

Hypothesis

Explicit teaching of mental imagery using the senses improves listening comprehension and oral retell of Grade 1 students

Abstract

In the early years of school the main reading strategy for many students is decoding at word level and this limits their processing of text for meaning, that is, comprehending what they have read. Research in explicit strategy training has shown an improvement in comprehension. The present study examines the explicit teaching of the comprehension strategy of visualisation to a group of beginning readers to improve their listening comprehension and oral retell. The teaching of this strategy will also focus on using the five senses to enrich the mental images of the students.

Four grade 1 students were exposed to explicit teaching to develop their ability to make mental pictures whilst reading. Cue cards were used as prompts to direct their thinking and use their senses. The students practised this strategy during the 7 lessons and recorded their images in pictorial form. They used these pictures to recall what they had read and used them for the purpose of retelling the story. An improvement in the drawings of the mental images after the five senses prompt was introduced and used in conjunction with the visualization was observed.

The findings of this study showed an improvement in the listening comprehension skills of all students who participated. Implications for teaching are that reading strategies need to be modelled and explicitly taught, and that a combination of strategies will further improve a student's reading skills.

Introduction

In the early years of school students become aware that print on a page can be read and they often become focussed on reading exactly what is on the page. For many children this becomes the only focus of reading. Also the current teaching focus is on the early development of children's word recognition skills and obtaining specific text levels by the end of each year. It has been proposed (Gough, Hoover and Peterson, 1996 as cited in Center, Freeman, Robertson & Outhred, 1999) that reading can be seen in 2 parts, one is at word level, decoding and the other is abstracting meaning from print, comprehension. Good readers recognise that reading is more than decoding. They make connections to themselves, to themes and the world around them. Oakhill and Patel (1991) found that students of average ability at word level but with poor comprehension did not appear to make inferences nor integrate ideas from the text to form a coherent representation in the same way as skilled comprehenders. Poor comprehenders seem to also have a less developed story event structure than their more skilled peers.

Pressley and Wharton-McDonald (1997) states that when children are instructed to learn comprehension strategies their understanding and memory of text increased. "Teachers need to explicitly model comprehension strategies and help students to understand when and how to use them" (Honig, Diamond and Gutlohn, 2000). The following comprehension strategies are strongly supported by research (Allington, 2001; Armbruster et al. 2001; Farstrup & Samuels, 2002 as cited in Gibson, 2004)

1. Activating prior knowledge
2. Answering and generating questions
3. Making & verifying predictions
4. Using mental imagery & visualisation
5. Monitoring comprehension
6. Recognising story structure

One technique, which they say improves reading comprehension, is training in visual imagery (Oakhill and Yuill, 1996). My action research will focus on the explicit teaching of the mental imagery and visualisation strategy. This strategy focuses on the reader being able to create a mental image from words read. By using prior knowledge and background experiences, the reader can connect the author's writing with a personal picture (Gibson, 2004). The skill of visualisation draws upon other comprehension strategies, that is, prior knowledge, prediction, questioning and story structure; therefore, it is important that readers develop the ability to create mental images while reading.

However, Block & Pressley, (2002) state that children need to add details present in single sentences to ongoing events and descriptions that authors portray. Also children may require repeated instruction before they can visualise concrete and later abstract concepts as they read. Children need to be instructed to use all of their senses when visualising as it helps the reader create a more developed image of the text. This action research will incorporate the use of the senses to assist the children in

creating rich visual imagery of the texts. Pressley and Wharton-McDonald (1997) state that there was direct improvement of reading comprehension by explicit teaching, modelling and teacher- assisted student practice of the strategies. Centre et al. (1999) reported that their study also showed specific improvements in the listening comprehension of Grade 2 children due to the effects of the visual imaging programme.

The present investigation aims to extend the earlier research by using prompts, which focus on incorporating the senses to enrich the students' visual images while reading.

Method

Design

The study uses a OXO design. The study is designed to explicitly teach the comprehension strategy of visualisation using the senses with the assistance of prompts/cue cards to Year One students in the class I am currently teaching.

Participants

The participants in this action research project were four Grade one students. The grade one children participating in this research are from a Prep/one composite class. The class consists of eighteen preps and seven grade one children. The researcher is the classroom teacher for this grade. The four year 1 children chosen were beginning readers. The relevant details for the participants are shown in Table 1.

