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An investigation of the use of verbalization to improve representational drawing performance

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**AN INVESTIGATION OF THE USE OF VERBALIZATION TO
IMPROVE REPRESENTATIONAL DRAWING PERFORMANCE.**

by

PATRICIA WATERS, B.A. (EDUCATION)

A Thesis Submitted in Partial Fulfilment of the Requirements for the

Award of Bachelor of Education with Honours

at the School of Education, Western Australian College of Advanced

Education.

Submitted December 18 1990.

Abstract

Drawing is a fundamental skill for the creation of art. This investigation set out to discover whether or not the application of verbalization to an efficient drawing strategy increased students' perceptual observation skills to enhance representational drawing ability.

The study group consisted of 20 Year 8 art students from a northern suburbs coastal secondary school in Perth. Their ages ranged from 12 to 14 years. They were randomly divided into two groups, experimental and control. The pretest and posttest drawings of the students from both groups were analyzed by four expert judges using an evaluation guide to determine the accuracy of the drawings.

The design of the study followed an experimental pretest, posttest format. It was conducted over a 3-week period. The conclusions are based on the outcome of six lessons. Lesson 1 (the pretest) and lesson 6 (the posttest) involved the students drawing from a clothed live model, using graphite pencil on cartridge paper. The control group was treated in the same way as any other year eight class during the teaching of a figure drawing strategy. The experimental group was encouraged and expected to verbalize (talk through their actions and thoughts) during all stages of learning this same figure drawing strategy.

The structure for this study is based on work done by Boughton (1973). Data was analyzed using instruments developed by Boughton to collect information relating to the alternative drawing strategies under investigation.

T-tests were used to compare the posttest drawings of both the experimental and control groups. These comparisons revealed that both groups improved their drawing performances significantly between the pretest and the posttest. As there was no significant difference between the posttest scores of both groups the present study did not find that verbalization significantly improves drawing performances.

Further study in relating verbalization to the teaching of drawing to inexperienced students is required before more conclusive evidence supporting or disproving this hypothesis can be determined.

Declaration

I certify that this thesis does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material published or written by another person except where due reference is made in the text.

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Chapter 1

INTRODUCTION TO THE PROBLEM.

1.1 Importance of the Study

Drawing is considered to be basic to many aspects of art education (Boughton, 1973, 1988, Capon, 1976, Nicolaides, 1941). The Unit Curriculum (Ministry of Education, 1988) used in all government secondary schools in Western Australia for years 8 to 10, has a dimension called "visual inquiry" which is "the development of skills of inquiry based on perception", leading "to a collection of predominantly drawing-based experiences reflecting creative development of ideas and concepts" (Ministry of Education, 1988, p.3.) The Year 11 TEE Art course has a compulsory drawing component because it is felt that "sound drawing skills are fundamental to the course " (Ministry of Education, 1987, p.5).

Nicolaides (1941) believed that the impulse to draw is as natural as the impulse to talk; although to develop perceptual skills involved in different ways of seeing is a difficult task. There are many theories and methodologies related to the teaching of drawing. Some of the most helpful in the secondary school context are proposed by Boughton (1973), Capon (1976), Edwards (1987), Eisner (1972) and Nicolaides (1941). Teachers in secondary schools in Western Australia generally have a 10-week period in which to help lower secondary students develop aspects of visual inquiry, visual literacy, learn some art history and criticism, and produce a studio piece or two. Teachers must decide which drawing strategy is most suitable for producing good results in the short time devoted to drawing in the art programme.

The Unit Curriculum (Ministry of Education, 1988) claims that "to be visually literate requires the same processes of learning as those found in any other field of study". Verbalization is a strategy that has been used to boost students' mathematics achievement (Schunk, 1981) and other self-regulated learning (Schunk, 1986).

Verbalization has been applied to the field of art to improve retention of information about art works (Koroscik, 1983, 1986, 1988) and as a method of teaching art processes to able students (Wharton, 1981).

Drawing is said to be a mixture of previously learnt graphic symbols, or schema, and the ability of the individual to translate, through an art media, what is seen in nature (Boughton, 1973, Eisner, 1972). Boughton (1973) applied verbalization to the act of drawing to enable students to differentiate between previously learnt schema and the reality which confronted them on particular occasions. With that in mind this study set out to investigate whether students show a significant increase in drawing performance when verbalization (a conscious explanation of what the hand is about to do, thinking aloud) is applied to the entire drawing process.

Drawing is fundamental to visual art and the mastery of some aspects may help students develop ideas for further investigation. It should increase understanding of visual relationships which help them to represent the world (Ministry of Education, 1988). Many drawing programmes are unsuitable for use in the classroom. Some may be too long, too complex, too limited or unrelated to childrens' art development. One of the major problems facing the art teacher is time. The average time spent on art by lower secondary students in Western Australia is 100 minutes a week over two terms. One fifth of this time is for visual inquiry. This is not long considering Nicolaides (1941) recommends one year for his drawing programme. Although Capon (1976) believes everyone can draw, Malins (1981, p.8) considers "the kind of seeing necessary to make a visual analysis as difficult" (p.8) and only achieved by intensive training and self discipline by someone who has innate talent to begin with. Everyone can certainly draw to some extent. Teaching accurate representational drawing however can be a long process, depending on the initial ability of the students. Teachers must do their best with resources available.

It is predicted that the use of verbalization during drawing will increase the efficacy and efficiency of a particular drawing strategy by developing student understanding of the concepts involved. This understanding is desirable as it is necessary to ensure that students are taught as efficiently as possible in the time allowed.

1.2 Statement of Hypothesis

Research question : Does the use of verbalization improve representational drawing skills based on a live model?

Hypothesis : The use of verbalization improves representational drawing skills based on a live model.

Null hypothesis : The use of verbalization does not improve representational drawing skills based on a live model.

Subsidiary questions - sub hypotheses.

Two of the research findings reported by Boughton (1973) are that :

- (a) young adolescent students become dissatisfied with their drawings because they are unable to draw realistically without being taught, and
- (b) the figure is the most popular subject for this age group.

These findings lead one to the following questions :

- 1 Are students dissatisfied with their drawings ?
- 2 Are students who have greater drawing ability more satisfied with their drawings than students who have less drawing ability ?
- 3 Is the figure the students' favoured drawing subject?

A major focus of this investigation is the use of verbalization. It is also relevant to ask two further questions :

- 4 Are students able to verbalize?

5 Are students aware of the meanings of the terms with which they verbalize (ie shape, proportion)?

1.3 Limitations

For optimal results it would be best if the same teacher or two teachers of equal experience were used to teach both groups. However the same teacher could not teach both groups because of time limitations, and it was also impossible to obtain two teachers of equal experience. The teacher of the control group in the present study had 15 years experience teaching art and the teacher of the experimental group had graduated the year before the study was conducted. It is acknowledged that the difference in teacher experience may have affected the results of the study in favour of the control group. However, the behaviour of both teachers was observed by an independent observer using a 22 point check list enabling the teaching behavior of the two instructors could be compared.

The sample size was small - only 10 subjects in each group. This also was due to time limitations; only one class could be trained in the time available. The smaller the sample size, the more difficult it is to find a significant difference between the groups. Therefore it is acknowledged that the present study will find a significant difference between the groups only if the effect of verbalization is quite large. If the effect of verbalization is equal to or only slightly superior to the ordinary teaching method, then no significant difference will be found.

1.4 Definition of Terms

Verbalization : putting words to a process or idea; overt private speech (external, aloud or whispering) "that has a self-regulatory function but is not necessarily socially communicative" (Fuson, 1979, cited by Schunk, 1986, p 348).

Drawing: "the process of making marks on a surface to form lines, tones, and textures in order to obtain an image of the perceived object, using media with value ranges from black to white" (Boughton, 1973, p. 6).

"the art of depicting forms or figures on a surface by means of lines: a portrayal of a form or figure in lines on a surface" (Ilson, Crystal, Wells & Long, 1984).

Improved representational drawing performances : to be guaged by comparison of pretest and posttest drawings looking for an improvement or an increase in :

1. The presence of basic shapes (ie circles, ovals, rectangles, triangles) that appear in both the drawing and the model.
2. The proportion of basic shapes as they appear in the drawing and on the model.
3. The details that appear in the drawing as are seen on the model.
4. Skill in representing the detail (tonal, linear quality).
5. Appendages joining the body in a functional manner.

