where mainstream school treats all the students regardless of background in the same way in order to provide the educational rights [16]. An inclusive setting in the school does not only allow children with disabilities to attend in the classroom but also ensure their need-based learning environment and all way participation [17]. Inclusive education facilitates student with disabilities' social and communication development [18], enhances their achievement scores [19]; overall they have become more independent in learning [20].

Inclusive educational settings are modified, adapted and fitted according to the needs of students with disabilities through functional independence assessment [21]. Children who participate in inclusive education have been found to be more independent [20] [22]. Inclusive education, therefore, serves as an indicator of students achieving functional independence in schools. Policies, physical structure and facilities of school, curriculum, teachers, and attitude are identified as the main components for providing inclusive education at the mainstream school [23] [24]. Along with these, medical professionals such as Doctor, Physiotherapist, Occupational therapist, Speech therapist are required to work to prepare and implement the effective intervention; because a student with cerebral palsy shows physical, psychological and social problems along with educational difficulties. This article has attempted to provide an overview of the factors related to achieving functional independence of student with cerebral palsy in the mainstream school. In the first section, the definition, causation and clinical manifestations of cerebral palsy has been outlined from the pieces of various literatures. A brief overview of the significance of policies, infrastructure and facilities, curriculum, health professionals, teachers, and positive attitudes for achieving functional independence of students with cerebral palsy in mainstream schools has then been discussed.

2. Cerebral Palsy

Cerebral palsy is a sentence concerning about the condition of difficulty in movement started from childhood. Cerebral means "concerning the brain" and palsy means "paralysis or inability to move" [25]. Cerebral palsy, then, is a kind of paralysis that results from the brain damage occurs before the brain development [26]. Similarly, it has been reported that cerebral palsy results from the brain injury while it is being matured and a lifelong disorder of movement and posture is experienced by the affected person due to this condition [1]. It is an

endless disorder comes from the brain impairments affecting a person's activity during motion or at rest.

2.1. Its Causation

There is no single cause for cerebral palsy to occur. A wide range of factors such as congenital, genetic, inflammatory, anoxic, traumatic, toxic, and metabolic factor may cause cerebral palsy [27]. Babies can be affected by cerebral palsy in three life stages, namely pre-natal, peri-natal and post-natal. A variety of risk factors is associated with cerebral palsy. Although significant post-natal intra-ventricular hemorrhage is more likely to have neurologic consequences of a disease, most hypoxic-ischemic lesions associated with cerebral palsy are prenatal [27]. Prenatal factors are those that operate from the time of conception to the time of labor. These are responsible for 28% of all cases of children with cerebral palsy [28] and in some studies they are responsible for 70% - 80% of cases [29]. The period from the time of onset of labor to the time of viability of the delivered child is regarded as the perinatal phase. It is the most important reason in about 67% of premature deliveries [28], and also for low birth weight, asphyxia, intracranial hemorrhage, infection, and convulsions. On the other hand, post-natal factors work after the baby is born. These are numerically less important than other factors [30]. They include trauma, infection of Central Nervous System (CNS) and vascular accidents.

2.2. Clinical Manifestations

Understanding of clinical feature helps to adopt better management for children with cerebral palsy. Before discussing the clinical characteristics, it is better to describe cerebral palsy classification briefly. Cerebral palsy can be classified by motor type and topographical distribution [31]. Motor type classification consists of spastic, dyskinesia, ataxic, hypotonic, and mixed and topographical classification is confined to spastic type which must contain hemiplegia, diaplegia and quadriplegia [31]. Of these, spastic CP is the commonest and accounts for 70% - 75% of all cases [32]. There is one widely used classification system of cerebral palsy named "The Gross Motor Function Classification System (GMFCS)". It is suggested that GMFCS classifies children with cerebral palsy according to their age specific motor activities [32].

Spastic type of cerebral palsy is characterized by clinical signs of upper motor neuron lesions where muscle contractions, convulsion and mental retardations are commoner than other forms [25]. Person with dyskinetic CP shows prominent involuntary movements or fluctuating muscle tone and its distribution is usually symmetric among the four limbs [33]. Disturbance in the sense of balance and equilibrium along with dyssnergia (uncoordinated and abrupt movement), past pointing, and intention tremors are usually present among the person with ataxic cerebral palsy. In contrast, children with hypotonic CP find difficulty to maintain their posture against gravity even in sitting as well as unable

to play due to floppiness [25]. In some cases of cerebral palsy there are combinations of clinical types e.g. spastic-athetoid, spastic-rigid, choreo-athetoid, and is usually due to extensive brain lesion.

