DRAWING DOS AND DON’TS:
THE DRAW-A-PERSON TEST AS A MEASURE OF INTELLECTUAL MATURITY?

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ABSTRACT

The Goodenough-Harris Draw-A-Person Test is used today in schools as a measure of school readiness and a predictor of academic success. Should adults be using children’s drawings for these purposes? Is the Draw-A-Person Test actually a measure of intellectual maturity? This thesis continues the academic discussion of whether this type of drawing-based assessment should be used in schools. If art lessons could improve children’s test scores, then the test would not truly measure intellectual maturity, which is assumed to be innate and cannot be taught. In this study, kindergarten classes were divided into two groups, an intervention group, and a control group. Thirty-one parents or guardians of kindergarteners consented to having their children participate. At baseline, the Draw-A-Person Test was administered to both groups. The intervention group received four art lessons over two weeks about drawing people, which I created and delivered. Then both groups repeated the test. There was no statistical difference between the pre-intervention and post-intervention test scores in either group. This finding supports the validity of the Draw-A-Person Test since the test scores for children in both groups remained constant. However, my experiences and observations while teaching the intervention group told a different story. There is a difference between statistical significance and real world significance that is observed by the art teacher. The students were capable of much more than they demonstrated in the test setting. This study considers the question: Are there drawing dos and don’ts for children’s art?
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This thesis is dedicated to the memory of my grandfather, W. Lambert Brittain, who instilled in me the love of art and a passion for art education.
Introduction

Children sit quietly, but restlessly, at their kindergarten classroom tables as they wait for further instructions from me. They have packets of clean white paper and freshly sharpened pencils in front of them. There is something powerful and magical about a clean white sheet of paper. It can become anything. However, this time, the paper will not become a canvas for their imaginations, but will be a setting for a formal test.

I administered the Goodenough-Harris Draw-A-Person Test as dictated in Harris’s (1963) Test Manual. The students drew a man, a woman, and themselves. The entire test took about 15 minutes to complete. When I collected their drawings, I noticed slight hesitation from a couple of students who knew they would not get their artwork back. Some students, who showed little interest in the activity and quickly drew their figures, surrendered their artwork to me without any signs of regret. This observation made me question whether every student followed my enthusiastic instructions, “Make the very best picture that you can; take your time and work very carefully” (Harris, 1963, p. 240). Did each student make the very best picture that she could? Did they project everything they knew about human figures into their drawings? I suspected not.

I know these children well. I had already developed a relationship with them as their student teacher for half of a semester. Today, I was not the fun art teacher. Instead of being able to encourage spontaneous statements students voiced about their drawings, such as, “I’m going to draw a princess!” I had to respond with, “No one must tell about their picture now. Wait until everybody has finished” (Harris, 1963, p. 241). However, this enthusiastic statement by a student resulted in many of the girls in the class drawing princesses for their drawing of a woman. I laughed to myself as I thought about how difficult it was to suppress art as a social
activity. This was the first observation that really made me question the validity of the Draw-A-Person Test.

The Draw-A-Person Test is thought to measure intelligence. Dale B. Harris (1963) preferred to call it intellectual maturity. The test entails asking children to draw a man, a woman, and themselves. The drawings are scored using a number of factors including accuracy, proportions, control of line, and level of detail (Harris, 1963). The test is commonly used today with young children as a school readiness assessment and as a predictor of academic success. Oster and Crone (2004) stated that it is “primarily used as a screening device by health and mental health professionals to quickly assess and estimate the cognitive ability of the school-age child” (p. 73). According to Kamphaus, Petoskey, and Rowe (2000), “Child testing is thriving” (p. 161) and “millions of U.S. school children receive psychological and related testing on an annual basis with the public and private schools leading the way in terms of tests administered” (p. 155). The Draw-A-Person Test is considered a psychological projective assessment since it assumes that the children will project what they know into their drawings, which would reveal their intellectual maturity. There is an overall decline in popularity and an increase of negative attitude towards projective tests, in part because psychoanalytic theories and methods are not as widely accepted today (Watkins, Campbell, Nielberding, and Hallmark, 1995). However, many psychologists still use projective drawing tests in their assessment practices (Watkins, et al., 1995).

The use of projective drawings is based on the theory that young children draw what they know, not what they see (Goodenough, 1926). Young children’s representation of an object in a drawing is the same as their mental concept of the object; not how they visually see it. For example, if you ask children to draw a mug in front of them and the handle is pointing away
from them, children will typically still include the handle in their drawings even though they cannot see it (Freeman and Janikoun, 1972; Bremner and Moore, 1984). As children get older, typically eight and nine years old, they will include more of what they actually see, such as the handle (Freeman and Janikoun, 1972). Through my experience working with children’s art, I believe that this theory is not always true and that children frequently make aesthetic and artistic decisions when they are drawing. For example, if a child is drawing a person and they make the head too small, they may not include all of the facial features, such as the nose, because the space would appear too crowded, not because they do not know that people have noses. I believe there are many factors that contribute to a child’s drawing. Using drawings as a measure of intellectual maturity could be undervaluing the child’s ability. Are there drawing dos and don’ts for children’s art?

**Every Child is an Artist**

Pablo Picasso once said, “Every child is an artist. The problem is how to remain an artist once he grows up” (Burke and Kehde, 1981, p. 93). As a child, I remember sitting at an old wooden scratched up dining room table that was repurposed in the designated playroom of our house. In front of me were various art materials to choose from for my art project. I loved to sit at the huge table and just draw. Sometimes I drew by myself and sometimes I drew with my little sister or with another family member. I loved to draw. Whenever we would visit family, one activity that we would do together was draw. When my family visited my grandparents in Del Ray Beach, Florida, my cousins, sister, and I would sit at the glass table on their porch and draw imaginative tropical islands and beaches as the warm air surrounded us. I have fond memories of visiting my other grandparents in Ithaca, New York. I remember sitting down with
my grandfather in particular and drawing together (Figure 1).