(Adapted from Boughton, 1973.)

It must be noted that these criterion for improved drawing performances applies to this study only, not to drawing in general.

Perception: "action by which the mind refers its sensations to external objects as cause" (Coulson, Carr, Hutchison & Eagle, 1975).

"the awareness of the external world, or some aspect of it through physical sensations and the interpretation of these by the mind" (Ilson et al 1984).

Realistic: "things in their true nature: as they are" (Coulson et al 1975).

"seeking to represent what is objectively real, closely representing the object, scene, or person being represented" (Ilson et al 1984).

Chapter 2

REVIEW OF LITERATURE.

2.1 The Importance of Drawing

Drawing is thought to be the earliest art technique and form of communication known to humans (Laliberte, 1976). Drawing is also considered to be a fundamental component of art education (Ministry of Education, 1987, Boughton, 1973, Capon, 1976, Nicolaides, 1941). "The primary concern of students is to expand their ability to experience and state their world in visual terms that communicate, and to understand better the options and obstacles that confront them when drawing from nature." (Goldstein, 1983, p.iv.) The curriculum currently in use in secondary schools addresses these problems of visual literacy. Teachers must use strategies that enable students to visually respond to their environment, and to overcome the problems that they face when drawing from nature.

Boughton (1973, p.iv) writes that "because drawing is basic to many aspects of the art education curriculum, skills acquired may benefit the student in other areas of art." This view is echoed in the Unit Curriculum (Ministry of Education, 1988) currently in use in all Western Australian government secondary schools. This document has a heavily based drawing component called "visual inquiry" which involves exploring different ways to interpret and represent the environment through drawing. The curriculum was designed to provide students with a wide range of experiences in all facets of art. Visual inquiry, visual literacy, art history, art criticism and studio are the five components. It is hoped that each of these dimensions will strengthen understanding of the others. They each look at different aspects of art which together provide a picture of the many different ways in which art can be approached.

While it is agreed by those authors listed above that drawing is essential to art education, views on drawing differ. Some believe that drawing is an innate need in

people (Nicolaidis, 1941). Capon (1976, p.7) claims that "drawing is a basic and natural act of self expression; everyone can draw. Too often, however, students are timid, inhibited, or suppressed; frequently they lack the knowledge of many possible forms of drawing." He believes that while methods and techniques can be taught to a certain extent, each person's drawings are their own interpretation of the subject. Eisner (1972) supported this, claiming that what a child learns is, in part, due to what he has previously experienced. He believes that people reach a certain level of ability in art (at about age 11 or 12) then stay at that level. They cannot progress further unless taught. He points out that artistic learning deals with the development of productive, critical and cultural knowledge and teachers can, to some extent, develop this.

Boughton (1985) states that art forms used by children for early expressive purposes are not appropriate when they try to draw "realistically". (An example of early expressive drawing is the human figures drawn by young children, or their lollipop trees.) Young adolescent students need to be taught to expand their perception, how to see in different ways, e.g. sensory awareness exercises, visual stimulation. It is believed that remembered images of, for example, trees, may cloud the perception of a particular tree that one is trying to draw (Boughton, 1985, Eisner, 1972). Students feel more comfortable with stereotypes. When faced with a difficult drawing situation students tend to revert to stereotyped drawings of the subject.

Boughton (1973, 1985), Capon (1976), Edwards (1987), Eisner (1972), Malins (1981), Nicolaidis (1941) and Ruskin (1857) all agree that drawing involves expressing visual relationships between points, lines, tones and so on. Drawing involves perception (defined on p.14). "The methods found to be most successful in improving drawing skills are those which combine some form of perceptual training with drawing ability" (Boughton, 1985, p.17). It appears that some form of perceptual training is essential in any comprehensive art course. Exercises regarding spatial

relations, tonality, implied texture and many other drawing strategies are used to teach perception. Exactly what this involves is a point of contention as not all teachers use the same methods but whatever view one holds it is essential to develop student understanding of perceptual concepts to ensure efficient teaching and learning.

2.2 Different Drawing Methods

Many reference books and programmes, full of useful information on the teaching of drawing, have been written. Not all are suitable for the local context, partly due to the unit curriculum which may limit content, time and sequence. In Western Australian secondary schools the teacher may only have contact with each student over one or two terms. Considering that drawing should occupy no more than one fifth of the time allocated for art because of the structure of the unit curriculum, one can see that only limited drawing skills can be taught.

Ruskin (1857) believed it takes 150 hours of practice to give enough skill to allow students to draw "faithfully" whatever they want (p.27). Nicolaides (1941) assumed that students had a year (of part-time study) to develop their skills. More recently Edwards (1987) demonstrated that students can show a marked improvement in drawing ability over a matter of weeks. The ability level of Boughton's students (1973) increased over a short time, with his study taking place over 3 weeks, a total of 4 hours devoted to drawing instruction. However, Capon (1976, p.7) says "drawing is an act of expression and only to a limited extent can it be taught," He believes that, while methods and techniques can be taught, each person's drawing is his or her own interpretation of the subject. As each individual perceives and responds to the world differently this appears to be correct, supporting what Boughton and Eisner say about previously learnt images and the frame of reference used having an effect on the product. "Most drawing consists of discovering the difference between what we know and what we see," writes Malins (1981, p.8). Unlike those mentioned above Malins

believes that perceptual seeing is a difficult task which can only be achieved after much training by people who have talent to start with.

The methods of all the people mentioned have been shown to be successful to some extent. They seem to reflect the status of drawings in each particular era. During the time of Ruskin's writing, drawing was used as a basis for master works and was rarely viewed as an end in itself. People have since come to appreciate drawings as artworks in their own right, some quick gestural drawings are admired more than their polished counterparts.

According to the Ministry of Education (1988) one of the teacher's jobs is to decide which particular methodology suits the particular situation. No one way is best. It is necessary to vary students' exposure to art methods. Time and resource limitations should also be taken into account.

"The kind of drawing which is taught, or supposed to be taught, in our schools, in a term or two, perhaps at the rate of an hour's practice a week, is not drawing at all. It is only the performance of a few dextrous (not always even that) evolutions on paper with a black-lead pencil profitless alike to performer and beholder" (Ruskin 1857, p.26).

Although written over one hundred years ago this statement could quite easily be related to drawing taught in our schools today. While the methodologies used to practice drawing in schools may have changed, whether they are any more effective or not is a subject for debate as no more time has been allocated to the teaching of drawing than was allowed at the time Ruskin wrote. Perhaps Ruskin is right, but given that this is the situation we are in, with limited time to spend on drawing training, it should be possible to improve the matter with verbalization.

A common factor in the literature on drawing is the use of examples of master artworks to illustrate concepts. Capon's (1976) book is an illustrative description of drawing ideas and techniques of various artists. Goldstein (1983, p.xi) stated that "although old and contemporary master drawings illustrating various points in the text have been instructive and stimulating...seeing student examples...illustrating solutions...would give the reader a better sense of the level of achievement to aim at...Most student drawings show more clearly the means used to achieve a result than do most masterworks." In the classroom situation the use of both these stimuli is possible and desirable. Laliberte (1976) uses his own drawings as well as those of master artists to illustrate his text. Nicolaides' (1941) text is illustrated by the work of students and master artists. He had planned to use his own drawings but he died before his book was complete. Malins (1981) wrote a book for art students to use, to further their development, based on drawing methods of master artists. By exposing students to master drawings it is anticipated that they will find techniques or ways of expression that they might not discover without this influence. Selected works from the print room at the Art Gallery of Western Australia were viewed during this study by both groups, with the experimental group being encouraged to verbalize throughout the session.

2.3 Verbalization

Verbalization, the putting of words to a process or idea (Fuson in Schunk 1986, p.348), is a learning strategy which has been used successfully in several areas of education. When Grade 9 and 10 students were asked to state a reason for every step they were taking, they showed greater problem solving abilities (Gagne and Smith, 1962). Ausubel (1963) affirms this finding in his belief that it is possible to gain knowledge through reception, and that verbalization aids facilitation of reception. It has been found that combining operational strategies with verbalization in mathematics resulted in greater skill development (Schunk, 1981). Verbalization also assists in development of self-regulated learning of cognitive skills (Schunk, 1986).

