

## Special Education

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### CONCEPT AND CONTEXT

Special education has undergone a qualitative change in the post-War period. The issues of human rights, equality and normalisation influenced conceptual development and practice of special education. The education and rehabilitation process took into consideration the social, political and economic contexts of human development. The normalisation movement in the beginning of the second half of the 20th century led to mainstreaming and integration of children with physical and intellectual impairments in regular schools, reducing segregation in special institutions.

The Warnock Committee report in 1978 broadened the concept of special education. It evolved the concept of special educational needs instead of categorisation and labeling. The various forms of physical and intellectual impairment result in special educational needs. For example, a child with intellectual impairment requires more concrete experiences, practice, and time to learn. A hearing impaired child requires more visual presentation and written explanation within the range of its vocabulary. A visually-impaired child needs more auditory and kinetic inputs in communication in the classroom. Similarly, a child with exceptional intellect requires a more challenging learning task to sustain motivation. A child with prolonged illness has its own special needs to cope with new learning tasks. According to the Warnock Committee, one in five children experience

learning difficulties at one time or the other in their educational career and have special needs (Warnock 1978). For some these are transitory. While in others these are persistent. The focus, therefore, should be on special needs instead of categories or labels. The concept of special education received a new meaning with this approach.

The concept of special-needs education has evolved into a still broader and natural concept of inclusive schooling in recent years. In developed countries, school systems which have historically parallel general and special schools, are moving from mainstreaming and integration towards evolving inclusive schools (Ainscow, M. 1994). For developing systems inclusive schooling is not an alternative but is an inevitability (Jangira, N.K. 1995a). The goal for both is to organise effective schools for all children, including those with special needs.

The concept of inclusive schooling has been clearly spelt out in the Salamanca Statement and Framework of Action of Special Needs Education 1994. The basic premise is that the school should meet the educational needs of all children, irrespective of their physical, intellectual, social, emotional, linguistic or other considerations interfering in learning. The school should include disabled and gifted children, street and working children, children from remote or nomadic population, ethnic or cultural minorities and children from other disadvantaged and marginalised areas or groups. Obviously, the



fundamental principle of the inclusive school is that "all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognise and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organisational arrangements, teaching strategies, resource use and partnerships with their communities." (UNESCO 1994). The school is to follow the child-centered teaching strategy (Jangira, N.K. 1995a). It envisions a continuum of support and services to match the continuum of special needs encountered in every school.

The inclusive school is relevant to our context for several reasons. The majority of locations in rural areas in developing countries like ours have one school. If it does not cater to the needs of all children, including those with special needs, it contradicts the supply side of the constitutional obligation in respect of universal elementary education. It also results in heavy wastage by way of low retention of children and underachievement as revealed in baseline studies (Jangira, N.K. 1994b). The issue of equity in education of children with special needs will remain unaddressed in priorities of investment in education. Lastly, the schools will continue to be considered inefficient if they do not respond to the educational needs of the communities as a whole. The schools cannot afford to ignore the educational needs of any segment of the child population. These have to be made effective for all children and young people.

This trend report has been visualised in the context of meeting special educational needs focusing on the educational system as a whole and not within the institutional dichotomy of general and special institutions. The researches conducted in India have been filtered through this screen to make meaningful interpretation to improve practice.

Several significant developments in education of children with special needs have taken place since the *Fourth Survey of Research in Education* (1983-88) which carried a chapter on special

education for the first time (Buch, M.B. 1991). The National Policy on Education (NPE) and Programme of Action (POA) for its implementation initially included education of these children under the section on equal education opportunity (MHRD, 1986a,b). The NCERT conducted a comprehensive survey of research in special education (Jangira, N.K., Mukhopadhyay, S. and Rath, K.B. 1987). Jangira, N.K. and Mukhopadhyay, S. (1988) reviewed studies conducted for doctoral and master's degrees. The review of special education (Jangira, N.K. and Paranjpe, S. 1993, Paranjpe, S. 1994, Pandey, R.S. and Advani, L. 1995) provide an overview of special education in India. The trend is based on policy documents in all these reviews. International literature informs trans-border trends in special-needs education.

### POLICY REVIEW

Education of children and young persons with physical and intellectual impairment remained a forgotten subject in educational policy in India (Jangira, N.K. 1990). The National Policy on Education—1986 brought it within the equal education opportunity section. It recommended: (a) education of children with locomotor and other mild disabilities, as far as possible, in common with other children in general schools; (b) establishment of 400 special education centres for children with severe disabilities at district headquarters; (c) inclusion of special education as an essential component in pre-service training; (d) provision for vocational education; (e) involvement of NGOs which have considerable experience in this area (MHRD 1986a). Though endorsing integration, the NPE seemed hesitant in full commitment to universalisation of elementary education for this group of children just like other children. It remained silent on the department of education assuming full responsibility for education of children with disability. The policy also did not take advantage of the emerging concept of 'special needs'. The NPE Programme of Action made a definite statement sounding caution against continued



segregated education. It suggested that no child with disability who can be educated in a general school should be admitted to a special school (MHRD 1986b).