Table 1

	Student A	Student B	Student C	Student D
Sex	Male	Female	Female	Male
Age	6 years	5years 11 months	6 years	6 years
Behaviour	Inattentive, restless	Attentive	Attentive	Inattentive
Reading Level	9	14	28+	28
Position in family	Second of 3 children	Second of 2 children	First of 3 children	First of 3 children

Materials

RUNNING RECORDS

Running records were taken for the pre-intervention baseline texts and the post-intervention texts.

Texts used: AlphaAssess The First Step: Assessing Early Literacy. Titles: Sebastian Learns to Swim Level 9 and The Laughing Dragon Level 22

LISTENING COMPREHENSION (John Munro)

This task was administered as a pre-test and also a post-test. This task was used to determine the level of listening comprehension of the students. (Appendix 1)

SPONTANEOUS RETELL

This task was administered after lesson 5 to assess the student's progress.

STUDENT'S RECORDING SHEET

This was used for the children to draw pictures to assist with their retell of the text. As a tool the students used a piece of paper for the children to express the visualisation in their minds. (Appendix 2)

DICTAPHONE

A Dictaphone was used for pre and post test to record the spontaneous retell.

VISUALISATION POSTER

This was referred to at each session. (Appendix 3)

FIVE SENSES CUE CARD

This was referred to at each session. (Appendix 4)

TEXTS

The following texts were used during the teaching sessions.

Poem: Flying Popcorn Arden Davidson(1998) (Appendix 5)

Big Red Bath Julia Jarman and Adrian Reynolds 2005

The King's Cake Jill Eggleton and Jim Storey 2000

Procedure

Four grade 1 students were individually assessed with a Running Record, using texts from AlphaAssess The Next Step: Developing Early Literacy series and John Munro's Listening Comprehension test. The instruction sessions were conducted in small group sessions during the reading hour in the two hour literacy block.

The research program consisted of

1. Baseline assessment session,
2. 7 x 20 minute intervention teaching sessions
3. Post intervention assessment session.

Lessons – Sessions 1 and 9 – Pre- Testing and Post – Testing

Students were individually assessed with the above - mentioned assessments.

Two students had a similar instructional level of 12 and two were at instructional level 26. Due to the different instructional levels it was decided to use 2 texts: - Sebastian Learns to Swim –Level 9 and The Laughing Dragon –Level 22 for assessment only and were not used for any teaching purposes. These texts were used for Pre and Post Testing.

Intervention Sessions:

The instruction commenced at word level and then progressed to sentences and prose using their senses to assist in creating rich mental images.

Lesson 1 - Introduction, explanation and modeling of Visualization strategy

A shared reading procedure was used.

Lessons 2 – 6 – Similar format for all lessons

- revision of visualization strategy and use of our senses to enrich mental images (refer cue cards appendix 3 & 4)

- read title /storyline/vocabulary

- describe and draw mental image

- discuss their initial mental image

- describe and draw new mental image

- compare and discuss how and why their mental image might have changed

- spontaneous retell was completed at the end of Lesson 5

(See detailed Lessons in Appendix 6)

Results

The students participated in both a pre and post tests that measured reading accuracy, listening comprehension and story structure. Table 1 is a summary of the data collected.

Table 1 Summary of Pre and Post Tests

	Reading Accuracy		Listening Comprehension		Story Structure	
	Pre test	Post Test	Pre test	Post Test	Pre test	Post Test
Student A	88%	99%	30%	60%	50%	84%
Student B	87%	100%	30%	85%	67%	84%
Student C	93%	100%	93%	100%	67%	100%
Student D	90%	97%	20%	50%	67%	84%

The data in table 1 has been calculated into graphs as seen in figures 1, 2 & 3 below.