On the other hand, topographical classification is mainly based on limb distribution for the spastic form of CP. The most common form is diaplegia. It is evidenced that about 30% to 40% people with CP show diaplegia [32]. In this condition, both legs are affected by stiffness which can be identified by walking on toes with knees bent as well as leg being pulled inwards with bent hips [34]. Hemiplegia is another kind of spastic CP where one side of the body is mainly affected [34]. It is also pointed out that hand movement are affected first and legs involvement only seen while children on walking [34]. Similarly, Sankar *et al.* (2005) state that the upper limbs are severely affected than lower limbs into this condition [32]. When all four limbs are affected, it is called quadriplegia [32]. It is opined that when all four limbs including arms, legs, and trunk are affected by stiffness and lead to difficulties in movements, sucking, chewing, swallowing, and speech, is called quadriplegia. [34]. Apart from these manifestations, person with cerebral palsy also shows reading problem, behavior disturbances, lack of communication, social aloofness, epilepsy and intellectual difficulties [1] [25]. It is clear that individuals with cerebral palsy present multiple clinical symptoms simultaneously with varying severity.

3. Overview of the Relevant Factors

3.1. Policies

A bundle of laws and rules operates the education systems. These are collectively known as educational policies which are important because they help a school establish rules and procedures and create standards of quality for learning and safety, as well as expectations and accountability [35]. In order to make a standard inclusive educational environment for the person with disabilities globally, the UN convention on the Rights of the child (1989), the UNESCO Salamanca Statement (1994), The Education for All (2000) and the UN Convention on the rights of person with disabilities (2006) provided proposal, guidelines, and strategies towards government, state and local authority [36]. Due to these international campaigns, many countries and government has shifted their education system towards inclusive educational settings. For instance, the Japanese government in 2007 revised their law in promoting educational reforms towards special support education [37], and the South African government took a new policy for building inclusive education and training systems [38]. These changes in the education system have had a positive effect on the access of education of special children in some countries. Of these, Israel is significant, as the number of students with special needs in mainstream schools has been steadily increasing since 2002 due to amendments to the law on educational institutions towards inclusive education [39]. Bangladesh government has also been taking and revising policies since its endorsement with these international calls. Of these,

Bangladesh National Building Code (1993 updated in 2010), National Policy on Disability (1995), Person with Disability Welfare Act (2001), National Educational Policy (2010) and Person with Disabilities Rights and Protection Act (2013) ensure person with disabilities all the human rights including education in Bangladesh [40] [41] [42] [43] [44]. Because of some programs for these Acts, Bangladesh experienced a striking 50% increase in the number of children with special needs in the mainstreaming school between 2005 and 2011 [5]. Although Bangladesh has showed tremendous achievement in access to school education but there are still about 4 million schools going children including disabilities are out of school [45]. This signifies that a lot of policies and programs are yet to be planned and implemented for ensuring inclusive education, in other words, functional independence for children with disabilities.

3.2. Infrastructure and Facilities

The mainstream school provides physical accessibility of inclusive education towards special needs children through infrastructure and facilities [46]. In terms of education at mainstreaming school, infrastructure refers the basic physical structures (such as classroom, toilet, hall room, corridor, drinking water fountain) which are aligned to the needs of special children and facilities signify the fit to carry out a basic effective educational activity on the play area, furniture, sports equipment, educational materials [47]. Washroom, libraries, classroom and playground within the school premises has been identified as the influential factors for the accessibility of education of children with disabilities [48]. Absence of these structures according to special children need may negatively affect the inclusive status of school. A UK survey (2010) reported that the lack of appropriate facilities, inaccessible buildings and limited support within the school creates barrier to educating children with disabilities [49]. Similarly, the physical environment of the school has been identified as the first of the four barriers to providing an inclusive education for students with disabilities [50].

