Chapter 2 at a glance

Review of related literature

- Problem of socio-economic deprivation in India
- Oral communication
- Vocabulary
- Reading skills
- Multiple intelligences
- Education reports in India
- Fundamental

Literature through books, journals, websites related to

- Child psychology
- Language development
- Story and poem books for children
- Brain based theories
- Multiple intelligences
- Research methodology
- Literature studies using brain based principles

Activities

- Education reports in India
- Research methodology

Fundamental Language studies using brain based principles

Educational reports in India

Research methodolgy

Brain based theories

Multiple intelligences

Communication

Activities

Child psychology

Language development

Story and poem books for children

Brain based theories

Multiple intelligences

Review of related literature

Depressed students’ language development

Oral communication

Vocabulary

Reading skills

Multiple intelligences
CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCHES

2.0 Introductory

In the first chapter, the development of the research problem was elaborated. It is an important step to take a review of the research journals, books, dissertations, thesis and other sources of information on the problem to be investigated. Such review helps in avoiding duplication of work and also provides new insight into planning and conduct of research undertaken.

In this chapter, review of related literature and researches is summarized.

2.1 Importance of review of literature and researches

The review of the literature is an important part of the scientific approach.

"The research literature can tell you what is known about a given educational question, and this knowledge can be weighed and interpreted in terms of the local situation."

(Borg, 1987, p-20)

The review of related literature provides strong theoretical base to the study and shows a path of knowledge to researcher. Review of related researches is also important.
"Effective research is based on past knowledge, this step helps to eliminate the duplication of what has been done and provides useful hypotheses and helpful suggestions for significant investigation."

(Best & Kahn, 2009, p-39)

The related researches provide the researcher with a framework within which researcher can interpret findings. It gives a researcher complete and thorough information on the work done in the country and abroad, in the specific area of the research. It also helps the researcher to know methodology, tools, sample and techniques of analysis. The important specific reason for reviewing the related researches is to know about the recommendations of previous studies for further research which they have listed in their thesis.

The general purpose of the review is to help the researcher develop the understanding and insight into previous work and the trends that have emerged. The review can also help in reaching a number of important specific goals.

In the present chapter, review of literature and researches has given.

2.2 Identification of the related literature and researches

The first step in reviewing the related literature is the identification of the material that is to be read and evaluated. The identification can be made through the use of primary and secondary sources available in the library.

In the primary sources of information the author reports his own work directly in the form of the research articles, books, monographs, dissertations or theses. Such sources provide more information about a study than can be found elsewhere. Primary sources give the researcher a basis on which to make his own judgment of the study.
Though consulting such sources is a time-consuming process for a researcher, yet they provide a good source of information on research methods used.

In secondary sources, the author compiles and summarizes the findings of the work done by others and gives interpretation of these findings. In them, the author usually attempts to cover all of the important studies in an area in the form of encyclopedia of education, education indexes, abstracts, bibliographies, bibliographical references and quotation sources. Working with secondary sources is not time-consuming because of the amount of reading required. The disadvantage of the secondary sources, however, is that the reader is depending upon someone else’s judgments about the important and significant aspects of the study.

The present study is related to oral communication and findings of brain based researches.

2.3 Review of related literature

The present study is related to findings of brain based researches. These researches were mostly done in the countries like America and England. As the area is new very few books are available in the libraries in Maharashtra related to this subject. Websites of the researchers and articles in journals are the main sources of literature. Literature available is categorized and summarized below.

2.3.1 History of Neuro-science and education

The neuro-science has a long history. The patients of different brain injuries were real sources of new inventions. Major attempts related to language learning are mentioned below chronologically.

1800: Broca and Wemicke were two physicians. They did autopsies on patients who had several language difficulties before their deaths. These physicians found
damage to particular areas of the brain now named after them, and these areas were consistently on the left hemisphere.

Early 1950: the famous neurosurgeon Wilder Penfield and his colleague Herbert Jasper described how electrical stimulation of certain areas of the brain blocked language. These neurosurgeons were able to perform these studies asking their patients questions during the surgical procedure.

1960: Another technique was discovered that allowed researchers to study the brain mechanisms of language. This method, called the Wada Test, uses a fast-acting anesthetic called sodium amytal (amobarbital) to put one hemisphere of the brain asleep. The sodium amytal is injected into the right or left carotid artery. The right artery supplies the right cerebral hemisphere and the left artery supplies the left cerebral hemisphere. Therefore, either the right or left hemisphere can be ‘put to sleep’ temporarily. If the left hemisphere is put to sleep in people who have language ability in the left hemisphere, then when asked to speak, they cannot. However, if the right hemisphere is put to sleep, then these people are able to speak and answer questions.

Late 1980: Dr. George Ojemann at the University of Washington has used electrical stimulation experiments to show that there can be a large difference in the brain area that is important for language from person to person. Nevertheless, the results of these studies agree with the earlier findings of Broca and Wernicke.

