An Attempt to explore various challenges or barriers faced by Physically Handicapped and/or Disabled Children in context of Inclusive Education Pedagogy in Asian Countries

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ABSTRACT
Present research work focuses on first exploring the various challenges to gaining education by physically challenged students in schools . Thereafter, it studies the interrelationship amongst them using ISM methodology.

Keywords
Women entrepreneurship, Interpretive Structural Modeling Methodology, MIC -Mac Analysis

1. INTRODUCTION

1.1 Education pedagogy and learning for physically challenged children

Meeting the educational needs of students is part of the development of equitable provision in an inclusive society where individual rights are recognized and protected. Classrooms are no longer a homogenous group because every child is different in terms of socio cultural differences, language, gender and human diversity. Having diverse learners needs to be viewed in a positive way for all children, including physically handicapped children as well as children with disabilities in such an inclusive environment. Diverse learners are a true reflection of society. They learn to grow up together and as adults they will learn to relate better as colleagues, employer, employees, neighbors and friends.

School is not just a place for learning academics but also for learning about relationships, emotions and forming friendships. Making friends could be an ego related issue with students with disabilities and could be difficult for them , therefore providing structured support and setting up a friend's circle can promote social relationships. Other activities that promote friendships are collaborative learning and peer tutoring in planned classroom activities. Children with disabilities are required and needed to participate in everyday school activities along with their peers. Adaptations to teaching methods, curriculum and the physical environment in the classroom and playground may also be required. They are different also from a typically averaged normal child for their right to dream gets limited and gets supersede by their disabilities. Teachers can facilitate this by introducing and widely discussing about various career options they can choose from depending upon their interest and relevance . Other vocations such as nursing, artists, singing etc. could be discussed at length to arose their interest .

These children faces challenges not only in their educational , but also their personal as well as professional life . However this article concentrates on the educational life of these children and how it can be further enhanced or improved for their betterment. A major reason for their lack of participation is the poverty. The limited access to schooling or any kind of physical therapy or treatment to improve their physical health and condition. Further , lack of appropriate infrastructure , shortage with appropriate trained man power and most important being the attitudinal barriers . The attitudinal barriers are not just in the education system and community but also at home and family. Present research work explores some of the basic challenges the children with disabilities faced .

The paper is arranged as follows: Section 2 deals with the literature review on the various challenges faced by disables / physically handicapped children while learning and getting education in schools . The barriers are studies in context of inclusive education. Thereafter in section 3 ISM methodology is described and the related case example is discussed in section 4 . Section 5 presents some of the recommendations and suggestions as explored through literature . Future directions and research implications are provided in section 6.

2. CHALLEGES IN LEARNING FACED BY CHILDREN WITH DISABILITY [1-8]

Although the concept of inclusive education has been promoted internationally for more than two decades many countries engaged in the OOSCI (Out Of School Report a study conducted by UNICEF and UNESCO) reported the presence of multiple barriers that contribute to exclusion of children with disabilities from education. These factors extend beyond the boundaries of the school and classroom. In a similar study carried out in rural Ghana discovered that children with disabilities are viewed by parents as not having any or a very limited capacity to learn and originate primarily because of avoidance of promoting inclusive education by teachers and head teachers (UNICEF and UIS, 2012). Changing and bring about a positive attitude not only positively impacts the life of the child with disability but also the extended family and community.

In the following section , some basic challenges have been described .

2.1 Socio-cultural challenges (SCC)

2.1.1. Family environment (FE) : Family is viewed as a complex set of interacting relationships. And this system depends on bi-directional influences. Under this broad perspective, there are many factors which can be the prime focus on their own.

a. ***Socioeconomic status (SES):*** SES is an index that combines years of education, prestige and skill required by one's job and income. SES plays an important role in developing the child's values, self-direction, confidence, self-esteem and socialization which in long run affects the child's learning.

b. ***Family structure (FS) :*** Nuclear and extended family set-up has different kinds of childrearing practices and value systems. Quality and quantity of time spent with the child often has an immense effect families often have hidden emotional issues which can be manifested in their learning difficulties.

c. ***Child rearing practices (CRP):*** Different parenting styles such as authoritative, authoritarian, permissive and uninvolved parenting- all have their own effect on the child. Whereas authoritative parenting encourages the child to express his thoughts, feelings and desires; the children with authoritarian parents are more submissive and anxious in nature.