Art was a large part of my life as a child. I was an artist. The amount of time I spent drawing is not the reason I would consider myself to be an artist. I was an artist because I transformed my ideas into art creations.

You were also an artist. Every child has created works of art, even if they were scratched into stone thousands of years ago. In my experiences working with children, I have been amazed at their artistic essence. I admire young children’s fearless nature as they dive into art projects. Not only do they not hold back, but they also explore their world with passion and excitement. Like Picasso, I too believe that every child is an artist, but what does that mean? What is an artist? According to the *Merriam-Webster Online Dictionary* (2009), an artist is “one who professes and practices an imaginative art.” However, this is just one definition. There are numerous definitions and understandings of what makes an artist.

Whichever definition you prefer, practicing imaginative art allows the artist to make artistic choices when creating art. Children, as artists, make aesthetic choices when they draw. Is analyzing a child’s drawing for intellectual maturity truly honoring her inner artist? The Draw-A-Person Test is just that, a test. In the instructions, students are not encouraged to include as many details as they can, which is one of the measures for which it is scored, but to “draw the very best picture that you can” (Harris, 1963, p. 240). According to the makers of the test and the theories upon which it is based, the best is the most detailed drawing and “the
method of scoring the drawing is independent of its artistic qualities” (Harris, 1963, p. 93). However, I think that the test instructions are misleading. I believe that the best picture is very different from the most detailed. A student’s best drawing of a person may not be highly detailed or proportioned correctly, but may be incredibly creative and artistic. For example, from my previous knowledge of working with one of the students, who is five years old, I know that he loves to draw imaginative super heroes. He does not draw familiar action heroes, but he invents his own and gives them powers. Figure 2 shows the drawing of himself from the Draw-A-Person Test. He drew himself as an action hero. The intellectual maturity score of this drawing was an 86, which is below the average of 100. He would have scored better if he included everything he knew about the human figure, such as hands and hair. Since his figure did not have a “clear representation of clothing” (Harris, 1963, p. 260), he also did not receive any points for “Clothing I, II, III, IV, or V.” He made the artistic decision to omit aspects of the figure from his drawing. His drawing may not be conventional, but it is creative. I was always impressed by the quality of his projects in art class, but his intellectual maturity score does not reflect my observations. The test does not score his lively imagination or inventive ideas, but penalizes him for his artistic choices. The nature of the test does not acknowledge that he is an artist.
The Goodenough Draw-A-Man Test

The Goodenough-Harris Draw-A-Person Test was derived from the Goodenough Draw-A-Man Test. Florence L. Goodenough (1886-1959) was a renowned developmental psychologist. She made many contributions to the field of psychology, but is most famous for the development of her Draw-A-Man Test. Her Draw-A-Man Test represented the merger of psychology and art education in her career. Although it was her only work in art education, the Draw-A-Man Test played a significant role in children’s art testing.

Goodenough’s Draw-A-Man Test was developed during the 1920s when Progressive education was popular in the schools (Efland, 1990). In art education, research interests focused on artistic development (Stankiewicz, 2001). Art educators believed that “teaching and learning should be based upon the natural development of the child” (Efland, 1990, p. 189). Stage theories were popular and supported the belief that children’s drawing ability evolved along a linear path (Stankiewicz, 2001). An improved representation of objects was also believed to evolve with age (Stankiewicz, 2001). Golomb (1992) stated, “The notion of drawings as culture-free products of the child’s mind, a conception that is quite compatible with this view of primitive art, motivated Goodenough to construct her well-known Draw-A-Man Test” (p. 325). Children’s drawings were seen as a window to the mind (Winner, 1982).

During the Scientific Movement after World War I, Progressive educators attempted to revise the education system through scientific methodologies (Efland, 1990). As a result, intelligence testing became increasingly popular (Efland, 1990). Psychologists first became involved in intelligence testing during World War I when they were used in classifying army personnel (Spring, 2004). Standardized intelligence tests were used in schools to compare scores to national norms (Clark, Zimmerman, and Zurmuehlen, 1987). They were also used as a means
of scientific selection, such as tracking students (Spring, 2004). Many IQ tests that were developed during this time had built in prejudices and were created to maintain the dominance of the Anglo-American culture (Spring, 2004). I do not believe that Goodenough knowingly incorporated a bias into her test as was the case with some other IQ test developers, but strived for accuracy and fairness. Goodenough collected several thousand children’s drawings from numerous schools around the country. The children studied for the development of the Draw-A-Man Test were at a variety of academic achievement levels and from various backgrounds, ages, races, cultures, and genders (Goodenough, 1926). However, since she only used drawings from children in the United States to standardize the test, a cultural bias is incorporated.

Science and psychology made their way into the field of art education through intelligence testing (Efland, 1990). One major aim of Progressive educators was to incorporate scientific findings and principles into the art classroom (Stankiewicz, 2001). Beginning in the 1920s, many tests were developed to assess drawing ability and general intelligence (Clark, et al., 1987). The large majority of the art testing developed during this period was found to not have significant correlations with general intelligence, but with artistic ability and talent (Efland, 1990). However, Goodenough’s Draw-A-Man Test did have a correlation with the Stanford-Binet IQ Test, which increased its validity and reputation as an intelligence assessment tool (Goodenough, 1926). Her test did not look at the techniques or technical skill level of the man that the child drew, but at the level of detail that was included in the drawing (Goodenough, 1926). The level of detail was chosen by Goodenough (1926) as the site of analysis due to the belief that:
The frequency with which any given characteristic tends to appear is a function of the extent to which it has become integrated into the developing concept, and a measure of the weight which should be given to it as an index of concept development. (p. 75)

Goodenough’s Draw-A-Man Test was developed in the midst of the widespread adoption of IQ tests in the 1920s.