2.3.2 Recent findings in brain related to education

Brain imaging technique is the most recent technique to study language centers. Positron emission tomography studies show that many of the expected areas of the brain have increased blood flow during language tasks, but there are also areas on both hemispheres that are activated. Therefore, it appears that even the hemisphere that is not dominant for language (usually the right side) has some involvement in language.
“Actually, people have problems communicating the emotions involved with language when they have damage to the right side of the brain in the area where on the left side it is used for language.”

(Boeree, 2010, p-2)

Nowadays, the technology regarding these researches is much advanced.

“Fortunately there are several noninvasive ways of evaluating electrical brain activity in humans and these relate to the behavior of thousands or millions of neurons that are linked together in particular brain regions. Electroencephalography (EEG) and magnetoencephalography (MEG) measure electrical and magnetic activity arising from the brain. Recordings are made with electrodes placed on the skull. Blood flow is an indicator of brain activity and can be measured using brain imaging techniques. Blood flow is to region of the brain in which neuronal activity is highest and that require a replenishment of oxygen and glucose. Positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) detect changes in blood flow. Recordings are made in special brain scanners.”

(Blackmore-Frith, 2005, p-14)

2.3.3 Learning process in the brain

The synapse is the junction between two neurons. One neuron’s axon connects with a second neuron’s dendritic terminals. When a nerve impulse occurs in the first neuron, neurotransmitters are released from the axonal terminal the first neuron and are received by the receptors of the dendritic spines of the second neuron.

This process occurs while learning. Therefore, brain science with education is an upcoming way of learning and teaching.
The structure of related brain organs

The human brain is a unique organ. It is a miracle. Brain receives information and relays it to the appropriate locations for processing. The brain is just like a king of whole body.

As, Patricia Wolfe describes in ‘Brain matters’,

“It is the source of cognition, memory, thoughts and what we call intelligence. Your ability to speak and understand the speech of others comes from the brain. You don’t have to worry about controlling your heart rate, respiration, breathing, hormone secretion, or immune system; the brain does this for you unconsciously and automatically.”

(Wolf, 2001, p-2)

The brain is one of the most complex systems in the universe.

Neuro-scientific research has thrown a light on how the brain learns. Recent advances in technology have provided an amazing tool for neuroscientist to discover more about how the brain functions. Techniques such as brain imaging, which measures activity in the brain as people perform a certain task, have significantly pushed forward our knowledge of the human brain and mind. Brain scientist can now offer some understanding of how the brain learns new information and deals with it throughout the life.

The diagram of the brain structure is given below.
The brain structures such as, the brain stem, cerebellum, amygdala and hippocampus play critical roles in our ability to process information and form memories.
1. The cells:

The entire body is composed of cells. Each cell or group of cells has a specific job to perform. The cells that constitute the central nervous system comprise the brain and the spinal cord along with the endocrine system. They provide most of the control functions for the body. Two types of cells make up the central nervous system, neurons and glial cells.

![Figure No. 2.2 - The structure of cell](Source: www.dnaletters.com)

a) Neuron:

Neurons are found primarily in the brain and the spinal cord. Number of these cells is approximately 100 billion. They differ from the other cells in two major ways:

(i) They do not appear to regenerate on a regular programmed basis, as do most other cells.
(ii) Neurons communicate with one another and form networks by means of electrical and chemical signals. To do this they need a different design from other cells. In each neuron, thousands of short projections called dendrites and a single axon, which is usually covered by a fatty substance called myelin. Dendrites receive information from other cells. The main job of the axon is to send information to other cells. The end of the axon splits into branches, each of which ends in an axonal terminal or bulb. Neurons communicate electrochemically by passing messages at the junction (known as synapse) between axonal terminals and spines on dendrites or cell bodies.

![Figure 2.3 - The synapse](Source: www.mybrainnotes.com)

b) Glial cells:

The glial cells are different from neurons. They do not participate directly in electrical signaling as neurons do. One of the primary roles that glial cells play is in the development of the fetal brain. Oligodendrocytes, this type of glial cells, lay down myelin, a laminated wrapping around some (but not all) axons. It plays an important role in learning.
2. Brain stem:

The important role of the brainstem is in the production of many of the brain’s chemical messengers.

3. Thalamus

Thalamus has been called the gateway of the cortex. Because nearly all inputs from the sensory organs travel first to nerve cell bodies in the thalamus, where the signals are sorted and sent to the receiving areas on the cortex.

4. Amygdala

Amygdala is involved in processing emotions.

The thalamus is sending information to the cortex; it sends the same information to the amygdala for evaluation. If the stimuli are harmful, it triggers the hypothalamus.

(Wolfe, 2001, p-27)

5. Hippocampus

Hippocampus holds memories of our immediate past and it dispatches the memory to the cortex, where it is stored as long-term memory.

Here is the information of the part of the brain that allows us to be aware, to recognize and to talk about how we’re feeling and what we are thinking – the structures that operate at the conscious level.