Developing countries school like Bangladesh shows inaccessible classroom, toilet facilities and drinking water area [51] and no ramp which causes great difficulty to get in school building for wheelchair bound pupils [52]. Absence of ramp, narrow doorways, inappropriate classroom furniture, inaccessible playground and disabled unfriendly toilet results in preventing student with disabilities coming to school or dependent on their non-disabled peers to carry out school related activities [53]. Since walking difficulties are very common among children with cerebral palsy and it is estimated that about 33.33% of them are non-ambulant [54]; therefore, the school should have ramp, handrail, disabled-friendly toilet, large corridor, accessible playground and drinking water area for carrying out general and school based activities by the children with cerebral palsy without anyone assistance. According to Loreman and his colleagues, infrastructure such as ramps, steps, width and positioning of door and doorways, table, bench and shelf height , accessible sink, classroom equip-

ment, drinking fountain, playgrounds and other buildings, and facilities, for instance, arrangement of furniture, classroom clutter such as games, bags, rugs, toys, sporting equipment, lighting, un-obscures lines of vision, distraction, and the visibility of hazards should be considered for ensuring inclusive education at the mainstream school [55]; as a result student with disabilities including cerebral palsy will not be dependable on others for getting equal and quality education.

3.3. Curriculum

The term "Curriculum" refers to the lessons and academic content taught in an educational institute. In case of school, it represents a pedagogical project that values the multiple and complex interactions between the following elements: 1) the teaching-learning contents used in achieving the objectives, contents of the school curriculum (education plan, school curriculum, school books, study areas, thematic areas, etc.); 2) the general education objectives, the reference and framework objectives for various subjects and operational and evaluation objectives corresponding to the teaching-learning activities; 3) teaching-learning strategies in school and after school, correlated with formal activities; 4) evaluation strategies of the efficiency of the teaching-learning activities [56]. An inclusive curriculum allows all students (with or without disabilities) to take the same type of lessons without discrimination. According to the Indian National Council of Educational Research and Training, an inclusive curriculum recognizes the need to organize schools keeping in mind the individual differences of students and enables all students to achieve their goals for opportunities and flexibility [57]. Since each and every child is unique, therefore, different instructional methodology, curriculum materials, and assessment methods is required for their effective teaching [58] [59].

The adapted curriculum plays an important role in providing inclusive education on the basis of special needs of children. It is expressed that adaptation of existing curricula is not limited to planning but also involves implementation [60]. Universal Learning Design (ULD) is a recognized concept for providing teaching-learning activities through some modification or adaptation to the prevailing curriculum. A universally designed curriculum focuses on creating learning environments and adopting practices that allow for access and participation by all children, regardless of individual, cultural, or linguistic differences [61]. The "universal" in ULD does not imply a single solution for everyone, but rather it underscores the need for inherently flexible, customizable content, assignments, and activities [62]. Many studies have shown the effectiveness of the ULD on the learning process of students with disabilities. Knight *et al.* (2013) applied ULD principles in the teaching of natural science through pictures and words as a visual media form towards moderate to severe intellectual disabilities and autism child results them becoming simpler to understand the lesson rather than when the teacher teaches only using textbooks [63]. On the other hand,

student with learning disabilities feel more relaxed and real, and their enthusiasm for learning increases while teaching is provided through video games or printed book instead of textbooks [64]. In addition, their ability to develop learning activities plan has been noticed to improve when they were given using multiple means for representing the learning objects [65]. Therefore, the existing curriculum should be administered through ULD to adapt the academic content according to the ability of students with cerebral palsy.

3.4. Health Professionals

Person with cerebral palsy shows mild to severe difficulties and there are no two people who show same condition at a time. This condition generally affects a person's movement, posture and balance, but these motor disturbances can lead to primary impairments such as walking, grasping, griping, feeding, swallowing, eye movements, and speech production problems, and secondary difficulties like reading problem, behavior disturbances, and lack of communication, musculoskeletal dysfunction, and social aloofness [1]. Along with these, medical conditions such as epilepsy and intellectual difficulties are very common among the cerebral palsy population [1] [25]. Mental retardation, epilepsy, and other attributes of cerebral palsy have been identified as the risk factors for functional dependency of this population [66].