Goodenough’s unpublished 1924 doctoral dissertation from Stanford University, The intellectual factor in children’s drawings, which evolved into the Draw-A-Man Test, was her first and only investigation that merged art education and psychology (Clark, et al., 1987). Goodenough discussed the design, development, and findings of the Draw-A-Man Test in her book, Measurement of intelligence by drawings, published in 1926. Her Draw-A-Man Test was created in order to measure general intelligence from a child’s single drawing of a man (Goodenough, 1926). Goodenough (1926) stated that:

The experiment under consideration had as its object the study of the intellectual factors involved in the spontaneous drawing of young children, and it has involved the construction of a scale to be used in the measurement of these factors. This scale is based on drawings of the human figure. (p. 81)

Goodenough claimed that her intelligence test was superior to existing tests because the Draw-A-Man Test addressed concept development as opposed to artistic and aesthetic skill (Goodenough, 1926). During the 1920s, many educators believed that the ability to represent concepts through drawings progressed with age (Stankiewicz, 2001). Children of all types of backgrounds could be tested since drawing is non-verbal; the test could be used with deaf children and children whose first language is a language other than English (Goodenough, 1926). She chose the
drawing of a man to be the subject of the test because it is universal and is something with which every child is familiar at a very young age (Goodenough, 1926).

Goodenough’s ideas for the development of the Draw-A-Man Test were strongly founded in past research. One basis for Goodenough’s use of drawings as a measure of intelligence stemmed from Meumann’s experiments and research. Meumann and other researchers, such as Clark, found that children draw what they know, not what they see (Goodenough, 1926). One of Clark’s most famous demonstrations of this theory was a study in 1897 where he presented children with an apple that had been pierced with a pin, which was sticking out on both sides. The younger children drew the apple in a transparent manner with the pin line continuing through the apple, unbroken by the apple’s mass. The older children did not draw a continuous line and only drew the pin sticking out on either side of the apple. The study demonstrated that as children grow older they draw more from observation than present knowledge. Another significant finding from past research was that children prefer to draw the human figure rather than other subjects up to the age of ten, which inspired Goodenough to base her test around the drawing of “a man” (Goodenough, 1926). During the 1920s, men also had clothing that was more uniform than women’s or children’s clothing, which is why Goodenough chose to have children draw a man as opposed to a person (Cox, 1997).

Goodenough’s (1926) book, *Measurement of intelligence by drawings*, was very successful and popular (Harris, 1963). The Draw-A-Man Test was accepted by other academics and was considered a major contribution to the field (Harris, 1963). She was regarded as an authority on mental testing and intellectual development (Lawrence, 2000). I agree with a statement made by Harris (1963), “Of the many tests of intelligence, the Goodenough Draw-A-Man Test (1926) is perhaps the most unusual in basic conception, brevity, and general
convenience” (p. 1). Her Draw-A-Man Test was a significant, interesting, and unique contribution to children’s art testing.

**The Goodenough-Harris Draw-A-Person Test**

The Goodenough Draw-A-Man Test was widely used for some time, but is no longer being used today. Dale B. Harris (1914-2007), Goodenough’s colleague, revised and extended the Draw-A-Man Test into what is known today as the Goodenough-Harris Draw-A-Person Test. Harris, who was also in the field of psychology, was best known for his work with the Draw-A-Person Test. In 1963, Harris published the revisions of the test and the test manual in his book, *Children’s drawings as measures of intellectual maturity*. “Concurrently, in 1963, the Psychological Corporation published the Goodenough-Harris Draw-A-Person Test, which remains in wide use today” (Thompson, 2008, p. 558). When Harris began his revision, he worked collaboratively with Goodenough, who was ill at the time. Unfortunately, she passed away before the completion of his book, which was dedicated to her memory. Koppitz (1968) and Naglieri (1988) also devised similar tests to the Draw-A-Person Test in the 1960s (Cox, 1997). In 1980, Draw-A-Person Tests were among the most popular intelligence assessment tools for young children (Gardner, 1980).

One major difference between the Draw-A-Man Test and Harris’s revision is that the Draw-A-Person Test requires children to draw a man, a woman, and themselves, as opposed to evaluating children on a single drawing of a man (Harris, 1963). A more accurate judgment can be made when there are three examples of the child’s abilities. Harris developed a point scale for a drawing of a woman as well as modified the point scale for a man. For example, points are now awarded for clothing and accessories, which was not the case in Goodenough’s test. Harris
(1963) also attempted to expand the scale for adolescents; however, he found it was not valid for children over 13 years of age.

The point system and scoring were completely revised and restandardized (Harris, 1963). Drawings are scored by giving a single point for the presence of an item. For example, Harris (1963) determined that a point would be awarded for:


A maximum of 71 points can be earned on a drawing of a woman, and drawings of men have 73 possible points (Harris, 1963). Harris (1963) provided specific detailed directions to help determine the presence of each point. The manual gives instructions of how to convert the raw score into a standard score by factoring in the age of the student, using the appropriate conversion table (Harris, 1963). Harris’s test only uses the age in years and does not factor in the month of the child, which differs from the Goodenough test. For example, a child that is five years one month old and a child that is five years eleven months old are both considered five for the conversion table. “The standardization samples were constructed so as to center at the mid-year in each age group” (Harris, 1963, p. 293). There are four different conversion tables: for a boy drawing a man, a boy drawing a woman, a girl drawing a man, and a girl drawing a woman. The drawing of themselves uses the conversion table of the appropriate gender. An intellectual maturity score is determined by averaging the standard scores for the man and woman drawings. The drawing of oneself is not used in the average, but as a separate third estimate since it has not been standardized (Harris, 1963). The intellectual maturity score has a mean of 100 and a standard deviation of 15, which is analogous to intelligence tests (Harris, 1963).
Harris stressed in his book that he does not see the score as an IQ score, but as a measure of intellectual or conceptual maturity. Harris (1963) stated:

The child’s drawing of any object will reveal the discriminations he has made about that object as belonging to a class, i.e., as a concept. In particular, it is hypothesized that his concept of a frequently experienced object, such as a human being, becomes a useful index to the growing complexity of his concepts generally. (p. 7)

Harris evaluated whether the test was reliable and whether or not the test measured what it was supposed to measure, its validity. Various investigations discussed in his book have demonstrated that it is both reliable and valid (Harris, 1963). Several thousand children’s drawings were collected to standardize the test. The samples were collected from a more diverse population than what was accessible to Goodenough for her standardization of the Draw-A-Man Test (Harris, 1963). Harris (1963) also found that the normative data revealed gender differences; girls typically scored higher than did boys. Harris (1963) suggested multiple hypotheses for this trend: girls typically take more care with details, girls culturally may have more practice drawing, girls typically are more attentive to appearance, and that girls socially mature faster than do boys. The difference in performance between boys and girls was taken into account and is why the test has different conversion tables for girls and boys.