2.4 Verbalization in Art Education.

Verbalization has been used in art education research. Wharton (1981) used verbalization of art processes as a method of teaching able students. They responded well to this strategy. Koroscik (1983,1988) found that when students gave their own name to an artwork aloud, they retained more information about that artwork when asked about it at a later date. Brent Wilson and Marjorie Wilson (1981) suggest that if an adult and child draw together and discuss their work, the child's graphic skills will develop. Both participants learn from observing their partners use of line, tone, perspective and so on. (This idea comes from the work of Vygotsky (1934 / 1986) who argued that there is a level at which children can perform by themselves, but above that level is what Vygotsky called "the zone of proximal development." Vygotsky said that the size of this zone is an indication of the child's readiness to learn about a particular concept. Educators since Vygotsky have argued that this is one of the best ways to teach a child is to teach them within this zone, i.e. in collaboration with another adult or child.) The Wilsons claim that this graphic dialogue will also work effectively between two students. Boughton (1973) applied verbalization to the task of differentiating between previously remembered images and the reality of a particular subject.

Verbalization has been shown to be a useful learning aid throughout many areas of education. However Schunk (1986) warns that verbalization may not help when students can already do a task. It may actually distract students in this situation as it is an extra task to be thought about. This idea is supported by Edwards (1987) who reported that she could not talk and draw at the same time. She believes that verbalization and spatial, analytical processing require the use of different parts of the brain and to use both together limits the effectiveness of both. The subjects involved in this study are novices in the area of realistic figure drawing, unlike Edwards who is an art educator. Using verbalization as a learning strategy may not detract from their

performance because of their beginners status. When beginning to learn a skill it is necessary to concentrate on every action, but after becoming familiar with a task this intense concentration may not be needed. When learning to draw realistically it is essential to concentrate throughout the act. Verbalization during the drawing process is intended to enable students to concentrate more closely on what they are doing.

Verbalization can be used to differentiate between remembered schema and reality, to discuss one's own work, to talk about the drawing strategy one is using, and in discourse about master artworks. Perhaps verbalization would best be used to teach drawing to students who have not yet progressed to the stage of realistic drawing. It may be possible to combine and extend the approaches discussed above. All this talking may enable students to grasp ideas more firmly, which could result in improved drawing performance.

Summary

In a normal class situation students with lower drawing ability command more of the teachers' time and attention. During this study the teacher of the experimental group endeavoured to spend the same amount of time with each pupil so there was no bias in this way. It was not expected that verbalization would standardize and conform drawings to teacher expectations.

Drawing is a fundamental art activity. Some form of perceptual training is essential in any art course, although in lower secondary schools in Western Australia there is limited time available to do this.

Verbalization has been used successfully as a learning strategy in mathematics (Schunk, 1981), to assist self-regulated learning (Schunk, 1986), and to implement greater problem solving skills (Gagne and Smith, 1962). It has been used in art to develop

graphic skills (Wilson and Wilson, 1981), and to retain information about artworks (Koroscik, 1983, 1988).

By applying verbalization to realistic drawing, a task to which adolescents attach much importance (Boughton, 1973) and find difficult (Boughton, 1973, Eisner, 1972, Malins, 1981), students may find their drawing performance noticeably improved in the short time available.

Chapter 3

DESIGN OF THE STUDY.

3.1 Overview

Boughton (1983) focussed on satisfaction and ability changes in figure drawing of lower secondary school students in Calgary, Alberta. He showed that by following a specified drawing strategy (defined on page 17), students' abilities to produce more realistic figure drawings increased. The students also became more satisfied with their work (although whether this was because they felt they were producing what the teacher wanted or whether it was intrinsic satisfaction was not investigated). Boughton applied verbalization to this strategy so that the students could focus better on the actual figure before them without their perception being clouded by schematic memories of what a figure is.

Boughton's drawing strategy was used in this study and was conducted in Semester Two, Term 3, 1990. It was a pretest, posttest experimental study which was conducted over a 3-week period commencing at the start of a unit. One Year 8 class was divided into two randomly formed groups, one control, one experimental. The students were seen twice a week during the time allocated to art, six lessons in all.

3.2 Subjects

The subjects were 20 Year 8 students from a northern coastal suburbs senior high school in Perth.

3.3 Methodology

The whole class was asked to draw a figure from a live model (this was the pretest). They were then randomly divided into two groups, experimental and control. (Each student was allocated a number. The numbers, written on pieces of paper, were taken from a container one at a time. The student corresponding to the first number drawn

was placed in the experimental group, the student corresponding to their second number drawn was in the control group, and so on.) Both the control and experimental groups were taught the drawing strategy used by Boughton (1973). The experimental group was taught to verbalize through all stages of the drawing classes. The control group were taught as the teacher would have treated any other Year 8 class, that is keeping verbalization to a minimum during the drawing process. At the end of the 3-week programme a posttest was given to the students. As in the pretest the students were asked to draw from a live model. No instruction was given during the pretest or posttest both of which allowed 35 minutes for drawing. The drawings of the students from both tests were analysed by four judges who used an evaluation guide to determine the accuracy of the drawings. The data was then analysed by applying t-tests to both the pretest and posttest scores of both groups to determine if there was a significant difference between the drawing improvement of the groups.

3.4 Drawing Strategy (Boughton 1973)

These are the steps set out by Boughton which resulted in increased realism and student satisfaction with their drawings.

- 1 Examine the nature of large shapes that make up the figure. Practice drawing them separately.
- 2 Estimate height/width relationship of total figure. Alter the proportion of the drawing page to match.
- 3 Identify key points of change of direction in the figure. Find each on the page in terms of their relationship to the edges of the page and each other. Proceed in this order : (a) top of head (b) end of body (c) chin (draw head) (d) shoulders (draw body) (e) knees (draw upper leg) (f) ankles (draw lower leg) (g) toes (draw feet) (h) elbows (draw upper arms) (i) wrists (draw lower arms) (j) fingertips (draw hands).

- 4 Basic shape drawing developed in Stage 3 must be dark enough to be seen through a new, semi-transparent sheet of paper placed over the top of it. Students are to draw detailed contour lines on the new sheet, relating placement of details to basic configurations beneath.
- 5 Put aside basic shape drawing and place another sheet over the contour drawing. Experiment with different lines to draw the detail, using the contour drawing as a guide. (Boughton, 1973, 1985)

3.5 Instruments

The instruments Boughton (1973) used to record performances are suitable for this study.

1. Judges' Evaluation Guide. This states the criterion for evaluation of the drawings. (Appendix A.)
2. Judges' Score Sheet : Drawing Ability Test. The scores relating to the evaluation guide were placed on this. (Appendix B.)
3. Observer's Check Sheet. Possible effects of instructor bias were measured by an observer recording teacher behaviour on the check sheet. Not all items were appropriate to this situation, for example, there are no chalkboards in two of the art rooms at the school where this study was conducted so any items mentioning its use were ignored. (Appendix C.)
4. Amended Satisfaction/Dissatisfaction Scale. This is a 9-point scale ranging from "It is terrible" to "It is excellent" which the students used to grade their own drawings. (Appendix D)

Chapter 4

PROCEDURE

4.1 Lesson 1.

Pretest. Both groups

Students were introduced to the teachers and the model. The students were told to draw the model to the best of their ability without talking to anyone else. It was explained that the drawing done would be assumed to be the best they could do, so they were advised to be serious about it. Sheets of A2 cartridge paper and graphite pencils were distributed and the students were set to work. They drew for fifteen minutes, had a two minute break and then drew for a further twenty minutes. The students then rated their drawings using the Satisfaction/Dissatisfaction Scale. After the drawings and materials had been collected the class was randomly divided into two groups. These groups were then randomly designated as experimental and control groups. Permission forms for the parents to sign giving agreement for the children to participate in the study were then given out. Photographs on slide film were taken of the model after the lesson to allow for accurate evaluation.