The hesitation of the NPE to make special education the full responsibility of the education department may have been due to absence of demonstrable capability. The demonstration sites under the Project Integrated Education for Disabled (PIED) established by the NCERT with assistance from MHRD and UNICEF did result in increased commitment of the education department. The Acharya Ramamurthy Committee suggested support for families having children with disability to improve educability, and redefinition of the role of special schools which should serve as resource centres for integration in addition to educating children whose special needs cannot be met in general schools. The revised policy formulations and the NPE Programme of Action 1992 did move forward by recommending that all schemes of education (teacher education, non-formal education, adult education, vocational education, etc.) should be made responsive to children with physical and intellectual impairments (MHRD 1992). The gap between policy and implementation causes worry (Pandey, L. 1995). Its inclusion in the District Primary Education Programme (DPEP) raises optimism about its implementation in the participating states (Jangira, N.K. 1995).

The evaluation of PIED using the composite area approach carried the policy regarding education of children with disability forward (Mani, M.N.G. 1993, 1994). The multi-site action research project (MARP) on 23 sites has provided experience in evolving inclusive schooling to meet special needs with focus on learning and achievement by all children (Jangira, N.K. and Ahuja, A. 1991, 1992, 1994). Its incorporation in DPEP and consideration of the Salamanca Statement and Framework of Action on Special Needs Education should inform further policy review and formulation.

The education policy is at the stage of integration at the federal level. The response in the states, however, is uneven. Some states have

yet to share investment in education of children with special needs besides mere utilisation of the funds available under the centrally sponsored scheme of Integrated Education for Disabled Children (IEDC). The education department is yet to assume full responsibility, including education in special schools. The state programmes of action to implement the NPE have yet to reflect this concern. The central and state governments should capitalise on the PIED and MARP experience to realise the goal of education of all. Inclusive schooling should inform the education policy of the future. The policy will draw strength from inclusion of inclusive schooling in the legislation for disabled persons.

### RESEARCH TRENDS

The research activity in India has increased during the period under review. Up to the Fourth Survey of Research in Education, 60 studies were identified (Jangira, N.K. and Mukhopadhyay, S. 1991). These also included studies relating to education of gifted children. The number of studies exclusively covering education of children with physical and intellectual impairments is 44 during the period 1988-92. Nearly half of these studies explored characteristics of the learners with special educational needs; a quarter addressed themselves to learning and teaching; a couple of studies are related to training of teachers; and another four covered family and community perceptions of disability and persons with disability. The increased research activity is a positive signal. An attempt is made in this section to review these studies in the context of the emerging concept of special education.

### Understanding the Learner and Special Needs

The learner characteristics constitute the most researched area during the period under review. The research explicitly focused characteristics of learners in the conventional categories of disabled persons like blind and VH, deaf and hearing-impaired, persons with mental retardation and the learning-disabled. Implicitly special needs can



be derived from these studies.

Banerjee, N. (1988) investigated the adjustment of blind students in secondary schools. More blind students were found to be maladjusted than the sighted. Nearly one in five students had a moderate level of maladjustment with home environment, school environment and peers of the opposite sex. Surprisingly, the percentage of blind children maladjusted to home environment was one and a half times more than to school environment. How much of it was due to home environment, how much due to segregation in special schools of the blind, is a moot question. Khan, A.H. (1988), covering 246 students in special schools for the blind in Orissa, concluded that blind children were less achievement oriented, self-reliant and attribute failure to achieve themselves. They were found to be more self-centred, neurotic and withdrawing. Sahoo, J. (1991) reported lower self-concept but better adjustment of deaf children than blind children. Lal, A. (1992) reported differences in blind and sighted students on acceptance, worthiness, anxiety and participation scales. Mandravalli, M.R. (1991) discovered developmental lag in VH children on cognitive development tasks. They, however, followed the Piagetian development stages. The studies suffer from design and analysis deficiencies. Only blind children from special schools were compared to the sighted students. Blind students from regular schools could provide more information. In Lal, A.'s (1992) study the direction of differences has not been indicated. Mandravalli, M.R. (1991) does not specify the extent of the cognitive lag. The needs of low-vision and other children with visual impairment have not been covered. Despite these limitations, the studies do point to special needs. For example, counselling of students and families in improving adjustment is required. Special effort is required to improve cognitive functioning to minimise the cognitive lag. Cognitive training strategies should be tried out with these students.

Kapoor, S. (1990) studied cognitive functioning and perspective-taking ability of hearing-impaired children. Parental behaviour inventory, facial expression test to assess

perspective-taking, Koh's Block Design Test, Alexander's Pass Along Test, terminal examination scores and Teacher's Rating Scales were used to collect data. The two groups differed on Pass Along and Koh's Block Design tests. Institutionalised deaf children perceived parents more accepting than non-institutionalised ones. What does this indicate? Is it because the schools and parents worked in unison? Were parents trained and counselled? The questions are not answered by the study. The institutionalised and non-institutionalised students did not differ in respect of perspective taking ability. Sharma, P. (1989) reported lower linguistic competence in hearing-impaired children as compared to children with normal hearing. Within hearing-impaired children, those studying in regular schools had higher linguistic competence than those in special schools for the deaf. Differential analysis for different degrees of hearing-impairment and causes for higher linguistic competence in integrated settings could make the findings more meaningful. The studies point to special needs but do not specify for classroom practice.