6. The cerebral cortex or neo cortex

This outermost part of brain is newest in evolution of brain. It is wrinkled. It is made up of six layers of cells, their dendrites and some axons. The neo cortex has four
lobes. a) Occipital lobes, b) Temporal lobes, c) Parietal lobes and d) Frontal lobes. These lobes have separate functions.

a) Occipital lobes:
This area is also called as visual cortex. This is the area of general scanning, stereo vision, depth, distance and object detection. Visual stimuli become meaningful when sensory perceptions are matched with previously stored cognitive associations.

b) Temporal lobes:
The main function of temporal lobes is to process auditory stimuli. At the conjunction of the left occipital, parietal and temporal lobes (but lying mostly in the temporal lobes) is a group of cells known as Wernicke’s area. It is located in the left hemisphere. It allows us to comprehend or interpret speech and to put words together in correct syntax when speaking.

c) Parietal lobes:
The parietal cortex which can be divided into superior (higher) and inferior (lower) sections is involved in spatial manipulations and in arithmetic and number understanding.

The posterior part of the parietal lobes continuously analyzes and integrates all this information to give you a sense of spatial awareness.

d) Frontal lobes:
The frontal lobes occupy the largest part of the cortex and perform the most complex functions. Our ability to move parts of our body at will, think about the past, plan for the future, focus our attention, reflect, make decisions, solve problems and engage in conversation are all possible because of this highly developed area.
Toward the back of the frontal lobes is a strip of cells known as motor cortex. Nearly all neural activity directing muscular movement originates in the brain’s motor cortex.

In the front of the motor cortex is a supplemental motor area. This area contains an extremely important group of nerve cells known as Broca’s area. This is the part of the cortex that allows us to speak. Broca’s area is located in left hemisphere of the supplemental motor area in about 95 percent of the population. (The other five percent, approximately 30 percent of left-handed person, have the speech production area in the right hemisphere.) Broca’s area is connected to Wernicke’s area by a bundle of nerve fibers. This linkage is important because before any speech can be uttered, its form and the appropriate words must first be assembled in Wernicke’s area and then relayed to Broca’s Area to be translated into the proper sounds. This information is then passed to the motor cortex for vocal production.

This is information related to brain and education. For the present study, the specific organs, its functions and their relation with oral communication were considered for planning the activities in the program.

7. Left and right hemisphere

Looking down from the top, the whole brain appears to be composed of two seemingly identical halves, known as left and right hemisphere. These two hemispheres are joined with bundles of fibers. The connection between the two halves is a bridge called corpus callosum.

The left hemisphere is much concerned with language. The right side is concerned with spatial matters, recognition of faces and many visual patterns and music. The figure 2.4 is given below.
Figure 2.4 - Left and right brain

(Source: http://ninespv.wordpress.com :)

EXPERIENCE =

USABILITY/ANALYTIC + DESIGN/CREATIVE

Left-Brain Functions
- Analytic thought
- Logic
- Language
- Science and math

Right-Brain Functions
- Holistic thought
- Intuition
- Creativity
- Art and music
The functions of left and right brain are given below.

Table 2.1 - Left and right brain

<table>
<thead>
<tr>
<th>Left Brained Functions</th>
<th>Right Brained Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses logic</td>
<td>Uses feeling</td>
</tr>
<tr>
<td>Facts rule</td>
<td>Imagination rules</td>
</tr>
<tr>
<td>Words and language</td>
<td>Symbols and images</td>
</tr>
<tr>
<td>Present and past</td>
<td>Present and future</td>
</tr>
<tr>
<td>Math and science</td>
<td>Philosophy and religion</td>
</tr>
<tr>
<td>Reality based</td>
<td>Fantasy based</td>
</tr>
</tbody>
</table>

2.3.5 Consideration of brain based principles

According to various researches on brain-based learning, environment, diet, amount of sleep, music, color, oxygen, movement, exercise, water intake all affect on our brain responses and learning. For better learning, positive emotions, scope to imagination and creativity, learning involving music, thought of whole brain learning are essential.

In the present study, the principles given below were considered. But diet, amount of sleep, water and oxygen, such principles related to physical and some principles related to their home environment, were not taken into consideration.

Principles applied in the present program, are shown in figure 2.5 given below and are elaborated after that.
(1) Enriched and joyful environment enhances learning

The stimulation of an enriched and joyful environment results in significant physiological change in the brain, compared to brains in sterile, boring environment.
(2) Emotions increase retention

Emotions drive attention. Attention drives learning, memory and problem-solving. “Emotion is double edged sword, with the ability to enhance learning or impede it.”

(Wolfe, 2001, p-111)

Thus, Positive emotions are very important for learning and for the particular age group.

(3) Consideration of whole brain learning is effective

Need to put more emphasis on teaching to both halves of the brain, since they work together all the time. Content (the text in which the left hemisphere excels) is important but text without context (the specialty of the right hemisphere) is often meaningless.

(4) Cognition is the base of all type of learning

Cognition is a term referring to the mental process involved in gaining knowledge and comprehension, including thinking, knowing, remembering, judging and problem-solving. These are higher-level functions of the brain and encompass language, imagination, perception and planning.

(5) Imagination is mind’s eye of the brain

Imagination is the ability of forming mental images, sensations, and concepts, in a moment when they are not perceived through sight, hearing or other senses.
(6) Creativity is the best mental tool

Creativity is marked by the ability or power to create, to invest with a new form, to produce through imaginative skill, to make or bring into existence something new. Creativity is required for the flexibility and originality to go beyond imitation.