4.2 Lesson 2.

Experimental Group Treatment.

The students were asked how many of them moved their lips when doing a difficult mathematics problem. All answered positively. Upon being asked why they did so they responded that it made it easier to think. It was explained that this act of talking to oneself when confronted with a problem is called verbalization and that this was to be applied to the drawing that they would be doing over the next few lessons.

Boughton (1973) provided a detailed transcript of key questions and instructions used to guide the production of "drawing one" by the experimental group. This was followed closely with the experimental group following the introduction to lesson 2, and is as follows:

Height - Width Relationships (Boughton 1973)

(A.=Student answer, I.= Teacher instruction, Q = Teacher question)

Q. If you drew the model so the head touched the top of your page, the feet touched the bottom and the shoulders touched the side, would the drawing "look right?"

A. No, the figure would be too wide.

I. When making a drawing, as a beginner, it helps if your page has the same height-width relationship as your model. See if you can fold your page so that it does this.

Use of the Drawing Instrument.

I. Most people, when learning to draw, use the pencil as though they are writing. By this I mean that once they have drawn a shape they are afraid to change it, even though it does not "look right." Drawing becomes much easier if you are not afraid to change what you have already drawn. The best way to do this is to draw lightly at first, with continuous strokes until you can see that the shape is more to your liking. Then it is a good idea to work over it with heavier strokes to reinforce the favourable shape.

Further detail regarding the examination of basic shapes can be seen in Appendix E.

Control Group Treatment.

The presence of basic shapes in and around the classroom was examined, triangles, circles, squares and variations thereof. This was related to the figure. Circle; head square; torso triangle; folded arms, etc. were pointed out. Students were asked to select the highest point on the figure and run a horizontal line through it. They were then asked to do the same with the lowest point, then the widest to the left (and place a vertical line through it), and the widest to the right. The shape that resulted from this activity was a rectangle. Into this rectangle they were then asked to place all the basic shapes that they could see in the figure. The details (ie, nose and mouth) were visualized in the same way and added. It was stressed to the students that they must concentrate on the task and not speak at all, the only voice to be heard was that of the

teacher guiding the students. Proportion was also mentioned eg, "How large is the head within the length of the major rectangle? Measure with thumb and forefinger how many times the head fits into the total height of the figure." The philosophy of the different roles played by the left and right hand sides of the brain was mentioned. It is believed by some that the left hand side of the brain is in control of words while the right hand side is involved in conceptualization.

4.3 Lesson 3. Visit to the Print Room at the Art Gallery Of Western Australia.

This was to familiarize students with clothed figure drawings by artists.

Experimental Group Treatment.

The students filled in a questionnaire which asked them to describe how three different pictures were drawn (technique and medium), they copied shapes seen in at least five of the drawings (attempting to get the proportions right) and they described the feelings and emotions they interpreted from each of these drawings. The assistant curator gave a talk, explaining that although people draw differently their work is equally valid. After the time in the print room was over the students looked around the gallery, sketching any figures in paintings or sculptures that took their fancy. Unfortunately four of the students from the experimental group missed out on this excursion. Those that went produced some very good drawings during the session.

Control Group Treatment

The students received the same lecture from the curator as the experimental group. That was the only similarity. Students were introduced to the term "subject matter". Description of shapes, geometric, rectangles, and so on was discussed. So was "atmosphere", the feeling one gets from the paintings through the use of colour, line and shape. A variety of styles of drawing were viewed in the print room. The students copied their favourite drawing quickly using the basic shapes that they perceived.

4.4 Lesson 4

Experimental Group Treatment.

The students who did not attend the gallery visit were given a description of the experience by those who did. The main points raised were the different drawing styles - how everyone is different, the different media the artists used in their drawings and the effects this gave.

The students drew the teacher. Because of the brevity of the period not much was achieved. Most of the students managed to tackle shapes, contours and detailed drawing. Proportion was noticeably improving. Verbalization was stressed. The students took turns to describe to their neighbour their thought processes as they were drawing.

Control Group Treatment.

Students were given three magazine cuttings of figures in action. They traced over the figures (a) selecting negative spaces in basic shapes and simplifying if possible. (b) selecting directional or repetitive lines following the same direction. The teacher then did some modelling. The students related all they had learnt from the first activity into one drawing of the teacher. Once again silence was stressed with the teacher being the only one who was talking.

4.5 Lesson 5.

Experimental Group Treatment.

The students were paired and as one modelled the person drawing had to describe to his or her model what they were doing as they were drawing. The model arrived 10 minutes into the lesson. An audio recording of the students' verbalization processes was then taped.

Control Group Treatment.

Before the model arrived the teacher modelled. The model was positioned to create directional and repeated lines. By the use of questioning the students retraced the meaning of rhythmic and directional line. The students did a full page drawing, checking the proportion of the shapes in relation to the head length. They then drew using basic shapes only. Using this basic shape drawing as a guide the students used a second sheet of paper over it on which they drew a contour drawing of the figure. It was imperative that students had total concentration and did not talk at all during the drawing process.

4.6 Lesson 6.

Posttest (Both groups.)

The students were told to draw the model to the best of their ability without talking to anyone else. It was explained that, as in the pretest, the drawing done would be assumed to be the best they could do. Sheets of A2 cartridge paper and graphite pencils were distributed and the students were set to work. As in the pretest they drew for fifteen minutes, had a two minute break and drew for a further twenty minutes. These drawings were then rated using the Satisfaction/Dissatisfaction Scale. The drawings and materials were then collected and the students dismissed. Once again photographs were taken of the model from all angles to aid in the evaluation of the drawings.

Chapter 5

ANALYSIS OF DATA

5.1 Hypothesis

The use of verbalization improves drawing performances.

Null hypothesis : The use of verbalization does not improve drawing performances

This investigation set out to discover whether the drawing ability of Year 8 students could be improved more significantly through using intense verbalization as a teaching and learning strategy than it would if verbalization were not overtly encouraged. One art class was randomly divided into experimental and control groups. Both groups received the same number of lessons in figure drawing. The experimental group was encouraged to verbalize through all stages of the learning process. The control group was taught in the same fashion as any other Year 8 class in that the amount of talking done during the drawing process was minimal. A pretest was conducted before any treatments were given, and a posttest at the end.

5.2 Statistical Test of Hypothesis

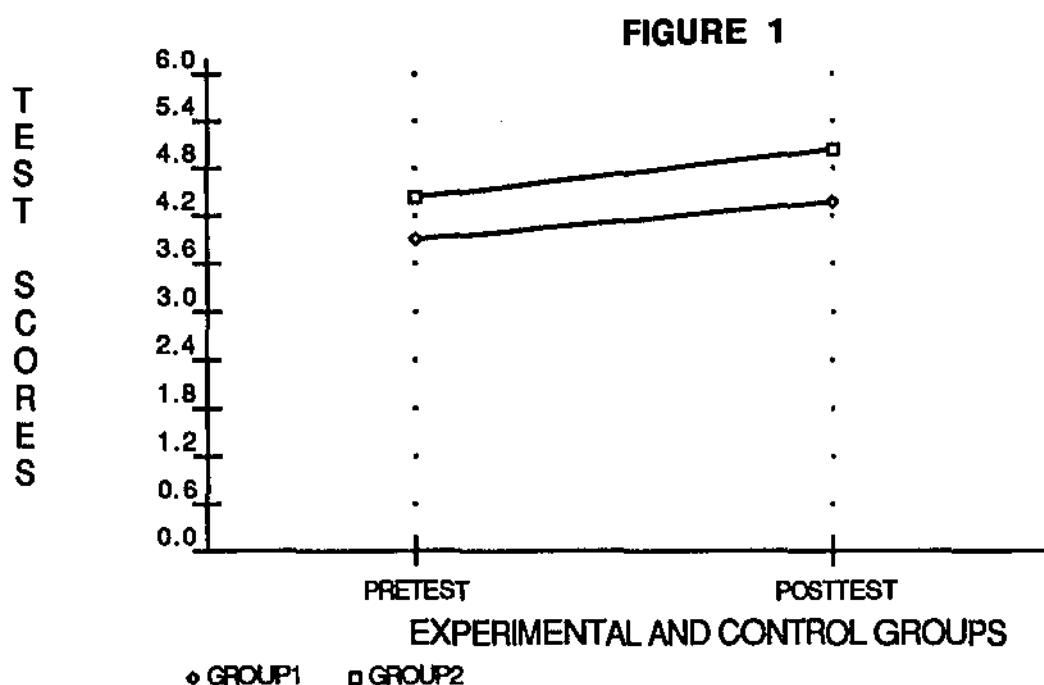
The first time the pretest and posttest drawings were evaluated all judges met and viewed them together. They were in random order and as each drawing was displayed a slide of the corresponding pose by the model was shown. (This is similar to the evaluation conducted on the drawings in Boughton's (1973) study.) T-tests run on this data revealed that neither group significantly improved. As this finding did not reflect the view of either teachers or one of the judges it was felt that perhaps the method of evaluation was faulty. It was decided for the second evaluation the pretest and posttest drawings of each student were stapled together, some with the pretest drawings on top, some with the posttest drawings on top. Each judge was visited separately and had as long as he or she needed to view and compare the drawings and slides. This took

much longer than the first evaluation but is felt to be a truer, more valid analysis. The scores referred to in the remainder of this thesis are those from the second evaluation.