Tripathi and Srivastav (1991) studied behavioural manifestation of learning disabled (LD) children, using learning ability tests I and II, Draw-a-Man's Test, WISC, Verbal Intelligence Scale, and Frostings Development Test. The study revealed differences in perceptual motor behaviour in LD and non-LD students, and kinesis behaviour; LD children experienced difficulty in recognising the shape of English alphabets and Arabic numerals rotated in different positions. Srivastava, S. and Afiah, F.Z. found no difference in learning disabilities in boys and girls and among students with different religious backgrounds (Hindus, Christians and Muslims). Bhattacharya, M. (1988) and Biswas, A. (1989) have studied learning problems and not learning disability. Mohapatra, S. (1991) used reading disability synonymous with learning disability. These studies point to definitional problems.

The studies used physical and orthopaedic



impairments synonymously. Upreti, V. (1988) reported lower self-concept in children with orthopaedic impairments. The students with physical impairments felt more insecure and had poor adjustment. The girls felt more insecure than boys. These characteristics are related to the severity of disability. Like VH children they relate poorly to parents. Prabhatsinh, C.R. (1992) reported lower self-concept in these children. In an interesting study, Sharma, I.P. (1990) studied the personality of low and high creative children with physical impairments. He reported no locational differences (rural-urban) in the two groups. The high-creative group of children preferred arts, science and technical work while the low-creative group preferred crafts. The high-creative group of students were more reserved, assertive, responsible, imaginative, self-reliant and relaxed than their low creative counterparts who were dependent and humble. Sharma, S. (1988) reported higher field dependence in children with disability than non-disabled children; the groups of students with different disabilities also differ among themselves.

The exploration of learner characteristics revealing special needs were undertaken but there are gaps. The range of sensory, physical and intellectual impairment covered in the studies is low. Not even a single study relating to intellectual impairment was reported. The studies focused on the blind and the deaf. Those with visual and hearing impairment with residual sensory inputs did not receive attention. Even the characteristics that were explored have not been adequately explained to draw implications for understanding special needs to be incorporated in teaching plans. The definition of the terms and context are not precisely defined. The design and analysis of the data also leave much to be desired. The gaps need greater attention in future research.

### **Learning and Teaching**

The studies in this area are more pointed. Though the studies are also labelled as "for persons with disability," the process and procedure do meet

special educational needs. Lidhoo, M.L. and Dhar, L. (1989) used behaviour-modification approach to design instruction for educable children with mental retardation and reported improved achievement and adaptive behaviours. Mohite, P. (1989) developed a diagnostic tool for teachers to identify learning difficulties in spelling and reading. The instructional programme resulted in improvement of spelling and reading skills of the experimental group. Khader, M.A. and Rama, S. (1988) designed a reading readiness programme for educable mentally retarded children and reported effectiveness in improving reading Kannada in an experiment. Rath, S. (1991) demonstrated an individualised instruction-training approach improving reading skills and comprehension of students with learning difficulty.

Sharma, P. (1989) adapted science instructional material to meet the special needs of hearing-impaired children which was found to be effective in an experiment in both special and regular schools of Haryana, Delhi and Mysore. Sharma, M.C. (1988) in a small experiment tried out teaching aids and used them in the concept-attainment model at primary school level. The achievement of deaf students was higher in the experimental group but not significant.

Two experiments tried out different modalities for learning by mentally retarded and deaf children. Narayan, J. (1990) compared effectiveness of adult and peer models on the learning and retention of performance skills in children with mental retardation. A learning kit for teaching the skills was developed for EMR and TMR children. Peer-modelling was found to be the most effective technique for learning performance skills in motor, perceptual and communication areas as compared to "adult and no-model" conditions for both EMR and TMR children. Mandke, K.N. (1991) studied the effect of single-modality stimulation on speech and language development of hard-of-hearing children. This carefully designed experiment demonstrated that teaching, using a single stimulation modality in carefully structured



individualised approach, enhanced the development of language skills in hearing-impaired children. Both experiments are promising. Cooperative learning based strategies complement individualised instruction (Rai, K. 1991). Narayan, J. and Ajit, M. (1991) and Kohli, T. (1988) demonstrated home-based training in learning. Parental involvement and support reinforces school effort.

Research in this area is a step forward in special education since the Fourth Survey of Research in Education. It has all the seeds for meeting special needs in the classroom. The diagnostic-remedial approach to overcome learning difficulties, individualised instruction and cooperative learning based approach, peer modelling, adaptive instructional material and teaching aids, and parental support have been experimented with. Fischgrund, J.E. (1990) lamented the lack of research in instructional methodology for education of deaf children since efforts concentrated on assessment of and communication with them. Adapted material for science education and teaching aids to meet their special needs, therefore, are refreshing. The researches are few and the experimental design can be improved. This is an area which deserves greater attention for research and experimentation. The context variables need to be studied along with the process of learning. The experimental treatment and traditional method need a fuller and precise description for working out implications for teaching.

