Title

Cooperative Teaching-Learning Strategies for fostering Abstract Learning among Visually Impaired Learners

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Abstract

As per The Rights of Persons with Disabilities (RPWD) Act,2016 and The National Education Policy 2020 (NEP 2020), "Education system must aim to benefit India 's children so that no child loses any opportunity to learn and excel because of circumstances of birth or background. It emphasizes inclusive education which means that irrespective of any disability children will be given equal chance of quality education." So, by Inclusive Education approach educating the children with disabilities with that of normal ones within the same roof will brings all students together in one classroom regardless of their strengths or weaknesses in any area, and seeks to maximize the potential of all students by providing equal chance of quality education. The present chapter has been given for studying the abstract ideas on the concepts that are around us, for that the Environmental Science has been taken as a subject of study for Upper Primary Classes. As per the developmental psychologists this is the peak developmental stage for abstract reasoning and language development. As revealed by the literature Visually Impaired Children lacks visual experiences, so they deprived of in some areas of cognitive development and language development at the primary stage which may be later compensated when they acquire more knowledge & experiences but sometimes it gets restricted if there are lack and shortage of environmental exposure and experiences that will be hurdle for their future development. In the present chapter the author tries to explore the lacking areas in abstract concept development among visually impaired learner in primary stages that are included in their EVS textbooks. The other major aspect of this chapter will be Cooperative Learning strategies which are suggested for teachers to use them in classes for cater down the unique needs of their diverse learners. These activities will be very helpful for reinforcing abstract concept development among visually impaired learners and are essential for their clear concept development which will be hinder in later life if not taken care of properly.

Keywords- Cooperative Teaching, Abstract learning, visually impaired learners, Inclusive education, Collaboration.

Introduction

Inclusive Education is a system of education wherein students with or without disabilities learn together, where every single child has its own unique learning needs and a system of teaching and learning is suitably adapted to meet the unique needs of different types of students with disabilities. So, there is a need to fulfil these diverse needs by using student's full potential which will be achieved by providing them an equal chance of education. For inclusive education it is one of the prerequisites that each and every child in the classroom to be involved at the same time and learn on its own pace. For that a no. of teaching-learning strategies has been designed by the experts for an inclusive classroom learning like: UDL, Differentiated Instructions, Peer-mediated Learning, Collaborative learning and Cooperative learning.

An Abstract learning is one of the major goals of education for all learning to understand the concepts that are real but not directly tied to concrete physical objects or experiences, where pieces of information are absorbed from our senses and make connections to the wider world. The primary stage of every child plays a vital role in a child's understanding concepts for their later life but children with Visual impairment may need some extra efforts for developing these abstract ideas. A child's learning begins from his birth which grows day by day through their experiences and environmental exposure. In childhood they learn through imitation and reflexes, later on, they observe their parents, elders, and other persons in their surroundings, and through their experiences, they assimilate the new knowledge and become logical thinkers in later life, but visually impaired children may get knowledge into pieces due to lack of vision. They learn their environment in a different way, imitation is lacking, they understand the concepts through tactual, auditory and Kinaesthetic sense mostly. So, the transition from concrete learning to abstract learning becomes a challenge which needs hard efforts on the part of teacher. For that a number of inclusive teaching-learning strategies are required to supplement their learning.

The present chapter is designed to suggest the different strategies based on Cooperative Teaching-Learning Style for developing Abstract thinking among visually impaired learners. For that the author suggested four Teaching Learning Strategies for visually impaired learners which is based on Cooperative Teaching-Learning Strategies. For each strategy the author selected four abstract concepts from the Vth class EVS book. For each concept one activity

was developed for abstract learning keeping in mind the unique needs of visually impaired children that is the visual limitation of all.

Rationale

Learning patterns differ from human being to human being. Several people process information in an enhanced way when gained using different senses. However, our learning styles vary but learning takes place by individual style. Visual information is fundamental in helping children observe & interpret what happens in the environment and is an important prerequisite for conceptual development in a student's learning but deformity and destruction of vision, bring about a reduced amount of sensory data to the visually impaired learner leading to insufficiency or delay in various skills learned through observing others. This lack of vision also affects language development, reasoning skills, problem-solving abilities, and abstract thinking. This may later result in the individual's learning and performance in classroom learning because children with visual impairment cannot perceive and use visual information to interpret various learning situations taking place within the environment. These children do not get attentive and slowly but surely are left out in loneliness from the concerned subject matter and in this manner from their classmates. Cooperative teaching-learning strategy could be a source of assistance to cope their difficulties to help them in developing abstract thinking. Encouragement of collaborative learning among students with visual impairment in an inclusive classroom will be an effective strategy in promoting academic achievement, positive attitude towards the subjects, understanding of concepts, and improving social interaction among them. When children are working in collaboration with each other, they can devise solutions to their problems easily and can improve their learning. Teamwork and collaboration also help them to generate awareness regarding the use of innovative techniques and methods. They will also know about other children's perceptions and viewpoints when they work in collaboration. For this reason, there is a need for developing abstract thinking ability among visually impaired using cooperative teaching-learning strategies.

Review of Literature

Medically reviewed by **Timothy J. Legg, Ph.D., CRNP**, written by **Rebecca Joy Stanborough**, MFA on September 5, (2019), Abstract thinking is the ability to consider concepts beyond what we observe physically. Recognizing patterns, analysing ideas, synthesizing information, solving problems, and creating things all involve abstract thinking.

The ability to think abstractly develops as we mature, and we can intentionally improve our abstract thinking ability by improvising and playing with puzzles, models, and language. Striking a healthy balance between abstract and concrete thinking is important for maintaining good mental health and daily functioning.

