CHAPTER II

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The review of literature is a very indispensable and crucial aspect of any research project. Its importance can be realized if the research literature is properly scrutinized and analyzed. It helps the researcher to adopt a systematic approach towards the research problem that he/she intends to pursue in the desired field. Keeping in mind the importance of related literature it was tried to put in the best efforts to gather the data whether directly or indirectly related to the study.

Research takes advantage of knowledge which has accumulated in the past as a result of constant human efforts. It can never be undertaken in isolation. Rather it takes into consideration the work that has already been done on the problems which are directly or indirectly related to the study proposed. A careful review of the research journals, books, dissertations, articles, theses and other sources of information on the problem to be investigated is one of the important steps in the planning of any research study. Thus a review of literature must precede any well planned research study.

A study on blinds has attracted many people to foster it and make it a positive step in progressive direction. But no literature was available directly or indirectly related to the study. But since communication is the fundamental tool of existence, researcher has identified a few studies that are related to communication and has tried to give a clear picture. The researcher has tried to integrate the basic meaning of communication by the studies identified.

2.1 STUDIES RELATED TO EDUCATION OF VISUALLY IMPAIRED STUDENTS

A number of studies have been done in various parts of the world with the focus on improving the education of visually handicap. Before proceeding to a more detailed explanation of the present research design, the researcher would like to examine some of the major areas from which our work has evolved. In this study the researcher would analyze the studies related to communication of blinds with their friends, parents and teachers and the role played by media in
their life. Though a number of studies were scrutinized for the above said purpose but only a few studies could be found relating to the problem.

Kirk and Gallagher (1962) in their book threw light on how training can be given at early stage of learning to exceptional children so that they can also live like a normal person. In few cases it was found that blind students can outperform sighted in some areas. By developing special skills in which training on Braille, typing and handwriting, mastery of the environment, orientation and mobility, map and chart reading, listening skills, life skills, use of technology etc, blind students can be developed to lead an independent life.

Bluhm (1969) threw light on the importance to give the training in living skills during early years or the initial years of the learning so that the child can become more acceptable to society. The main objective is how to teach the child how to dress, clean, relieve etc. The training regarding Braille, teaching social science, math, science, self expression and creativity is very important and should be imparted to a child during early years by parents and teachers. By learning these skills, a child can learn to be independent for his routine work.

Cromer (1977) in his study associated the learning of language with the vision and that is symbolic whereas the verbal language elevate the sensory and aesthetic response to the world into new level of consciousness. He was of the opinion that our learning from senses about the environment is one millionth of what we know to be reality. 99% of the vital forces affecting our life is invisible. Man’s knowledge was based on what would be observed through senses. Language brought reflection and the ideational world which broke down the boundaries of the finite sensory world and ushered the world of ideas as source of knowledge. TV has taken away the child’s ability to form pictures in mind.

The Blind Relief Association (1980) conducted a study on mutual perception of the blind and the sighted. Under this study, they worked out the attitudes of the blinds towards the sighted and the vice versa in organizations and family. This study was carried out on two institutes namely blind relief association and rashtriya virjananda andh kanya vidyalaya. The attitude to deal with handicapped people is of fundamental importance as it all depends on the way we treat special students to make them acceptable part of society. This study also suggested and adopted 3 point rating scale. Open ended interview schedule was adopted to gather data. In order to conduct this
study, 30 parents and 20 employers and 10 employees agreed to co-operate. Results showed that there is lack of close and frequent interactions with the sighted. Close interaction can be achieved by making blind students learn in ordinary schools. Employers decline to accept blind persons because they do not see clearly how a person without sight can engage in certain occupations.

Kersten (1981) emphasized on how music can be used as a therapy for visually impaired children and how their physical problems can be improved through music therapy. Music is a big source of relaxation; it can help these children develop their psychomotor learning during early stage of development. Music can be used for developing locomotion activities that require marching, galloping and skipping.

Blacher (1984) stressed on the need to understand that many handicapped children have mental retardation. Many parents of such children do not realize and don’t know how to react to it. Parents should accept their child so that the child can show enthusiasm to learn the skills.

