

Vol 3 Issue 5 June 2013

Impact Factor : 0.2105

ISSN No : 2230-7850

---

Monthly Multidisciplinary  
Research Journal

# *Indian Streams Research Journal*

Executive Editor

Ashok Yakkaldevi

Editor-in-chief

H.N.Jagtap

---

**IMPACT FACTOR : 0.2105**

**Welcome to ISRJ**

**RNI MAHMUL/2011/38595**

**ISSN No.2230-7850**

Indian Streams Research Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial Board readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

***International Advisory Board***

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathmatcal Sciences, University of South Carolina Aiken, Aiken SC 29801	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Centre For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Department of Chemistry, Lahore University of Management Sciences [ PK ]
Janaki Sinnasamy Librarian, University of Malaya [ Malaysia ]	Catalina Neculai University of Coventry, UK	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Ecaterina Patrascu Spiru Haret University, Bucharest	Horia Patrascu Spiru Haret University, Bucharest, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pintea, Spiru Haret University, Romania
Anurag Misra DBS College, Kanpur	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Titus Pop	George - Calin SERITAN Postdoctoral Researcher	Nawab Ali Khan College of Business Administration

***Editorial Board***

Pratap Vyamktrao Naikwade ASP College Devrukh,Ratnagiri,MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University, Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yalikar Director Managment Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU, Nashik
Salve R. N. Department of Sociology, Shivaji University, Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary, Play India Play (Trust),Meerut	Maj. S. Bakhtiar Choudhary Director,Hyderabad AP India.	S.KANNAN Ph.D , Annamalai University,TN
	S.Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra
	Sonal Singh	

**Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India  
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.isrj.net**



## A CRITICAL STUDY OF PROBLEMS IN SCIENCE TEACHING/LEARNING WITH REFERENCE TO THE BLIND STUDENTS STUDYING IN SPECIAL SCHOOLS

ASHOK KUMAR KURUKSHETRA

### Abstract:

*Science plays an important role in each and every sphere of our lives. The word science comes from the Latin word 'Scientia' that means to know. The fundamental activity of science is making careful observation through controlled experimentation. The progress of a country is measured on the basis of the parameter that to what extent it is developed in the field of sciences, use of natural resources and better living conditions etc. are all given by the proper use of science.*

### KEYWORDS:

Science Teaching, Students Studying, Fundamental Activity, Critical Study.

### INTRODUCTION:

It is a systematic study and it is not the study of one day. The total outcome of the various fields of science is the efforts of scientists. As to rise up the hill, we have to start right from the bottom and a successful person achieving the goal always start from the lower level and gradually move up. The overall development of the personality of the person depends directly or indirectly on the way that how he was given education. Education helps the person to adjust himself in the society and surrounding and may be able to earn his living to the maximum satisfaction. Teacher moulds a person to a desirable personality and help him to survive in the society. Teachers make the use of various tools, techniques to make the teaching learning process effective.

### PROBLEMS IN TEACHING/LEARNING SCIENCE

Teachers and Blind students face a no. of problems in teaching/learning science.

In black board observations teachers and blind students face the problems in teaching /learning science. So black board written materials should be verbally explained to the students.

Teachers and students face the problems in teaching /learning science as the two dimensional embossed diagrams are used to explain three dimensional concepts. Teachers should use real objects and models that are relevant to the students.

In the teaching /learning science with reference to the visually impaired students, the teaching aids are not easily available to them. So, it is problematic for both teachers and students. So teachers should prepare aids from locally available materials.

In solving the numerical problems teachers and students face the problems as it is a slow process in writing on Braille slate and have to turn the paper what ever have to read. On the other hand in Taylor frame the words can't be written.

Teachers and students both face the problems in teaching /learning chemicals formulas and chemical equations as the standard science Braille codes have not been standardized in India e.g. To show the chemicals bond whether it is single, double and triple bond, no sign is available.