(7) Music is method of storing information

Music is a complex neural activity. Sound waves enter our ears and are converted into nerve impulses. From there, the impulses are transmitted to specialized regions of our left and right temporal lobes for processing. Many musical experiences can activate the cognitive, visual, auditory, affective and motor systems.

(8) Movements are essential to stimulate the brain

Any type of movement is helpful for neural activities. Running, jumping or playing is a need of children's brain. Movement with the music or rhyme provides an extra sensory input to the brain and enhances the learning.

2.3.6 Consideration of Multiple Intelligences

American scientist and educationist Dr. Howard Gardner elaborated the 'Theory of Multiple Intelligences'. As per this theory he stated that every person has a special and unique brain, with the set of intelligences. He explored ten intelligences.

1. Verbal Intelligence:

- This area is specialized with words. The children of this area are good at reading, writing, telling stories and memorizing words along with dates. They tend to learn best by reading, taking notes, listening to lectures, and discussion and debate. They are also frequently skilled at explaining, teaching and oration or persuasive speaking.
- For providing the opportunity of this intelligence many activities were formed. As, the game of the names - ‘Be quick’ was played. Imagine and tell: The organs like hands and teeth, tongue and stomach are talking with each other.

2. Mathematical intelligence:

- This area is specialized with logic, abstractions, reasoning, and numbers. The children of logical mathematical intelligence naturally excel in mathematics, chess, and other logical or numerical activities.

- While giving activities, the students were asked to converse about their home. How many people are there? Who are small? How many rooms are there?

3. Intra-personal intelligence:

- This area is a specialty of introverts. They are highly self-aware and capable of understanding their own emotions, goals, and motivations.

- The children of this intelligence learn best when they allowed to concentrate on the subject by themselves. In this study, they asked to imagine about the meaning of their name.

4. Interpersonal intelligence:

- Interaction with others is a specialty of this area. They communicate effectively and empathize easily with others. They typically learn best by working with others and often enjoy discussion and debate.

- In this study, many activities were given for interacting with other students. As, role play, or discussions about the celebrations of various festivals.
5. Spatial intelligence:

- This area is specialized with vision and spatial judgment. People with strong visual-spatial intelligence are good at visualizing and mentally manipulating objects.

- The children with strong spatial intelligence are proficient at solving puzzles. They have a strong visual memory and a very good sense of hand-eye coordination.

- Picture reading about home, picture reading about village or city. Hearing the poem and answer the questions. These activities were taken for this intelligence.

6. Bodily-kinesthetic intelligence:

- This is the area of physical activities. Children of this intelligence learn better by doing something physically, than reading or hearing about it.

- The activities like singing a poem with actions, drawing a picture on given subjects were arranged.

7. Musical intelligence:

- This musical intelligence is related with rhythm, music, and hearing. The children of this intelligence show a greater sensitivity to sounds, rhythms, tones and music.

- The children with this intelligence, learn best via lecture. They use songs or rhythms to learn and memorize information.

- The activity as, singing of poem with actions and with instrument were taken many times.
Naturalistic intelligence:

- Love with nature, is a speciality of naturalistic intelligence. Children of this intelligence have greater sensitivity to nature.

- Naturalists children learn best when the subject involves collecting and analyzing, or is closely related to something prominent in nature.

- In this study, the opportunity was given to talk about two related things, Such as, rain and peacock, rain and plant. Drawing the sky.

Existential intelligence:

- One’s capacity to raise philosophical questions about life, death, and ultimate realities.

Spiritual intelligence:

- This intelligence is related to spiritual experiences.

The last two intelligences, Existential and Spiritual are under experiment that is why; first eight intelligences were taken into consideration in the present study.

The present study is designed for Development of Brain-based Program for Enrichment of Oral Communication of 1st Std Deprived Students. As per the brain researches, learning means making synapses. Growth and multiple branching of the dendrites and axons is the brain’s response to rich sensory input from an enriched environment.

The first standard means the children of six years. According to brain research, first ten years are very much important for acquiring education – especially language.
education. As deprived students lack rich experiences regarding language acquisition, it brings forth need to provide them same through systematic efforts based on findings of brain research. The stimulation of an enriched environment results in significant physiological change in the brain.

The present study is designed to give them opportunities to activate their brain regions related to oral communication, as well as the whole learning process.

2.4 Review of related researches

As per the objectives of the present study, several researches were reviewed. The researches on following areas, such as - brain based principles, language development in general, but specifically on oral communication, deprived students of 1st standard, were studied.

Researcher received the researches from the following sources. For this purpose researcher visited various libraries and websites. The list is given below.