Rex (1990) through his article attempted to provide historical overview of research related to education of school-aged learners with visual handicaps and tried to address current research issues. The author tried to focus on four research strands for review: low vision perception and efficiency, tactual perception and efficiency, reading and writing in the visual medium, and reading and writing in the tactual medium. The author felt that though studies were conducted in the area of tactile discrimination and perception but those studies lacked depth and studies related to aural abilities and learning were also very limited. There is dire need to conduct fruitful researches in the field of education of visually handicapped learners.

Preisler (1990) found that in longitudinal, descriptive study of blind infant-sighted mother interaction during the age period 3 to 12 months, 10 infants, seven blind and three severely impaired, were video recorded in natural interactional settings with their parents. The objective was to describe which communicative expressions the infants, as well as their mothers use in interaction and how they respond to each other’s communications. Detailed analyses of the infants and mothers communicative behaviors were carried out. The blind infants exhibited a variety of communicative expressions in interaction with their mothers; they took an active part in proto-conversations and dialogues with their mothers. The blind infants had difficulties in sharing their opinion about objects with their mothers during the age period studied.
Comparisons between the blind and the severely visually impaired infants showed that even very low vision improves the infants’ opportunities to take part in interpersonal communication and to share meanings. The results are discussed in relation to Trevarthen’s view of the infant having an innate motive for intersubjectivity—for communication—and Stern’s theory of development of the self.

Long (1990) through this study tried to provide the outline of research about orientation and mobility of persons with blindness and severe visual impairment and worked out on the areas for future area in the above said field. The author reviewed the development of measures that assess mobility and have discussed the use of these measures in the study of factors that influence travel in natural travel environments. The focus of the study is on the research about orientation and mobility conducted in natural travel environment than the ones conducted in laboratory settings. One important development is the increase in measurement technology used to study orientation &mobility in natural travel environments.

Vohra (1991) attempted to work on the difficulties faced during the introduction of Braille in India. During the struggling period there was no common code of language which could be universally accepted. After considerate efforts in 1951, Bharati Braille was accepted. The major challenge by that time was to represent such code through which phonetic uniformity in English and other languages can have the same significance. The main purpose was to find out the way in which education of this particular section of society can be at par with sighted and this could be made possible only if the common code of Braille would be discovered and adopted. The efforts were to make Braille as a complete tactile representation of the printed, so that the education of blind should not be segregated from the sighted. Universal acceptance of Bharati Braille in India would have been impossible without the establishment of a Braille printing press. The Braille press was then established at Dehradun. Then efforts were made to work on contractions and abbreviations, Braille shorthand and stenography, adopting a proper method to teach math, music and science.

Lin and Sikka (1992) laid emphasis on the identification of gifted child with visual handicap at an early age and need to educate them. It laid stress on the teaching of Braille. It is important to clarify/analyze visual dysfunction prior to implement any strategy for identification or placement as it poses various challenges in their development of abilities and skills. Whitmore and Maker suggested that instead of visual acuity, visual arc should be treated as measurement index as it
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shows clear picture of individual’s vision and it will let us know to what extent it affects learning. In order to utilize the talent of Gifted Visual Handicap child fully, they should be given different educational opportunities as such child have double exceptionalities. Maker further suggested that curriculum should be designed in such a manner that it enhances their ability with the help of detailed description of models, needs and goals. Clark advised the strategy of integrated brain function to be adopted for teaching Gifted Visually Handicap. Braille should be the primary medium to be adopted for teaching such students as Braille is the medium of communication for blinds and after adapting to the language, these children feel level of comfort in this sighted world. Braille is considered to be the print media and is an important tool to meet the requirements of the competitive world. Johnson said that as a shift is seen that visually impaired children prefer regular school to the special ones, there is pressure on the teachers to assess these special students in a fair manner. It was further observed that there is lack of tactile and motor training at early stages of such population.

Bahuguna (1993) considered that there is the need of training for the visually handicapped child during the first five years of the birth. And his book served as a guide to make parents aware about the type of training that can be given to their visually handicapped child at home. As the initial years in a child’s life is considered to be the formative years for the development of various skills like the development of language, mobility, motor, cognitive and others; so it assumes supreme significance to understand and impart these training from home to ensure complete development of the disabled child. Proper training and orientation with the use of various objects will make a blind child confident and independent for discharging the daily routine activities. This book serves as a guide for parents and the teachers and will help them to understand the needs of a visually handicap child and will help them to train their child in a proper manner regarding physical and motor skills, walking skills, cognitive development, auditory perceptual development, language development, social and emotional development.