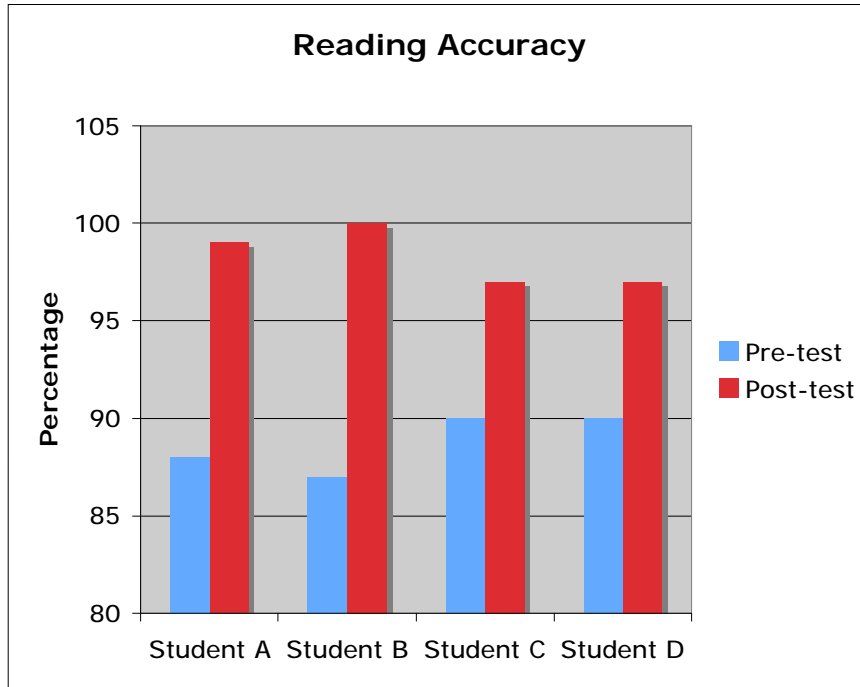


Figure 1

The above data shows reading accuracy improved for all students by the end of the explicit teaching sessions. This may have been the result of the students being exposed to the texts in the pre test.

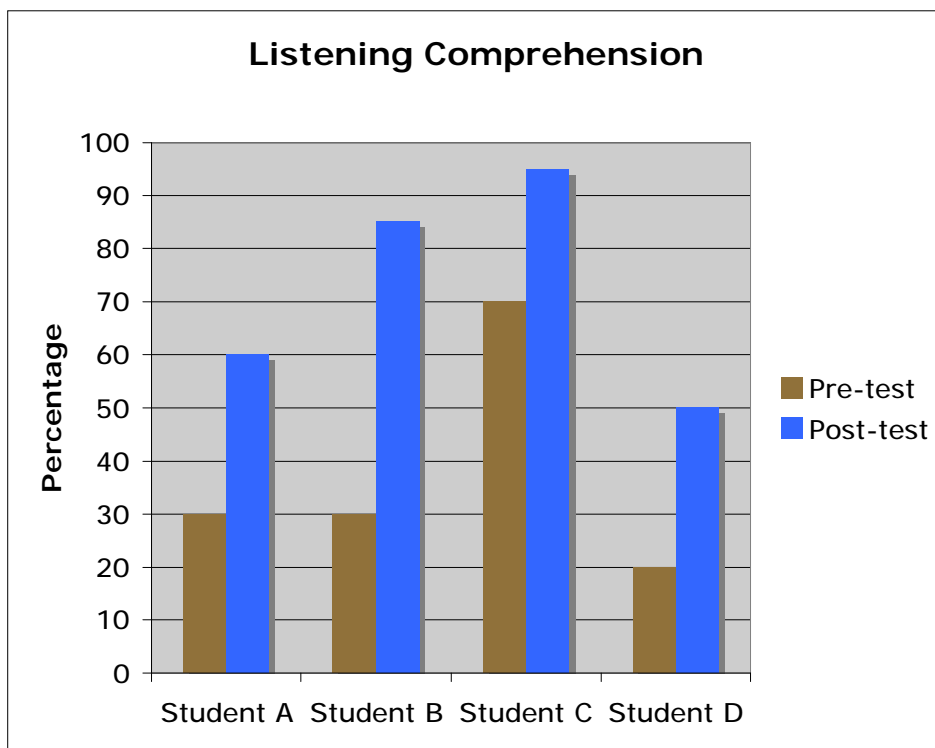


Figure 2

The above data indicates that, for all students listening comprehension increases as

practise with mental imagery increases.