### **Training**

The training of teachers and other functionaries received limited attention from researchers. Mukhopadhyay, S. (1990) identified teaching competencies for education of children with disability in regular schools. Jangira, N.K. and Ahuja, A. (1992) describe experiments on the effectiveness of cooperative learning based training approach in in-service and pre-service teachers as well as teacher educators. The training improves teacher competencies to meet educational diversity in the classroom and to

develop positive attitude towards integration of children with special needs. Responsive teaching, based on reflection and problem-solving, are illustrated by innovative experiments to encourage the active involvement of children in learning. Overcoming resistance of school heads to change through professional development provides an example of an innovative training programme (Jangira, N.K. and Jangira, P. 1995). Teacher-development initiative to meet special needs (Jangira, N.K. and Ahuja, A. 1994) and teacher education for inclusive schooling (Jangira in press) crystallise a research-based training strategy. More research in this area is needed to demonstrate the efficacy of different models not only in terms of teacher competence gains, but also in their impact on student learning and adjustment to classroom and social environment.

### **Community Perceptions and Environment**

Education in schools is not an isolated activity. It occurs in a social context. How children and young persons with disability are perceived by society also influences student behaviour. Some studies are addressed to this issue.

Pandey, S.P. (1991) studied the attitude of the rural community in Eastern Uttar Pradesh to persons with disability. The rural community was unaware of the potentialities of persons with disability and exhibited social prejudice towards them. They were unwelcome in public places and social functions. The reason was absence of facilities of education and rehabilitation in the area and lack of awareness and environment building activities. Panda, B.K. (1991) reported differential attitudes towards persons with different disabilities varying from the type and degree of disabilities. The community had mixed attitudes, positive towards some and negative towards others. Tiwary, Poonam and Verma (1989) reported positive attitude towards children with disability in families which had access to information and had knowledge about potentialities and limitation.

Jangira, N.K.; Ahuja, A. and Mukesh, N. (1990) analysed perceptions about disability and



disabled persons in the print media. The contents of 16 newspapers (English, Hindi and Oriya) for the month of September in 1989 were analysed. It was reported that newspapers (70.27%) covered news items rarely accompanied by a photograph. This area never attracted editorial attention. The intent and content-covered messages about information and advocacy were 20%, followed by rehabilitation and restoration, governmental and non-governmental action and prevention. The maximum messages (77%) had positive loading. Some messages were not informed adequately and carried negative loadings. When this analysis was placed before the print and non-print media persons in a National Seminar at the NCERT, the journalists found it highly revealing. Much water has flowed under the bridge since then. The media coverage has increased manifold. There is hardly any newspaper or magazine which does not carry writings on the subject. TV and radio carry programmes regularly.

Community awareness has improved through media and expansion of services. The sensitivity to the education and rehabilitation of persons with disability has improved.

The teleschool for parents and teachers of young children was the result of a cooperative effort of the NCERT, the NIMH, the Technology Mission and Doordarshan and needs a special mention here. The telecasts provide not only functional knowledge of education and training of children with mental retardation, but also improve awareness about their potentialities in the community (parental participation in the evaluation). Distance learning technology needs further exploration.

### **GAPS AND PROSPECT**

Research in special education in India progressed both in quantity and quality during the period under review. However, there is room for improvement in both dimensions. The reason is simple. Special education itself is a new area for the education department since it was mainstreamed only in late 80s. The researchers in this area are in the making. Researchers with

sound methodological competence do not have orientation to special education and practitioners in special education have no or limited knowledge and skills for research. The limited research activity is also due to less spectacular outcomes. Despite these limitations, research activity has increased and improved. Gaps in coverage and methodology are natural.

### **Definitional Tangle**

The studies have classified children in gross categories without specifying the range. For example, 'physical handicap' and 'orthopaedic handicap' have been used synonymously. 'Blind' and 'visual handicap' have been used interchangeably. It is not clear whether 'visually handicapped' included blind persons or not. The range of visual impairment has not been specified. The same is the case with the hearing-impaired. Similarly, 'slow learners' has not been defined properly. The greatest confusion has been observed in the area of learning disability. Overlap in mild disabilities and identification is a serious problem. It becomes difficult for the reviewers and practitioners to interpret findings. The classification and categorisation continues for the assessment of disability for eligibility to restorative and social welfare benefits (MHRD 1994). It is more of a medico-psychological assessment. Wang, M.C. et al. (1990) also flagged this issue. Should it continue to be the same for education? Should there be an assessment of the educational needs rather than disability? Should educational research focus on meeting these special needs? The new line of research relevant to educational practitioners should address this issue.

### **Lack of Comprehensive and Long Range Studies**

Most of the studies conducted so far are doctoral theses. The coverage in terms of sample and variables is limited. Not even a single study is comprehensive in range. Universities and institutions have not yielded research. Further,



the studies have one-point and single-shot outcomes. These have not followed through the students with disability over grades and stages of education. Tracer studies about how these persons used education in vocational and community life are missing. For example, we do not have studies to answer such questions as: What happens to the ecology of the classroom and the school when it starts accommodating children with physical and intellectual impairment? What is the process of accommodation? How do teachers and students respond to children and their special needs? How does the change affect their academic life through grades and stages? How does the support system operate? What is the change process featuring their preparation for vocation? How do they fare on the job? How does the job environment respond to them? How is their family life after marriage? How does change of communities affect their life? Studies of a long-range nature and comprehensive studies should be supported by research funding agencies. The National Institutes for the Handicapped and the NCERT should themselves undertake this kind of research. These could also be supported by fellowships.