CP is non-curable but early intervention therapy can help to achieve effective skills that can facilitate independence and improve quality of life [67]. Activities of daily living (ADL) are vital tasks of person in their school, home and social environment. Difficulties in doing ADL can affect the person's school performance along with their achievements in other contexts. According to Griffiths and Clegg, it is useful to define a child delayed development according to his/her age [34]. They also points out that professional can be able to help him on the basis of his lacking as well as can monitor in progress and attainment of child with CP. Health professionals like physiotherapist, physician, occupational therapist, speech therapist, orthopedic surgeons play vital role in the management of cerebral palsy [68].

Physiotherapists help people affected by injury, illness or disability through movement and exercise, manual therapy, education and advice [69]. In the school, physiotherapist can take part in screening, and assessment of children for deficits in developmental areas related to learning [70]. In addition to these, this professional can also function in the treatment of student with mild to severe sensorimotor disabilities [71]. It is evident that physiotherapy treatment is effective for functional improvement, motor outcomes and lower extremity related development [72]. In addition to these, targeted, trunk and hip muscle can also be improved by applying physiotherapy intervention [73] [74]. Apart from the physical aspect, physiotherapy intervention has been proved as a successful operative approach in increasing sensory-motor function, academic performance, behavior and social-emotional responses of school-aged children with

Developmental Coordination Disorder (DCD) and learning difficulties [75]. The presence of physiotherapy professionals in the school does not have only benefit children with disabilities. Acquiring motor skills is a very common problem in young children which makes it difficult for them to read, do math and acquire new knowledge [76]. In addition, school activities cause back, neck, hip or knees pain which lead to reduced physical activity, disturbed sleep, absence from school, and need of treatment [77]. Study shows that [78] a significant and positive effect of physical activity on children's academic achievement and cognitive outcomes, and physiotherapists have specific skills to demonstrate the relationship between physical activity and health and to work with prescribed physical activity to reach health and well-being of both children with or without disabilities; therefore it is recommended to include physiotherapy professionals as an integral part of the school healthcare.

On the other hand, occupational therapy is a form of therapy that helps people of all ages to learn how to improve their abilities to do the everyday activities they want to or have to do [79]. Due to fine and gross motor dysfunction, intellectual disability, learning difficulties, speech impairments, and vision and hearing impairments, children with cerebral palsy shows mild to severe level of developmental defect in acquiring handwriting and reading skills [80] [81]. Case-smith [82] examined the effect of OT on handwriting of student with learning and developmental disabilities. It showed significant increases in handwriting legibility, in-hand manipulation and position in space scores among the intervention group compared with students who did not receive services. OT services have also been proved as an effective approach to improve the writing readiness among the school students [83]. King and his colleagues conducted a study on school-based therapy services including OT over fifty children of special needs, including cerebral palsy in London reported that ninety-eight percent of the fifty children made progress in the area of school productivity (written communication skills, organizational skills, functional fine motor/visual skills) [84]. Apart from the academic outcomes, non-academic outcomes such as social skills, behavior management, recess, and participation in sports, self-help skills, prevocational/vocational participation, and transportation, are also supported by the school occupational therapists [85]; which can subsequently play an important role in making cerebral palsy children functionally independent in both school and society.

Speech difficulties are very common among children with cerebral palsy [86]. A 2012 study conducted by Swedish researchers found that speech problems affect more than half of all children with cerebral palsy [87]. Difficulty in controlling the muscles of face, throat, neck and head lead to troubles with speech, chewing and swallowing and cause drooling and affect overall ability to interact and learn, and moreover, who also have difficulty hearing may have a hard time understanding spoken language [87]. Speech and language therapy seek to improve a child's speech and communication by strengthening the muscles used

for speech, increasing oral motor skills and by improving their understanding of speech and language. Prior studies show the effectiveness of speech and language therapy in communication, utterance and improvement of imitation tests for children with learning disability [88]. Some studies emphasize classroom based intervention over home setting as school children demonstrated a greater ability to generalize the new words in the former context [89]. Similarly, other studies [90] [91] reported that classroom-based services may be more effective with regard to generalization than pullout therapy services for some areas of language intervention and may result in greater generalization of new skills to other natural settings.