Title :A CRITICAL STUDY OF PROBLEMS IN SCIENCE TEACHING/LEARNING WITH REFERENCE TO THE BLIND STUDENTS STUDYING IN SPECIAL SCHOOLS Source:Indian Streams Research Journal [2230-7850] ASHOK KUMAR KURUKSHETRA yr:2013 vol:3 iss:5

Blind students face the problems in drawing diagrams as the diagrammatic concepts are not clear to them. Moreover devices and equipments are not easily available to them. Students face the problems in referring the tables because the tactual scanning is difficult and time consuming. It is also problematic to write the table on Braille slate. Handling the apparatus and chemicals is problematic until they takes necessary precautions. Blinds students face the problems in understanding colour concepts e.g. colour changing. Colour changing and flowing water concepts are not possible without specific equipments.

#### NEED AND SIGNIFICANCE

It is significant to improve the science teaching /learning by knowing the opinions of teachers and students. This study is also significant to optimize the use of available facilities in teaching/learning science. The quality of teaching /learning science need to be improved. This study is also helpful in this direction.

#### DEFINITIONS OF IMPORTANT TERMS:-

##### Blind:

A person who satisfies one of the flowing three conditions is termed as legally visually impaired person.

- i. Absence of vision in both eyes.
- ii. Visual acuity less than 6/60 or less in better eye after best possible correction.
- iii. Field vision 20° or less in better eye after best possible correction.

#### SPECIAL SCHOOL

Special schools are those schools which impart individualized instructions to the children with special needs.

#### OBJECTIVES OF THE STUDY:

- i. To study the problems in teaching science to blind students.
- ii. To study the problems in learning science in blind students.

Muruganandam, S. 1990. Conducted a research work on Development of teaching-learning strategies in teaching science for visually impaired children and found that;

- i. The visually impaired children learned more science concepts when they were through the specially prepared teaching-learning materials.
- ii. The learning package on science teaching for visually impaired children was found effective. (MKU 1068).

Kansal Sarita, (1995), Conducted a research work on the Problems in teaching of home science in high schools of Kurukshetra and found that;

- i. Teachers and schools administrators face the financial problems ultimately suffer the students.
- ii. Curriculum is not flexible that can be changed according to school situation.
- iii. Lack of trained teachers.
- iv. No provision of laboratory, equipments and material for practical work.

Review of literature tells that much work has been done in general science teaching with reference to the blind students. So the researcher decided to conduct this study.

#### SAMPLE

In the present study, considering the importance and nature of sample investigator collected the data. Purposive sampling procedure was followed 50 blind students from two special schools for the blind

situated in Panipat and Chandigarh was selected. Six science teachers from these two schools were also selected.

**TOOLS USED:**

Questionnaire/Schedule to study the problems encountered in teaching science to visual impaired students contain 21 items. Out of which, 18 questions are closed one with options yes/no whereas three questions are in open form. Questionnaire/Schedule to study the problems encountered by students learning science contain 22 items. Out of which, 21 questions are closed one with option yes/no whereas one question is in open form.

**COLLECTION OF DATA:**

The investigator after selecting the sample and deciding the tools and techniques for data collection visited two special schools situated in Panipat (Haryana) and Chandigarh.

**PROBLEMS OF VISUALLY IMPAIRED STUDENTS IN LEARNING SCIENCE**

**Table - 1 Responses of blind students**

S. No. (Item No.)	No. of students =25 (Panipat)		No. of students =25 (Chandigarh)		Total No. of Students =50	
	Yes	No	Yes	No	Yes	No
1	21	4	20	5	41	9
2	19	6	18	7	37	13
3	18	7	20	5	38	12
4	15	10	14	11	29	21
5	21	4	19	6	40	10
6	9	16	10	15	19	31
7	17	8	18	7	35	15
8	25	0	25	0	50	0
9	25	0	25	0	50	0
10	0	25	0	25	0	50
11	0	25	0	25	0	50
12	0	25	0	25	0	50
13	0	25	0	25	0	50
14	15	10	16	9	31	19
15	20	5	21	4	41	9
16	22	3	22	3	44	6
17	22	3	20	5	42	8
18	23	2	19	6	42	8
19	19	6	20	5	39	11
20	16	9	17	8	33	17
21	17	8	18	7	35	15