Paxton et. al.(1993) attempted to explain how integrated training in extended movement mobility for visually impaired can be used as a dance form ‘contact improvisation’ for visually impaired and the sighted people (and unsighted) who work with them. The training on ‘contact improvisation’ was movement based and evolved out of the dance form, developed by Steve Paxton (dancer and choreographer) in 1970s and the process was based on a group dynamics.
model coined by Kilcoyne (a clinical psychologist and performance researcher) with the help of Paxton.

Paxton and Kilcoyne planned to research in 1986 about contact improvisation for partially sighted and its use to them. They observed that since contact improvisation is learned through haptics (the science of touch) and the kinesthetic senses instead of senses of sight, during their initial stages of learning, people tend to close their eyes. This further suggested that it could be an easy and appropriate form for those whose movement is restricted by the basic fact that they can’t see but they want to move freely and dance creatively without hurdles. As this form is based on partners, it sounds more safe and suitable to visually impaired as during initial stages of dancing, their sighted partner can look forward to any hindrance. It’s more like Braille for the body, exclusively available for both sighted and visually impaired - a common language learned by the body.

Aathlekar 1993) focused on the need to examine the varied degree of blindness and the need to educate them through Braille medium also needs to be decided; this decision should be taken by teacher and the student. As there are cases who are complete blind, some are partial with light perception, some can see large font so it has to be decided by the teacher and the student the most convenient medium to study as Braille is the main language for a visually impaired. This was also ascertained that as their ability to see has been affected so the knowledge about the surroundings lack behind if we compare them with the sighted. So it is necessary to involve these type of children in work and make them aware about the surroundings through touch. Encourage the child to play with harmless things so that his knowledge and vocabulary can be strengthened. Family has to play a major role for such development. Then the teacher has to teach the way of reading the Braille. It is very important to develop the touch and to teach the student the right way of reading the six dot pattern.

Golledge (1993) investigated and found that geography has paid very little attention to the disabled or disadvantaged populations. In this paper, the researcher focused on the way geographers can evoke their skills and knowledge to deal with the sets of problems faced by special population. As society has engrossed itself more with dealing, the problems faced by the special population like blind, deaf and dumb, retarded, physically handicapped, socio-economic destitute and homeless, geography has drawn its interest in finding solutions to the problems that this special population face in understanding normal commerce with their physical and inbuilt
environment and how expertise of geography discipline can be a help to them to eliminate such
problems. Author has framed certain general and few specific suggestions on the way
geographers can enhance improvise their ability and knowledge regarding dealing with such
problems faced by such population and also laid stress on importance of spatial cognitive
abilities and made few suggestions for further research challenges. Two primary tasks need to
be done in order to develop geography for the disabled. One is to find out the nature of the
various environments in which this special population exists to check out if traditional
geographic theories, models, and laws hold significance. Second is to comprehend the nature of
environment in which the disabled must conduct their activities. It means that geographers have
to look at the geography of the disabled. And must understand the environment in which these
people live.

**Hasselbring and Glaser (2000)** through his study tried to find out how computer based
technology can play a vital role in helping visually impaired students to participate in educational
program in a typical class room environment. Adaptive technology enable the students with
severe disabilities to become active learners alongwith their sighted non disabled peers.
Computer technology has the ability to provide equalizer effect to the disabled ones but the
barriers of inability or inefficiency of teachers to adopt that for education or the inadequate
training to staff and cost must be taken into consideration and efforts should be done to
overcome it first; only then the technology can be used more extensively. Devices like Closed-
circuit television magnification, computer screen magnification, descriptive video services,
screen readers, optical character recognition, Braille notetakers can be used to help visually
impaired students so that they can be at par with their sighted peers.