Epilepsy is known as a higher attachment to cerebral palsy; it has been reported that about 15% - 60% of children with cerebral palsy show epilepsy [92] [93]. The risk of developing epilepsy is about 71% if the person with cerebral palsy also has a learning disability [94]. Physicians usually manage epilepsy through diagnosis, and medication [92] [95]. For many children, epilepsy is easily controlled with medication and they can do what all the other kids can do, and perform as well academically [96]. In addition, orthopedic surgeons play a critical role in improving muscular function and ambulation for children with cerebral palsy in the short term and reducing the burden of long term care [97].

Realizing the need for first aid, screening, and treatment for all students, including cerebral palsy, school health program has become an integral part of the American school setting [98]. Recent research suggests that especially by improving health outcomes; school health programs can also improve education outcomes such as student attendance, school engagement, classroom behavior, mood, concentration, memory, standardized test scores, grade point average, grade advancement, and high school completion [99]. Thus, policymakers and implementing governors are advised to take necessary steps to create a link between health professionals and school authorities for the betterment of students with disabilities, including cerebral palsy, or to recruit those professionals to school if possible.

3.5. Teacher

The teacher acts as the guardian of the students in a school classroom. One hand, teachers have to look after the academic education of the students; on the other hand, the general needs of the students in the classroom are fulfilled by him. Suitable education, and problems and solution according to pupils various needs are effectively and appropriately provided by the teachers [100]. In order to be able to work with the special needs student and implement inclusive education at the classroom, teachers should be equipped with relevant professional competencies as there is a correlation between implementing inclusive settings and teachers' skills and knowledge [101].

If teachers are well prepared and trained it may allow and encourage practices that will further, to a large extent, successful inclusion of all students [102] [103].

Teachers make great contributions to student with disabilities in assigning seating, providing group discussion time, exposing students to diversity, making classroom physical accessible, providing inclusive playground, taking immediate action against bullying, providing choice in sports and communicating with parents which providing inclusive environment, in other words, facilitating them achieving functional independence at the school [104]. In addition to ensuring inclusive settings, student with severe emotional or learning disabilities performance can be enhanced through teacher's efficacy [105]. Along with academic performance, teachers play a significant role in the assessment of functional skills, and preparing intervention for improving gross and fine motor abilities, visual-motor integration, and visual-perceptual skills of the student with disabilities in the classroom [106] [107]. Therefore, it is suggested to provide contemporary and updated capacity building training about special education to the teacher on a regular basis.

3.6. Positive Attitude

Attitudes are comprised of feeling, thought and action [55]. In regular school programs, the inclusiveness of special needs students' is mainly influenced by the teachers [108]. Tyagi (2016) identified fourteen necessary activities of the mainstream school teacher in order to meet the specials needs of the student with disabilities at the school [109]. These responsibilities are outstretched to curriculum, class room's infrastructure, health professionals, student with disabilities and their parents and school peers. Therefore, teachers' attitude is crucial in the use of effective instructional practices to promote, manage, and implement the necessary demand of student with disabilities at the mainstream school. Borg *et al.* (2011) stressed that effective inclusive settings at the general school depends on values and attitude of teachers along with their skills, knowledge and understanding [110]. In order to explore the teachers' explicit attitude towards inclusion of students with disabilities, many studies have been carried out in The US, Europe, and Australia [111] [112] [113] [114]. Teachers' attitudes towards the inclusion of special needs children have been identified as indicators of successful inclusion educational settings in these studies [115]. Precisely, the promotion and limitation of inclusive practice was influenced because teachers' attitudes toward inclusion were associated with positive or negative expectations and behaviors [116] [117]. Jordan and Stanovich (2010) reported that teachers with positive attitudes see themselves as responsible for the achievement of all students irrespective of their disabilities, interacted with all students more frequently, and at higher levels of cognitive engagement [118]. This positive attitude results in the development of good personality and of achieving academic performance among the students [119]. Similarly, Wiener *et al.* (2012) reported that positive outcomes for students with disabilities are usually seen in the classroom of a teacher who has a positive attitude towards the inclusive education and acts accordingly [120]. The positive attitude of the teachers not only

contributes to the outcome of the students with disabilities but also contributes to the development of a positive attitude of their peers [111] [121].