Aside from the cultural differences between boys and girls, there are cultural differences between countries and even between different cultures within the United States, such as New York Puerto Rican children and Alaskan Eskimos (Harris, 1963). For example, Eskimo children do not include the ears as often as the norm group, possibly because people are frequently wearing parkas, which hide the ears (Harris, 1963). After observing numerous cultural differences between groups, Harris (1963) stated, “It has been affirmed that although the test
may be unsuited to comparing children across cultures, it still may rank children within a culture according to relative intellectual maturity” (p.134). Harris (1963) also observed a trend that the test scores have changed within the United States from the culture of the 1920s when Goodenough standardized her test to the 1950s when Harris standardized his test. For example, the tests in the 1950s “tend consistently to excel on the presence of arms and trunk, attachment of limbs, correct number of fingers, depiction of hand, head, and two dimensional arms and legs, ears, eye details, chin, and forehead” (Harris, 1963, p. 139). Harris suspected the differences could be due to the change in attitudes towards children’s drawing in schools, which encouraged students to express themselves creatively through art. Harris (1963) stated, “It is often hypothesized in current child development literature that children are, as a consequence, freer, more spontaneous and expressive, and also more observant” (p. 139). Harris (1963) believed that the new direction in art education theory was the most likely explanation for the change in the culture of children’s drawings.

The Goodenough-Harris Draw-A-Person Test was extremely popular when it was developed and published. It has retained its popularity as a drawing assessment tool (Thompson, 2008). Although I believe the Draw-A-Person Test was an essential and significant contribution to the field, I do not believe children’s drawings should be analyzed for intellectual maturity.

The Debate over the Draw-A-Person Test

The Draw-A-Person Test is still being used today (Thompson, 2008). Some people believe that the Draw-A-Person Test is a valid and valuable tool that should be used in schools. Others believe that the test is flawed and should not be used. There is literature supporting both sides of the Draw-A-Person debate.
Studies have found that the Draw-A-Person Test is both reliable and valid. Reliability is the consistency of the test; when independent scorers provide similar test results, it is called inter-rater reliability. Validity is that the test measures what it is intended to measure, such as intelligence. The largest piece of evidence that supports the validity of the Draw-A-Person Test is that it was positively correlated to the Stanford-Binet Intelligence Scale and the Wechsler Intelligence Scale for Children (WISC-R), which are well-known established intelligence assessments (Harris, 1963). This correlation led many psychologists to adopt the Draw-A-Person Test into school assessment practices.

However, many studies have called the validity of the Draw-A-Person Test into question. A study by Abell, von Briesen, and Watz (1996) found that the test was reliable and correlated significantly to both the WISC and the Binet; however, they discovered that it did not have adequate validity. Abell, et al. (1996) showed concern about the validity and “the correlations observed in this study are actually indicative of only modest relationships and obtained statistical significance because of the study’s large sample size” (p. 73) and that “a further cause of concern is that these correlations are considerably lower than those reported by Harris (p. 73). Abell, Wood, and Liebman (2001) also investigated whether the test was really testing what it claimed to be testing. They too found that the Draw-A-Person Test did have excellent inter-rater reliability (Abell, et al., 2001). However, they determined that the test had very poor validity coefficients and suspected that previous studies were able to establish validity because of their large sample size (Abell, et al., 2001). The study strongly opposed the use of the Draw-A-Person Test and said it, “must be used with only the greatest of caution, if at all” (Abell, et al., 2001, p. 213). Kamphaus and Pleiss (1991) found that the Draw-A-Person Test is reliable, but does not
accurately measure intelligence. ter Laak, de Goede, Aleva, and van Rijswijk (2005) determined that the scoring system needed to be revised to have validity.

Motta, Little, and Tobin (1993) performed a survey of data-based studies within the preceding 40 years of its publication to help summarize all of the findings that investigated the validity of the Draw-A-Person Test. Motta, et al. (1993) found that:

Those data which support Human Figure Drawings as a measure of intelligence are generally countered by a greater volume of evidence disconfirming them. It is clear that HFD scores have little if any predictive validity and the concurrent and construct validity is questionable at best. (p. 167)

Motta, et al. (1993) concluded that, “Human Figure Drawings are seriously flawed as a screening test for intellectual performance and are not useful as a predictor of academic achievement” (p. 167). With the decline in popularity of projective tests, schools are using the Draw-A-Person Test not as a measure of intelligence, but as a tool for school readiness and as a predictor of academic success. It is puzzling how the test could still be administered in schools with so much oppositional research; I am not sure why it is still being used. Motta, et al. (1993) believed that, “It is probable that ease of administration and anecdotal reports of instances in which figure drawings do correlate with real world outcomes, may account for their continued popularity” (p. 167). Harris (1963) discussed in his book that his Draw-A-Person Test did have validity; however, it appears that it was not often replicated.

Harris (1963) also addressed in his book the possible effect of art instruction on the Draw-A-Person Test. Harris (1963) discussed a study conducted by Gridley in 1938. Four-year-old children were asked to draw a man, a little man, a big man, as well as copy a schematic drawing of a man, draw a man simultaneously with dictated step-by-step instructions, and to
draw a man as stated in the directions that were given previously (Harris, 1963). The drawings were scored with the Draw-A-Man Test. Gridley found that the only scenario that was significantly higher was the drawing where children received systematic instructions as they were drawing the man, which was expected (Harris, 1963). The fact that the scores for drawing a man with instructions given before the test were not significantly higher than the scores without such instructions supports the idea that art instruction would not affect the test. The “influence of specific drawing instruction” discussed in Harris’s book did not address the type of art instruction that students would receive from a regular art class.