d. ***Vulnerable families (VF) :*** Child maltreatment in the family is not new but its immense effects have recently been recognized. Physical abuse, sexual abuse, physical neglect, emotional neglect and psychological abuse all can leave the child traumatized and his or her development devastated.

e. ***Children of parents with Psychiatric Disorders/AIDS etc. (CWPD) :*** Stigma associated with the psychiatric disorders, AIDS, cancer etc. often leaves the family isolated from the society. This also has a huge effect on the children coming from these families. They often feel secluded and teasing and bullying is also accompanied many a times. School refusal is a common result.

2.1.2 Personal Factors

a. ***Physical & Mental Health (PMH):*** A healthy and happy child can participate in various activities which shapes his social development, personality, self-esteem and confidence. The child becomes more curious, he learns through experiences and exposure to the environment. If the child is depressed or anxious it will definitely affect his functionality.

b. ***Temperament of the child (TOC):*** An easy to warm up child is curious, can take criticisms and failure adequately, is social, joyful and can cope with the stress . The child's ability to cope with the perceived stress often determines his ability to solve problems which determines and facilitates his learning styles in future.

c. ***Emotional issues (EI) :*** Children often have difficulty in understanding, regulating and expressing their emotions in adequate way. Family conflict, physical and sexual abuse, teasing, bullying should always be kept in mind if such kind of behavioral manifestations are seen.

d. ***Age factor (AF) :*** Age also plays as an important factor in the child's style of learning. In the beginning, the children depends more on the parents and teachers but later on they relies more on their experiences. This transition requires imparting at least the basic education to the children.

2.1.3. Social Factors (SF)

a. ***Cultural Values (CV) :*** Different cultures have their own sets of values which influence the child's sense of self and coping strategies.

b. ***Prejudices (Pr) :*** Prejudices regarding gender, different ethnic groups or even towards certain physical characteristics can come as a hindrance for the children to learn adequately.

c. Diversity (Di) : Diversity in the classroom takes multiple forms. We often think of diversity in demographic or group terms, such as age, class, culture, disabilities, ethnicity, gender, or sexual orientation. But the most common involves individual difference: in background, levels of preparation, learning styles, interests, and abilities. To be effective teachers it is important to understand how individual children take in and process information.

2.1.4 Individual factors (IF) : These factors might include chronic illness ; intellectual difficulties ; behavioural or developmental difficulties; mental health issues such as depression or anxiety; experiences of trauma ; difficulties with self-esteem, communication skills or social skills and difficulties with listening, concentrating or sitting still.

2.1.5 School factors (SF) : These factors might include being bullied; disliking, or not feeling connected to, the school culture or environment; disliking school subjects, not liking the choice of subjects, or not feeling challenged by the work ; poor school or academic support, especially in relation to heavy workloads ; not getting along with teachers or other students at school and / or skipping competing demands on time, such as extracurricular activities. These factors contributes towards creating school problems for the children and students shows frequent signs such as drop in marks ; resistance to doing homework ; lack of self-esteem ; boredom ; engaging in to in appropriate sexual activities .

2.1.6 Environmental Factors (EF) : These factors might include marital discord / divorce, domestic violence ; parent – child separation ; physical abuse ; sexual abuse etc.

2.1.7 Attitudinal barriers (AB) : Teachers can bring about a change in attitude by her/his skill and own behavior, towards the student with disability. A special educator in an inclusive school is a resource person for the school and has the important job of advocating for the children with disability i.e. ensuring the children's participation in school events and celebrating the children's success.

2.1.8 Diversities and Individual Differences (DID) : Diversity in the classroom takes multiple forms. We often think of diversity in demographic or group terms, such as age, class, culture, disabilities, ethnicity, gender, or sexual orientation. But the most common individual difference could be in the in the background, levels of preparation, learning styles, interests, and abilities. Not all children learn the same way. In a class of diverse students there are also individual differences amongst the children with disabilities. In an inclusive education system, the aim is more about adapting the educational environment so that the system is more supportive and responsive to a diverse group of learners. Children with disabilities enter the class with diagnosis such as Autism, Specific learning disabilities, Down's syndrome, Cerebral Palsy, and teachers need to avoid making assumptions about students .