Journal Article **The Performance of Students with Visual Impairments on Abstract and Scenario-Based Tasks and Their Correlates** by **Kim T. Zebehazy, Rachel C. Weber, Meagan Murphy, Aisha Ghani(2020)**, In this article a sample of 52 students with visual impairments completed two divergent thinking tasks, one traditional Alternate Uses task, and one scenario-based task created for this study. Each student's teacher of students with visual impairments completed a questionnaire containing demographic, curriculum, and student characteristics. Findings demonstrate the strong relationship between real-life problem-solving, divergent thinking, and academic functioning in students with visual impairments.

Article **Teaching science and mathematics to students with visual impairments** written by **Mbulaheni Maguvhe (2015)**, A case study was conducted interrogating a blind technician, who regards himself as an unqualified scientist, in his understanding of various school factors that could entice blind and partially sighted learners to participate in mathematics and science education, and to promote their retention in related professions. The participant thus drew from his own experiences of the school environment and wider concentric social institutions. A semi-structured interview schedule was followed and the responses were recorded by mutual consent. Analysis was conducted based on questions put to the participant. The study revealed that teacher motivation and mentorship in mathematics and science methodologies and the use of tools for learner empowerment are lacking. It further revealed that teachers lack the requisite skills in special education to harness learner potential in mathematics and science.

Journal Article **Abstract Teaching for a Concrete World: A Lesson from Plato**, written by **Peter Lindsay,** PS: Political Science and Politics, Vol. 44, No. 3 (July 2011), pp. 605-610, Published by: American Political Science Association, the article argues that instructors should introduce students to abstract concepts only after they have provided concrete illustrations of them. The advantages of working from the concrete to the abstract are twofold: (1) students have an easier time conceptualizing abstraction from within a particular context, and (2) such a context provides them with a greater motivation to do so. In an effort to mirror the pedagogical approach I defend; I begin by reviewing the manner in which Plato introduces the

concept of justice to his readers in Book I of the Republic. I then examine the common model of teaching abstract concepts, demonstrate how an effective alternative differs from this model, and review the education theories that support the alternative model.

Thankarajathi, S. (2007) carried out an experimental study to assess the difference in the academic achievement of students when taught using Cooperative learning and other method of instruction. The sample consisted of 59 students of high school. The researcher gauged the performance of children in experimental as well as in control group. These groups had high performers, average performers and below average performers. The study concluded that there was a remarkable difference in the mean scores of post-tests of cooperative group and control group. The high achievers, average achievers and low achievers of Cooperative groups exhibited a significant difference in the mean score as compared to control group. The results also reflected a difference in pre-test in Cooperative groups in terms of gender, background and the type of tuition attained.

Why abstract learning is difficult for visually impaired children?

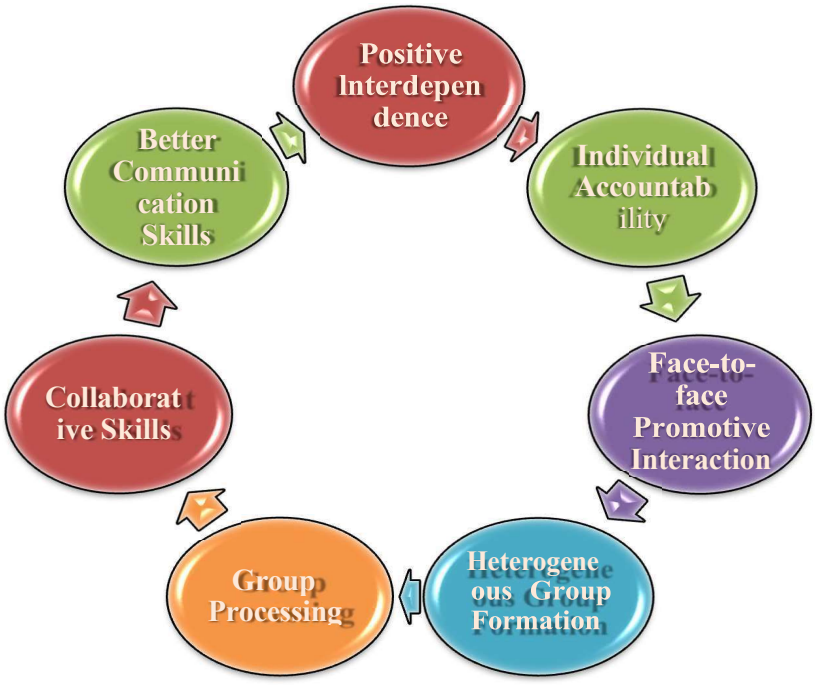
As per developmental Psychologists the primary stage of students plays important role in the development of abstract reasoning and language acquisition and visually impaired children may lack in some areas of cognitive and language development at the primary stage due to hindrance in the visual path and having information into pieces(partly). This situation may be compensated when they acquire more knowledge and self-experiences but sometimes there may be restrictions if there are a lack and shortage of environmental exposure, self-experiences, and socialization that will be a hurdle for their future development. Berthord Lownfeld told about primary limitations that are faced by visually impaired students are: “A loss in the range and variety of experiences, loss in the ability to get around, and loss of the control of the environment and the self in relation to it”. Due to this limitation, they are dependent on their parents and other people in their surroundings for getting knowledge and as a result, their experiences are less than those of non-disabled children. They may feel hindered in developing concepts that are in abstract form and become difficult for them to understand. So, to provide equalization of learning opportunities there is a need for special attention towards these types of children and provide them education with the use of concrete objects and developing abstract learning using different teaching-learning Strategies for promoting proper understanding. The

Co-operative teaching strategy will be the best tool to provide them equality in education which will be given through collaborative learning.

What is Cooperative Teaching-Learning Strategy?

Cooperative learning is a teaching method, where teachers arrange and mixes students of different level of ability and learning into groups. According to John Dewey, "It is the responsibility of the teacher to carefully select the group. Each member is responsible for learning. And also, to teach what is taught to his/her teammates." Cooperative learning method enables students to learn and teach with the help of their group members, and it focuses on group success rather than individual success. In these type of teaching-learning method children of varied degree of heterogeneous abilities are clubbed together into a team subject to reward based upon judgement of group's success. It aims to organize class activities, in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject.