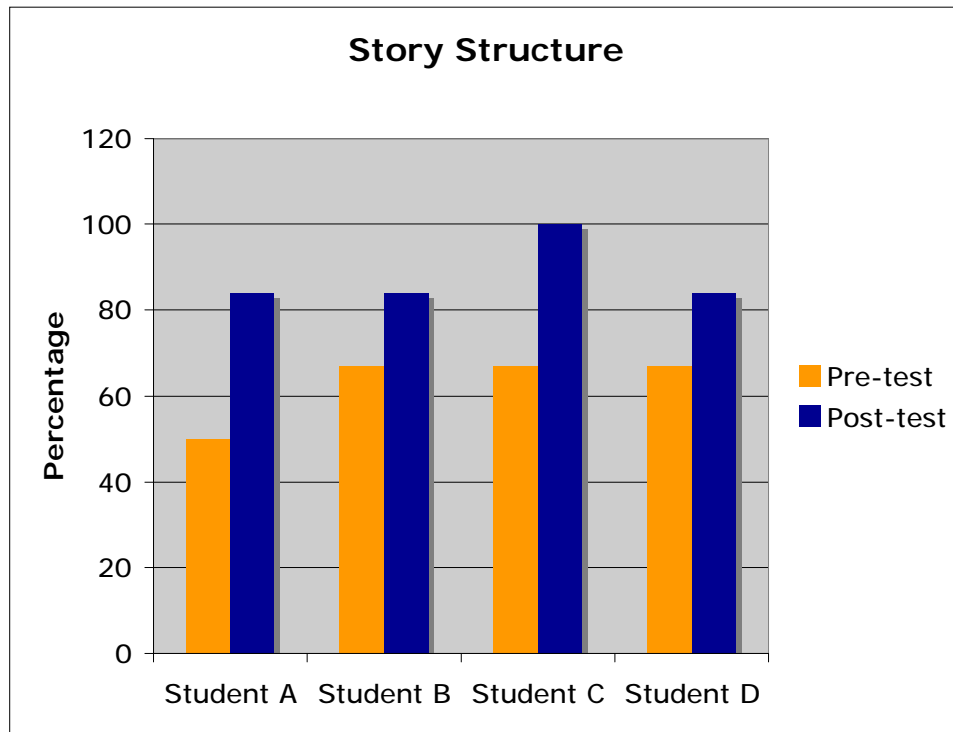


Figure 3

The results from the story structure component of John Munro’s Listening comprehension test indicate that the explicit teaching of the comprehension strategy of visualisation improves the student’s recall of main events that constitute the elements of story structure.

Following the pre-test the next five sessions focused on developing the children’s ability to recall information when being cued. During these sessions the students listened to the text, drew a picture to assist with their recall of information. After lesson five and six the students were assessed with a spontaneous retell of the poem- Flying Popcorn.

The students’ spontaneous retelling performance using John Munro’s model, 2002 is shown in table 2 and figure 4 below.

Table 2 spontaneous Retell of poem: Flying Popcorn

	LESSON 5 Number of ideas in poem	LESSON 6 Number of ideas in poem
Student A	4	7
Student B	3	6
Student C	5	7
Student D	4	7