### **Fuller Specification of Programmes and Attainments**

There are studies on the effectiveness of certain programmes and materials developed for meeting special needs. The research reports and publications do not provide full description of the material or treatment in a manner that the reading practitioner could use them, if he wants to. For example, Mani, M.N.G. (1993, 1994) indicates effectiveness of PIED, but little is explained about the process and programme implementation. Similarly, Sharma, P. (1989), Mandke, K.N. (1991) and Narayan, M. (1991) have not described the process and programme implementation fully. This is required for taking decisions about proper placement and for designing the support system for optimum gains to children and young people with special needs.

Field-tested programmes are needed to bring these persons within the ambit of education for all.

### **Redefinition of School Effectiveness**

Research on school effectiveness has evolved during the last decade and a half with a shift in the focus on school-based improvement. Egalitarian education in democracies requires that schools be the places for all children from all communities. Inclusive education also demands the knowledge and skills of meeting diverse educational needs, including special educational needs arising from physical and mental impairments. How should school-effectiveness research respond to this emerging need? This question has started attracting gradual attention in developed countries. In developing countries like India this question has not been even formulated for school-effectiveness research. In the Indian context, it is essential that each school should cater to the needs of all children and all children must learn to their potential. The projects on Minimum Levels of Learning (MLL) do take this aspect into consideration, but the special-educational-needs issue is yet to be addressed. This line of research should be in focus in the remaining years of the current century and the early years of the 21st century.

### **Delivery and Support System**

The studies on support system and delivery are much needed in our context where health and welfare services are not universal. The special educational needs area is essentially multi-disciplinary. Coordination and convergence of services are crucial to the effectiveness of the 'special needs education'. The POA-1992 and the DPEP guidelines lay stress on this aspect for universalisation of elementary education (MHRD 1992; MHRD 1994; MHRD 1993). This has not attracted the attention of researchers in India. What is the status of the support systems and delivery? How is education of special needs



managed in areas where one or the other services sector is not available? Is it recognised as a multisectoral activity? If so, what are the functional linkages and coordinating structures at the national and subnational levels? How are these linked to schools? For example, how do special and ordinary schools complement each other? How are community based rehabilitation (CBR) programmes linked to special educational needs programme in schools? How do restorative and rehabilitation services support schools? How do schools and *anganwadis* complement each other in improving the educability of special-educational-needs children in the early years? How are welfare schemes linked to educational schemes? Independent studies on the delivery system in individual sectors are available in a limited way, but support and delivery system against the perspective of the inclusive school requires urgent attention. Each sector, health and social, is demanding responsiveness from education. The claims of education on other sectors are less recognised and appreciated. The complementarity and sharing of common goals need careful study which would inform well coordinated converging inputs.

#### **Lack of Research on Multiple Disability**

Most of the research was addressed to development needs and problems relating to students with a single disability. There was practically no research on students with multiple disabilities. There are students with visual impairment with mental retardation, deaf students with mental retardation, and children with cerebral palsy. No research has been addressed to the complex special educational needs of these children. Some studies are conducted for preparing assignments in training programmes of the Spastics Society, but these are a very small sample, and are extremely limited in range and quality due to the constraint of time during the training. The research skills of the trainees are also limited. This is an area of research which will acquire importance as the country moves towards universal enrolment,

retention and achievement of children and young persons with disability, to achieve the goal of education for all.

#### **Use of Educational Technology**

Technology is transforming the educational scene. Radio, TV and, on a limited scale, computers, are entering schools. Distance education programmes offered by open schools and universities have started enrolling students with disability. Research has been conducted on the perceptions of and effectiveness for other students. No research on the problems of students with special educational needs, on the suitability or otherwise of the material and process, or on adjusting to their special educational needs is available in the country. The courses on special education are being offered by Indira Gandhi National Open University as a component of different courses. Who are the clients? How do they get practical experience? How are the courses utilised by the clients? Do these improve awareness in certain sections of the community? The studies can answer such questions. The research on the application of technology to meet special educational needs in the classroom and through the distance mode are required for expanding its coverage and improving effectiveness.