How does cooperative teaching-learning strategies facilitate abstract concept learning among Visually impaired learners?



- **Positive Interdependence:** Working as a team motivates the students and develop the sense of positivity and positive interdependence among visually impaired children. By which Visually impaired learners get motivated and feel enthusiastic to work together.

- **Individual Accountability:** Each student is aware of their goals assigned to them thereby they owe accountability for their contribution to the particular given task which will encourage them to focus on their own learning.

- **Face-to-face Promotive Interaction:** Herein students with visual impairment have a mutual dialogue to promote each other's Learning via face-to-face activities (like: Rounrobin & Rountable). They explain and discuss topics assigned to each other. Every student has some content to discuss and make the other members ponder over it and share their viewpoints. This healthy dialogue process creates a face-to-face interaction among them and helps them to develop the habit of healthy communication talk among themselves.

- **Heterogeneous Group Formation**: One of the most interesting characteristics of Cooperative learning style is the formation of groups of children with mixed abilities i.e., heterogenous group different in gender, attention level, age, interest areas, academic achievements. So, this diversity helps in accomplishing the task beautifully.

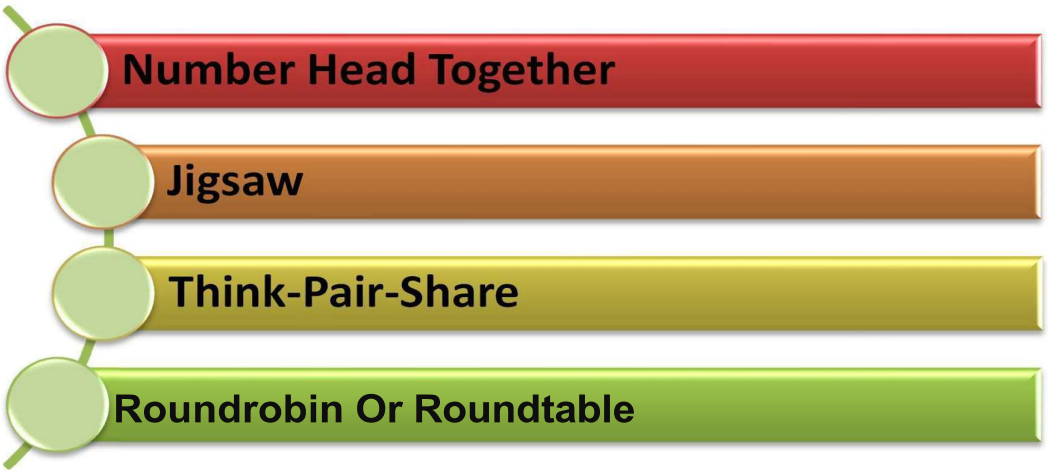
- **Group Processing:** Children are provided with a way to assess the level to which their group has attained desired goals. In cooperative teaching-learning style they work in groups which will further develop the collaboration, team work and group work enthusiasm among visually impaired learners.

- **Collaborative Skills:** Cooperative learning enhances collaborative skills with activities like teamwork, articulation, sharing ideas, brainstorming sessions, and disagreement management among visually impaired learners. These types of activities later on foster the creative thinking and problem-solving abilities among them.

- **Better Communication Skills:** Cooperative teaching-learning style promoted Peer-mediated learning, Peer-educating, Peer reflection, team function, and other Collaborative associations, which may lead to better communication among visually impaired learners

effectively and it will help to motivate students intrinsically for learning by collective work without being isolated.

Cooperative teaching-learning strategies that are Suggested by the author for fostering Abstract learning among visually impaired learners



Strategy No. 1

Number head together

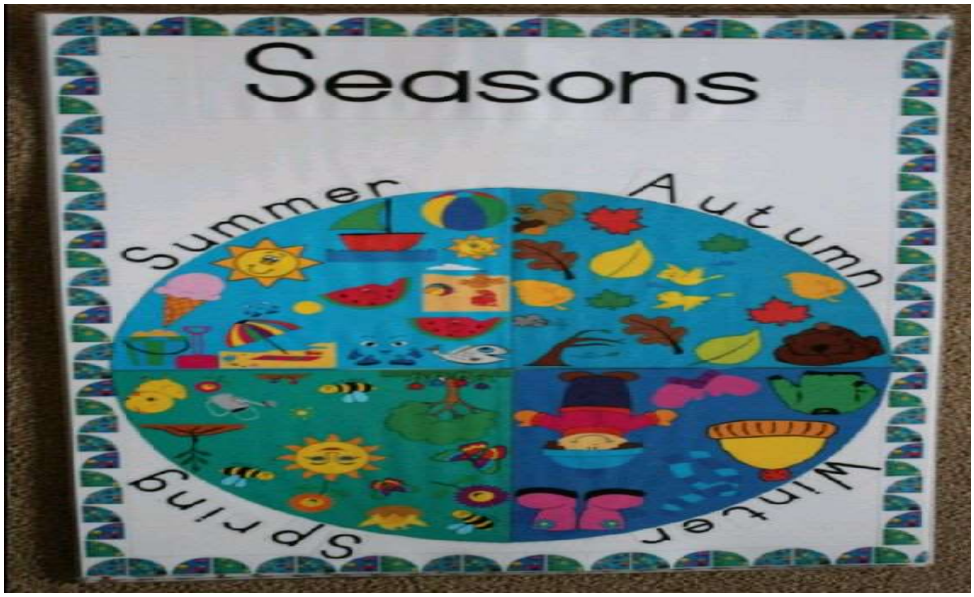
In number head together, till particular counting teams are formed. Each member possesses a certain number assigned. A problem is presented to the whole group and the brainstorming is done so that a team solution could be offered in a way that each team member could answer any question about the problem. Then any number could be called and an answer is expected from the child with that assigned number. All the team members need to put in their sincere efforts to make the other member comprehend the topic, attain expertise in each topic, and answer correctly.