The goal of this study was to investigate the Draw-A-Person Test and to further the exploration of whether art instruction affected the Draw-A-Person Test scores. My hypothesis was that art lessons about drawing people and self-portraits would positively influence children’s Draw-A-Person Test drawings and would score higher than children who did not learn about drawing people. I created four short art lessons about drawing people and self-portraits. My intention was not to create lessons to teach to the test, but to teach about drawing people as part of their art curriculum. The kindergarteners were also learning about parts of the body so the lessons fit well into their regular classroom curriculum. The study design was to compare the Draw-A-Person Tests, from both the intervention and the control group, at the beginning and at the end of the study to determine if art instruction could increase children’s test scores.
Methods

Participants

The 31 participants in this study were composed solely of Radio Park Elementary School kindergarteners. Radio Park Elementary School is located in State College, Pennsylvania. There are three kindergarten classes in the school. One of the classes was assigned to receive the intervention and the other two classes, which had smaller numbers of participants, were assigned to be in the control group. There were nine girls and five boys in the intervention group, and eleven girls and six boys in the control group.

The students were 64.5% female and 35.5% male. They were 74.2% Caucasian, 12.9% Asian, 6.4% South Asian Indian, 3.2% African American, and 3.2% African American of Hispanic descent. The Pennsylvania State University Office for Research Protections approved this study. The parents or guardians of the children who participated provided informed consent and the children provided assent.

Materials

I administered the Draw-A-Person Test to the kindergarteners in their classroom setting. I used the Draw-A-Person Test Manual from Harris’s (1963) book, *Children’s drawings as measures of intellectual maturity*. Each student was supplied with a booklet with three separate blank pages, one for each drawing, and a pencil. The test took about 15 minutes for the children to complete. As part of the art lessons, the students in the intervention group also used art materials and visuals supplied through their kindergarten classroom, the art classroom, and myself.
**Procedure**

The students, parents, or guardians from all three kindergarten classes at Radio Park Elementary School were personally contacted to voluntarily participate in the study. I already had a relationship with the kindergarteners since I had student taught their art classes the previous semester. All students whose parent or guardian signed the informed consent document participated in the study.

At the beginning of the study, I administered the Draw-A-Person Test to both the control and the intervention group. I then taught the art lessons to only the intervention group twice a week for two weeks. After the intervention was completed, I administered the Draw-A-Person Test a second time to both groups. This test was three weeks after the baseline test.

I taught the intervention group four art lessons, in two 20-minute and two 40-minute sessions. The students had one long and one short lesson per week. These lessons focused on how to draw a person, which is part of their art curriculum. The first lesson focused on different ways to draw people. Students drew a person and then shared their drawings with others at their table and found similarities and differences between their own drawings and those of their classmates’. I showed examples of artists’ work in which the subject was a person. We discussed the artwork and talked about what the artist chose to include and not include for their person. Students then chose the details or features they liked most from other students’ drawings or the artist visuals and added these to their own drawings. For example, one of the girls really liked her neighbor’s drawing of eyelashes and chose that as something she would add to her own drawing. Another student chose the toes from one of the visuals and added them to his own drawing. The students were able to talk about different ways to draw people and were able to
appreciate their classmates’ artwork and adapt the features they liked and incorporate them into their own work.

The second lesson focused on portraiture and the parts of the face. I showed the students some examples of self-portraits and portraits by artists and we discussed them as a class. We then discussed all the parts of a face and the location on the face where they belong. As students named the various parts, I added them to a drawing I was making in front of the class. We talked about position of features on the face and different ways facial features could be drawn. I used the ‘negotiated drawing’ approach. For example, when a student said faces have noses, I drew a nose above the eyes and the students quickly corrected me and told me the proper placement. After going over all the parts of the face, including nostrils, ear lobes, et cetera, students drew their own faces while consulting their images in a mirror. Students tried to include all of the features that we discussed as a class and anything else that they noticed in the mirror. I was immediately shocked at the high level of detail they included in their drawings. If they had included those portraits as the heads in their figure drawings, I thought, they would have scored exceptionally high on their Draw-A-Person Tests. For example, as I was walking around the room I noticed one of the girls had drawn a very interesting pattern on her figure’s neck, but I noticed she was not wearing a turtleneck shirt. I told her, “That is a very beautiful pattern,” and she replied, “Thanks! It’s the veins on my neck! Look!” and pointed to her neck. She had discovered her veins while looking in the mirror. I encouraged the students to draw as large a head as they could on their paper, which also helped with making sure they had enough space to include all the details they desired. Students who were drawing stick figures for their Draw-A-Person Test were able to draw incredible self-portraits with some teacher facilitation.
The third lesson focused on the parts of the body and proportion. I showed the students a Faith Ringgold painting of people dancing, which we discussed as a class. I then played music for the students to dance to and they had to freeze when the music stopped. Students looked at themselves and their classmates and saw how bodies bend, such as at the elbows and knees and how our arms and legs attach to our bodies. We discussed different parts of the body as a class and sang the “head, shoulders, knees, and toes” song. Students then drew a person who was dancing to music and tried to include the many parts of the body we discussed. One student in particular seemed to really enjoy this lesson. He internalized and incorporated what he learned about the parts of the body into his post-intervention Draw-A-Person Test (Figure 3).

The last lesson reviewed the parts of the face and the parts of the body. Students modeled for each other and drew their classmates. They were challenged to try to include as many aspects of the face and body as they could. When they were finished, they worked on two collaborative pieces. I had traced the outlines of a boy and a girl from the fourth grade on two large sheets of paper. The students then worked together to finish the people.

The two 20-minute art lessons were taught during their regular classroom time during part of their play period. The other two 40-minute art lessons were taught during their regular art class. During the two weeks that the intervention took place, between the two Draw-A-Person Tests, the control group in the other kindergarten classes participated in their regular classroom activities.