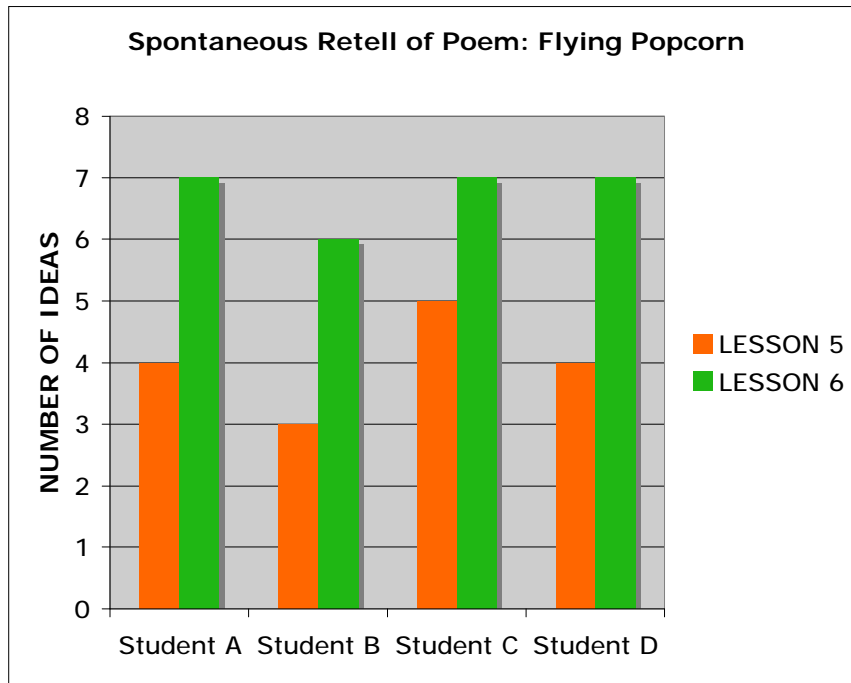


Figure 4

Discussion

The results of the assessment collected from the intervention supports the prediction that ‘teaching grade one students the strategy of visualization using our senses will improve listening comprehension and oral retell.’ All students’ results suggest that this intervention was successful, with each student increasing in their level of listening comprehension and oral retell. This indicates that explicitly teaching of visualization using our senses does improve comprehension.

Oakhill & Patel (1991) reported students of average ability at word level but poor comprehension did not appear to make inferences nor integrate ideas from the text. This was supported by the listening comprehension results of Students A, B and D. All these students showed a significant improvement in their listening comprehension. The small group instruction and the use of the cue cards helped to focus the students to the strategy. This was especially helpful for students A & D as they were initially very distracted and inattentive at the beginning of the teaching sessions, however, the cue cards assisted them to focus on the task and the researcher observed a significant change in behavior which resulted in improved use of the visualization strategy in later sessions. Student C commenced the sessions with a 70% listening comprehension result and during the initial sessions where the visualization strategy was being introduced she commented that she always made pictures in her mind when reading. However, through repeated practise she showed an increase of 25% in her listening comprehension skills.

In the early sessions the students were asked to draw mental images after hearing a word and sentences. The students’ drawings demonstrated a literal interpretation of the meaning, however, the five senses was introduced after lesson 4. The same word and sentences were repeated and the children were asked to draw the mental images,

this time using their senses to enrich their meaning of the word and sentences. In comparing the earlier images to the new images a significant difference was observed. The word was 'butterfly' and all students' images went from a single image of a butterfly to a butterfly in a garden setting with the sun shining. Student C drew musical notes and student B wrote "la, la, la" coming from birds in the pictures. The same differences were observed in the images drawn for the sentences. The mental images showed a more enriched interpretation when cued to use the senses when visualizing. These observations support the findings of Block & Pressley (2003). They reported children need to be instructed to use all of their senses when visualising as it helps them to create more developed images of the text.

As teaching sessions continued, the students showed a greater awareness of using visualisation to assist with the comprehending texts. In lesson 5 the students were cued to use the visualization strategy and their senses to assist with the retell. However, the results of the spontaneous retell were not as expected. So in lesson 6 the focus was on key words and phrases that help create vivid images and the students were assessed again. The effect of highlighting key words to assist with visualisation was not part of this study. However, after viewing the results from the spontaneous retell assessment after lesson 5 the researcher decided to focus on key words and phrases to see if there was any change to the results. The results as shown in figure 4 indicated an improvement in their retell. This finding suggests that when teaching the comprehension strategy of visualisation student need to be able to identify key words and phrases. The students did not seem to internalise the use of visualization as a strategy. This may have been the result of the action research project being limited to a sample size of four students and seven intervention sessions. However, increase the sample size, extend the period of intervention, look at more accurate ways to collect data on the use of the visualising strategy and its effective transfer into everyday reading practice may result.

Reading accuracy was not a focus of this research however, the results of the running records showed an increase in reading accuracy. This improvement may have been a result of the intervention or the students being familiar with the texts from the pre test.

The findings of this research support other research into intervention programs designed to improve student's comprehension. It has been suggested by other researchers that intervention should target multiple strategies. The findings of this action research suggest that using the senses while visualising enriches mental images and improves listening comprehension. Any strategy used in a classroom needs to be explicitly taught to enable the students to develop the strategic skills; this was supported by Pressley and Wharton-McDonald (1997). Drawing pictures assists with the development of the skill of visualisation by allowing the student to clarify their visualisation to the point where it can be communicated effectively to someone else. The data from this research demonstrates that visualisation is an effective strategy and using the senses enhances the results. This research highlights that through explicit teaching the effectiveness of these strategies can be improved. This has implications for the explicit teaching of comprehending strategies. The classroom program, which systematically targeted the explicit teaching of comprehending strategies to develop and improve comprehension, should see gains in students' ability in reading comprehension.