Concepts

Activity 1:

Different Seasons/Weather Conditions

Material required: Bowl, Flash Cards, Slips, Glue, Highlighter Pen, Audio-Visual video/ppt presentation, Tactile chart of Seasons



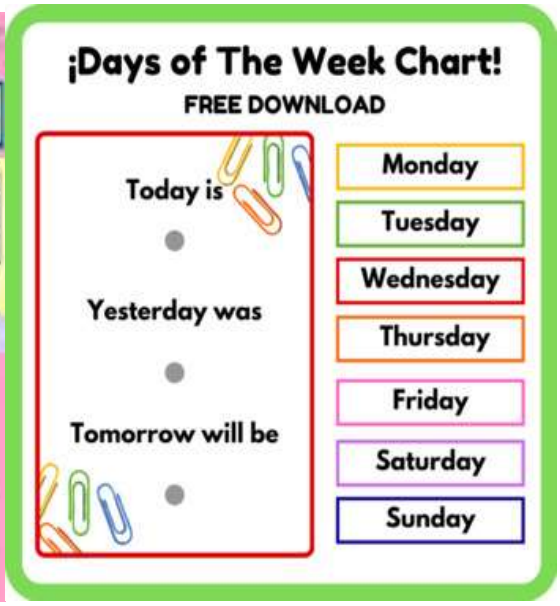
Steps:

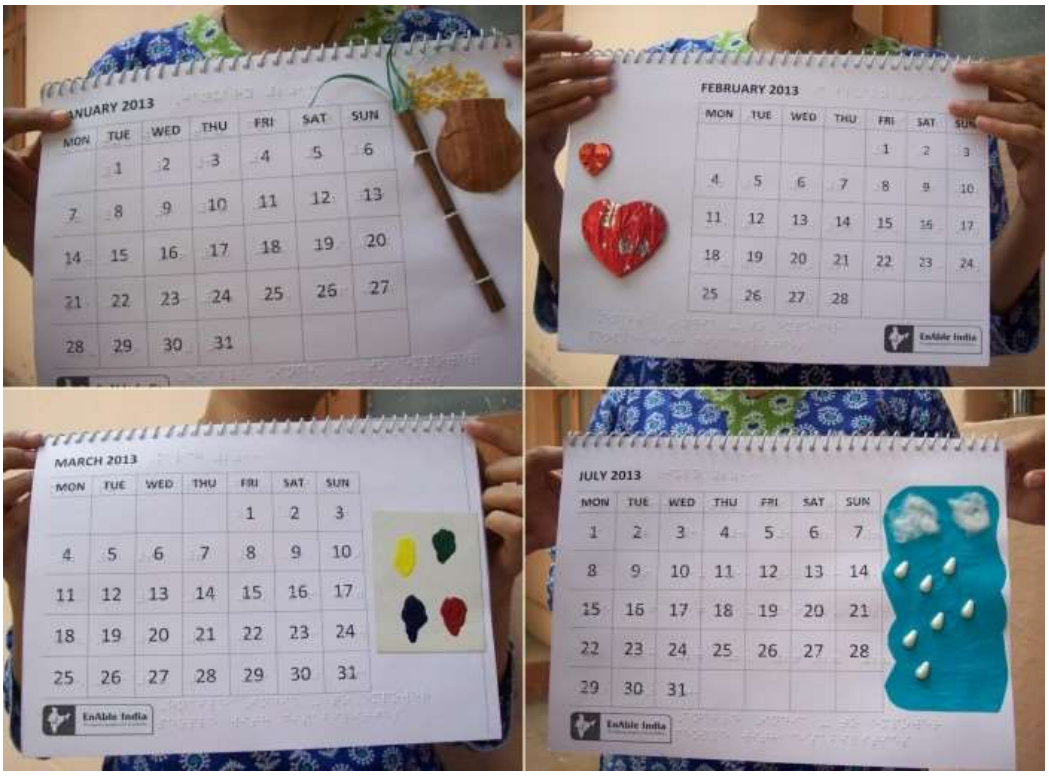
- Firstly, the teacher assigns a certain number to each student
- Then Divided class into two groups of 10-10 Students each
- Then Flashcards of the name of season (Summer, Winter, Autumn, Spring) were presented to visually impaired children by providing some information about the characteristics of different types of seasons.
- Slips of all the participants (total 20) will be made and put in a bowl.
- Teacher took any slip from the bowl and then which no. is randomly selected was called.
- The particular randomly selected no. of students will answer the questions of the teacher about the content.
- Questions were asked like:
    - What do you feel about Today's weather, Is it Hot or Cold?
    - What weather conditions do you like most?
    - What type of clothes do you like to wear most?
    - Do you like the rain? Yes, or No, Then Why of a given answer.

Activity 2:

Today/Tomorrow/Yesterday

Material required: Text Book, Calendar, Chart paper of the week, Text to speech, Flash Cards, Newspaper, Watch (Through time management technique)





Steps:

- Firstly, the teacher assigns a certain number to each student
- Then Divided class into two groups of 10-10 Students each
- Then Chart of the name of days in a weak (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday) was presented to visually impaired children by elaborating about Yesterday, Today, and Tomorrow.
- Slips of all the participants (total 20) will be made and put in a bowl.
- Teacher took any slip from the bowl and then which no. is randomly selected was called.
- The particular randomly selected no. of students will answer the questions of the teacher about the content.
- Questions were asked like:
    - Have you presented in yesterday's class?
    - What do I give you as homework?
    - How many days in a week?
    - What do you call the present day?
    - The day which is gone is called as?
    - Do you like to read the newspaper? What type of information do they give.