Figure 3. Draw-A-Person Test. Post-intervention drawing of a man with knees and elbows.
Results

The baseline and post-intervention Draw-A-Person Test scores were compared for each child to determine significance. Figure 4 is an example of a pre-intervention and post-intervention drawing of a man. See the Appendix for the intervention group comparisons.

A doctoral student at The Pennsylvania State University in clinical child psychology, who has extensive experience scoring assessments but no formal Draw-A-Person Test training, scored the drawings as an independent evaluator to determine their raw scores. There was no identifying information on the drawings, just the students’ assigned numbers. She had never been to the school or met any of the students. After the raw scores, or total number of points awarded, were determined, I calculated their standard scores. The intervention did not have an effect on the Draw-A-Person Test scores. There was not a significant difference between the
intervention group’s baseline and post-intervention test scores. As anticipated, there was also not a significant difference between the pre-intervention and the post-intervention test scores for the control group. The mean test scores before and after the intervention were as follows:

<table>
<thead>
<tr>
<th></th>
<th>Intervention Group Mean +/- Standard Deviation</th>
<th>Control Group Mean +/- Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>101.7 +/- 15.6</td>
<td>94.7 +/- 16.3</td>
</tr>
<tr>
<td><strong>Final</strong></td>
<td>102.8 +/- 14.0</td>
<td>92.7 +/- 14.1</td>
</tr>
</tbody>
</table>

This study supports the validity of the Draw-A-Person Test since art instruction did not affect the test results. There were also no gender differences for the test scores. Although there was no significant statistical difference in the intervention group between the baseline and final test scores, my experiences and observations told another story.
Discussion

Statistically, the art lessons did not have an effect on the children’s Draw-A-Person Test scores. One factor that could have contributed to this result was that only one person scored the tests. If several people scored them, then reliability would have been able to be determined. The study may have had poor inter-rater reliability if there were multiple evaluators. It also might have been difficult for the evaluator to make judgments on aspects of drawings that were ambiguous. The child’s intention could have been more easily determined if the evaluator had knowledge about how children draw. For example, one child’s post-intervention drawing of a man included knees and elbows, for which he did not get credit (Figure 3). The points are called “Elbow joint shown” and “Knee joint shown” and the detailed descriptions of the points are not clear. It states, “There must be an abrupt bend (not curve) at approximately the middle of the arm” (Harris, 1963, p. 256, 257). The instructions are the same for the knee and leg. The man in Figure 3 does not have bent arms or legs, but the elbow and knee joints are still indicated and therefore could have been awarded points. As his teacher, I knew what he was trying to depict, especially since I taught the intervention art lesson on how the body moves. Children had experimented with different ways to show joints in their drawings. I could see how a person scoring the drawing may not realize what the student was trying to illustrate.

Another possibility for why no statistically significant differences were found between the two groups could be because the study was underpowered. There may not have been enough participants in each group to detect a difference between them. However, even though no statistical differences were found, I still believe that drawings should not be used as measures of intellectual maturity. There is an important difference between statistical significance determined by the data and a real world teacher observed significance. The scoring guide was
created to be as objective as possible; however, with ambiguous drawings the evaluator has to speculate and may not come to the same conclusion as the art teacher who has knowledge of how the students draw. The art teacher’s observed difference is vital since the teacher can witness learning taking place in the classroom that may not be reflected in the student’s test scores. There may not have been a statistical significance, but I witnessed real world significance.

I acknowledge that the Draw-A-Person Test is telling of the student’s ability. However, it was obvious to me that the students were not drawing everything that they knew about the human figure. They demonstrated that they knew a lot more during the art lessons. For example, the girl that drew the veins on her neck in the art lesson did not include even close to that level of detail in her Draw-A-Person Test. Even though the test is based on the theory that children draw what they know, not what they see, Harris (1963) himself acknowledged that children do not always draw everything they know. Harris (1963) discussed a study by Mott in 1939 that demonstrated that children did not draw everything they knew about a man when they were asked to draw a specific type of a man, such as a farmer. Children were consumed by the task of including special details and left out basic elements that they had included in their general drawing of a man (Harris, 1963). Studies by Golomb (1973, 1981) and Brittain and Chien (1983) have also questioned the theory that children draw what they know, not what they see. They found that children could name body parts that they did not include in their drawing of a person. Brittain and Chien (1983) also found that children who could not name the body section of a person also left it out of their collaged human figures. Children do not draw everything they know in their figure drawings, but include what is most important to them at that specific moment. Their decision of what to include is contextual. For example, one of the girls who had a loose tooth and talked about it often included teeth in her drawings. However, Harris (1963)
stated that it does not matter if children do not draw everything they know in their Draw-A-Person Test since “the fact remains that, progressively with age, all children include more aspects in their drawing of the human figures, and these aspects are at all times organized into a patterned, ‘whole’ representation” (p. 202). He does not believe that children who do not draw everything that they know in their figure would affect the validity of the test.

One of my observations while teaching the intervention group was that many of the students encountered planning problems and were not able to include aspects of the figure that they found particularly important, such as the nose. During the art lessons, I had to remind students to draw as large as they could to fill the whole paper. One of the first things students usually drew was the circle for the head of the figure. If a student initially drew the head too

![Figure 5. Draw-A-Person Test. Pre-intervention and post-intervention drawing of a man, which reveals planning problems with the pre-intervention drawing.](image)
small, typically the student would keep the small head and use it to determine the scale of her drawing. In Figure 5, a student encountered planning problems in his pre-intervention Draw-A-Person Test. He drew the head so small that he chose not to include a nose. In his post-intervention drawing, he drew his figure larger so he was able to include all of the facial features that he thought were important. He included not only the nose, but also the nostrils. There was a 21-point difference between the scores of these drawings. This example demonstrates how the Draw-A-Person Test does not always accurately represent intellectual maturity.