**Yu, Ramloll and Brewster(2000)** in this paper discussed the design of computer-based haptic
graphs for blind and visually impaired people with the support of their preliminary experimental
results. Through this study the researcher tried to find solution to the problem of visually
impaired and tried to develop a system which can make graphs accessible through haptic and
audio media. The experiment was conducted on both blind and sighted people and results
suggested two techniques: engraving and the use of texture to model curved lines on haptic
graphs. Integration of surface property and auditory cues in the system were proposed to assist
blind users in exploring haptic graphs.
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Hartz (2000) attempted to make his blind students aware about the latest technology and enabled them to be independent to browse and access online books available for this particular section rather than depending on the visual persons. Hartz’s main focus was the access of printed word for his students. He never denied the fact that blinds have proficiency in reading their own language i.e. Braille but nobody knew that they can receive Braille books online via mail from the regional co-operating library. Hartz found that blinds are dependent to choose their study material on sighted people. Blinds never had an opportunity to choose their books themselves. The thing that came as a shock to him was that blinds tried to select current topics but they depend on their sighted friends to search for material relevant to their topics. He then made an attempt to literate blinds regarding the new technology computer to them and enabled them to surf and browse their own material independently. He wanted to inculcate the habit of reading in them. Blind students can read their files in Braille, locate the errors in the Braille text and push a button just above the error to route the cursor to the proper location for making the correction. The technology that can prove to be helpful to blind students are Braille and Speak - a laptop computer, use of scanners, Braille translation software, read newspapers online using world wide web, JAWS screen reading softwares, Dec talk express, accent SA Speech synthesizer.

The Museum of Modern Art’s Department of Education (2001) presented touch tours in which trained educators guide those with visual disabilities to experience selected sculpture on view in the galleries while wearing special plastic gloves. The program was expanded to include art history courses for blind and visually impaired adults and children. The program included staff development for teachers in elementary, middle, and high schools, and the use of specially produced materials such as Art Education for the Blind’s tactile diagrams of two-dimensional works, high contrast black-and-white images, enlarged color reproductions, and large print and Braille brochures.

Enabling Dimensions (2002) examined that that there has been a raging debate on digital divide’s issue. The focus of this debate is primarily on the under privileged. Enabling dimensions has widened this term and included the disabled and elderly people. Major findings of the study were that though computers has enabled visually challenged people to access it for their use by using JAWS screen reading software and Kurzweil scanning (OCR) software to access printed text but visually challenged are facing problems in using it because of the foreign accent speech.
Screen readers cannot understand the visual elements like images, graph and pictures. Awareness level is low regarding the accessible web content and related issues. Respondents found it difficult to access web content. Internet is used for sending mails for them but is rarely used for general browsing. Haptic technology (forced feedback mouse) was a barrier for the new users. There is dire need of interaction with community. It is the need of the hour to change the mindset at the policy making level to show that visually challenged can pursue in other streams also. E-Learning is badly required for this particular section as it will reduce the problem of commuting by bringing classrooms to their homes. Methodology adopted by Enabling Dimensions: this study was conducted in phases; Objectives and Discussion guide (flow of questions ); Validating the objectives (by meeting the experts who are working with disabled and divided the target audience in small groups of 5 respondents each); Freeze the Discussion Guide; One to One depth interviews.

Legood et.al (2002) found that there is dearth of studies on the injuries that visually impaired face; so the researcher conducted study in this area by analyzing review on epidemiological literature in April 2000. Databases on all types of injuries were taken in the form of articles published between 1980 and 2000. Studies were selected on following criteria: formal ophthalmic assessment; adjustment for confounding variables; large sample size including numbers of visually impaired; and clear definitions and outcomes. Ophthalmic assessment included measurement of visual fields, contrast sensitivity, visual acuity, depth perception, or diagnosis of specific eye conditions such as cataract and glaucoma. The 31 studies were separated into categories according to cause and setting. Injury categories used fractures (20), occupational injuries (3), and traffic injuries (8).

As per the study there are substantial gaps in research on both injuries to which people with visual impairment are especially susceptible and in evaluating interventions to reduce such injuries. It is suggested that in future studies the minimum data captured includes: formal ophthalmic evaluation of visual fields and visual acuity, control for confounders, and the costs of health care resource use. Effective vision screening programmes with appropriate treatment are required to adequately identify and treat the target population.

Singh (2003) threw light on making visually impaired people productive and realized that it can be achieved and given only if the education can be vocationalized. The author aimed to find out the gaps in the vocationalization of their education and how technology and training can
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contribute to make adequate and meaningful vocational programmes. He concluded that if the blind student is trained from the initial stages to the final stage of the school by involving the persons from different professions to give them hands on training then they can themselves be representatives of industries. The skills of the visually impaired child need to be analyzed and assessed and trained as per the need.