3. INTERPRETIVE STRUCTURAL MODELLING METHODOLOGY

Interpretive structural modelling methodology or ISM [Warfield 1974] is a known technique to map the relationships amongst the relevant elements as per decision maker's problems in a hierarchical manner. Starting with the identification of elements , it proceeds with establishing the contextual relationships between elements (by examining them in pairs) and move on towards developing the structural self-interaction (SSIM) matrix using VAXO [Warfield 1974] and then initial reachability matrix and final reachability matrix and rearranging the elements in topological order using the level partition matrices . A Mic-Mac analysis is performed afterwards which categorize the variables as per the driving and dependence power in to autonomous, dependent, driver and linkage category. Finally, a diagraph can be obtained.

4. DEVELOPMENT OF ISM MODEL

In this section, ISM model is developed for studying the interrelationships amongst various barriers to inclusive education to disabled and physically handicapped children. Some 18 basic challenges are explored viz. Socio- economic status (SES) ; family structure (FS) ; child rearing practices (CRP) ; vulnerable practices (VP) ; children of parents with psychiatric disorders (CWPD) ; physical and mental health of the child (PMH) ; temperament of the child (TOC) ; emotional issues (EI) ; age factor (AF); Cultural Values (CV); Prejudices (Pr); Diversity (Di); Individual factors (IF) ; school factors (SF) ; Environmental factors (EF) ; emotional issues (EI) ; Attitudinal barriers (AB) ; Diversities and individual differences (DID).

4.1 Construction of Structural Self - Interaction Matrix (SSIM)

This matrix gives the pair-wise relationship between two variables *i.e. i and j* based on VAXO. SSIM has been presented below in Fig 1.

4.2 Construction of Initial Reachability Matrix and final reachability matrix

The SSIM has been converted in to a binary matrix called the initial reachability matrix shown in fig. 2 by substituting V, A, X, O by 1 or 0 as per the case. After incorporating the transitivity, the final reachability matrix is shown below in the Fig 2.

Fig 1: SSIM matrix for pair wise relationship amongst barriers

S. No.	Barriers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		SES	FS	CRP	VF	CWPD	PMH	TOC	EI	AF	CV	Pr	Di	IF	SF	EF	AB	DID
1	SES		A	V	V	V	V	V	V	V	V	X	V	V	V	O	V	A
2	FS			V	X	V	V	V	V	V	V	X	V	X	V	A	V	A
3	CRP				A	V	V	V	V	V	X	A	A	X	X	A	V	A
4	VF					V	V	V	V	V	V	A	A	X	V	A	V	A
5	CWPD						V	V	V	V	V	A	A	X	V	A	V	A
6	PMH							V	V	V	A	A	A	X	V	A	A	A
7	TOC								V	V	A	A	A	X	V	A	A	A
8	EI									V	A	A	A	X	V	A	A	X
9	AF										A	A	A	X	V	A	V	X
10	CV											A	A	X	V	A	V	A
11	Pr												A	X	V	A	V	A
12	Di													X	V	A	A	A
13	IF														V	A	X	A
14	SF															A	V	A
15	EF																V	A
17	AB																	A
18	DID																	

Fig 2: Initial reachability matrix

S. No.	**Barriers**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
		SES	**FS**	**CRP**	**VF**	**CWPD**	**PMH**	**TOC**	**EI**	**AF**	**CV**	**Pr**	**Di**	**IF**	**SF**	**EF**	**AB**	**DID**
1	SES	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0
2	FS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0
3	CRP	0	0	1	0	1	1	1	1	1	1	0	0	1	1	0	1	0
4	VF	0	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1	0
5	CWPD	0	0	0	0	1	1	1	1	1	1	0	0	1	1	0	1	0
6	PMH	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	0
7	TOC	0	0	0	0	0	0	1	1	1	0	0	0	1	1	0	0	0
8	EI	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	1
9	AF	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1
10	CV	0	0	0	0	0	1	1	1	1	1	0	0	1	1	0	1	0
11	Pr	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0
12	Di	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0
13	IF	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0
14	SF	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0
15	EF	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
16	AB	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1	0
17	DID	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Fig 3 : Final reachability matrix