1. S N D T W.o m e n U n i v e r s i t y, Pune
2. S N D T W.o m e n U n i v e r s i t y, M u m b a i
3. I n d i a n i n s t i t u t e o f E d u c a t i o n, Pune
4. P u n e U n i v e r s i t y, Pune
5. D e c c a n C o l l e g e, Pune
6. M a h a r a s h t r a S t a t e B o a r d o f t e x t b o o k s, Pune
7. S C E R T , Pune
8. D n y a n P r a b o d h i n i, Pune
9. M u m b a i U n i v e r s i t y, M u m b a i
10. A k s h a m a n d a n s c h o o l l i b r a r y, Pune
11. w w w . e r i c s e a r c h . c o m
W hile going through the researches, it is observed that brain based researches were few in number. But several studies were found on deprived students related with language development. The conclusions of these studies were also similar. The studies on primary education, especially on 1st standard, were also few in numbers. W hile searching the researches, experim ental and descriptive studies were found.
Classification of related researches was done. It is shown in figure below.
The researches obtained were classified in two major categories.

1. Researches related to brain based principles

2. Language development in deprived students

Researches related to brain based principles are classified in three categories.

1. Fundamental

2. Applied

3. Literature survey

Language development in deprived students is classified in two major categories.

1. Experimental

2. Descriptive

2.4.1 Researches related to brain based principles

Fundamental researches

1) Title: A theory of neurological processes in language acquisition: A qualitative meta-analysis

Researcher: Caraballo Olivera, Michael Anthony

Year: 1994

Objectives: To develop a theory of language acquisition based on neurological processes in the brain, which connects linguistic and psychological constructs to make it both holistic and heuristic.
<table>
<thead>
<tr>
<th>Method</th>
<th>The literature review, a meta-analysis of the literature review, and the development of the theory.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>Through the use of qualitative meta-analysis, the researcher integrated findings and interpretations of research on neurological processes and the process of language acquisition, and analyzed them within constructs of function and interrelated processes.</td>
</tr>
<tr>
<td>Recommendation</td>
<td>The researcher recommends validating of the principles and concepts of the theory through experimental research in neuro-linguistics and language acquisition and descriptive research in sociolinguistics and language acquisition.</td>
</tr>
</tbody>
</table>

2) Title  
Connecting neuroscience and education: The neural correlates of phonemic awareness in normal reading children

Researcher: Pare-B lagoev, Elizabeth Juliana

Year  2006
Abstract
This study describes and addresses conceptual and practical challenges to connecting neuroscience and education, and presents results from a neuro-imaging study of phonemic awareness in normal reading children.

This study presents results from an fMRI neuro-imaging study of phonemic awareness skills. Previous studies of phonological processing have mostly used adult subjects; the current study employed children who are highly proficient readers. The task was based on a fully normed item from a neuro-psychological test battery, which contrasts with the somewhat ad hoc nature of the tasks often used for fMRI studies.

Conclusion
1) Children’s reaction time is longer than adults.
2) Phonemic processing is more effortful, less automatized for children than adults.

3) Title
Speaking in Multiple languages: Neural correlates language proficiency in multilingual word production

Researcher
Videsott, Gerda, Herrberger Barbel, Hoening Klaus, Schilly Edgar, Grothe Jo, Wister Werner, Spitzer Manfred, Kiefer Markus

Type of research
Journal Articles; Reports – Research

Year: 2010

Abstract
The human brain has the fascinating ability to represent and to process several languages. Although the first and further
languages activate partially different brain networks, the linguistic factors underlying these differences in language processing have to be further specified. Researchers investigated the neural correlates of language proficiency in a homogeneous sample of multilingual native Ladin speakers from a mountain valley in South Tyrol, Italy, who speak Italian as second language at a high level, and English at an intermediate level.

Conclusion
The results demonstrate the significance of right prefrontal areas for language proficiency. Right prefrontal cortex supports language proficiency by effectively supervising word retrieval.

Applied researches

1) Title
The impact of recent brain research on changing the instructional delivery of elementary teachers

Researcher
Smith, Debra, Ann Pellegrino

Year
1999

Objective
To measure the instructional delivery of teachers

Sample
Six teachers and random sampling of subjects

Method
Experim ental method

Conclusion
All trained teachers had made their classrooms absent of
threat and enabled their students to take risks. Indicators such as classroom arrangements, absent of sarcasm, negative feedback, the attentiveness of students, preparedness of students were overwhelmingly successful.

2) Title
The effect of using a multiple intelligence-based training program on developing English majors' oral communication skills

Researcher
Abdullah M. Abim M. M. M. Sayed

Year
2005

Objectives
To investigate the effect of using Multiple Intelligences based training program on developing first year English majors' oral communication skills.

Method
Experimental

Statistical techniques
T-test and effect size formulas

Sample
30 students

Tools
1. Oral Communication test
2. Multiple Intelligences based training program

Conclusion
There was a significant difference between pre and post test.

Sample
113 students
Method  
Experimental method

Statistical technique  
ANCOVA, 't' test

Conclusion  
There was significant difference in the experimental group students' academic achievement point which was studied with BBL as compared to those of the control group students.

3) Title  
इयत्ता नववीच्या इंग्रजी विषयाच्या एका घटकासाठी बहुविध बुद्धिमत्ता उपागम बापून केलेले अध्यापन व नेहमीचे वर्गाध्यापन याच्या परिणामकारकतेचा तौलनिक अभ्यास

Researcher  
Kadam Suvarna

Type of research  
Dissertation

Year  
2008

Objectives  
1. Plan a lesson using the theory of multiple intelligences
2. To compare the effectiveness of students' achievement with the teaching of using the approach of multiple intelligences.
3. To compare the effectiveness of students' achievement with the learning of using the theory of multiple intelligences.