First a t-test was done comparing the experimental and control group posttest results. (One student did not complete the posttest so there were only drawings from 19 students to analyze.) The mean score for the experimental group was 4.380 and for the control group 5.024. As the .05 significance level was selected for this study, the differences were considered significant only if they were equal to or less than this probability (p) value. $t(19) = 2.17, p > .05$ There was no significant difference between the posttest scores of the two groups. This could be explained in at least two ways : (1) It may indicate that verbalization produces no better performance than no verbalization. (2) Alternatively, verbalization may have produced better performance but this effect may have been masked by the fact that the subjects in the control group produced better drawings even before training began. Observe, in Fig 1 (p. 32), that the average score in the control group was higher than the average score in the experimental group.

In order to distinguish between these two explanations, a t-test was performed on the pretest scores of the two groups. There was no significance between the two groups at pretest, $t(19) = 3.24, p > .05$. Therefore the failure to find a difference between the groups at posttest was not caused by any superiority in the control group at pretest.

Finally it should be noted that, although there was no difference between the groups, both the experimental group and the control group improved significantly during the 3 weeks of the study, $t(10) = 3.24, p < .05$ and $t(9) = 3.12, p < .05$ respectively.



Group 1 in Figure 1 represents the experimental group, group 2 represents the control group. These results show that while both groups significantly improved their realistic drawing performances there was no significant difference between the drawing performances groups on the pretest or the posttest.

That both groups knew they were participating in a study may have resulted in the Hawthorne Effect, that is better than normal performance. As this would have affected both groups it is expected that it's effect on this study is minimal.

In summary, the use of verbalization did not improve drawing performances significantly more than the teaching strategies used by the other art teacher in the teaching of representational drawing of the figure.

5.3 Judge Agreement

The judges' scores are significantly correlated at the 0.01 level. This means that they held similar perspectives. The correlations between the judges can be seen in Table 1

Table 1

	Judge 1	Judge 2	Judge 3	Judge 4
Judge 1	1.000			
Judge 2	0.616	1.000		
Judge 3	0.703	0.494	1.000	
Judge 4	0.675	0.506	0.557	1.000

5.4 Observer's Check Sheet.

This was an instrument, also used by Boughton (1973), to compare the teaching performances of the teachers of both groups. However the drawing strategy taught to both groups in this study was only taught to one group in Boughton's study. This check sheet was devised to focus on this difference. Because of this it cannot be used here in the way it was intended. It is useful in that something of the teaching styles of the two teachers can be compared. Some of the categories did not fit this situation exactly. One of the judges, also a teacher at this school, used these checksheets for both teachers at random times through lessons 2, 3, 4 and 5. The check sheet was comprised of 22 points. These will be viewed one by one along with the responses for both teachers and can be seen in Appendix G (p.60) It is important to note that although both teachers used verbalization, the experimental group was encouraged to verbalize more than the control group. It may not be possible to teach effectively without the students doing a certain amount of verbalizing. The teaching behaviour of the two instructors was similar.

5.5 Amended Satisfaction/Dissatisfaction Scale.

The pretest Satisfaction/Dissatisfaction rating was done immediately after completing the pretest. The same was done with the posttest. However when the scores were viewed it became apparent that some of the students might change their mark if they could view both drawings together. This was because some of the students rated their posttest drawings lower than their pretest drawings yet when they were viewed together an obvious improvement in realistic content could be seen.

For each student, a satisfaction score was obtained for the pretest and posttest drawings. A difference score was obtained by subtracting the pretest score from the posttest score. This difference score indicates the extent to which students believed their drawings had improved. The average difference score of the experimental group was 2.2 while that of the control group was 1.14. In the same way, a difference score was obtained for each of the judges by subtracting the pretest score for a particular student from the posttest score of the same student, indicating the extent each judge believed the student had improved in drawing ability over treatment time.

In order to determine the extent to which students' perceptions of their improvement matched the judges' perception of student improvement, a series of correlations were calculated. These are shown in Table 2. Table 2 shows the correlations between the students' difference scores and each of the judge's difference scores. (It was not appropriate to average the judges' difference scores to obtain a single correlation coefficient because the difference score varied too much. In some cases one of the judges considered that the posttest drawing was better than the pretest drawing and another judge considered that it was worse. Therefore correlations for each of the judges were considered separately).

Table 2

Judges	Correlation to students difference scores.
Judge 1	0.076
Judge 2	0.341
Judge 3	0.108
Judge 4	0.053

5.6 Favourite Subjects

The students were asked to write what their favourite things to draw were on the back of one of their drawings. The findings can be seen in Table 3.

Table 3

Subject	Frequency
People	6
Landscape	6
Cars	2
Trees	2
Ocean	1
Horses	1
Fictional things like faries and elves	1
Animals	1
Teenage Mutant Ninja Turtles	1
Buildings	1

Chapter 6

DISCUSSION OF FINDINGS

6.1 Drawing Ability Test

Summary.

The pretest and posttest drawings were analyzed using t-tests to compare (a) the posttest performances of the control and the experimental groups, (b) the pretest performance of both groups, (c) the pretest and posttest performances of the control group, and (d) the pretest and posttest performances of the experimental group. Both control and experimental groups significantly improved their realistic drawing performances of the human figure. However there was no significant difference between the pretest drawings of the two groups or the posttest drawings of the two groups.

Discussion.

A lack of significant difference between posttest performances of the groups could be for a variety of reasons.

1. **Sample Size.** It was acknowledged in the Limitations section of this paper (p.7) that a significant difference between the two groups would only be found if the effect of verbalization was large. This is because the sample size is so small. No significant difference could be attributed to the effect of verbalization being equal to or only slightly superior than the ordinary teaching method. As no significant difference occurred it is possible that verbalization did not have a negative effect on the drawing performances of the students in the experimental group, however to ascertain this a more detailed study will be needed. That verbalization is equal to the ordinary teaching method is apparent. To test superiority it is obvious that a longer, larger study is needed.

2. Methodology. The check sheet observer noted that the control group did some verbalizing, although not to the extent of the experimental group. This indicates that there may have been more similarity between the control and experimental group treatments than planned.

3. Drawing Strategy. It may be that the drawing strategy is such an effective instrument that the methodology used to teach it is secondary to its effectiveness. Learning to draw requires visual perception, expressing visual relationships between points, lines and so on. Some perceptual training is given through the use of this particular drawing strategy. This investigation was short, with a total of six hours contact with the students. Of comparable length was Boughton's 1973 study, where the satisfaction and ability levels of junior high school students improved after following the same figure drawing strategy.

6.2 Satisfaction Differences.

The average satisfaction difference between the pretest and posttest satisfaction ratings of the control group was 1.44 while that of the experimental group is 2.2. As the major difference between the groups was verbalization perhaps it was this that caused the experimental group to become more satisfied with their drawings.

6.3 Relationship between drawing ability and satisfaction.

Summary.