**Basu (2003)** attempted to develop Audio Qwerty Editor, KGP- Talk and a Talking Web Browser that was supported by text to speech synthesis system for Indian languages for the visually impaired community in India and other developing countries. The author felt the need to enhance the skills of these underprivileged by developing their educational infrastructure so that this particular section of society can also get employment with the sighted people. In order to make the two way communication between the visually impaired and sighted community practicable, it is required to transliterate the Braille documents to the text document in the corresponding language. To enable the visually impaired people to participate in creative office work, they should be equipped with suitable keyboards and other assistive devices that addresses to the idiosyncrasies and requirements of the user’s language

**McLinden (2004)** conducted the study on nine children with visual impairment to develop haptic abilities of these children. An adaptive tast approach was proposed for developing framework. Haptic perception can be described as perception that relates to the sense of touch, particularly to the ways in which it is possible to discriminate and recognize objects from handling them as opposed to looking at them. Role of haptic in educating visually impaired child is often ignored. The study attempted to find out the nature of the haptic strategies used by visually impaired children with additional disabilities, to what extent can haptic strategies that serve an apparent exploratory function be identified and which assessment approach is the best for identifying and analyzing the observed haptic strategies.

**Miller and Ockelford (2005)** tried to find out that how various senses work out when there is a loss in one sense. After carefully going through, it became clear that ‘where’ and ‘what’ of vision and how knowledge through vision helps in development of a human being; how hearing typically develops as well as the likely impact of visual loss on that development. He found that training has to be given in all the respective senses so that the child can grow in a better way. Music listening skills can be used to promote the areas of development: movement, learning, language and socialization.
Siligo (2005) through this article would give music educators some practical tools and information for helping students with visual impairments enjoy the ensemble experience. Louis Braille’s tactile Braille music was one way with which blind student can write or preserve music sound. He advised to convert visual print music into auditory tactile form. By using portable Perkins Braille writers, students can use the print-music letter names and the abbreviation. The greatest obstacles to teach the Braille music code is lack of exposure to it and the difficulty of assimilating its abstract concepts and lack of trained staff.

Jones et al. (2006) conducted a study on 21 students with visual impairments to study the impact of new haptic instructional technology for teaching cell morphology. To carefully conduct this study, both descriptive and exploratory approaches were adopted. The procedure adopted was the pre-assessment of the knowledge and then by using PHANTOM they were examined and then post assessment was done. Results showed that students made significant gains in their ability to understand cell organelles and found the technology to be useful in understanding which otherwise was not possible as traditional syllabus is highly dependent on visual models of science. Students in this study used the haptic feedback device, PHANTOM desktop device that allowed them to manipulate and get tactile feedback as they explored cell morphology depicted in cell exploration programme.

Poirier (2007) stated Webster takes the opening verses of John 9 as an illustration of this connection between sin and disability. John 9 tells the story of Jesus healing a blind man on the Sabbath—the opening verses raise the question of the blindness’s relation to sin. He further elaborated that even in Bible Lord Jesus has denies any relation between sin and blindness. Blindness is not an outcome of the sins of one previous birth. Jesus did not say that man was born blind so that God’s healing power might be displayed in him. Rather he said that he must work this healing while it is day, so that others may plainly see it.

Schiff (2007) gave training of assistive technology to a group of blind and visually impaired students so that they can also access the resources of the college library as their sighted peers. The author made use of JAW software and Zoom text during training period. Results showed that visually impaired students who earlier used to refer library as intimidating and inaccessible place now no longer seems unfamiliar place.
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tauchi et al. (2008) tried to improve the abilities of the visually impaired children through some investigation and observations. wooden blocks with magnetic pieces and a grid plate was proposed for visually impaired students to grasp and improve the spatial abilities. An experiment was carried out to check the impact of the blocks. The participants performed 3 kinds of tasks to check their compatibility in development stage in spatial thinking. The objective was to propose a toy for visually impaired children so that they can improve their spatial cognitive environment.