Activity 3:

Cold/Hot/Warm

Material required: Water, Glasses, spoon, Hairdryer, Water bottle, Tiffin box, Mid-day meal food, and Water dispensers used in offices

Steps:

- Firstly, the teacher assigns a certain number to each student
- Then Divided class into two groups of 10-10 Students each
- Then three glasses of water (Hot water, Coldwater, Warm Water) or Hairdryer were presented to visually impaired children for elaborating the concept.
- Slips of all the participants (total 20) will be made and put in a bowl.
- Teacher took any slip from the bowl and then which no. is randomly selected was called.
- The particular randomly selected no. of students will answer the questions of the teacher about the content.
- Questions were asked like:
    - What do you bring today for lunch? Let's lookout its temperature condition.
    - What do you prefer to drink Cold or Normal Water in Summers?
    - Do you like cold drinks or Coffee?
    - What do you like most Hot or Cold Coffee?
    - What type of cooling appliance do you have in your home for summers?

Activity 4:

Time (Second/Minute/Hour)

Material required: Sandglass/Sand Timer, Digital Clock, Braille watch, Hand made watch of ice-cream sticks, Chart of different times made of matchbox

Steps:

- Firstly, the teacher assigns a certain number to each student
- Then Divided class into two groups of 10-10 Students each
- Then the teacher discussed and taught about seconds, minutes, and hours by the presentation of Handmade watch, Chart paper, and Sandglass to visually impaired children in the classroom.
- Slips of all the participants (total 20) will be made and put in a bowl.
- Teacher took any slip from the bowl and then which no. is randomly selected was called.
- The particular randomly selected no. of students will answer the questions of the teacher about the content.
- Questions were asked like:
    - How many seconds in a Minute?
    - An hour is consisting of how many seconds?
    - How many times will a minute hand be moved to make an hour?
    - what does it mean when a sandglass is empty on one side?
    - In a Day there are how many Hours?
    - Have you used a braille clock, what do you feel about its usefulness?

So, like this, the entire members of both groups talked about different weather conditions, Different seasons, Today/Tomorrow/Yesterday, Time respectively by question-answer session and attain expertise in that topic with the help of their team members. Every member will give positive remarks of every right answer and at last, which team scored high they will be rewarded.

Strategy No. 2

Jigsaw

In this method, each team member possesses a piece of information that is requisite for all other members for completion of the problem assigned and for completion of the report. The students are firstly assigned individual tasks about a problem as a whole for the entire group which is termed as 'Home group'. Afterward, the knowledge and facts thus gathered are shared in the group by each member. Then the students have to move to the 'Expert Group' where they meet the members of other groups processing some topic. Each member

shares their part of knowledge and notes down the further added by the other members after that they move back to their home group and serve as a master over their part of the topic.

Concepts

Activity 1:

Different Types of Soil

Material required: Different Soil Collected from School premises as School Garden, playground, flower Vas, Clay, Sand

Steps:

- Here, the teacher first introduced a different type of soil to the students like the soil of their school garden, playground, flower pot, sand, clay.
- Then assign students group tasks by diving them in groups of 5 students each which is called “Homegroup”
- Each group ask to bring different types of soil which they easily assess from their home surroundings
- On the next day, the first member of group A can show their bought soil.
- They rest of four members of same group one will also show their soil which they bought one by one
- After that they collectively conclude how many kinds of soil they found and make a list of types of soil.
- Like that the rest of the two groups which are called “Expert Groups” groups B and C will also follow the same procedure
- At last, all three groups drag down their ideas regarding the topic that what are the similarities or dissimilarities in their group and tally to the “expert group” as How many types of soil does every group have?
- Then they turn to another group one by one to share and discuss their ideas.
- Like this the ideas and knowledge of one student pass on to another student and later it spread to the large group to conclude the possible solution.

Activity 2:

Different Types of Senses

Material required: Tactile Chart of Body parts, Flashcards of particular sense and related body part, paly way method, audio-visual clips of poems based on senses and body parts

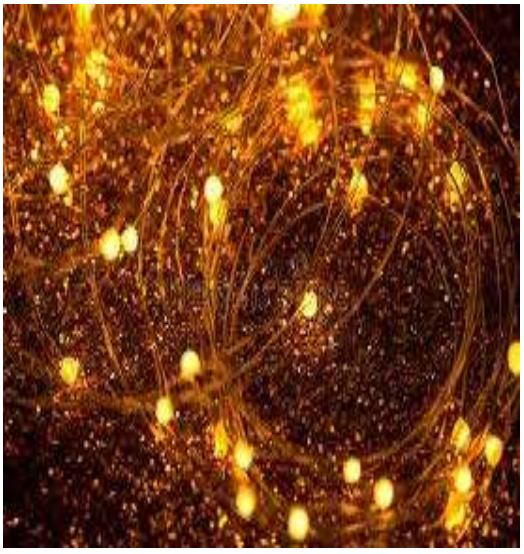
Steps:

- Here, the teacher first introduced a different type of senses through body parts among visually impaired students.
- Then assign students group tasks by diving them in groups of 5 students each which is called “Homegroup”
- Each group ask to give their thought about the use/importance of five senses in their daily routine life
- Every student of a group has to tell at least five (one for each sense i.e., see/hear/touch/taste/smell) benefits/use of sense in daily life activities
- After that they collectively conclude the importance, use, and benefits of senses in our daily life
- Like that the rest of the two groups which are called “Expert Groups” groups B and C will also follow the same procedure
- At last, all three groups drag down their ideas regarding the topic that what are the similarities or dissimilarities in their group and tally to the “expert group” as
    - How many types of senses?
    - Which Human body parts are related to the senses?
    - Benefits of senses to perform our daily tasks?
- Then they turn to another group one by one to share and discuss their ideas.
- Like this the ideas and knowledge of one student pass on to another student and later it spread to the large group to conclude the possible solution.