Tools  
Multiple intelligences test.
Method
Experimental

Conclusion
1. There is a significant increase in the experimental group students’ achievement, as compared to control group due to use approach of multiple intelligences
2. Students participate more in learning activities consistent with their intelligences.

4) Title
Teacher and child talk in active learning class and whole-class contexts: some implications for children from economically less advantaged home backgrounds.

Researcher
Martlew; Joan, Ellis; Sue, Stephen; Christine, Ellis; Jennifer

Year
2010

Objectives
1) To compare social studies instruction based on the brain-based instruction (BBI) and traditional teacher-centered method.
2) To search the effects of BBI on elementary school sixth grade in social studies instruction students’ academic achievement and motivation.

Tools
1) Academic Achievement Test of Social Studies
2) The Interview method.
Sample 150 children and six primary teachers.

Conclusion Active learning pedagogies were introduced into the first year of primary schools. Although active learning increased the amount of talk between children, those from socio-economically advantaged homes talked more than those from less advantaged homes.

Recommendation Policy-makers and teachers should pay particular attention to the implications of this for the education of children from economically less advantaged home backgrounds.

Literature survey

1) Title Mini literature review based on brain research and its effect on educational practice

Researcher Hall, Amita Rena

Year 2007

Objectives To look at brain research and its effect on educational practice

Abstract This review looks at the implication of brain research and examines the relationship between the functionality of the brain, multiple intelligences and the educational practices occurring in our schools on a daily basis. Gardner's theory
classifies human intellectual competencies in a totally new way, with more specific criteria than the traditional choice between "verbal" or "mathematical" (Hanson; & Hyun).

Gardner's system of classification has already had a significant impact on how we think about the learning process, teaching, testing and even the nature of thought itself. Included in this review, each of Gardner's intelligences and how these can be used in educational settings to assist children understand and achieve in a manner tailored to their learning styles and functioning abilities.

2) Title
Enhancing student learning with brain based research

Researcher
Bonnema Ted R.

Year
2009

Method
Survey

Abstract
A rapidly growing quantity of research currently exists regarding how the brain perceives, processes, and ultimately learns new information. In this paper, the author surveys current literature to identify foundational instructional strategies that are supported by brain-based research.

(1) An overview of research findings with respect to the information processing and memory functions of the brain.
(2) Overarching areas of instructional strategies that are supported by current research.
Recommendations

In order to maximize their teaching efficacy, educators should have a basic understanding of key memory functions in the brain, and how these functions relate to student learning.

3) Title

The global aspect of brain based learning

Researcher

Connel J. Dianne

Year

2009

Abstract

During the past 20 years the field of BBL has grown tremendously. It is reasonable to expect that its research and applications to teaching and learning will continue to expand in the United States and in many countries around the world. The newest multiple intelligences (MI) brain research has three advantages: first, it provides educators access to brain research to make academic brain-based connections to teaching and learning. Second, it allows educators to design classroom and school environments that accommodate a growing diverse group of student learners.

Conclusions

It is becoming clear that BBL research and strategies provide a solid foundation for educators around the world to create successful Learning and the Brain Communities, a type of "comm unit y" based upon two principles: (1) creating a learning atmosphere that intentionally welcomes and accepts all learners and (2) using effective, research-based academic BBL strategies to enhance student learning.
Summary

There are total 12 researches related to Application of brain based principles. Three researches are fundamental. Six researches are applied. Three researches are literature reviews. All these researches were obtained from the source of internet, from Eric-search, proquest and j-store websites. Two studies were based on MI theory.

Comparison with present study

These studies helped researcher to know more about brain functions; especially the scientific knowledge regarding learning process or language development.

The fundamental studies of Pare-Blagoev and Elizabeth Juliana’s Research is on phonemic awareness and normal reading. Specifically Prof. Duman’s study is closely related. His study was to measure the effect of brain-based instruction to improve on students’ academic achievement in social studies instruction. His program was developed for 6th grade students. The teacher-student talk in active learning class was studied by Mathew; Joan, Ellis; Sue, Stephen; Christine, Ellis; Jennifer. They also implemented brain based instructions. The theory of multiple intelligences was discussed in the study of Suvana Kadam and Abdullah M. Ahamad M. Ahamad Syed. The literature review by Connell J.D. Diane or Bonnem a Ted R. was useful for brain based learning.

2.4.2 Language development in deprived students

Experimental researches

1) Title Language development in socially disadvantaged and socially non-disadvantaged children

Researcher Reddy Govinda
<table>
<thead>
<tr>
<th><strong>Type of research</strong></th>
<th>Ph.D thesis</th>
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<tbody>
<tr>
<td><strong>Year</strong></td>
<td>1988</td>
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</table>
| **Objectives**       | 1) To know the effect of home background on language development of children  
                       2) To know the effect of social disadvantage on language development |
| **Tools**            | Duncan’s multiple tests, Tucky’s test |
| **Sample**           | 720 children |
| **Method**           | Experimental |
| **Statistical technique** | ANOVA, chi-square |
| **Conclusions**      | Urban children, socially advantage children, those from higher grades performed better than rural children, socially disadvantaged children and those from lower grades, respectively. |

2) **Title**  
An investigation into the relationship between language ability, ordinal position, habitation and parental income among deprived primary school students
Researcher: Devi C. B

Type of research: Ph.D. thesis

Year: 1991

Objectives:
1) To identify the relationship between language ability and ordinal position, habituation and parental income among primary school children of deprived families
2) To identify the relationship between language ability and parental income.