Results shows that toy blocks and the effective direction for the use by the visually impaired children can become meaningful in the education of blind at school level as it can improve the ability of space recognition. It became clear that it was hard for blind children to possess spatial cognition abilities than sighted. Based on this observation, a toy was proposed for visually impaired children. The Japan Toy Association ‘kyoyungangu’ is recognized as a toy which visually impaired children can enjoy. A toy block and the effective direction for the use by the visually impaired children was suggested as toy blocks in future would prove helpful in making visually impaired children learn about the concept of space recognition.

Kummervold and Holthe (2008) tried to find out how visually impaired mobile users can be updated about health information through short messaging services. In order to conduct this study 12 visually impaired persons were selected who were unable to read the SMS and the study was compared with three methods of presenting text messages as speech; the multimedia messages with prerecorded speech-synthesized information was sent to users and mobile phone calls was also prerecorded and SMS was sent and then converted into speech by the mobiles. An experiment was conducted for a trial period of three month; 88 SMS, 111 MMS and 104 phone calls was sent. All messages i.e. 88% of MMS and 69% of telephone calls were received. SMS method was the best selected by the users.

fraser and Maguvhe (2008) threwed a light on numerous problems related to the teaching of life science to blind learners and its implications. It particularly took totally blind into consideration as they are the most vulnerable in terms of learning life sciences. To study the problems faced in learning biology with absence of vision and its impact on visually impaired learners, special schools, life sciences educators, and Outcomes Based Education was the main
objective. The study was conducted in South Africa at 11 special schools. Structured interviews were conducted with nine science educators teaching at the different special schools and focus group interviews with ten Grade, 12 learners taking a life science at each of the schools. The interviews were audio-taped and video taped by sighted observers. The data was decoded and the results coded and classified for interpretation purposes. The study revealed learners’ difficulties in applying science process skills because of lack of vision, confidence, motivation, etc. For example, one such skill, namely ‘tabulation’, remains a problem to the most blind learners. The blind learners were also very rarely occupied in practical work and field trips. Practical exposure was limited to very simple and elementary exercises that provided little intellectual challenge and did not call for advanced problem analytical skills. Learners had less access to computers, encyclopedias, sources of reference and relevant publications. Educators did however apply cooperative learning strategies in schools where totally blind and partially-sighted shared the same learning environment.

Saxena and Watt (2009) attempted to discuss the struggles faced by blind computer users in the field of security solutions. The paper enlists a number of ways by which user as well as device authentication can be achieved. It further discusses the need for developing certain authentication methods which can assist the blind user for easier and safer computing experience.

Vickerman and Blundell (2009) attempted to find out the expectations of disabled students regarding Higher Education. The views and experience were recorded through questionnaire and indepth interviews. A sample of 600 was identified and the data was collected in two phases. In phase one, questionnaire was filled by all the students regardless of the fact that they are disabled or not and in second phase involving four face-to-face interviews with disabled students was undertaken. The purpose was to find out the perspectives of students in Higher Education related to their experiences of induction onto their course, course delivery, barriers to learning and links into employability with the purpose of gaining a rich insight into the various stages of the student life cycle. The need of the hour is to transform higher educational institutional policies and cultures along with the provision of staff development to make sure that disabled people have equal access and support to educational provision.

Rehman (2010) presented a new technology in his doctoral thesis- a Braille code of emotions and said that it gives new opportunities for social interactions for the visually impaired. Rehman
said that lack of sense of vision is a barrier for visually impaired to see the facial expressions as facial expression plays an effective role in communication barrier for social interaction. He developed a new technology using web camera, hardware and a tactile display that enabled visually impaired to interpret human emotions directly.

Bin I and Shiu (2010) tried to examine the final phase of development of 2-D graphic spatial representation among genetically blind individual who falls between the age of 17 and above. The task of ‘draw a cube’ was given to all the nine participants. Results revealed that a student who lost his vision at the age of 9 adopted the final stage of graphic development whereas the rest of the participants used orthographic projection system.

Tadic et al. (2010) tried to examine the language and socio-communicative profile of 15 visually impaired children and normal range verbal intelligence using verbal scale from the Wechsler intelligence scale for children. The result concluded that visually impaired children showed poorer use of language for social purpose.