Activity 3:

Different Types of festivals

Material required: **Chart of Different types of festivals (In Tactile and large print form), Flashcards, sweets, colours, led lights, glitters, chart of worship places of different religions, Diya's, clay, glue, scissors.**



Steps:

- Here, the teacher first introduced different types of festivals related to different religions by asking some introductory questions to visually impaired students. Like:
  - How many types of festivals do you celebrate in your family?
  - How many types of festivals do you know about?
  - Which festival do you enjoy most?
  - What's special about your most likely festival?
- Then Show them the Chart, Flashcards, and audio-visual clips to give more information about festivals which are included in their textbook chapter.
- After that assign students group tasks by diving them into 3groups, where each group have 5 students, and it is called "Homegroup"
- Each group ask to give their thought about one festival and organize a short celebration of that festival within their group.
- Every student of a group has to bring/prepare one item for celebrating a particular festival. For ex- Holi

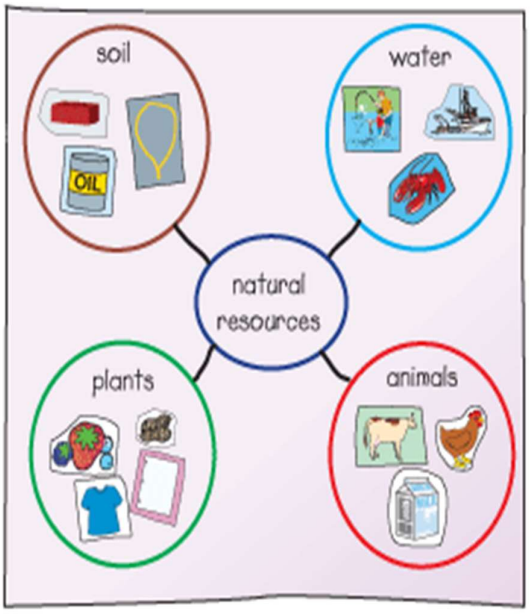
  For celebrating Holi, A group members will collect glitters, colours, water, sweets, water balloons, and a short essay about why it is celebrated, by whom, and when…. vice versa.
- Like that the rest of the two groups B and C will also follow the same procedure for another kind of festival they want/like to celebrate
- After that they collectively organize activities like festival fest or role play modelling, festival mela which they want and share & discuss their ideas.

- At last, all three groups drag down their ideas regarding different types of religion and festivals which are celebrated in India and conclude about the happiness and importance of festivals in our life.
- Like this the ideas and knowledge of one student pass on to another student and later it spread to the large group to conclude the possible solution.

Activity 4:

Resources: (Natural/Manmade)

Material required: **Charts, Models, Classroom material (like the chair, table, pencil, pen, tape. Etc), flowers, leaves, wood, water, textbooks, flashcards. Etc.**



Steps:

- Here, the teacher first introduced different types of Resources of our environment which are given by nature and man-made both
- Then Show them the Chart, Flashcards, and audio-visual clips to give more information about resources that are included in their textbook chapter

- After that assign students group tasks by diving them into 3groups, where each group have 5 students, and it is called “Homegroup”
- Each group ask to list out of five natural resources and five Man-made resources.
- Every student of a group has to tell one natural and one man-made resource for human being livelihood. And then make a list to show differentiation among them. For ex-

- Like that the rest of the two groups B and C will also follow the same procedure for enlisting both resources.
- At last, all three groups drag down their ideas regarding different types of Natural and Human-made Resources and conclude about the importance of resources in our life.
- Like this the ideas and knowledge of one student pass on to another student and later it spread to the large group to conclude the possible solution.

Strategy No.3

Think-Pair-Share

This is the most fundamental activity of cooperative learning style, wherein a problem is presented either by the other learner and students are given time to ponder upon the problem. They have the freedom to drag down their ideas regarding the problem and then turned to another learner to share and discuss their ideas. Then these pairs share their ideas and knowledge in large groups. The nature of the content thus shared could vary from simple to Complex level depending upon the problem of content and the possible solutions offered.

Concepts

Activity 1:

Different types of Textures

Material required: Cardboard, Chart paper, fluorescent paper, tissue paper, Zig-Zag design scale, Sand Paper, Clay, Glittered clay, Cotton, piece of tile, Sponge, Thermocol, Braille paper.



Steps:

- Firstly, the teacher Divided the whole class into five groups of 4 students each.
- Then the Scholar shows the types of textures in different materials like Cardboard, Chart paper, tissue paper, Sand Paper, Cotton, Sponge, Braille paper.
- After that, two students from the first two groups: groups A and B come over to the teacher's table.
- Then, the Teacher asks the particular students what they feel through their remaining senses (Touch or residual vision) about the tactual material presented over them.
- Both team members will then tell one by one what they feel and understand about the presented items.

- They will be discussed the different types of textures under the guidance of their teacher.
- After that they return to their group and discussed what they learn about the textures….
- Like that rest of the group members came one by one (at a time two groups) and discussed the content.
- Finally, the whole class collectively discussed their point of view about different kinds of textures which they learn collectively by sharing ideas and experiences with each other.

Activity 2:

Different types of clothes

Material required: Handmade Chart of pieces of different clothes, textbook, Flashcards, Cotton buds and roll, Boll of wool, Sack, Hanky, Tissue/wipes.

Steps:

- Firstly, the teacher Divided the whole class into five groups of 4 students each.
- Then the teacher shows the hand-made chart or flashcard of different types of clothes.
- After that, two students from the first two groups: groups A and B come over to the teacher's table.
- Then, the Teacher asks the particular students what they feel through their remaining senses (Touch or residual vision) about the tactual chart or flashcards.
- Both team members will then tell one by one what they feel and understand about the presented content.
- They will be discussed the different types of clothes under the guidance of their teacher.

- After that they return to their group and discussed what they learn about the clothes….
- Like that rest of the group members came one by one (at a time two groups) and discussed the content.
- Finally, the whole class collectively discussed their point of view about different kinds of clothes which they learn collectively by sharing ideas and experiences with each other.