S. No.	Barriers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
		SES	FS	CRP	VF	CWPD	PMH	TOC	EI	AF	CV	Pr	Di	IF	SF	EF	AB	DID	D.P
1	SES	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	14
2	FS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	15
3	CRP	0	0	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0	10
4	VF	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	12
5	CWPD	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	11
6	PMH	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	14
7	TOC	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	14
8	EI	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	16
9	AF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
10	CV	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	14
11	Pr	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	15
12	Di	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	15
13	IF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	16

14	SF	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	15
15	EF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	16
16	AB	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	0	10
17	DID	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
	De.P	9	12	15	14	16	17	17	17	17	17	17	17	17	17	5	17	4	

D.P : Driving power ; De.P : dependence power

4.3 Level Partition

Table 2 : Iteration I

S.No.	Reachability set	Antecedent set	Intersection set	Iteration/ Levels
1.	**6,7,8,9,10, 11,12,13, 14, 16**	1,2,3,4, 5,6,7,8,9,10,11,12,13, 14,15,16	6,7,8,9,10,11 ,12, 13,14,16,17	
2.	5,6,7,8,9, 10, 11,12,13,14,16	1,2,3,4,5,6, 7,8,9,10,11 ,12,13,14,15,16	5,6,7,8,9,10, 11, 12, 13,14,16	
3.	3,5,6,7,8,9, 10, 11,12, 13,14,16	1,2,3,4,6,7, 8,9,10,11, 12,13,14,15,16	3, 6,7,8,9,10, 11,12,13,14, 16	
4.	3,4,5,6,7,8,9, 10, 11,12, 13,14,16,17	1,2,4,6,7,8, 9,10,11, 12,13,14,15,16,17	4,6,7,8,10, 13,14,16	
5.	2, 3,4,5,6,7,8,9, 10, 11,12, 13,14, 16,17	1,2,4,6,7,8, 9,10,11, 12,13,14,15,16,17	2,4, 6,7,8,10, 13,16	**I**
6.	1, 2, 3,4,5,6,7,8,9, 10, 11,12, 13,14, 16,17	1,2,8,9,11, 13,14,15, 16,17	1,2,8,9,11, 13, 16	
7.	1, 2, 3,4,5,6,7,8,9, 10, 11,12, 13,14,15, 16	9,13,14,15, 16	13,14,15, 16	
8.	1, 2, 3,4,5,6,7,8,9, 10, 11,12, 13,14,15, 16,17	9,17	9,17	

From the final reachability matrix, reachability and final antecedent set for each factor are found. The element for which the reachability and intersection sets are same are the top-level element in the ISM hierarchy. After the identification of top level element, it is separated out from the other elements and the process continues for next level of elements. Reachability set, antecedent set, intersection set along with different level for elements have been shown below in table 2 to table 9.

Table 3 : Iteration II

S.No.	Reachability set	Antecedent set	Intersection set	Iteration
2.	**5**	1,2,3,4,5,15,17	5	
3.	3,5	1,2,3,4,15,17	3	
4.	3,4,5	1,2,4,15,17	4	
5.	2, 3,4,5	1,2,4,15,17	2,4	
6.	1, 2, 3,4,5	1,2,15,17	1,2,11	
7.	1, 2, 3,4,5, 15	15,17	15	**II**
8.	1, 2, 3,4,5, 15, 17	17	17	

Table 4 : Iteration III

Sr. No.	Reachability set	Antecedent set	Intersection set	Iteration
3.	**3**	1,2,3,4,15,17	3	
4.	3,4	1,2,4,15,17	4	
5.	2, 3,4	1,2,4,15,17	2,4	
6.	1, 2, 3,4	1,2,15,17	1,2	**III**
7.	1, 2, 3,4, 15	9,15,17	15	
8.	1, 2, 3,4, 15, 17	9,17	9,17	

Table 6 : Iteration IV

S.No.	Reachability set	Antecedent set	Intersection set	Iteration/ Levels
4.	**4**	1,2,4,15,17	4	
5.	2,4	1,2,4,15,17	2,4	
6.	1, 2,4	1,2,15,17	1,2	**IV**
7.	1, 2,4, 15	15,17	15	
8.	1, 2,4, 15, 17	17	17	

Table 7 : Iteration V

Sr. No.	Reachability set	Antecedent set	Intersection set	Iteration
5.	2	1,2,15,17	2	
6.	**1, 2**	1,2,15,17	1,2	
7.	1, 2,15	15,17	15	
8.	1, 2,15, 17	17	17	**V**