The correlations calculated between the students' Satisfaction/Dissatisfaction ratings and the judges' scores revealed that the difference the students perceived between their pretest and posttest drawings is unrelated to the difference in the judges' scores.

Discussion.

Capon (1976) claims that timidity, inhibition, suppression and lack of knowledge cause problems when people begin to draw. This helps understanding of the difference between the students and the judges perceptions of the drawings. It is the experience of the writer that lack of confidence occurs with many beginners who claim that they can't draw when in reality they are quite good.

Eisner (1972) and Capon (1976) stress that individual interpretation is a valid and valuable aspect of drawing. The judges involved in this study found the lack of criterion in the evaluation for this expressiveness quite a problem. "Assessment is based upon observational skills without any consideration to aesthetic qualities which are based on HOW the observational elements are used for expressive purposes." This comment made by one of the judges was agreed upon by all. They felt that many of the drawings were good expressive renditions of the model but the criteria demanded that they be marked low. The criteria used for grading these drawings looked for presence of shapes, proportions, and details in the drawings that related to the attitude of the model. Skill in representing these was also taken into account. The judges felt that while some of the drawings weren't rated highly according to these criteria they were nonetheless good drawings in that they conveyed an expressive impression of the model. Perhaps the students who gave their drawings a high satisfaction rating when the judges marked them low were taking these expressive qualities into account.

6.4 Favourite Subjects.

People and landscapes were awarded the same number of mentions. Other subjects were individual choices apart from cars and trees which were mentioned twice. Boughton (1973) claimed that in the literature he researched people came first as favourite subject with young adolescent students. It is interesting to note that landscapes rated the same number of mentions as people in this survey. When teaching

students to draw it is important that the subjects chosen are within the sphere of students' interests and experience.

6.5 Verbalization

Summary.

Student verbalization was very basic and appeared to follow the students actions rather than the students basing their actions on their verbalization. The act of verbalization, even though not as effectively practiced as anticipated, did not appear to negatively affect the work of the students as Schunk (1986) and Edwards (1987) suggested it might. This is probably because the students were not sure how to approach drawing a figure to begin with. The group that used verbalization as a strategy worked as well as the class that did not.

Discussion.

It is interesting to note that, during the visit to the Art Gallery of Western Australia, the experimental group students were reluctant to talk much despite open questioning, prompting and encouragement by the teacher. This may be attributed to the fact that four out of ten were away and the remaining six didn't know each other very well. (The control class teacher, who only had one absent, said she couldn't stop her students talking!) Verbalization was supposed to be the distinguishing feature between the groups. The group that was supposed to verbalize most were reluctant to speak out during this session, while the group that were not encouraged to talk verbalized automatically. This may affect the results of this study adversely. The time was too short - students leaving school at the beginning of recess and returning just after the beginning of the lunch hour (about one and a half hours). To be more effective this kind of activity requires at least half a day.

During lesson 4 the students were reluctant to speak out (they said they felt silly) so they were encouraged to think through what they were doing. The teacher randomly

called on students who then had to describe their thoughts. Unfortunately internal, or covert verbalization (resulting in improved thinking and seeing) cannot be measured so there is no way of knowing if students verbalized effectively internally.

An audio-cassette player with a clip on microphone had been booked to record experimental group students verbalizing during lesson 5. The clip on microphone was particularly important so the students would not be overly distracted by the recording process. However the microphone could not be made to work so the cassette player had to be used by itself. This was very distracting as the transcript reveals. (See Appendix F.) Although the session was not as successful as it could have been it does reveal the type of language students used when verbalizing. It is very simple. A video recording would clarify the meaning of some of their statements and would possibly not be any more disturbing.

Chapter 7

IMPLICATIONS FOR EDUCATIONAL PRACTICE.

The nature of this study does not allow confirmation or rejection of the hypothesis that verbalization improves drawing performance. The drawing performance of both groups increased significantly between the pretest and the posttest but the cause of this improvement is more likely to have been the drawing strategy used rather than verbalization. However verbalization applied to this drawing strategy enabled the students to improve their drawing to the same level as those taught by a more regular method. This indicates that it is valid to apply the process of verbalization to a learning strategy when the students involved are beginners (in this case beginning representational figure drawers). It is worth noting that the students who were in the experimental group increased their satisfaction with their drawings to a greater extent than the control group. Verbalization could also prove useful when working with students who have a low opinion of their work.

To allow the students to draw faithfully anything they desire may well require the 150 hours of practice recommended by Ruskin (1857) or the year of practice suggested by Nicolaides (1941). The realistic quality of the students' drawings could improve greatly if they received drawing instruction and practice over this length of time. The longer time would allow a similar but more valid investigation to be conducted.

Because all students are not particularly interested in drawing it might be appropriate to offer extracurricular classes for those who express an interest, in this way their drawing will reach a greater potential. The insufficient drawing time in lower secondary schools does not allow students to fully develop their drawing skills.

Chapter 8

RECOMMENDATIONS.

Students in the experimental group spoke in the main about what they were doing instead of doing what they were talking about. The development of a strategy to teach efficient verbalization skills would allow student verbalization to become much more effective. The strategy discovered in lesson 5, of pairing students and have the one who is drawing telling the student who is modelling exactly what he or she is doing would be a good introductory lesson to verbalization. (This strategy is somewhat derivative of the graphic dialogue described by the Wilsons on page 19.) It should take place during the lesson after the pretest, the first lesson with the experimental group.

The same teacher to teach both classes would reduce the difference between treatments in this investigation. The teachers used in this study had completely different backgrounds, experience and different teaching styles. All these factors intruded on the study, creating more differences between the groups than verbalization alone. An example of this is that the teacher of the control group used her own methodology of teaching figure drawing developed over fifteen years of teaching in conjunction with Boughton's (1973) drawing strategy.

A longer study with three or four classes would also give a much clearer picture of the effect of verbalization on drawing performance.

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APPENDIX A
JUDGES' EVALUATION GUIDE.
EVALUATION GUIDE

Drawings will be evaluated according to the criteria stated below. Judges will mark the drawings for each criteria using a seven point scale.

CRITERIA

- A. All body shapes (head, trunk, arms, legs, hands, feet) must be present in concordance with the attitude of the model.
- B. The major body shapes should be in correct proportion, approximating the proportions of the model.
- C. Details such as eyes, eyebrows, nose, mouth, hair, hands, clothing, etc. should be present in concordance with the attitude of the model.
- D. Details should be represented with skill. For example, consideration should be made of the appropriateness of detail selected and represented, the accuracy with which the detail is related to major body parts, and the skill with which detail has been translated into linear form.
- E. Appendages must join body in a functional manner.

SUMMARY

- A. Major body shapes present
- B. Major body shapes in proportion
- C. Details present
- D. Details represented with skill
- E. Appendages join the body in a functional manner

APPENDIX B
JUDGE SCORE SHEET : DRAWING ABILITY TEST.

JUDGE SCORE SHEET

Each criteria should be marked on a one to seven scale. One (low) seven (high), or one (poor) seven (excellent).

Drawing No.			Criteria (score)		
	A.	B.	C.	D.	E.
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
.....
38.					
39.					
40.					

APPENDIX C

OBSERVER'S CHECK SHEET.

1. Methods of examining basic shape relationships were demonstrated.
2. Attention of the students was directed to the model as a whole, rather than as a relationship of parts.
3. Methods of relating detail to basic shapes was demonstrated.
4. The teacher constantly directed the students' attention to visual relationships existing in the model.
5. The teacher constantly questioned the students about the visual relationships of the model.
6. The teacher constantly emphasized the idea that the student's effort should be directed towards satisfying his own standards in drawing.
7. Questions such as "How do you draw a foot?" etc., were answered by verbal explanation and demonstration on the chalkboard.
8. Questions such as "How do you draw a foot?" etc., were answered by demonstration on the chalkboard without specific instruction.
9. Emphasis was placed upon students' solving drawing problems themselves rather than teacher-student discussion of these problems.
10. Teacher-pupil discussions of characteristics in the model occurred.
11. The drawing stimulus was changed at least three times during the lesson.
12. Drawing tasks set by the teacher left the class largely unoccupied.
13. The teacher constantly ignored students' requests for help.
14. The teacher constantly displayed irritability, impatience or disinterest.
15. Constraints placed upon the behaviour of the class were unnecessarily restrictive.
16. The teacher used sarcasm when referring to students.
17. The teacher praised the work of the class unnecessarily or excessively.

