

A Preliminary Study on the Drawing Characteristics of Children With Low Vision and the Related Teaching Strategies

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Summary

This study aimed to understand the drawing characteristics of children with low vision, and to propose teaching strategy suggestions through practical teaching to seven children with low vision from the second to sixth grades. A total of 16 weekly drawing classes were conducted. The teaching research was achieved through recurring cycles of plan/revised plan, action, observation, and reflection.

Four teaching objectives for the curriculum were: (1) to increase participants' ability to observe; (2) to enrich their mental images of the visual world; (3) to increase their ability of pictorial representation; and (4) to enhance their situational imagination.

The curriculum themes extended from the individual (I) to the surrounding environment (such as family, school, and city), from cursory observation to detailed observation. Daily life elements were used as teaching resources and curriculum theme setting. The class unit began with understanding one's characteristics and human structures, extending to food, plants, insects, animals, vehicles, campus, streetscapes, cities, natural environment, etc.

All participants had individual instruction at home or school, or participated in a group of three at school. In total, more than 800 drawings were collected through the whole teaching process.

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Comparing pre-test results with post-test, the participants' depiction ability from observation (Tables 2 and 3), spatial composition, and situational imagination (Tables 4 and 5) had all improved markedly. The individual performances of each participant presented considerable progress. Figure 3–16 shows the comparison of each participant's performance in the early ("a" in each figure), and middle or late period of teaching ("b" and "c" in each figure).

This study proposes 6 drawing characteristics of the participants:

1. Drawing silhouette-like contours with one continuous stroke

The participants tended to draw an outer contour of an object and neglect the inner contour of the elements that composed the object. They might pause several times to reconsider or observe while drawing a silhouette-like outline, but they would not remove the nib from the line until they completely finished the contour (Figure 17).

2. Continuous lines in the background could not be connected smoothly

Narrow visual field limited some participants' sensory size. They usually drew within a small area on the paper, and repeated the process until they finished the whole picture. This drawing strategy interrupted the continuity of long lines in the background (Figure 18). However, if they first drew grids to divide the paper into smaller divisions, and then drew some objects inside them, they could keep the continuity of long line easier. In this condition, direct and smooth muscular movements helped to keep the continuity of the grid lines (Figure 19).

3. The participants with highly myopic, or those who kept their heads close to the paper while drawing were not able to compose pictures of large scenes (G5s4 in Table 5; Figures 9a and 19).

These two conditions allowed the participants to focus on only a small part of the picture at a time. That caused more difficulties in planning large scenes. The participant (G6s7) with hyperopia composed large scene more easily than others.

4. Participants had difficulty controlling curves features of the objects

The curvatures of the animal model shapes were easily deformed because of the participants' visual field limitation and difficulty to obtain overall proportional features in an instant (Figure 20).

5. The drawings often had many exquisite details or decorative lines (Figures 9b, 10b, 10c, 13b, 14c, 15b, 15c, 16b, and 16c)

Some participants enjoyed to create various patterns to fill the whole picture and were enthusiastic in coloring small area in details.

6. The original spatial representation stage was obviously delayed, but could be improved after appropriate teaching

The participants' spatial representation was the most primitive part of their drawings. However, after appropriate educating, the older participants could draw the models with oblique projection system and use it to compose large scenes with such concept or even convergent lines (Figures 10c, 13b, and 16c). Eventually their performances were closer to those done by the sighted than the blind. This result suggested that vision plays a critical role in learning advanced projection systems.

In addition, this study proposes the teaching strategies for teaching children with low vision from the following four aspects:

1. Understand the individual

- (1) Due to numerous causes of low vision, the limitations of each individual's vision are not the same. The ideal learning conditions for them are also various. After understanding each student's vision restriction, the teacher knows the way to strengthen students' visual images of the depicted objects through effective observation.
- (2) In addition, the teacher should understand students' physiology, psychology, previous learning experiences, personal interests, personality, family background, etc., in order to design appropriate teaching plans and strategies to attract one's attention and suit his/her developmental status.

2. Provide suitable drawing and teaching materials

- (1) Provide drawing paper in appropriate sizes and colors according to each individual's vision.
- (2) Prepare pens with easily distinguished colors for children with color recognition difficulties, as well as clearly visible labels identifying the pens.
- (3) Provide various palm-sized realistic models. Using small, realistic models, students can grasp the scale, shape, color, structure, etc. of an object at a glance. Besides, it provides students opportunities to perceive an object through haptic perception. Such impression to a whole object is not necessarily the experiences that can be obtained from observing real objects in large sizes.
- (4) Design teaching materials adapted to each student's vision. Color, shape, and detail should be clearly visible.

3. The key points of curriculum design

- (1) Related drawing themes to individual's experiences.
- (2) Encourage students to manipulate the manikin's posture to better understand specific poses so they can draw human figures in a variety of positions.
- (3) Encourage students to observe and touch the depicted object carefully to help them understand

its details and characteristics. In addition, to provide photo cards of the objects so the students can review conveniently after class and enhance their visual memory.

- (4) Encourage students to draw from observation, not only to enhance their observation, but also to integrate perception and pictorial representation. Avoid directly copying from existing patterns or pictures.
- (5) Provide older students with small geometrical models so they can learn the concept and develop drawing skills of advanced projection system.
- (6) Dialogue between teachers and students can enrich the contents of drawings. Giving positive feedback can greatly increase students' self-confidence and motivation.
- (7) Without sticking to coloring, simply drawing with lines provides a great opportunity to develop individual's idea and imagination quickly and freely.
- (8) Let students rest their eyes periodically.

4. Expend students' visual database

- (1) Various realistic models and visual stimuli can improve students' cognition about form and help them effectively comprehend the features of real objects.
- (2) Students' situational experience deepens their learning and visual experiences, which enriches their imagination and drawing.
- (3) Expose students to many examples of artworks with diverse styles by established artists or other children for appreciation.

The art of children with low vision is often neglected because of the small population and the lack of both basic research and professional art teachers. Those children are also put in an awkward situation, between the sighted and the blind. People pay more attention to the needs of the blind than the low vision, because it is assumed that their development is simply delayed, so they do not need special help. Such misunderstandings hinder research in related topics.

The participants in this study had made significant progress in drawing with one semester of teaching. Many works were even amazing. Although this study was not focused on art therapy, many teachers or parents of the participants often gave feedbacks that drawing education boosted the children's self-confidence, emotional stability, and self-accomplishment. They learned much more than merely drawing what they see or think, or the pictorial skills. This leads us to the fact that children with low vision benefit immensely from well-designed drawing lessons.