Table 8 : Iteration VI

Sr. No.	Reachability set	Antecedent set	Intersection set	Iteration
7.	**15**	15,17	15	
8.	15, 17	17	17	**VI**

Table 9 : Iteration VII

Sr. No.	Reachability set	Antecedent set	Intersection set	Iteration
8.	**17**	17	17	**VII**

4.5 Classification of factors

The critical success factors described earlier are classified in to four clusters viz. autonomous factor, dependent factors, linkage factors and independent factors (mentioned in fig. 4 below).

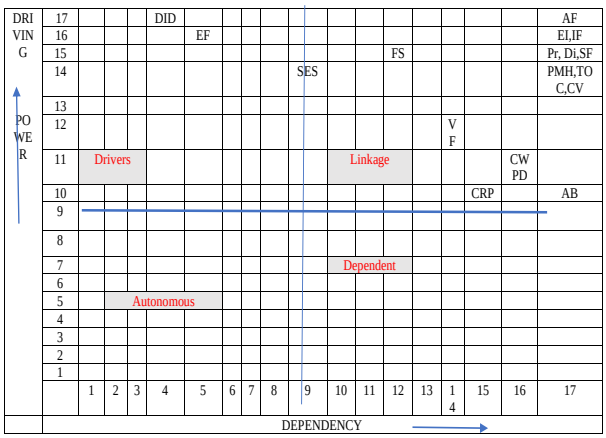

Fig . 4: Driving power and dependence diagram

4.4 ISM model

An ISM model is developed (as shown in fig. 5 below) after arranging the elements as per their interaction or dependence relationships.

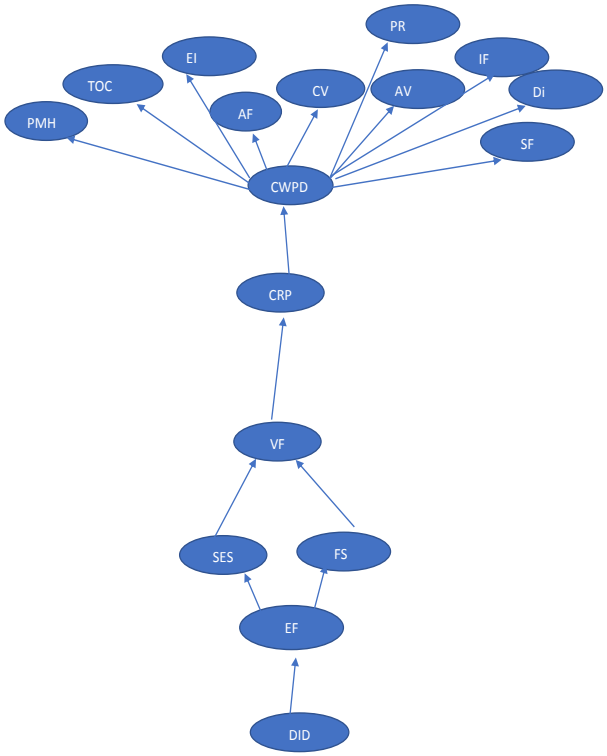

Fig 5: ISM diagraph

5. LITERARY OBSERVATIONS

1. It is important for teachers to be non-judgmental towards parents, which enable a positive attitude. Parents are not to be blamed for having a child with disability.
2. There should also be a non-judgmental attitude towards children with disability especially those who show difficult behaviours. Working collaboratively with parents and carers and encouraging involvement in the development of individual educational plan can enhance learning outcomes.
3. Helping parents to develop positive perception of their child with disability. Read up and learn about the diagnosis of the children with disability in the class .
4. Find out from parents how their child communicate , spend time and how they support their child this often shed lights on the child's strengths .
5. Parents need to be informed about how their child is being supported and accommodated in school, and what the outcome of the support is. This may help parents to try out some strategies at home.

6. MANAGERIAL IMPLICATIONS & CONCLUSIONS

On the quantitative analysis front , the challenges discussed above could be taken further for the possible inter-relationships or hierarchical relationships with the help of various multi-criteria decision making techniques such as AHP , FUZZY AHP , DEMATEL etc.

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