- 1.It is observed from 1st entry of table 1 that percentage of affirmative responses given by the students of Panipat, Chandigarh and total students are 84, 80 and 82 respectively. Its means that majority of the blind students studying in either Panipat & Chandigarh perceive science as an interesting subject.
- 2.It is observed from 2nd entry of table 1 that percentage of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 76, 72 and 74 respectively. Therefore, majority of students do not consider science as a difficult subject.
- 3.It is observed from 3rd entry of table 1 that percentage of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 72, 80 and 76 respectively. Therefore, most of students reported that science text books are easily available in Braille.
- 4.It is observed from 4th entry of table 1 that percentage of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 60, 56 and 58 respectively. Therefore, majority of the students like the science related books and articles.
5. It is observed from 5th entry of table 1 that percentage of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 84, 76 and 80 respectively. Therefore, majority of the students like the listening of science related programmes on T.V./Radio.
- 6.It is observed from 6th entry of table 1 that percentage of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 36, 40 and 38 respectively. Therefore, its shows that there is lack of other science related others Braille books in both the schools.
- 7.It is observed from 7th entry of table 1 that percentage of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 68, 72 and 70 respectively. Therefore, is no dearth of other science related books in both the schools.
- 8.It is observed from 8th entry of table 1 all the students of Panipat and Chandigarh gave affirmative responses. Therefore, there are trained special teachers for teaching science in both the schools.
- 9.It is observed from 9th entry of table 1 all the students of Panipat and Chandigarh gave affirmative responses. Therefore, there are science rooms in both the schools.
- 10.It is observed from 10th entry of table 1 all the students of Panipat and Chandigarh gave negative responses. Therefore, there is no science laboratory in either school.
- 11.It is observed from 11th entry of table 1 all the students of Panipat and Chandigarh gave negative responses. Therefore, there is no science botanical garden in either school.
- 12.It is observed from 12th entry of table 1 all the students of Panipat and Chandigarh gave negative responses. Therefore, as there are no botanical gardens so students can't visit the same.
- 13.It is observed from 13th entry of table 1 all the students of Panipat and Chandigarh gave negative responses. Therefore, it shows that science is not taught by experimental method in both the schools.
- 14.It is observed from 14th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 60, 64 and 62 respectively therefore, majority of the students are able to solve numerical.
- 15.It is observed from 15th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 80, 84 and 82 respectively. Therefore, majority of students told that the complete contents matters of science is taught in class room in both the schools.
- 16.It is observed from 16th entry of table 1 that 88 percent students of students of Panipat and Chandigarh gave affirmative responsive. Therefore, science related teaching aids e.g. charts, models are easily available in both the schools.
- 17.It is observed from 17th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 88, 80 and 84 respectively. Therefore, science related teaching aids e.g. charts, models are used during science teaching.
- 18.It is observed from 18th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 92, 76 and 84 respectively. Therefore, there are sufficient numbers of embossed diagrams in science Braille books.
- 19.It is observed from 19th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 76, 80 and 78 respectively. Therefore, majority of the students understand the embossed diagrams of science Braille books.
- 20.It is observed from 20th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 64, 68 and 66 respectively. Therefore, majority of the students face the problems in reading chemical equations and formulas written in Braille.
- 21.It is observed from 21th entry of table 1 that percentages of affirmative responses given by the students of Panipat, students of Chandigarh and total students are 64, 68 and 66 respectively. Therefore, majority of the students face the problems in writing chemicals equations and formulae.
- 22.In the 22nd question investigator asked to report the specific problems faced by them learning science. Only eight students reported following problems in learning science.

- a.They fail to understand the experimental activities explained verbally.
- b.They find it difficult to understand the embossed diagrams.