#### **FUTURE RESEARCH**

Special education itself is a recent activity. Research on special education needs is, therefore, still very young. There are efforts in some areas. The gaps are many and quality needs improvement. But research on learning and teaching in the ordinary classroom does complement special-needs education. In fact, both reinforce each other. Whatever the umbrella, both contribute to effective teaching. Somebody has rightly said that good education and teaching is good special education. The commonality of research questions is very high between the two. Wang, M.C.; Reynolds, M.C. and Walberg, H.J. (1990) summarised research questions in this



area for the decade. The questions still hold good at least for the coming two decades. These questions are:

1. What are the important variables that cause learning? How do some of the salient and commonly-agreed-upon variables, such as classroom climate, the principal's leadership, teacher expectations, teacher-student interactions, time-on-task, and so forth, affect student learning performance, the classroom instructional-learning process, academic achievement, handicap classifications, and placement of students with special needs?
2. What specific aspects of the functioning of students with disabilities and/or students considered to be academically at risk differ from the characteristics of 'expert' learners? How do successful and less-than-successful students differ in terms of their ability to assume an active role in their learning? Are these learner characteristics alterable? What are some of the effective intervention strategies that foster increasing 'expertise' in students who are considered academically 'handicapped' or at risk of academic failure?
3. What are the salient characteristics (features) of programmes that appear to be most conducive to developing student self-responsibility and competency for active self-instructive process in knowledge, and skill acquisition and maintenance?
4. How are certain alterable learner characteristics (e.g. knowledge, students' self-perception of cognitive and/or social competence, temperament, and motivation) related to students' responsiveness to cognitive-strategy training and other interventions aimed at developing both subject-matter knowledge and higher-order cognitive skills?
5. Do differences in teacher styles and instructional approaches require differences in levels of student competence for assuming self-responsibility in their learning and the ability to be self-instructive?

6. How can advances in cognitive-instructional research be incorporated to improve understanding and procedures for diagnosing and monitoring learning processes that are intrinsic to student achievement of subject-matter knowledge and the higher-order cognitive skills of reasoning and problem-solving?

7. What specific steps can be taken to enhance the linkage between assessment (diagnosis of student learning needs and evaluation of learning outcomes) and improvement in instructional effectiveness? What types of assessment (measures and procedures) are most effective in integrating the assessment and instructional process to produce information in the service of student learning?

8. What do teachers need to know about instructionally relevant learner characteristics and state-of-the-art practices in order to increase their expertise in linking diagnosis and assessment to improve student learning? (Wang, M.C. 1990, pp. 23-24.)

Research now is increasingly addressed to school and classroom practice. The researchers should not be fence-sitters. They have to enter the scene of action, capture dynamic interactions, describe them in the language of the practitioners, design material and practices, formulate effective training programmes for teachers and other professionals, and experiment in enlarging the scope of meeting individual needs in the classroom. In the research of the future, the teacher will not be only a consumer but also a partner in research. This scenario is emerging in the developed world. A beginning is also being made in developing countries. To achieve the goal of developing effective schools for all children, including those with special educational needs, requires pragmatic research support. Earmarked funding not only for conducting this research, but also for networking of researchers and institutions at the national and international levels for disseminating to improve practice, should be the goal.



## REFERENCES

- Ainscow, M., Mel. 1994. **Special Needs in Classroom: A Teacher Education Guide**. London: Jessica Kingly Publishers.
- Banerjee, N. 1988. **An investigation into the problems of adjustment of blind students reading in secondary schools of West Bengal**. Independent study. *Vishwa Bharti*.
- Bhattacharya, M. 1988. **An investigation into the learning disabilities developed by secondary school students in the area of equation-sums in algebra**. Ph.D., Edu. Univ. of Kalyani.
- Biswas, Anju. 1989. **Learning disabilities in critical thinking in some areas of physical science: Diagnosis and prevention**. Ph.D., Edu. Univ. of Kalyani.
- Buch, M.B. 1991. **Fourth Survey of Research in Education 1983-88**. New Delhi: National Council of Educational Research and Training.
- Chandrakar, Gopal. 1988. **Field dependence and sensation seeking abilities of the handicapped children**. Ph.D., Psy. Ravishankar Univ.
- Dave, P.N. and Murthy, C.G.V. 1993. **Educational Research and Innovations 1982-92: A Bibliography**. New Delhi: National Council of Educational Research and Training.
- Fischground, J.E. 1990. **The Education of Deaf Children and Youth**. In, M.C. Wang, M.C. Reynolds and H.J. Walberg (eds.). **Special Education: Research and Practice**. Oxford: Pergamon Press.
- Jangira, N.K. 1986. **Special Education Scenario in Britain and India**. Gurgaon: Academic Press.
- Jangira, N.K. 1988. **Survey of Research in Special Education in India**. Independent study. New Delhi: National Council of Educational Research and Training.
- Jangira, N.K. 1990a. **Education without Colouring Children: Design Model for Developing Countries**. Keynote address to International Special Education Congress held at Cardiff (U.K.) on 30 August-2 September 1990.
- Jangira, N.K. 1990b. **Disability and disabled persons in newspapers: A review**. Independent study. New Delhi: National Council of Educational Research and Training.
- Jangira, N.K. 1994a. **Teacher education to meet special needs**. *Journal of Indian Education*, XIX (6), 46-57.
- Jangira, N.K. 1994b. **Learning achievement of primary schoolchildren in reading and mathematics**. In, **Research Based Interventions in Primary Education**. New Delhi: National Council of Educational Research and Training.
- Jangira, N.K. 1995a. **Responsive Teaching**. New Delhi: National Council of Educational Research and Training.
- Jangira, N.K. 1995b. **Rethinking: Teacher Education**. *Prospects*, Vol XXV, No 2, June. 261-271.
- Jangira, N.K., Anscon Mel and Verma, J. 1991. **Effectiveness of resource pack based teacher training strategies in terms of teacher and pupil attitude to learning and teaching and class achievement—A Multisite action research project**. Independent study. New Delhi: National Council of Educational Research and Training.
- Jangira, N.K. and Ahuja, Anupam. 1992(a). **Effective Teacher Training: Cooperative learning based approach**. Delhi: National Publishing House.
- Jangira, N.K. and Ahuja, Anupam. 1992(b). **Effective Teacher Training**. Delhi:



National Publishing House.