18. The teacher condemned the work of the class unnecessarily or excessively.
19. The teacher praised the work of individuals unnecessarily or excessively.
20. The teacher condemned the work of individuals unnecessarily or excessively.
21. The teacher made unnecessary gestures which could have been interpreted by the class as praise.
22. The teacher made unnecessary gestures which could have been interpreted by the class as condemnation.

APPENDIX D

AMENDED SATISFACTION/DISSATISFACTION SCALE

1. It is terrible. I despise it.
2. It is very bad.
3. It is bad.
4. It is not very good.
5. It is a toss-up. I neither like it nor dislike it.
6. It is a little better than a toss-up.
7. It is fairly good. I am getting better.
8. It is good. I like it.
9. It is excellent. I like it a lot.

APPENDIX E

EXAMINATION OF BASIC SHAPES

I. Look at the figure and think of it as a collection of shapes.

Q. What shape does the head resemble from the front?

A. An oval.

Q. Is the head the same width top and bottom?

A. No.

Q. Is it like an oval then?

A. No.

Q. What solid object that you are familiar with does it most resemble?

A. An egg.

Q. Does the head resemble an egg if you look at it from the side?

A. No.

I. Try to draw on the back of your piece of paper the basic shape of the head as you see it. Don't worry about details. Draw two or three if the first one doesn't satisfy you.

I. Look at the trunk, disregard the arms and legs if you can.

Q. Where is the widest part of the trunk?

A. Across the shoulders.

Q. Where is the narrowest part of the trunk?

A. Across the waist.

Q. Is the distance across the hips equal to the distance across the waist?

A. No. It is narrower across the hips.

Q. Would the shoulders be joined best by a curved line or a straight line?

A. A curved line.

Q. Why?

A. Because both the shoulders of the model slope down from the neck.

I. Try to draw a basic body shape, on a spare piece of paper, that resembles the trunk you are looking at.

I. Look at the arms and legs, forget about the hands and feet.

Q. How many parts does each arm and leg have?

A. Two.

Q. Is each part the same shape?

A. Not exactly.

Q. Are they similar?

A. Yes.

Q. What do you notice about each of these shapes that is similar?

A. They are all long thin shapes.

Q. Are each of these parts the same size?

A. No, the upper parts of the arms are bigger than the lower parts and it is the same for the legs.

Q. Is each part of each arm and leg the same thickness all the way along its length?

A. No, they are usually thicker towards one end.

I. See if you can draw some shapes on your spare piece of paper which resemble the arms and legs you can see on the model.

I. We are going to try to put some of the pieces together, now that you have practiced drawing them, to make a "basic drawing". By that I mean we are going to make a drawing of the main body parts, but we are not yet going to try to draw the details.

Q. As you have a piece of paper folded to make the same height-width relationship as the model, how do you think the drawing will best fit the page?

A. With the head close to the top, the feet close to the bottom, and the arms close to the side.

Q. In that case where do you think the end of the torso will be on the page?

A. Half-way down.

Q. You are saying then that the upper half of the model is the same length as the lower half?

A. Yes.

I. Measure the upper half of the model with a yard rule and compare it with the lower half.

Q. What did you find?

A. The lower half is a little longer than the upper half.

Q. Where will the end of the torso of the drawing fall on the page then?

A. A little above half-way.

I. Make a mark on the page to indicate this.

Q. Before you begin to draw, do you know how much space the head will take up of the upper half of the drawing?

A. About one third.

I. Draw the upper half of the figure making sure the head and torso fill the spaces we decided upon. Don't forget the shapes of these two things that you practiced drawing before. (Time was allowed for everyone to do this.)

Q. Before you draw the legs, do you know which is the longer part of the leg, upper or lower?

A. Lower.

Q. Whereabouts on the page will we place the knee then?

A. A little above halfway between the end of the torso and the bottom of the page.

Q. How far apart?

A. About the width of the head.

Q. Are both knees directly underneath the torso?

A. No, one is, but the other is a little to one side.

I. Mark the positions of the knees and draw the top half of the legs. (Time was allowed for this.)

I. Decide for yourselves where the ankles are and draw in the bottom half of the legs. Don't forget to leave space for the feet.

Q. How big is a foot compared to a head?

A. I don't know; smaller I think...

APPENDIX F
TRANSCRIPT.

VERBALIZATION TAPE. LESSON 5. EXPERIMENTAL GROUP.

(T = teacher, student verbalization is in italics.)

N : This is Nicole and I'm starting off by doing the head...and I'm trying to - I don't want to talk into this tape recorder.

T : Pretend it's not a tape recorder. Tell me what you're doing. To start - you're putting in detail there aren't you?

N : Yes, that's because otherwise I can't get the shape right.

T : O.K. Tell me what shape's you're doing as you go.

N : I'm doing the head but I did the shape wrong first so I have to do it again, and, I'm doing detail on the top because it helps me to do the shape of the head when I'm doing it properly.

A (Amanda) : Is that thing still on?

T : It doesn't matter. Pretend it's not here. Just tell me what you're doing. I just want to watch for a minute.

A : I'm doing her head, and now I'm going down her face. There's the nose there...I'm going down to her lips.

T : Are you doing contours there?

A : Yeah. I'm going across.

T : Actually you're fixing up mistakes doing that aren't you, when you get onto the contour drawing?

A : Yeah.

T : That's good.

A : And now I come down to the top of her neck and that's where...it goes down and then there's the collar there, and that one goes down there.

T : While you're talking your drawing has improved! Just there, that little bit you've done while you've been talking to me, that's excellent! You keep talking in your head, O.K. I'm going away now.

T : O.K., now, just talk to me. Pretend this instrument's not here. Tell me what - - haven't you done anything yet?

C (Chris) : Yeah but I messed up on that one there.

T : You mean it's taken you ten minutes to draw two circles?

C : No, one.

T : O.K., come on, tell me what you're doing anyway.

C : Can you go to him and I'll do it...

T : No! Tell me what you're doing starting from the shapes.

C : I'm going to do the head now.

T : Uh-huh.

C : And - um...it's embarrassing!

T : Yes, I know.

C : I'm going to do the head, yeah, and then...

T : O.K. I'll leave you alone.

C : It's embarrassing. I don't know what to say.

T : That's O.K. Fair enough.

T : Your turn. You haven't done very much either. You've been too busy talking about other things, haven't you?

M (Matthew S) : Ah, no, I'm - shut up Chris - I'm drawing her left arm...um...um...

T : Tell me your name, too, cause I won't know.

M. S.: Oh, yeah, my name's Matthew. Oh, yeah, I'm down to the lower part of her left arm.

T : Tell me what shapes you're drawing.

M.S. : I don't know.

T : Well, you're supposed to be thinking about that aren't you?

M.S. : Oh, yeah - um -it's sort of an oblong - well - shape arm and it comes over her lower - oh what...um...

T : You're drivelling aren't you?

M.S. : Yeah.

T : I'm going away. Thanks for that Matthew.

T : Say your name first then tell me what you're doing there please.

C (Chris) : Um what I'm doing or what I've just done?

T : What you're doing.

C : I'm Chris and I'm just drawing the legs - um - the upper parts of the legs and what's that called there?

T : Lower leg I suppose.

C : I'm drawing the lower legs...and...um...drawing oblong...

T : You've got the proportions down pretty well.

C : I think I've drawn the head too small.

T : How many heads fit into the body?

C : Um - five I think.

T : How many fit in there?

(Response unclear)

C ; I'm just drawing the shoes - the feet - and I'm just going to start the contour drawing... ...I'm drawing the head and across there. Now the ears...

T : Thanks.

T : Name first please.

J : O.K. Jarrad. I'm doing the foot - kind of rectangle shape - two rectangle shapes.

T : Are you using the drawing underneath at all?

J : Yeah and uh I'm not going into detail yet.

T : Still contour?

J : Yeah, um I'm going to the bottom of the foot - a semi-circle shape.

T : Do you find it hard to talk into this? (Nod) Fair enough. I'll go away and leave you to do that.