PROBLEMS OF TEACHERS IN TEACHING SCIENCE TO BLIND STUDENTS

Table 2 Responses given by the teachers

S. No. (Item No.)	No. of teachers =4 (Panipat)		No. of teachers =2 (Chandigarh)		Total No. of teachers =6	
	Yes	No	Yes	No	Yes	No
1	4	0	2	0	6	0
2	1	3	0	2	1	5
3	3	1	2	0	5	1
4	4	0	0	2	6	0
5	2	2	0	2	2	4
6	0	4	0	2	0	6
7	0	4	0	2	0	6
8	0	4	0	2	0	6
9	0	4	0	2	0	6
10	4	0	2	0	6	0
11	3	1	2	0	5	1
12	4	0	2	0	6	0
13	1	3	0	2	1	5
14	2	2	1	1	3	3
15	2	2	2	0	4	2
16	4	0	2	0	6	0
17	0	4	2	0	2	4
18	4	0	2	0	6	0

- 1.1st entry of table 2 reveals that responses given by all the six teachers of both schools are affirmative. Therefore it may be interpreted that science text books in Braillele are easily available in both the schools.
- 2.2nd entry of table 2 reveals that all the teachers expect one believes that number of other science related books in Braillele are not sufficient.
- 3.3rd entry of table 2 reveals that all the teachers expect one believes that number of other science related recorded books are sufficient.
- 4.4th entry of table 2 reveals that all the teachers of both the schools reported that there are science rooms in both the schools.
- 5.5th entry of table 2 reveals that two teachers of Panipat gave affirmative responses whereas other four teachers believe that teaching material in science rooms is not sufficient.
6. 6th entry of table 2 reveals that all the teachers from both the schools told that there is no science laboratory in either school.
- 7.7th entry of table 2 reveals that all the six teachers from both the schools told that there is no botanical garden in either school.



8.8th entry of table 2 reveals that all the six teachers from both the schools do not take the students to the botanical gardens as there is no botanical garden in either school.

9.9th entry of table 2 reveals that all the six teachers from both the schools do not teach science by experimental methods.

10.10th entry of table 2 reveals that all the six teachers from both the schools teach the complete syllabus in the class room.

11.11th entry of table 2 reveals that all the six teachers expect one believes that there is sufficient teaching material e. g. charts models etc. for teaching science.

12.12th entry of table 2 reveals that all the teachers use teaching material e. g. charts models in science teaching.

13.13th entry of table 2 reveals that five out of six teachers believes that number of embossed diagrams in Braille books is not sufficient.

14. 14th entry of table 2 reveals that three out of six teachers believes that the students can understand the embossed diagrams given in the books.

15.15th entry of table 2 reveals that four out of six teachers believes that they feel problems in teaching chemical equation and formulae.

16.16th entry of table 2 reveals that all six teachers believe that they make desirable adaptations in teaching science.

17.17th entry of table 2 reveals that two teachers of Chandigarh believe that science should be taught in higher classes whereas all the four teachers of Panipat do not believe so.

18.18th entry of table 2 reveals that all the teachers believe that they teach science with full interest to the blind students.

19.Item No. 19 is an open question. Teachers reported following problems in teaching science concepts to the blind students.

- a.It is time consuming.
- b.Teaching colour concepts is not possible.
- c.It is difficult to teach reaction based concepts.
- d.Problem of verbalism is common.

20.Item No. 20 is an open question teachers reported following other problems in teaching science.

- a. Teaching aids are not easily available.
- b.It is difficult to introduce the topic.
- c.It is difficult to teach the diagrams.

21.Item No. 21 is also an open question. Teachers gave following suggestions to improve the process of teaching/learning science with reference to the blind students.

- i.Science equipments should be adapted for the blind.
- ii.Teachers need to be committed.
- iii.Remedial measures should be taken by the teachers to teach science to the blind students.
- iv.More teaching aids should be provided to make process of learning science interesting.
- v.Arrangement for experimental work should be made.
- vi.More emphasis should be given on science teaching.
- vii.Science books should be modified according to the special need of the blind students.
- viii.There should be provision of science laboratory and well equipped science room.
- ix.They should be provision of excursions/science trips.