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Appendix 1

Task: Listening Comprehension

- Instruction to student: *I am going to read you a story. Listen carefully. When I have finished I am going to ask you to tell the story back to me.* □
- Read the first story below aloud to the student. Read it as a story. □
- When you have finished, ask the student to tell you what happened. Say *now tell me the story. Say all you can about it. You can say it in your own way.* □

Jane was at school and went out to sit on the seats and eat her lunch. □ As she opened her lunch box, it fell over and her lunch went on the ground. □ Jane wondered what she was going to do. Her sandwiches now had dirt all over them. She told her friend, Susan. □ Susan took one of the sandwiches from her lunch-box and shared it with Jane. □ After lunch, Jane and Susan went into the playground and had a good time playing chasey.

Teacher record sheet

The student needs to retell events in sequence to score points.

Write down the student's immediate story retelling as accurately as possible

Prompt provided: Yes / No

Record Retell of Events

	✓ or X		✓ or X		✓ or X
Jane		at school		went out	
sit		on seats		lunch	
opened lunch- box		fell over		lunch on ground	
sandwiches		dirt		told friend	
Susan		Susan took sandwich from her lunch-box		shared it with Jane	
after lunch		Jane and Susan		went into playground	
had a good time		playing chasey			

Scores: Immediate Recall: / 20

Story Structure

	✓ or X
Setting (<i>school, playground</i>)	
Initiating Event (<i>Jane dropped her sandwiches</i>)	
Internal Response (<i>Jane wondered what to do</i>)	
Attempt (<i>She tells her friend Susan</i>)	
Consequence (<i>Susan gave her a sandwich</i>)	
Ending (<i>They went off to play</i>)	

Score: / 6

Appendix 2

Name _____

Date _____

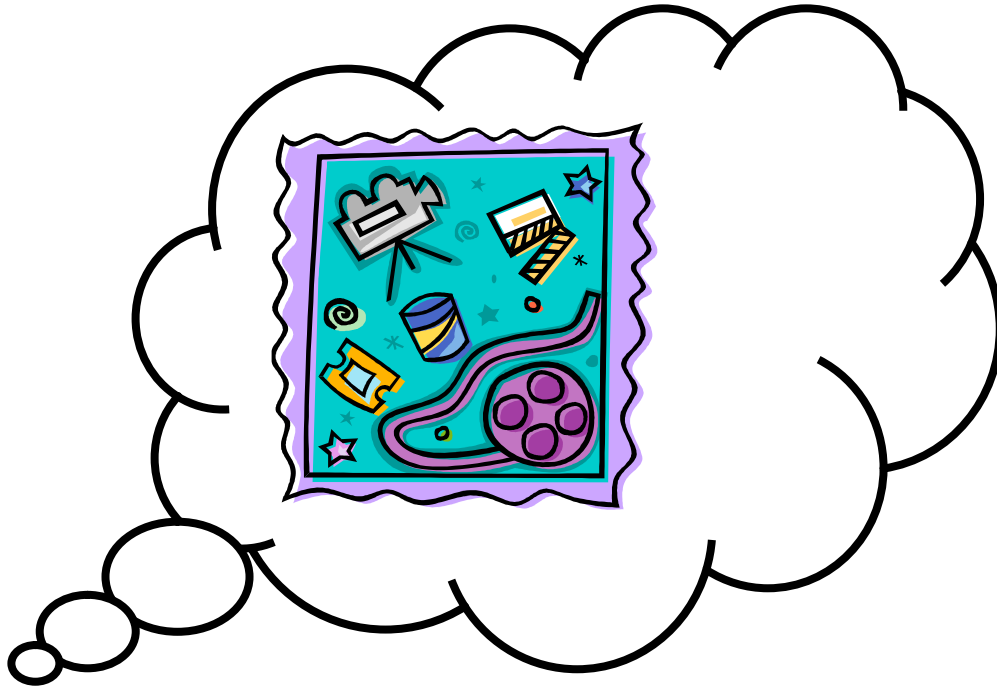
Mental Pictures from _____

By _____

My picture

My picture after using 5 senses.