Another observation was that the test environment was very different from that in the art classroom. There were huge differences between the drawings that the children created as part of the art lessons and their drawings as part of the Draw-A-Person Test. Children may have an easier time drawing people in an art classroom than in a formal test setting because it makes more “human sense” as Margaret Donaldson (1978) termed it. The instructions for the Draw-A-Person Test tell students to draw a man, a woman, and themselves; however, these arbitrary instructions do not relate to the children’s lives. Donaldson (1978) found that children who were unable to perform a task were able to accomplish it when it made “human sense” and related to their lives. For example, Donaldson (1978) discussed a classic Piaget study called the “three mountains task,” which involved three mountains, each with a distinctive feature, set up in front of a child. The child was to determine what view of the mountains the doll had that was sitting on the other side of the table. Children had a very difficult time with this task and frequently chose their own perspective. However, when the task made more “human sense” and was changed so that the child had to determine where a boy doll could hide so the policemen could not see him in a quadrant made up of two bisecting walls, children were able to appreciate the policemen’s perspectives and successfully complete the task (Donaldson, 1978). The
instructions for the Draw-A-Person Test are remote, but when children are taught a lesson about their own and others’ faces and bodies, drawing people makes more “human sense” and relates to their everyday experience.

Not only can the type of test instructions, but also the test atmosphere can have a negative influence on children’s drawings. The environment of the test setting was very different from the art classroom. Students were instructed to be quiet and not talk about their drawings. They also knew that when they finished, their drawings were going to be collected. Students may not feel comfortable taking risks in such a formal test setting. Figure 6 is an example of a student who attempted to draw fingers, but struggled with it and decided to erase them. She knew more about the human figure than she drew. If the classroom was not silent and she was not feeling the pressure of a test, would she have continued to try to draw her fingers? Perhaps if she had received a few words of encouragement from me she would have persevered. She knew that the drawings were going to be collected so instead of having fingers that she was not proud of, she may have opted to erase them. Although I do not know what her thought process was, this is another example of a student who knew more than she demonstrated in the test setting. Some students just needed some facilitation and encouragement to go beyond drawing a person as they normally do, their schema, and to venture outside of the way in which they feel comfortable drawing a figure.

Figure 6. Draw-A-Person Test. Drawing of herself, which shows how she struggled with and decided not to take the risk of drawing fingers.
A schema, as defined by Lowenfeld and Brittain (1987), is “a satisfactory symbol for a person and for familiar objects” (p. 258). All of the kindergarteners had schematic drawings of people. It is schematic when they repeatedly use the same shorthand representation. The style of the representation is specific to the individual child. In addition to a schema of a human figure, children have well-developed internal models of many objects, such as a house and a tree. One of the reasons why there were no differences between the pre-intervention and post-intervention Draw-A-Person Test drawings was that many of the students returned to their schema of a person in the test setting, as opposed to incorporating what they learned from the art lessons. Figure 7 demonstrates a pre-intervention and post-intervention Draw-A-Person Test of a woman. The student’s basic schema is evident.

Figure 7. Draw-A-Person Test. Pre-intervention and post-intervention drawing of a woman, which demonstrates the power of her schema.
Research demonstrates the power of the schema, but it also shows how it is possible to influence it. Lowenfeld and Brittain (1987) noted three types of variations, “[1] exaggeration of important parts; [2] neglect or omission of unimportant parts; and [3] change of symbols for significant parts” (p. 275). Aside from variations, actual changes in the schema take time. “New information is gradually internalized and, once assimilated, provides new concepts and an altered schema” (Lowenfeld and Brittain, 1987, p. 285). Internalization, as termed by Vygotsky, is “the process by which higher functions are acquired” (Efland, 2002, p. 31). Vygotsky believed that this process takes time since two stages are involved. He believed that new information first goes through a social cultural stage and then becomes internalized in psychological processes (Efland, 2002). In my study, there might not have been enough time for the children in the intervention group to internalize the lessons. What they may have internalized might not have immediately transferred to the test performance beyond the power of their schema.

Cox (2005) investigated how it is very difficult to encourage children to veer from their schema, especially when they are in the “tadpole stage” of drawing. However, Cox (2005) also discussed studies that were able to motivate children to differ from their schema and demonstrate representational flexibility. Cox (2005) listed numerous studies that demonstrated students can stray from the comfort of their schemas. Cox and associates (Cox and Moore, 1994; Cox and Lambon Ralph, 1996; Cox, Koyasu, Hiranuma and Perara, 2001) found that a series of interventions were effective in altering a child’s schema and that schemas are not, in fact, rigid. Cox and Moore (1994) found that children as young as four were able to adjust their schema when they drew a model from different orientations. By age seven, children could modify their schema and draw a profile of a model that had occluded limbs (Cox and Lambon Ralph, 1996). Schemas are not fixed and students will focus on different parts of the schema at different times
(Cox, 2005). Typically, students will stay with their schema when given a general task, but will alter their schema to specific instructions, such as drawing two heads (Cox, 2005). Many students feel most confident with their schema drawings since they already know the drawing will be successful, and this could account for the frequent reversion to schemas in a formal test setting.

My intervention sought to further develop children’s schemas and to have them incorporate what they know about the human figure into their drawings. I believe I was able to alter their schema in the art classroom setting, but it did not carry over into the test setting. With some teacher facilitation, students were able to draw incredible portraits and figures. One student who typically just drew a smiley face, dots for eyes and a smile, for the facial features was able to create an impressive self-portrait when looking in the mirror. He included eye and nose detail and did an excellent job drawing his glasses, which he did not include on the Draw-A-Person Test drawing of himself. However, for the final test he reverted to the smiley face representation and did not include any facial details or his glasses when he drew himself.

It is possible that the Draw-A-Person Test is an accurate measure the children’s schemas, but not their full capabilities. Is the schema a representation of children’s intelligence even if they can achieve much more with scaffolding? “Vygotsky notes that the child is accelerated in his achievements if helped by adults or older children, compared with his achievement if left to struggle with problem-solving on his own, a difference Vygotsky described as the zone of proximal development” (Cox, 2005, p. 207). The zone of proximal development is where learning takes place and is the difference between the child’s actual developmental level and the level the child can reach with facilitation to internalize information (Efland, 2002). Efland (2002) quotes Vygotsky and states:
Instruction is good only when it proceeds ahead of development. Then it awakens and rouses to life an entire set of functions which are in the stage of maturing, which lie in the zone of proximal development (p. 35).