Tools: Language ability test developed by the researcher.

Sample: 203 students studying in VIII in 11 randomly selected schools

Method: Experimental method

Statistical techniques: ANOVA and 't' test

Conclusions:
1) The ordinal position affected the language ability of the children among the deprived families. 2) Parental income played a significant role in language development.
3) Title  
Some aspects of language development among Hindi speaking children in deprivational/non-deprivational environment: A psycho-linguistic study

Researcher  
Mishra, Babban and Tripathi, L.B.

Type of research  
Independent study

Year  
1991

Objectives  
To study the effect of deprivation on the development of Hindi language in children

Tools  
1. Prolonged deprivation scale of Mishra and Tripathi
2. Tests of Hindi syntactic development
3. Performance test of locative prepositions

Sample  
420 children

Method  
Experimental method

Statistical technique  
ANOVA, trend analysis and other tests of significance

Conclusions  
1. Differential impact of deprivation was observed on variation in choice of word order for the expression of locative relationship between the pair of object.
2. The type of home environment or level of deprivation did
change the type of communication category being used by children while talking to their others

4) Title
Enhancing the reading skills of advantaged and disadvantaged children of std 1 through systematic reading of children’s literature.

Researcher
Suja Koshy

Year
2001

Objective
To study the impact of the reading of children’s literature on the decoding skills and the reading skills of the advantaged and disadvantaged children of std. 1

Tools
1. Picture story telling test.
2. Reading readiness test.

Sample
120 children

Statistical technique
$t$ test

Conclusions
1) This study has found support for the use of children’s literature for enhancing reading and listening skill of children.
2) Clear evidence has found that even the schools can make important early contributions to the emergence of early
The importance of emergent literacy skills as a foundation for proficient reading has led to the development of interventions to teach these skills. These interventions are particularly important for children from disadvantaged homes because they often lack the home literacy experiences necessary for building foundational literacy skills prior to school entry.

In this study, teachers explicitly taught the narrative structure to kindergarten and first grade children in high poverty schools to increase their comprehension of children’s literature. Instruction was delivered as children listened to stories during daily story time.

The findings indicate that children who learned story structures recalled more ideas from new stories and answered more questions about structural elements of those stories (e.g., who is the main character?). The results
suggest that teachers can deliver effective comprehension instruction to emergent and beginning readers in the context of listening comprehension activities.

Descriptive studies

1) Title
   Acquisition of mother tongue in different social groups (Malayalam)

Researcher
   Nair, Sukumaran, B

Year
   1980

Objectives
   (i) To understand the socio-linguistic aspects of language acquisition,
   (ii) To find out the relationship between linguistic variables and extra linguistic factors such as age, caste, class and degree of socialization

Conclusions
   1. Consistent differences in the linguistic behavior of children of different social classes were observed. The children of the upper middle class manifested stronger tendencies of correct acquisition of linguistic features than their lower class counterparts.
   2. The socializing environment accelerated the pace of linguistic development.
<table>
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<tr>
<th>2) Title</th>
<th>First language (Telugu) development in children, a</th>
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<tbody>
<tr>
<td>Researcher</td>
<td>N imala, C.</td>
</tr>
<tr>
<td>Type of research</td>
<td>Ph.D. thesis</td>
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<tr>
<td>Year</td>
<td>1981</td>
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<tr>
<td>Objective</td>
<td>To describe the first language acquisition and development in Telugu children.</td>
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<tr>
<td>Tools</td>
<td>4 children in the age range 1.5 years to three years</td>
</tr>
<tr>
<td>Conclusions</td>
<td>1. In mastering the consonants and consonant clusters, children actively used three major phonological processes—deletion, substitution and assimilation.</td>
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<td>2. Children acquired the past tense first followed by the non past.</td>
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<td>3. Acquisition of extended verb meanings by children created laughter as the verbs were used in the literal sense without knowing the metaphorical meaning.</td>
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| 3) Title       | A study of language development of socially disadvantaged rural pre-primary children of Madurai district |
| Researcher    | Suriyakanthi, A.                               |
Type of research  Ph.D. thesis

Year  1982

Objectives
(i) To find out the language development of selected socially disadvantaged rural pre-primary children in terms of the total number, types and length of sentences, type of questions, total number of words, vocabulary of use and of recognition, cases, tenses and content of vocabulary of recognition,

(ii) To establish the relationship between language development and the variables, namely, age, sex and parental education.

Conclusions
1. The socially disadvantaged children were deficient in their language development when compared with the socially advantaged children.