#### MAIN FINDINGS:

Problems of visually impaired students in learning science:-

- i.Majority of the blind students studying in either Panipat & Chandigarh perceive science as an interesting subject.
- ii.Majority of the students do not consider science as a difficult subject.
- iii.Most of the students, reported that science text books are easily available in Braille.
- iv.Majority of the students like the science related books and articles.
- v.Majority of the students like the listening of science related programmes on TV/Radio.



- vi. There is lack of other science related Braille books in both the schools.
- vii. There is no dearth of other science related recorded books in both the schools.
- viii. There are trained special teachers for teaching science in both the schools.
- ix. There are science rooms in both the schools.
- x. There is no science laboratory in either schools.
- xi. There is no botanical garden in either school.
- xii. As there are no botanical gardens so students can't visit the same.
- xiii. Science is not taught by experimental methods in both the schools.
- xiv. Majority of the students are able to solve numerical.
- xv. Majority of the students told that complete content matter of science is taught in class room in both the schools.
- xvi. Science related teaching aids e.g. charts, models are easily available in both the schools.
- xvii. Science related teaching aids e.g. charts, models are used during science teaching
- xviii. There are sufficient no. of embossed diagrams in science Braille book.
- xix. Majority of the students understand the embossed diagrams of science Braille books.
- xx. Majority of the students face the problems in reading chemical equation and formulas written in Braille.
- xxi. Majority of the students face the problems in reading and writing chemical equation and formulas.

- a. Students fail to understand the experimental activities explained verbally.
- b. Students sometimes find it difficult to understand the embossed diagram.

#### **Problems of teachers in teaching science**

- i. Science text books in Braille are easily available in both the schools.
- ii. Numbers of other science related books in Braille are not sufficient in either school.
- iii. Number of other science related recorded books are sufficient in both the schools.
- iv. There are science rooms in both the schools.
- v. Teaching material in science rooms is not sufficient in both the schools.
- vi. There is no science laboratory in either school.
- vii. There is no botanical garden in either school.
- viii. Teachers do not take the students to the botanical garden in either school.
- ix. Teachers do not teach science by experimental method in either school.
- x. Teachers teach the complete syllabus in the class room in both the schools.
- xi. There is sufficient material e.g. charts models etc. for teaching science.
- xii. Teachers use the teaching in science material e.g. charts models teaching in both the schools.
- xiii. Most of the teachers believe that number of embossed diagrams in Braille books is not sufficient.
- xiv. 3 out of 6 teachers believe that the students can understand diagrams given in books.
- xv. 4 out of 6 teachers believe that they feel problems in teaching chemicals equations and formulas.
- xvi. All the teachers make desirable adaptations in teaching science.
- xvii. 2 teachers of Chandigarh believe that science should be taught in higher class whereas all the 4 teachers of Panipat do not believe so.
- xviii. All the teachers believe that they teach science with full interest to the blind students.
- xix. Teachers reported following problems in teaching science concepts to blind students.

- a. It is time consuming.
- b. Teaching colour concept is not possible.
- c. It is difficult to teach reaction based concepts.
- d. Problems of verbalism are common.
- xx. Teachers reported following other problems in teaching science:

- a. Teaching aids are not easily available.
- b. It is difficult to introduce the topic.
- c. It is difficult to teach diagram.
- xxi. Teachers gave following suggestions to improve the process of teaching learning science with references to the blind students.

- a. Science equipment should be adapted for the blind.
- b. Teachers need to be committed.
- c. Remedial measures should be taken by the teachers to teach science to the blind students.

- d. More teaching aids should be provided to make process of learning science interesting.
- e. Arrangement of experiments should be made.
- f. More emphasis should be given on science teaching.
- g. Science book should be modified according to the special needs of the blind students.
- h. There should be provision of science laboratory and well equipped science room.
- i. There should be provision of excursions/ science trips.

#### CONCLUSION:

On the basis of the findings, investigator identified following problems in teaching/learning science with reference to the blind students studying in special schools.

