Twister: New and Improved

Making the Game Accessible to All

Amanda Elizabeth Hatch

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Rationale and Intent

The game Twister™ is a fun filled competition testing the flexibility and strength of an individual. Another aspect it unknowingly tests is a person's perception of colors and makes the assumption that all people are able to see the red, yellow, green, and blue dots. After having a class on board games and brain functioning, we learned about how the littlest things interfere with a person's participation. As the game Twister™ was being played as a class we discussed who would be unable to play it, those who are colorblind and how could we fix that, by putting patterns or shapes on the board instead of colors. I believe this idea is important because even something as small as a game should be accessible to all people and by making the simplest changes we can do just that.

So, how do you make the game "color-blind friendly"? My initial ideas involved replacing the circles on the board with different shapes. But, after experimenting with foam and arranging the shapes on the board it became apparent that it was too bulky and looked too crowded. So then my next idea came about when I was helping my mom with her renovation of our kitchen. She was lining the cupboards and drawers with themed contact paper. After working with it and seeing how neat, easy, and professional it was, I knew it work well for making shapes. But, this time instead of making the shapes similar in size to the circles on the board, I would make them small enough to fit in the middle of the circles. I came up with four shapes, circles, squares, diamonds, and triangles and placed them in the middle of the already colorful dots.

The population I am trying to help would be people who are color-blind. But, what exactly does it mean to be color blind? Stereotypically we might imagine someone who is colorblind only being allowed to see black and white, but that is not the case. Color blind is not a form of blindness at all, if you are colorblind; you have difficulty distinguishing certain colors.

Red-green color deficiency is the most common form of color blindness; a less common form is blue-yellow color deficiency. (Bailey 2008)

Color blindness occurs when certain cells in the eyes' retina that normally respond to a certain color no longer respond correctly. It affects more men than it does women, and usually, people with a color deficiency are born with it. Some 10 million American men, seven percent of the male population cannot distinguish red from green, or see red and green differently from most people. (HHMI 2008) Color blindness is caused by a common X-linked recessive gene. If you're color-blind, your mother must either be color-blind or have normal vision, but be carrying the color-deficient gene. Aging or disease can also damage retinal cells and in extreme cases can lead to almost total color blindness.

Cost and Availability of Materials

When searching for my materials the place I went looking at first was Wal-Mart. I found the game Twister™ in the Toys and Games section. The game itself only cost 12.00 dollars and in my online research I found that to be the average retail price. Next, I went to the Housewares section to find plain white contact paper that is used to line the insides of cupboards' and drawers. I found the smallest roll was 5.96 and was approximately 24 feet in length, which would be plenty for my shape making.

Construction and Instructions

In the beginning I needed to makes stencils of triangles, squares, circles, and diamond shapes to fit inside my circles on my Twister™ board. I looked online for shapes and printed them off. I then transferred the shapes to heavier scrap cardboard and used them as my stencils. I then took out my white contact paper and began to trace shapes. I traced on the backside of the contact paper for a neater and more finished looking project.

Next, I used scissors to cut out the shapes I had traced on the contact paper. I had to make six cutouts for each shape in order to have the twenty-four circles covered on the Twister™ board. After cutting the shapes out, I began to peel the backing away from the shapes and sticking it to the circle on the mat. Each color had a specific shape it was to be placed on, diamonds were placed on yellow circles, squares were out on red circles, etc.

I also realized the spinner would have to be altered in order to match the new shape covered board. The spinner itself was broken into four categories of left hand, right hand, left hand, and left foot. Then off of these categories were subcategories of red, yellow, blue, and green dots. So I repeated the process of making shapes to make miniature versions of what was on the Twister™ board. I paired each color with a specific shape to match the mat I had already made.

Research

http://www.allaboutvision.com/conditions/colordeficiency.htm

Color blindness By Gretchyn Bailey; reviewed by Vance Thompson, MD

cColor blindness is not a form of blindness at all, but a deficiency in the way you see color. With this vision problem, you have difficulty distinguishing certain colors, such as blue and yellow or red and green. Red-green color deficiency is the most common form of color blindness; a less common form is blue-yellow color deficiency.

c Color blindness occurs when certain cells in the retina that normally respond to color do not respond as they should.

The problem affects more men than it does women, and usually, people with a color deficiency are born with it.

Color blindness is caused by a common X-linked recessive gene. This means, if you're color-blind, your mother must either be color-blind or have normal vision but carry the color-deficient gene.

Color-blind fathers pass the gene to their daughters only, who will have normal color vision unless their mother also carries the color-deficient gene.

Aging or disease can also damage retinal cells and in extreme cases can lead to almost total color blindness.

http://www.hhmi.org/senses/b130.html

4000 Jones Bridge Road Chevy Chase, MD 20815-6789 | (301) 215-8500 | e-mail: webmaster@hhmi.org

Some 10 million American men—fully 7 percent of the male population—either cannot distinguish red from green, or see red and green differently from most people. This is the commonest form of color blindness, but it affects only .4 percent of women.