Is children’s intelligence what they can do on their own or what they can accomplish with facilitation and scaffolding? I believe that intelligence is the real world intelligence that the art teacher can see in the art classroom, not what they demonstrate in their schemas. The children did not show what they were fully capable of in the Draw-A-Person Test. They fell back on what was an easy and comfortable way to represent a person, not what they had learned. In the intervention, I did not tell the children what to draw, but encouraged their drawings with questions. For example, in one of the art lessons I noticed a few of the children were drawing the incorrect number of fingers. I asked a general question to the class of how many fingers we have on each hand. All of the children knew that they had five, which they learned at a young age. The children who did not have the correct number of fingers on their figure noticed and changed their drawing. I witnessed a real world significant difference between the children’s drawings before and after the intervention even though there was not a significant statistical difference. My notion of intelligence is different from the type of intelligence assumed in the test. Harris’s notion of intelligence is their actual developmental level that is shown in their schema drawings. However, I believe that their schemas are below their actual developmental level. My definition of intelligence is what children can achieve with facilitation and scaffolding. I think intelligence is what they are capable of, which was not reflected in the Draw-A-Person Test.

There have always been both spoken and unspoken rules concerning what makes some art superior to other types of art. However, many artists pride themselves on breaking these
conventions. There are decisions, preferences, judgments, and choices that the artist makes when creating a work of art. For adult artists, there are no aesthetic decisions that are right or wrong. It is subjective and a matter of opinion. Why would it be different for children? If each child is an artist, should not adults respect children’s artistic decisions? How are adults to know why children made the choices they made when they created their drawings if there was no dialogue? What are adults truly learning when they analyze children’s drawings?

Children are artists and therefore children’s drawings are art. I believe that using children’s drawings for adult purposes in a testing situation is unfair. The instructions for the test administrator in the Draw-A-Person Test Manual emphasize the importance of not talking to the students about their drawings and not influencing their drawings in any way. Although these directions on the surface seem like a good idea for the purpose of having students produce a drawing that accurately represents the student’s knowledge, I believe the results are, in fact, less accurate since students cannot tell you about their drawings. Kindergartners’ drawings can sometimes be hard to interpret due to their scribbly nature. The student’s input would clarify ambiguous marks, as opposed to the subjective judgment of the scorer who analyzes the drawing. If the scorer knew the artistic decisions that children were making, then the score would represent a more accurate interpretation of their artwork. If a child does not include hands in her drawing on the Draw-A-Person Test, instead of penalizing her, a dialogue should take place to understand her reasoning; her answer might be that her hands are in her pockets. Their artistic freedom should be honored when their drawings are scored.

However, Harris (1963) did not intend to consider their intentions and believed it was not necessary for the test to be valid. I believe children are artists and therefore make aesthetic decisions and adults cannot assume their intentions. I think that the Draw-A-Person Test is
telling of general ability, but is fundamentally flawed for this reason. Perhaps this is why other researchers have had difficulty replicating Harris’s (1963) validity. Harris (1963) disagrees with my beliefs that children are artists and stated:

As Goodenough pointed out long ago, graphic ability which achieves representative drawing of esthetic or artistic merit cannot be discerned in young children; such appears only after certain psychological (cognitive) processes have run their course, and the child has mastered techniques appropriate to the medium. (p. 235)

Harris, Goodenough, and the Draw-A-Person Test do not acknowledge that children’s drawings are art, but assume that the drawings are merely marks that represent concept development or symbolic representation. I acknowledge that there are many functions of children’s art. Some drawings are part of the art process and some drawings are the completed art piece. The Reggio school philosophy encourages many types of drawings that serve different purposes. Katz and Chard (2000) discussed, “Project work drawings may be of many different kinds: rough sketches, plans for future work, parts of larger composite pieces of work, or scenery for a dramatic presentation” (p. 150). Drawings can represent different aspects of the art process, but not all drawings are the final art product. “A few drawings may be discarded, having served their purpose (like rough drafts or “scratch” notes). Many drawings will be intended for worthier final destinations, taking their place in a book or report, on a poster, or in the child’s individual project folder” (Katz and Chard, 2000, p. 150). There are multiple ways that drawing becomes part of children’s learning. Children use drawing to explore the world around them. The process of drawing investigation and discovery is another form of art. The instructions for the Draw-A-Person Test ask the children to “make the very best picture that you can; take your time and work very carefully” (Harris, 1963, p. 240). He does not ask the children to brainstorm or create some
practice sketches before their final piece, but to make an artwork of a person. In order to judge the art, their artistic decisions and intentions would have to be taken into account; however, this is subjective and not possible. I do not think that the Draw-A-Person Test needs to be reworked or revised. I think the sole purpose of the test should be to determine the general ability of a child, but should not in any way be used in determining school readiness or in predicting academic success.

The Draw-Person-Test is based on the assumption that kindergarteners are not artists. The test does not score aesthetic aspects of the children’s drawings or take into account their intentions. Is it possible for the test to measure intellectual maturity without considering these issues? I do not believe it is feasible. Harris (1963) believes that children require “complex concepts and techniques” to create art, which are “quite beyond discovery by unaided childish exploration with drawing materials” (p. 235). I would argue that “unaided childish exploration with drawing materials” (Harris, 1963, p. 235) is art!

Are there drawing dos and don’ts? There may be dos and don’ts for drawing assessments, but for artists, both child and adult, there are only drawing dos.
References


Appendix:

Intervention group’s Draw-A-Person Test:
Baseline and final drawings for each student in order of test improvement

Six year old girl
Five year old girl
Six year old boy
Six year old boy
Six year old girl
Five year old girl
Six year old boy
Six year old girl
Five year old girl
Five year old girl
Six year old boy
Five year old girl
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Six year old boy