Socially skilled person can build an effective interpersonal relationship, on the other hand, person with underdeveloped social skills are at risk for unfruitful in their social life [122]. Usually, children social skills' is developed through peer interaction and an inclusive classroom provides children with disabilities an opportunity to interact with their typically developing peers in order to make the social relationship [123]. Study suggests that children with disabilities get more opportunity in developing friendship in the inclusive educational settings [124]. Along with this, it allows special needs child to have a role models to correct their behavior [125]. It is evident that special-needs students in regular classes do better academically and socially than students in non-inclusive classes [126].

Parents help a child with disabilities in promoting communication, cognition, socialization and independence [127]. Research has shown that parents attitude affect the success of inclusion [128]. Parents' who hold the negative attitude towards inclusion are unlikely to send their children into the general school [129]. Yurdusen and colleagues reported that maternal negative attitude adversely influence the emotional and behavioral ability of children with disabilities [130]. On the other hand, positive attitude of parents contributes for the successful inclusive settings; thus help in promoting and gaining effective academic outcomes for student with disabilities. Bariroh (2018) looked at the impact of parenting involvement in the learning motivation and achievement of children with disabilities [131]. This study reported that both the learning motivation and children achievement are significantly influenced by the parents' involvement. In the United States, a longitudinal study found strong relationship between parents' activities in support of education and improved outcomes in several achievement domains of children with disabilities in secondary school [132].

As teacher, peer and parental attitudes influence the development and promotion of cognitive, social, and communication skills and consequently contribute to the academic performance and functional independence of students with disabilities, including cerebral palsy; therefore, stakeholders are urged to show a positive attitude towards students with special needs.

4. Conclusion

Children with cerebral palsy illustrate several problems. Of these, motor dysfunction, behavior problems, speaking impairment, communication and cognition difficulties are significant. Acquisitions of these skills are inter-related with literacy skills. In the school settings, functional performance of student with cerebral palsy involves both academic and non-academic tasks. In order to conduct these activities without the support of anyone, just as skills need to be acquired at the individual level, the environment also needs to be transformed according to the individual's ability. Inclusive educational settings serve as the indicator of the functional independence of students with cerebral palsy at the

general school. Inclusive education offers all way participation through the compatible policies, infrastructure, and facilities, curriculum, teacher, and attitude for all the students regardless of any background at the mainstream school. Policies do not only provide guidelines, it also compels the related stakeholders to arrange, and implement the necessary steps for ensuring education towards all the students. On the other hand, compatible infrastructure and facilities allow students with cerebral palsy access in the classroom, playground, other school buildings, toilet, and drinking water fountain which ensures them doing school related activities without facing any obstacles. The adapted curriculum plays an important role in providing inclusive education on the basis of special needs of children. The appropriate curriculum enables students with cerebral palsy to gain positive academic outcomes. Teachers act as the main body in implementing and monitoring both the academic and general tasks of students in the classroom. Competent and skilled teacher contributes to achieving functional independence of a student with disabilities through taking part in the assessment and intervention and of providing education as per special needs children. It is clear that teachers who have a positive attitude try to provide effective education towards students with cerebral palsy. Along with these, peers and parents' positive attitudes also play a significant role in developing and promoting socialization, communication, cognition and independence of student with cerebral palsy. As students with cerebral palsy show educational difficulties as well as physical, mental and social problems, the presence of health professionals in the school system can help them deal with these problems that will lead them to achieve functional independence in mainstream schools.

Conflicts of Interest

The authors declare there is no conflict of interest in publishing this paper.

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Concerned Documents

Discussing Areas	Concerned Documents
Cerebral Palsy	Rosenbaum, P., Paneth, N., Leviton, A., Goldstein, M. and Bax, M. (2007), Hinchcliffe, A (2007), Krigger, K. W. (2006), Cooley, W.C. (2004), Suzuki, J., Ito, M., Tomiwa, K. and Okuno, T. (1999), Jacobsson, B. and Hagberg, G. (2004), Campbell, A.G.M. and McIntosh, N. (1998), Graham, H. (2005), Sankar, C. and Mundkur, N. (2005), Polin, R.A. and Ditmar, M.F. (2001), Griffiths, M and Clegg, M. (1988).
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