1. There is lack of general science related books in Braille.
2. There are science rooms in special school but these are not properly equipped.
3. Science laboratory is not there in special schools.
4. Botanical gardens are not there in special schools.
5. Although students reported that sufficient numbers of embossed diagrams are present in science text book in Braille but majority of the teachers do not agree with it.
6. Students find it difficult to read and write chemicals equations and formulae. Teachers also find it difficult to teach.
7. Teachers/ students reported that teaching lacks experimental methods.
8. Students find it difficult to understand the practical activities explained verbally.
9. Students as well as teachers feel that students sometimes find it difficult to understand embossed diagrams.
10. Teachers face following problems in teaching science concepts.
  - a. It is time consuming.
  - b. Teaching colour concept is not possible.
  - c. It is difficult to teach reaction based concepts.
  - d. Problems of verbalism are common.
11. Teachers reported other problems in teaching science such as:
  - a. Teaching aids are not easily available.
  - b. It is difficult to introduce the topic.
  - c. It is difficult to teach diagram.

Teachers gave following suggestions to improve the science teaching/learning with reference to the blind students.

1. Science equipment should be adapted for the blind.
2. Teachers need to be committed.
3. Remedial measures should be taken by the teachers to teach science to the blind students.
4. More teaching aids should be provided to make process of learning science interesting.
5. Arrangement of experiment should be made.
6. More emphasis should be given on science teaching.
7. Science book should be modified according to the special needs of the blind students.
8. There should be provision of science laboratory and well equipped science room.
9. There should be provision of excursions/science trips.

#### EDUCATIONAL IMPLICATIONS

The findings of the study have ample education implication for special teachers, science teachers, school authorities' parents of the blind students.

1. Study reveals that blind students perceive science as an interesting but not difficult subject. It means that blind students can learn science concepts satisfactorily if appropriate teaching strategies are adopted and adequate facilities are provided to the students.
2. General science books Braille should be provided in sufficient numbers.

- 3.Science concept should be made clear by adopting experimental methods.
- 4.There should be a provision of laboratory and botanical garden in the school.
- 5.Science room should be properly equipped.
- 6.Special attempts should be made to teach embossed diagrams.
- 7.Science code must be taught so that the students can understand chemicals equations and formulae.

#### REFERENCES

- I.Muruganandam, S. 1990. Development of teaching-learning strategies in teaching science for visually impaired children M.Phil., Edu. Madurai Kamaraj University.
- II.Kansal Sarita, (1995), Problems in teaching of home science in high schools of Kurukshetra; Unpublished M.Phil. Dissertation Kurukshetra University Kurukshetra
- III.Harrison, F. (1993). Living and learning with blind children: a guide for parents and teachers of visually impaired children. Toronto, ON: University of Toronto Press
- IV.Holbrook, M. C. (1996). Children with visual impairments: a parents' guide. V.Bethesda, MD: Woodbine House
- VI.Holbrook, M. C. & Koenig, A. J. (2000). Foundations of education (2nd ed.). New York, NY: American Foundation for the Blind.
- VII.Loumiet, R. & Levack, N. (1993).Independent living: a curriculum with adaptations for students with visual impairments. Austin, TX: Texas School for the Blind and Visually Impaired
- VIII.Smith, M. & Levack, N. (1996).Teaching students with visual and multiple impairments: a resource guide. Austin, TX: Texas School for the Blind and Visually Impaired
- IX.Wolffe, K. E. (1999). Skills for success:a career education handbook for children and adolescents with visual impairments. New York, NY: American Foundation for the Blind

# Publish Research Article International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished research paper.Summary of Research Project,Theses,Books and Books Review of publication,you will be pleased to know that our journals are

## Associated and Indexed,India

- ★ International Scientific Journal Consortium      Scientific
- ★ OPEN J-GATE

## Associated and Indexed,USA

- Google Scholar
- EBSCO
- DOAJ
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Databse
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database

Indian Streams Research Journal  
258/34 Raviwar Peth Solapur-413005,Maharashtra  
Contact-9595359435  
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com  
Website : www.isrj.net