Activity 3:

Different Types of Shelter

Material required: **Tactual Charts of different types of Houses, Model of Houses like: Village Cottage, Bungalow**

Steps:

- Firstly, the teacher Divided the whole class into five groups of 4 students each.
- Then the Scholar shows the different types of shelter which are use by human being like Tactile Chart of different kinds of house and flash cards, models of different kinds of Houses
- After that, two students from the first two groups: groups A and B come over to the teacher's table.
- Then, the Teacher asks the particular students what they feel about the particular Model.
- The scholar also asks some introductory questions like:
  - Where is your home? Is it is in the city or Village.
  - What type of house you living Is it multi story building or an individual home?
  - You Go some where else like hilly or Snowy places? What type of houses you saw there.
  - You visited the village? The people there living in which type of houses? Is it different from your home? Tell the differences
- Both team members will then tell one by one what they feel and understand about shelters with the help of there previous knowledge and understanding
- They will be discussed the different types of houses under the monitoring of their teacher.
- After that they return to their group and discussed what they learn about the presented content.
- Like that rest of the group members came one by one (at a time two groups) and discussed the content.
- Finally, the whole class collectively discussed their point of view about different kinds of shelters which they learn collectively by sharing ideas and experiences with each other.

Activity 4:

Liquid/Solid/Gas

Material required: Balloons, Cold drink, water, water bottle, tiffin box, eraser, toy ball, soft toys, slim, different clay, Deodorants, Stones.

Steps:

- Firstly, the teacher Divided the whole class into five groups of 4 students each.
- Then the teacher shows the types of materials (Liquid, Solid, Gas) like:
    - For Liquid: Cold drink, water, water bottle, slim, Watercolours, pastel colours, Etc.
    - For Solid: tiffin box, eraser, toy ball, soft toys, different clay, Stones, Braille slate, Abacus, Etc.
    - For Gas: Balloons, Deodorants, Hit me Toys, Portable swimming pool, Etc.
- After that, two students from the first two groups: groups A and B come over to the teacher's table.
- Then, the Teacher asks the particular students what they feel through their remaining senses (Touch or residual vision) about the tactual material presented over them.
- Both team members will then tell one by one what they feel and understand about the presented items.
- They will be discussed and differentiated between Liquid/Solid/Gas under the guidance of their teacher.
- After that they return to their group and discussed what they learn about the three forms….
- Like that rest of the group members came one by one (at a time two groups) and discussed the content.
- Finally, the whole class collectively discussed their point of view and ponder over the content which they learn collectively by sharing ideas and experiences with each other.

Strategy No. 4

Roundtable or Roundrobin

Here students' answers turn wise and pool into their knowledge and ideas. `In Roundtable each member writes and passes the pen and paper to other members to get their written accordingly while in Roundrobin students use the verbal mode of articulating their idea. In both of these activities, students keep on taking turns and keep discussing till they ran out of novelties regarding the topic.

Concepts

Activity 1:

Directions (East/West/North/South)

Material required: Compass, tactile map, diagram, Tactile Chart of Directions

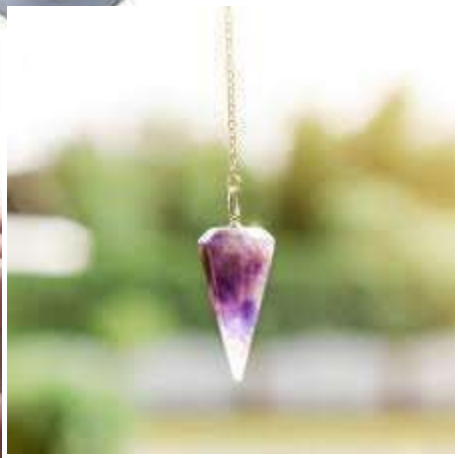
Steps:

- Firstly, the teacher Divided the whole two groups of 10- 10 students.
- After that the entire group A will sit on the round table where material like Compass, tactile map, diagram, Tactile Chart of Directions will be shown to them.
- Then the teacher asks them to either in written or verbally answer the questions about the direction.
- Questions were asked by the teacher as:
  - Who is your close friend in the group? Where did he/she is sitting tell the direction?
  - Who two friends are sitting in the east direction from you? Clap your hand towards the west direction.
- After that, students answer these types of above-mentioned questions tum wise either from the left or right direction.
- There is flexibility in giving answers by students either they can answer verbally or using pen or paper
- Both team members will engage in the task simultaneously.
- Both team members will be discussed the topic in the monitoring of teacher.
- Finally, the whole class collectively shared their ideas and viewpoints about the different types of Directions which they learn collectively by sharing ideas and experiences with each other.

Activity 2:

Front/Back/Left/Right/Opposite Directions

Material required: **Coins, Textbook, pencil box, magnet, pendulum, clock**



Steps:

- Firstly, the teacher Divided the whole class into two groups of 10- 10 students.
- After that the entire group A will sit on the round table where materials like: Coins, Textbook, pencil box, magnet, pendulum, the clock will be shown to them.
- Then the teacher asks them to either written or verbally answer the questions about the direction.
- Teacher will organize activities like:
  - Hold your book and tell Which is the front side or which is the backside?
  - Open your box and show what else you have? Put a pencil and blue colour pen in your box again.

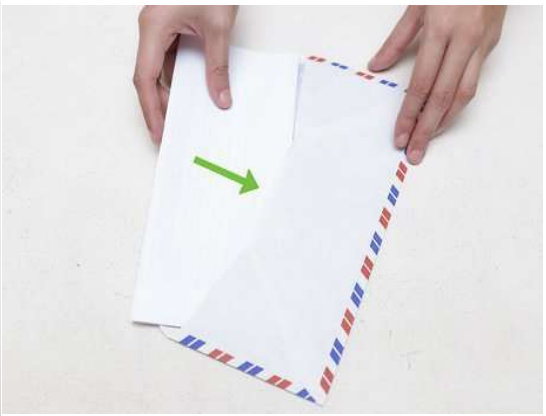
- Put the coins in the order where the heads are on the upper side.