Mon and Yap (2011) attempted to investigate the virtual objects learning by using haptic interface for visually impaired children. This study was conducted on 13 visually impaired students and 11 blindfolded sighted users. A computer replicated virtual reality environment can offer better opportunities for children with visual impairment especially in learning the shapes of new objects. In order to fulfill the project haptic technology along with the aid of audio was developed. Seven different objects were modelled to create haptic shapes which allowed users to have a better learning environment and assists them in learning and memorizing the shapes of different objects by name. The created application is deployed in a fully equipped computer with a stylus based haptic device and a set of speakers. Findings of the research revealed that 79% of the children agreed that virtual reality learning was useful in learning the shapes of new objects and assisted visually impaired children in continuing their learning process.

Simmons (2012) in his book has tried to provide the professionals and parents of the blind child the guidance that needs to be imparted to the child. This book has focused on the way visual impairment affects development, keeping aside any other disability. Joyce has tried to work out on the role of parents and siblings in the development of a visually impaired child. Family should accept the handicapness of their child and should provide a healthy and congenial environment so that child can also take his handicapness or disability in a positive manner. The right balance
of care is required as over protectiveness may frustrate the child. Parents need to understand that the child’s contact with the world is with senses and not through vision. A child can learn more if given exposure and firsthand experience by active involvement with the world.

**Subhi (2013)** studied the non verbal communication patterns of the visually impaired and tried to find out to what extent responses were influenced by age. 94 participants of parents and teachers of visually impaired students (51 parents and 43 teachers) were undertaken for the study through non verbal communication pattern scale and video recordings. Descriptive design using a survey tool in addition to video recording sessions was used. The results revealed that 6-12 years age category had most production of face expressions of emotions and para language sounds while 3-5 years age category has least production in these domains.

**Sengupta and Maji (2013)** in their paper emphasized on the importance of conducting qualitative research in the field of environmental education with the students having visual impairment. A sample of 40 students was undertaken for the study using purposive sampling. The respondents were of the age 14-25 and were studying in classes from 9-12. Methodology adopted was case study in which a number of cases that is some students with visual impairment were selected as typical cases and interviewed on basis of some open ended questions. Cross case pattern search using divergent techniques was also adopted. The study attempted to find out the knowledge level of visually impaired students in the context of environment on the issues of its protection. Results concluded revealed that the students have adequate knowledge about pollution and also described clearly as to the measures to be taken to protect the environment.

**Yildiz and Duy (2013)** attempted to find out the effectiveness of interpersonal communication skills psycho education program to improve empathy and communication skills if visually impaired adolescents. This study was conducted on 16 adolescents studying in elementary school. Factorial design was applied on two groups – treatment and control and three measures were adopted- pre test, post test and follow up. The participants in treatment group were exposed to interpersonal communication skills training for 9 sessions and participants of control group didn’t receive any exposure. In analysis it was clear that psycho-education program proved useful in increasing empathy levels and communication skills of the visually impaired adolescents.
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The available review of literature on the present study consists of the idea that in case of special population like handicap or impaired are involved, few studies support the qualitative approach while few support quantitative approach. Studies of Kirk and Gallaher (1962), Bluhm (1969), Bhugana (1993), Miller and Ockelford (2005) and Joyce(2012) showed that there is a need to train these students. The training of living skills should be given to the students during initial years of their learning so that they can also adopt the environment like a normal sighted child. Studies of Kersten(1981) and Paxton (1993) emphasized on the importance of music in training blind students. Music is a source of relaxation and learning can be made interesting with the use of music.

Several researchers have tried to find out the solution to the problems that visually impaired would like face because of the disability. Golledge(1993), Hasselbring and Glaser(2000), Hartz (2000), Enabling Dimensions (2002), Singh (2003), Basu(2003), Jones et al. (2006), Tauchi et al. (2008) and Fraser and Maguvhe(2008) have worked in this regard.

A review of research studies reveal that there is dire need to identify the gifted visually impaired child at early age so that right training can be given in time (Blacher, 1984; Ping Lin and Sikka, 1992). But there was no research on the communication patterns of the visually impaired and the usage of media by them. So, through this study the researcher would like to fill the gap.

References

4. The Blind Relief Association, (1980). Mutual perception of the blind and the sighted- a study on the reciprocal attitude of the blind and the sighted, New Delhi: The Blind Relief Association


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