2. The deficiencies were experienced in total number of sentences, words, length of sentences, and vocabulary of use in terms of parts of speech, case suffixes and tenses spoken.

3. The significant differences that were observed in the language

4. Educational level of parents was found to affect language development of both disadvantaged and advantaged children.

4) Title  A study of cognitive process and motivational patterns of deprived students in relation to their achievement
Researcher: Pandey, Kalpalata

Type of research: Ph.D. thesis

Year: 1985

Objectives:
(i) To find out the differences in cognitive process, motivational patterns and achievement of high and low deprived students.

Sample: 100 high and 100 low deprived students

Conclusions:
(i) Low deprived students (boys and girls together) scored significantly higher than high deprived students

Title: A critical study of the effect of the deprivation on the language ability of children studying in a municipal corporation school in standard 1st. A comparison with children in a private school and a village school

Researcher: Deshpande Shashikala

Type of research: Ph.D. thesis

Year: 1985

Objectives:
1) To study the effectiveness of economic, socio-cultural and experiential deprivation on the three components of language
ability - I) Vocabulary, II) comprehension, III) narration and expression.

2) To study the relation of different factors of deprivation with the three components of language ability as described above.

Tools
1) Deprivation scale
2) Language ability test.

Sample
Corporation school - 42, private school - 37,
Village school - 11. Total 90 students.

Method
Survey

Conclusions
1. Those who are seriously deprived they found to be affected more in all aspects of language ability.
2. Socio-cultural deprivation of the child also hampers comprehension ability of the child.
3. Economic deprivation affects comprehension ability of the child.

Title
Participation of parents of first standard children in their studies.

Researcher
Karandikar Sum an

Type of research
Independent study
Year: 1997

Objectives: What equipment and instruments in stimulating the child, the families have

Tools: Questionnaire

Sample: 283

Method: Survey

Conclusions:
1) Slum area children and corporation school children have less availability of sources of interactions as revealed through the analysis of characteristics of parents of all the four categories.

2) The stimulating atmosphere is available more to higher middle class. They are followed by lower middle class children. The slum area children are the third and the corporation children are the fourth.

Title: Can instructional and emotional support in the first grade class

Researcher: Bridget K. Hamre and Robert C. Planta

Type of research: Research paper
This study examined ways in which children’s risk of school failure may be moderated by support from teachers. Children were identified as at risk at ages 5-6 years on the basis of demographic characteristics and the display of multiple functional (behavioral, attention, academic, social) problems reported by their kindergarten teachers.

By the end of first grade, at-risk students placed in first-grade classrooms with first-grade teachers. These findings have implications for understanding the role that classroom experience may play in pathways to positive adaptation.

Comparison with present study:

There are 12 studies related to Language development in deprived students. And 5 studies are experimental and 7 studies are descriptive.

In the study by Steven Robert, Van Meter, Peggy Warcholak, Nicholas D. is on story structures for kindergarten and first grade children in high poverty schools to increase their comprehension of children’s literature. The study by Suja Koshy is to enhance the reading skills of advantaged and disadvantaged children of std 1. All the studies are related to linguistic skills in students.

These studies are related to linguistic skills, but there is no study on oral communication skills of 1st standard deprived students. These researches highlighted the clear relation between socio-economic deprivation of children and its effect on their...
language development. The researches of Shashikala Deshpande, Suryakant A. focuses on the various types of difficulties for language learning such as, parent’s education, the circumstances of deprived students etc. These researches underlines the need to pay more attention towards deprived students for language learning.

2.5 Special features of present study as compared to related studies

Researcher got insight of, how to communicate patiently with students after reading the study of Pare-Baglov and Elizabeth Juliana (2006). In their fundamental study it is concluded that children’s reaction time is longer than adults. Prof. Dum an (2006) studied the effect of brain-based instruction to improve 6th grade students’ academic achievement in social studies instruction. But the present study was on 1st standard deprived students. The teacher-student talk in active learning class was studied by Martlew; Joan, Ellis; Sue, Stephen; Christine, Ellis; Jennifer (2010). These studies were done in western countries whereas the present study is conducted on 1st standard Maharashtrian students.

Suj a Koshy (2008) tried to enhance the reading skills of advantaged and disadvantaged children of std 1. This study is related to linguistic skills in students. But the present study was intended to develop oral communication skills.

Researches by Devi (2001), Reddy (1988) highlighted the clear relation between socio-economic deprivation of children and its effect on their language development. All these studies were descriptive in nature. While, the present study was experimental, aiming at application of brain based principles for development of oral communication skills.

While going through all these researches, the researcher gained the additional knowledge about the area of present research. The researcher also got insight about use of brain based principles in language development. From all the above discussion it can be concluded that the problem chosen by the present chapter is completely new and not a
replica of any other research work, done in India and abroad. Special features of present study are mentioned below.

1. The present study is designed for enrichment of oral communication of 1st standard deprived students. For giving the various opportunities of oral communication the special program is developed using brain based principles.

2. For planning of the oral communication activities, the theory of multiple intelligences is used.

3. Parallel forms of oral communication tests for 1st standard deprived students are developed to measure oral communication.

4. Detailed observation of students’ responses throughout the program was done to support test scores.