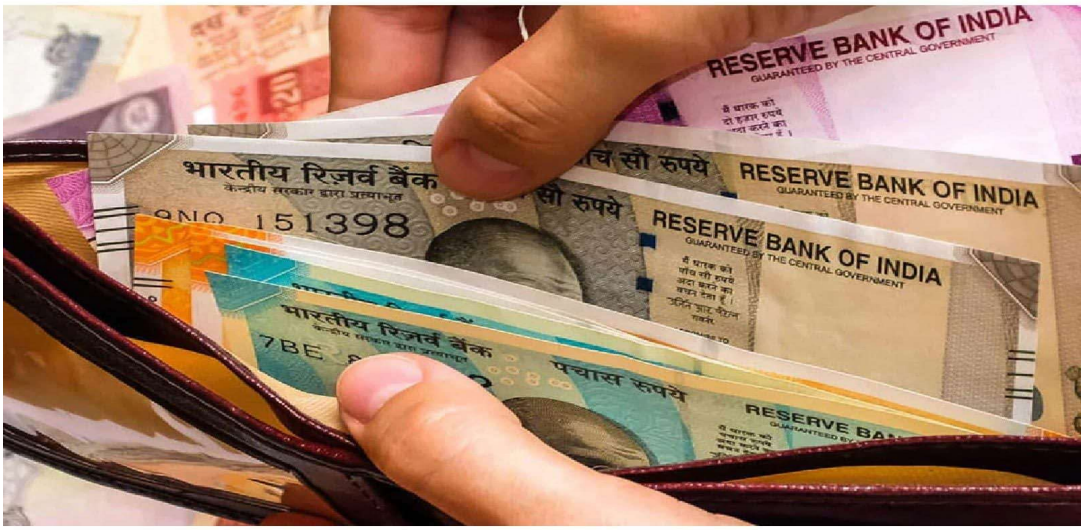
- After that, students perform the activities turn wise either from the left or right direction.
- There is flexibility in giving answers by students either they can answer verbally or using pen or paper.
- Both team members will engage in the task simultaneously.
- Both team members will be discussed the topic in the monitoring of teacher.
- Finally, the whole class collectively shared their ideas and viewpoints about the different types of Directions (i.e., Left, right, top, bottom, opposite direction) which they learn collectively by sharing ideas and experiences with each other.

Activity 3:

Inside/Outside, Upward/Downward, Forward/Backward

Material required: Envelope, letters, pencil box, compass box, colour packet, Purse, Tylor frame, tabs, Cane.





Steps:

- Firstly, the teacher Divided the whole two groups of 10- 10 students.
- After that the entire group A will sit on the round table were materials like Envelopes, letters, pencil boxes, compass boxes, colour packets, Purse, Tylor frame, tabs, Cane will be shown to them.
- Then the teacher asks them to either right or verbally answer the questions about the direction.
- Teacher will organize activities like:
  - Hold one envelop then put the letter in that
  - Open your pencil box just put scale and eraser outside the box What is inside your tiffin box
  - Put the coins into the purse.
- After that, students perform the activities turn wise either from the left or right direction.
- There is flexibility answering by students either they can answer verbally or using pen or paper.
- Both team members will engage in the task simultaneously.
- Both team members will be discussed the topic in the monitoring of scholars.
- Finally, the whole class collectively shared their ideas and able to differentiate between Inside/Outside, Upward/Downward, Forward/Backward which they learn collectively by sharing ideas and experiences with each other.

Activity 4:

Turning (Clockwise/Anticlockwise,90 degree/ 180 degree/ 360 degree)

Material required: Ball, rope, toys, Hand-made clock

Steps:

- Firstly, the teacher Divided the whole two groups of 10- 10 students.
- After that the entire group A will sit on the round table were materials like ball, rope, toys, Hand-made clock will be shown to them.
- Teacher told students that they will pass the toy clockwise to the next right sitting student.
- Like that they pass the toy anticlockwise also to their teammates.
- Teacher Give students a ball then places them in opposite direction with their backs touching together.
- Then ask them to pass the ball to each other. By this, they understood the concept easily.
- After that, students perform the activities turn wise either from the left or right direction.

- There is flexibility in giving answers by students either they can answer verbally or using pen or paper.
- Both team members will engage in the task simultaneously.
- Both team members will be discussed the topic in the monitoring of scholars.
- Finally, the whole class collectively shared their ideas and was able to differentiate between Clockwise/anticlockwise, tum to 90, 180, or 360 degrees which they learn collectively by sharing ideas and experiences with each other.

Conclusion

On the basis of the above-mentioned description teaching-learning strategies that have been suggested for teaching EVS to Primary School learners with the help of using various types of teaching-learning strategies it may be visualized that using these strategies in the classroom will definitely boost up the energy of visually impaired learners when they wok together with a positive interdependence and individual accountability with their peers in the classroom. Visually impaired students have so much potential, energy and creativity but due to some inhibitions or lack of self-initiative movements and self-confidence their inner talent and potential remain hidden. In group activities like this cooperative teaching-learning strategies when they have face-to-face interactions and shared group processing while accomplishing a task a sense of achievement, they attained which realizes them their own potential they may not be knowing before. Such type of practices sometimes helps in developing their residual and unidentified skills. So, by providing these cooperative environments their strong bonding between the peers has been seen and they feel very much enthusiastic and ready to achieve high goals in their life by attaining self-confidence.

Suggestions

- There is a need to use empirical and demonstrative method during performing these activities in the classroom.
- For the understanding of abstract concepts easily it is necessary to explain by making small stories and hands on experiences.
- For developing creative thinking ability among visually impaired children there is a need to explain the words and concepts which are use in each

lesson in a dramatic/play-way manner.

- Development of spatial concepts needs to be explained by exploring concepts from blackboards, charts, models and existing environment through strong or concrete examples.
- For emotional concepts, there is need to provide a variety of experiences in different situations, which develop the ability to sort and use the right concepts in suitable situation by visually impaired child in their day-to-day life.

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