Jangira, N.K. and Ahuja, Anupam. 1994. **Teacher development initiative (TDI) to meet special needs in the classroom.** In, UNESCO compilation. *Making It Happen: Examples of good practice in special needs education and community based rehabilitation.* Paris: UNESCO pp.33-40.

Jangira, N.K., Mukhopadhyay, S. and Rath, K.B. 1987. **Research in Special Education in India.** New Delhi: National Council of Educational Research and Training.

Jangira, N.K. and Mukhopadhyay, S. 1988. **Research in special education.** In Y.P. Aggarwal and S.P. Malhotra (eds.). *Research in Emerging Fields of Education.* New Delhi: Sterling.

Jangira, N.K. and Mukhopadhyay, S. 1991. **Research in special education: A trend report.** In, M.B. Buch. (Ed.) *Fourth Survey of Research in Education.* New Delhi: National Council of Educational Research and Training.

Jangira, N.K. and Paranjpe, Sandhya. 1993. **Asia Region Study: India Case Study.** New Delhi: National Council of Educational Research and Training.

Jangira, N.K. and Jangira, Pinki. 1995. **Effective Teaching Child Centred Approach.** Delhi: National Publishing House.

Kamalam, Maria Sr. 1989. **Training the Anganwadi workers in timely detection of disabilities in children.** M.Phil., Home Sc. Avinashilingam Institute for Home Science and Higher Education for Women.

Kapoor, S. 1990. **Cognitive functioning and perspective taking ability: A comparative analysis of normal and deaf children.** Ph.D., Edu. Jawaharlal Nehru Univ.

Khadar, M.A. and Rama, S. 1988. **Improving the Kannada reading performance of educable mentally retarded children.**

Independent study. Mysore: Regional College of Education.

Khan, A.H. 1988. **Personality structure of blind children and its relation to the mental ability and educability.** Ph.D., Edu. Utkal Univ.

Kohli, Tehal. 1988. **Impact of home-centre-based training programme to reduce developmental deficits of disadvantaged young children under the ICDS scheme in Chandigarh.** Independent study. Punjab University.

Lal, Alka. 1992. **A study of the personality, mutual perception, attitude and vocational preference of the blind and the sighted.** Ph.D., Edu. Univ. of Allahabad.

Lidhoo, M.L. and Dhar, Lalita. 1989. **Schedule of reinforcement: A learning model for mental retardates.** *Indian Educational Review*, Vol 24(1), 72-83.

Ministry of Human Resource Development. 1986a. **National Policy on Education—1986.** New Delhi: Government of India.

Ministry of Human Resource Development. 1986b. **NPE Programme of Action.** New Delhi: Government of India.

Ministry of Human Resource Development. 1992. **Revised Programme of Action 1992.** New Delhi: Government of India.

Ministry of Human Resource Development. 1993. **Education For All: The Indian Scene.** New Delhi: Department of Education, Government of India.

Ministry of Human Resource Development. 1994. **Education For All: The Indian Scene.** Compendium Volume, New Delhi: Department of Education, Government of India.