Visualising



Creating a picture in my mind.
Using all of my senses to connect to the text.

I visualised.....

I could hear/see/smell/taste/feel.....

I could picture.....

A mental image I had was.....

Appendix 4

<p>Our 5 Senses Cue cards</p>	<p>See</p> <p>QuickTime and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>
<p>Hear</p> <p>QuickTime and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>	<p>Taste</p> <p>QuickTime and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>
<p>Feel</p> <p>QuickTime and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>	<p>Smell</p> <p>QuickTime and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>

Appendix 5

Flying Popcorn

A piece of popcorn
escaped from the pan
and flew across the kitchen
like superman.

It ping-ponged back and forth
between the oven and the freezer.
Then it shot up to the ceiling
like a daredevil trapeezer.

I tried to catch it,
but it never missed a trick.
So finally I gave up
and ate a licorice stick.

Arden Davidson 1998

Appendix 6

Teaching Unit

This unit comprises of 2 session for pre and post testing and 7 lessons based on the hypothesis that ‘Explicit teaching of mental imagery using the senses improves listening comprehension and oral retell of Grade 1 students’. This unit was designed for year 1 students who are beginning readers. It was taught in a small group situation. The students were exposed to explicit teaching to develop their ability to make mental pictures whilst reading. Cue cards were used as prompts to direct their thinking. The students practiced this strategy every lesson and recorded their images in pictorial form. They used these pictures to recall what they had read and used them for the purpose of retelling the story.

Lesson 1

Focus: Introduce the comprehension strategy of visualisation/mental imagery

Step 1: show children a picture of a birthday party and ask the following questions:

- How does this picture make you feel?
- If you were at the party how might you feel?
- Make a picture or movie in your mind about the party?

Step 2: Children to describe what they see

Step 3: Teacher to describe his/her mental image

Step 4: Compare the different mental images and discuss why they might be different/similar.

Step 5: Show children the visualisation poster (appendix 3) and explain to the children that is what they have just been doing. Discuss how we make mental images all the time especially when we are reading. Explain how in the next couple of week we will be working on this strategy to help them with understanding the meaning/stories they read.

Lesson 2

Focus: Review of lesson one: Creating and describing mental images

Step 1: Review and discuss how we can make picture in our mind when we hear or read a story. Revisit Visualisation poster as a cue to using this strategy.

Step 2: Teacher: “The girl fell over.” Ask the children what is the picture they see in their mind. Ask the children to describe their picture. Compare and discuss the detail in the different descriptions.

Lesson 3

Focus: Create a picture in your mind from a single word

Step 1: Review how we make pictures in our mind and refer to Visualisation poster

Step 2: Teacher: Say the word butterfly

Children to draw what they see in their mind and describe their drawings/mental picture.

Step 3: Discuss our five senses- hear, sight, smell, taste & touch
Introduce cue cards for our 5 senses (appendix 4).

Step 4: Say the word butterfly again and ask children to make a picture in their minds but use their 5 senses. Children to draw what they see and describe their pictures.

Step 5: Compare first picture to the new one. Children to say how the pictures in their mind have changed when they used the senses to add detail.

Lesson 4

Focus: Create a picture in your mind from a sentence

Step 1: Review how we make pictures in our mind using visualisation poster and 5 senses cue cards

Step 2: Teacher: Say the word the sentence: “The boy ran into the street without looking.” and remind children to use the senses.
Children to describe their mental pictures.

Step 3: Teacher: Say the word the sentence: “When I woke up, there were branches and leaves all over the yard.” Children to draw what they see and describe their pictures.

Step 4: Children to compare their drawings/mental pictures

Lesson 5

Focus: Create a picture in your mind from a poem. Children to visualise each event in the poem, Flying Popcorn.

Step 1: Read the first verse of the poem – Flying Popcorn (appendix 7)
Draw their mental image, then with a partner the children will describe the pictures they have created in their minds.

Step 2: : Read the second verse of the poem – Flying Popcorn

Draw their mental image, then with a partner the children will describe the pictures they have created in their minds.

Step 3: Read the third verse of the poem – Flying Popcorn

Draw their mental image, then with a partner the children will describe the pictures they have created in their minds.

Assessment: Spontaneous Retell recorded in a table of events in the story (appendix 8). Individually the children will be asked to retell the events in the poem 'Flying Popcorn'.