P (Paul) : Um - I'm doing the outline of the hair which is a bit above the - um - head itself. I'm just going down to the ears...um...um...a bit of a cheek there because her cheekbone comes out a bit.

T : That's not exactly contour.

P : Yeah - anyway - um (laugh) - I'm coming down her cheek and that's coming down there ----- and, um, coming down in a straight line and now, um, I've just got her hand as a round thing and then it comes out around there so it doesn't matter and I'm going into her jeans now and it's pretty straight down there... it comes around here - and it's just coming down here - and then - turn it off here - um...

T : ...so I know who I'm listening to.

M : Um - Matthew and I'm just drawing the inside line of her right arm. What else? Um...

T : Just say whatever you like. Pretend it's not here and you're talking to me O.K.? I just want to hear what you're doing.

M : And I'm just going up to the top, doing - fixing up the creases...and down onto the other arm and down the shoulder - coming down the outside of the arm...

T : Actually you're doing that very well. Thanks.

T : Say your name first please.

N : Natalie.

T : Tell me what you're doing.

N : Um...

T : Just pretend you're talking to me. Don't worry about this. It's not here.

N : Um - I'm drawing the shoe and the lines of the boot and um ...(giggle)

T : Just tell me what you're doing.

N : I'm drawing the sole of the shoe now ... and that other bit ...

(The siren went, putting an end to that recording. There was one more interview to do. Children consented to wait.)

T : Tell me your name and what you're doing.

B : Blanche. I'm doing a bit of her shoe which I can just see and now I'm doing the inside of her foot - and now I'm doing the hair above her ear.

. An audio-cassette player with a clip on microphone had been booked to record students verbalizing. The clip on microphone was particularly important so the students would not be overly distracted by the recording process. However the microphone could not be made to work so the cassette player had to be used by itself. This was distracting as the transcript reveals.

APPENDIX G

CHECK SHEET RESULTS

(E= Experimental group teacher, C= Control group teacher.)

1. Methods of examining basic shape relationships was demonstrated.

E : Yes. Some difficulty with excessive noise in another room (in both lessons).

C : More so than with E.

2. Attention was directed to the model as a whole, rather than as a relationship of parts.

No comment made.

3. Methods of relating detail to basic shapes was demonstrated.

E : Yes. Well done.

C : Very good. More positive feedback to kids on discussion.

4. The teacher constantly directed the students' attention to visual relationships existing in the model.

E : Often with large group and small group discussion.

C : No comment made.

5. : The teacher constantly questioned the students about the visual relationships of the model.

E : Good discussion initiated. Students encouraged to verbalize a great deal

C : Good discussion initiated.

6. The teacher constantly emphasizes the idea that the student's efforts should be directed to satisfying his own standards in drawing.

No comment. (The assistant curator of works on paper at the art gallery gave a talk on this topic.)

7. Questions such as, "How do you draw a foot?" etc., were answered by a verbal explanation and demonstrated on the chalkboard. Brackets were drawn around the last four words with the comment "no" as there are no chalkboards used in the art rooms at this school. Individual demonstrations and verbal explanations were used.

8. Questions such as, "How do you draw a foot?" etc., were answered by demonstration on the chalkboard without specific instruction.

Inappropriate.

9. Emphasis was placed upon students' solving drawing problems themselves rather than teacher - student discussion of these problems.

E : Bracket around last six words with comment "good discussion".

C : No comment.

10. Teacher - pupil discussions of characteristics of the model occurred.

E : YES in a positive two way style.

C : YES.

11. The drawing stimulus was changed at least three times during the lesson.

No comment.

12. Drawing tasks set by the teacher left the class largely unoccupied.

E : Untrue.

C : No.

13. The teacher constantly ignored students' requests for help.

E : No.

C : No.

14. The teacher constantly displayed irritability, impatience or disinterest,

E : Patience.

C : No.

15. Constraints placed upon the behaviour of the class were unnecessarily restrictive.

E : No.

C : No.

16. The teacher used sarcasm when referring to students.

E : No.

C : Never.

17. The teacher praised the class unnecessarily or excessively.

E : No.

C : C praised more than E but both to a helpful degree.

18. The teacher condemned the work of the class unnecessarily or excessively.

E : No.

C : No.

19. The teacher praised the work of individuals unnecessarily or excessively.

E : No.

C : No.

20. The teacher condemned the work of individuals unnecessarily or excessively.

E ; No.

C : No.

21. The teacher made unnecessary gestures which could have been interpreted by the class as praise.

E : No.

C : No.

22. The teacher made unnecessary gestures which could have been interpreted by the class as condemnation.

E : No.

C : No.

Observer's comments : There seemed to be a conflict with both teachers about verbalization versus eye and concentration on model. During drawing, C did not encourage quite as much verbalization as E.

Lesson 3: E able to encourage talk between students about what they were drawing more than C. C more teacher directed. Both methods seemed to gain positive results.

APPENDIX H

Table 4

SATISFACTION/DISSATISFACTION RATINGS

CONTROL GROUP.

STUDENT	PRETEST	POSTTEST (I)	POSTTEST (II)	POSTTEST II-PRETEST	IMPROVED
1	8	8	8	0	.85
4	7	7	8	1	-0.02
7	1	2	5	4	0.72
9	7	7	7	0	0.05
11	7	5	7	0	0.18
14	5	7	7	2	1.4
16	8	8	8	0	-0.7
18	4	8	7	3	1.23
20	3	8	8	5	0.96

EXPERIMENTAL GROUP

1	7	7	6	-1	0.13
2	6	7	7	1	-0.02
5	6	5	6	0	1.23
6	3	5	5	2	0.35
8	4	9	9	5	0.18
10	4	8	8	4	0.08
12	6	5	5	-1	0.85
17	4	7	7	3	0.32
19	4	7	7	3	-0.5
21	4	6	6	2	0.52

APPENDIX I

Table 5 displays the average score from each judge for every drawing. Each average score was obtained by adding the scores given for every criteria (looking at one drawing and one judge's analysis at a time) and dividing by five. (There were five criteria, presence of major body shapes, proportion, presence of detail, skillful representation of detail, and functional appearance.)

TABLE 5
AVERAGE SCORES

TEST	JUDGE A	JUDGE B	JUDGE C	JUDGE D
Student 1 pre	4.3	4.4	3.2	3.8
post	4.8	3.8	4.2	3.4
Student 2 pre	5.2	5.2	5	4.4
post	4.7	5	5.3	4
Student 3 pre	4.8	5	4.4	6
post	6.2	6	4.8	6.6
Student 4 pre	4.8	5.4	4.4	5
post	5.5	5.4	5	3.6
Student 5 pre	1.6	4.4	2.4	2.2
post	3.4	5.4	3.5	3.2
Student 6 pre	3.6	4.4	3.4	4.8
post	4.8	5.2	3.8	3.8
Student 7 pre	2.5	3.4	2.4	2
post	3.6	4.4	2.8	2.4
Student 8 pre	5.3	4.6	4.2	4.4
post	5.2	5.4	4.8	3.8
Student 9 pre	4.4	5	4	4.4
post	5.4	4.2	4.6	3.8

Student 10 pre	4.1	4.2	4.2	5.6
post	5.2	4.6	4.4	4.2
Student 11 pre	5	6.2	4.6	4.6
post	5.5	6.2	3.6	5.8
Student 12 pre	1.8	4.2	3.2	2.2
post	3.2	5.2	3.4	3
Student 14 pre	3.9	4.8	4.2	4.6
post	6.1	6.4	5.2	5.4
Student 16 pre	6.3	5.6	3.4	5.2
post	5	5.6	4.4	5.2
Student 17 pre	3.1	3.6	2.6	3.8
post	4.7	4.8	4.1	3.8
Student 18 pre	4.1	4	3.8	2.4
post	5.2	4.8	4.6	4.8
Student 19 pre	5.4	5.8	3.2	3.4
post	5.3	6.2	4.7	3.6
Student 20 pre	4.5	5.4	4.6	4.4
post	5.8	5.8	4.7	6.4
Student 21 pre	3.4	5.2	3.6	3
post	4.9	5.4	3.6	3.4