Mandaravalli, M.R. 1991. **Cognitive development in visually handicapped**



- children—concrete operational stage.** Ph.D., Edu. Univ. of Mysore.
- Mandke, Kalyani, N. 1991. **Effect of single modality stimulation upon speech and language development of hard of hearing children.** Independent study. Pune: Tilak College of Education.
- Mani, M.N.G. 1993. **Project Integrated Education for the Disabled (PIED): Report of the Evaluation Study Phase I.** New Delhi: UNICEF.
- Mani, M.N.G. 1994. **Project Integrated Education for the Disabled (PIED): Report of the Evaluation Study Phase II.** New Delhi: UNICEF.
- Mishra, S. 1991b. **Effects of home environmental variables on language acquisition of learning disabled and normal children.** M.Phil., Psy. Utkal Univ.
- Mohapatra, S. 1991. **Reading, memory and attention processes of normal and reading disabled children.** M.Phil., Psy. Utkal Univ.
- Mohite, Prerana. 1989. **Developing and implementing a classroom instructional programme for children with learning difficulties.** Independent study. The Maharaja Sayajirao Univ. of Baroda.
- Mukhopadhyaya, S. 1990. **Identifying teaching competencies specifically for integrated education for the disabled children.** Independent study. New Delhi: National Institute of Educational Planning and Administration.
- Muruganandam, S. 1990. **Development of teaching-learning strategies in teaching science for visually impaired children.** M.Phil., Edu. Madurai Kamaraj University.
- Narayanan, J. 1990. **Comparison of the effectiveness of adult and peer models on the learning and retention of performance skills in mentally retarded children.** Ph.D., Edu. Utkal Univ.
- Narayan, Jayanthi and Ajit, M. 1991. **Development of skills in a mentally retarded child: The effect of home training.** *Indian Educational Review*, Vol. 26(3): 29-41.
- Narayan, Margaret. 1991. **Prevalence of mental retardation among slum children in Lucknow city.** Independent study. Lucknow: Regional Centre, NIPCCD.
- Panda B.K. 1991. **Attitude of parents and community members towards disabled children.** Ph.D., Home Sc. Utkal Univ.
- Pandey, R.S. and Advani, Lal. 1995. **Perspectives in Disability and Rehabilitation.** New Delhi: Vikas Publishing House Pvt. Ltd.
- Pandey, S.P. 1991. **Study of the disabled in rural society of eastern Uttar Pradesh with special reference to Bahraich, Deoria, Pratapgarh and Ballia.** Independent study. Lucknow: Pandit Govind Ballabh Pant Institute of Studies in Rural Development.
- Paranjpe, Lata S. 1991. **To study the effect of supplementary education programme for hearing impaired children on their language development and socialisation and to study the effect of parental education programme on their awareness of acceptance of their child's handicap.** Independent study. Pune: Tilak College of Education.
- Paranjpe, S. 1993. **Special education in India.** *Journal of Special Education*.
- Paranjpe, S. 1994. **A community based model of integration for primary education in India: A focus of SLD.** *European Journal of Special Needs*, Vol 9(2), June.
- Phoola, K. 1990. **A study of physically handicapped children in Jammu province.** Ph.D., Edu. Univ. of Jammu.
- Prabhatsinh, Chudasama Raghubha. 1992. **A study of adjustment, aggressiveness, achievement, motivation and self-concept of physically handicapped students as compared to normal students.** Ph.D., Edu. Saurashtra Univ.



- Rai, Kamlesh. 1991. **Cooperation-based learning strategies for disabled and non-disabled children in integrated settings.** *Indian Educational Review*, Vol 26(3), 110-122.
- Ramaa, S. 1990. **Study of neuro-psychological processes and logico-mathematical structure among dyscalculics.** Independent study. *Mysore: Regional College of Education.*
- Rath, S. 1991. **An individualised instruction training approach for teaching children with learning difficulties in reading and comprehension skills.** M.Phil., Psy. *Utkal Univ.*
- Sahoo, J. 1991. **A comparative study of the behavioural characteristics of the blind, deaf, dumb and normal children of Orissa.** M.Phil., Edu. *Ravenshaw College, Cuttak.*
- Saxena, R.R. 1991. **Intellectual and non-intellectual characteristics of slow learners.** Ph.D., Edu. *Banasthali Vidyapith.*
- Sharma, I.P. 1990. **A comparative study of personality traits, interests and aspiration of high-creative and low-creative physically handicapped students of higher secondary schools.** Ph.D., Edu. *Rohilkhand Univ.*
- Sharma, M.C. 1988. **An exploratory study on the use of teaching aids for developing concepts among handicapped (deaf) children.** Independent study. *New Delhi: National Council of Educational Research and Training.*
- Sharma, Premlata. 1989. **A study to explore linguistic competency of hearing impaired in IED and special schools of Haryana and Delhi.** Independent study. *New Delhi: National Council of Educational Research and Training.*
- Sharma, Premlata and Pandey, Savitha. 1992. **An experimental study to assess the effectiveness of adopted instructional material in science on hearing impaired from IED and special schools.** Independent study. *New Delhi: National Council of Educational Research and Training.*
- Sharma, Sunita. 1988. **Mainstreaming the visually handicapped.** *Indian Educational Review*, Vol 23(4), 30-41.
- Shyamala, Chengappa. 1989. **Speech and language behaviour of the cerebral palsied.** Ph.D., Lang. *Univ. of Mysore.*
- Tangri, Poonam. 1990. **A study of social and psychological factors in families with handicapped children.** Ph.D., Psy. *Punjab Univ.*
- UNESCO. 1993a. **Teacher Education Resource Pack.** Paris.
- UNESCO. 1993b. **Making it Happen.** Paris.
- UNESCO. 1994. **Final Report: World Conference on Special Needs Education: Access and Quality.** Salamanca, Spain 7-10 June, Paris.
- UNESCO. 1994. **The Salamanca Statement and Framework for Action on Special Needs Education: World Conference on Special Needs Education—Access and Quality,** Paris.
- Upreti, V. 1988. **A comparative study of self-concept, need-pattern and intelligence of normal and orthopaedically handicapped children.** Ph.D., Psy. *Rohilkhand Univ.*
- Wang, M.C. 1990. **Learning characteristics of students with special needs and the provision of effective schooling.** In M.C. Wang, M.C. Reynolds and H.J. Wallberg (eds) **Special Education Research and Practice.** Oxford: Pergamon Press.
- Wang, M.C., Reynolds M.C. and Walberg, H.J. 1990. **Special Education: Research and Practice—Synthesis of Findings.** Oxford: Pergamon Press.
- Warnock, M. 1978. **Special Education Needs: Report of the Committee of Enquiry into the Education of Handicapped Children and Young People.** London: HMSO.