Lesson 6

Focus: Identifying key words/phrases that help create vivid mental images

Step 2: Read poem '*Flying Popcorn*' for a second time and children will explore ideas or feelings, which add more details to their mind's picture.

Circle words in the text that best help you to form great mind pictures about the poem. Teacher to ask: "What ideas of your own did you add which made the picture vivid or more interesting but which were not in the poem itself?"

Step 3: Discuss your mind picture again with your partner.

Teacher to ask: "What new details or ideas appear in your mind pictures as a result of the second reading of the poem?"

Step 4: Teacher to lead discussion.

"How are your & your partner's mind pictures similar?"

"How are your & your partner's mind pictures different?"

"How do you explain the similarities & differences in your mind pictures?"

Assessment:

Focus: to see if the children's retell changes after lesson 5 Spontaneous Retell recorded in a table of events in the story (appendix 8). Individually the children will be asked to retell the events in the poem 'Flying Popcorn'.

Lesson 7

Focus: Using all senses to comprehend and infer meaning from a text

Step 1: Read *Big Red Bath* by Julia Jarman & Adrian Reynolds

Step 2: Children to describe and draw the mental images created.

Step 3: Compare and discuss mental images

Appendix 7

	Ideas in the poem: Flying Popcorn	No of ideas	Lesson 5	Lesson 6
1 st stanza	<ul style="list-style-type: none">• Popcorn escapes from the pan• Flew across the kitchen like Superman	1 1		
2 nd stanza	<ul style="list-style-type: none">• Ping-ponged around the kitchen• Was like a trapeezer	1 1		
3 rd stanza	<ul style="list-style-type: none">• Tried to catch it, but the popcorn was too hard to catch• Ate liquorice stick instead	2 1		

Appendix 8

Student A

	Ideas in the poem: Flying Popcorn	No of ideas	Lesson 5	Lesson 6
1 st stanza	<ul style="list-style-type: none"> • Popcorn escapes from the pan • Flew across the kitchen like Superman 	1 1	- ✓	✓ ✓
2 nd stanza	<ul style="list-style-type: none"> • Ping-ponged around the kitchen • Was like a trapeezer 	1 1	- ✓	✓ ✓
3 rd stanza	<ul style="list-style-type: none"> • Tried to catch it, but the popcorn was too hard to catch • Ate liquorice stick instead 	2 1	✓✓ -	✓✓ ✓

Student B

	Ideas in the poem: Flying Popcorn	No of ideas	Lesson 5	Lesson 6
1 st stanza	<ul style="list-style-type: none"> • Popcorn escapes from the pan • Flew across the kitchen like Superman 	1 1	- -	✓ ✓
2 nd stanza	<ul style="list-style-type: none"> • Ping-ponged around the kitchen • Was like a trapeezer 	1 1	✓ -	✓ ✓
3 rd stanza	<ul style="list-style-type: none"> • Tried to catch it, but the popcorn was too hard to catch • Ate liquorice stick instead 	2 1	✓✓ -	✓- ✓

Student C

	Ideas in the poem: Flying Popcorn	No of ideas	Lesson 5	Lesson 6
1 st stanza	<ul style="list-style-type: none"> • Popcorn escapes from the pan • Flew across the kitchen like Superman 	1 1	✓ ✓	✓ ✓
2 nd stanza	<ul style="list-style-type: none"> • Ping-ponged around the kitchen • Was like a trapeezer 	1 1	✓ ✓	✓ ✓
3 rd stanza	<ul style="list-style-type: none"> • Tried to catch it, but the popcorn was too hard to catch • Ate liquorice stick instead 	2 1	- - ✓	✓✓ ✓

Student D

	Ideas in the poem: Flying Popcorn	No of ideas	Lesson 5	Lesson 6
1 st stanza	<ul style="list-style-type: none">• Popcorn escapes from the pan• Flew across the kitchen like Superman	1 1	✓ -	✓ ✓
2 nd stanza	<ul style="list-style-type: none">• Ping-ponged around the kitchen• Was like a trapeezer	1 1	- ✓	✓ ✓
3 rd stanza	<ul style="list-style-type: none">• Tried to catch it, but the popcorn was too hard to catch• Ate liquorice stick instead	2 1	✓ - ✓	✓✓ ✓

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