

Does Color Matter in Assessment of Student Performance?
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AMATYC Themed Session, Placement and Assessment (PAC) Cincinnati, 2006 *THA*

Synopsis: After I gave a test printed on blue paper, students who had trouble reading the white tests came up to me thanking me for the color. For the majority, color makes no difference, but in each class, some students say, “Wow, thanks for the blue!” and their test scores seem better.

Learning styles vary. For instance, some people find it easier to read a black and white textbook page through a colored transparency. One of my students seemed to have vision problems: he was peering at the board, even when he sat close to the front of class, and had told me he had recently had his vision checked. His handwriting was “scribbly”—very difficult to follow, and pretty much all over the paper—but his participation in class discussion (both answers and questions) indicated that he was a strong student. I asked him if he had trouble seeing writing on paper. “Yes, the numbers and letters jump around.” I took him to my office, showed him a rainbow of papers, and he selected blue. On the test day, I was surprised that no student commented on the blue tests, and even more surprised when other students actually came up to me in the halls, thanking me for the color. Some of these students had that “scribbly” style of handwriting too, but not all.

I decided to run a Likert scale, from 1 to 5 (*see next page*) with 1 as “White for me”, 3 as “Color doesn’t matter” and 5 as “Thanks for the blue!” I predicted a bell curve, but to my surprise, thought I certainly had most students saying color doesn’t matter, quite a lot said blue was good.

Student comments included:

- “I think that the blue made me focus more than the white”
- “Blue relaxes my eyes, white reflects more light and puts more pressure on them.”
- “I didn’t notice. Blue is better than bright obnoxious colors, however.”
- “I have chronic migraines and this color made a huge difference.”
- “I got a good grade so keep them coming.”
- “Test is test is test.”

Now, it is hard to see whether test scores actually go up. The sample size is small to begin with, and some like blue for easing math anxiety, while others find it physically easier to work with. Then there is the placebo effect—some feel that it lightens the mood, and perhaps do better that way. Overall, as I look at test scores from these few years compared to years of white, the biggest predictor of success seems tied to whether the students did their homework or not.

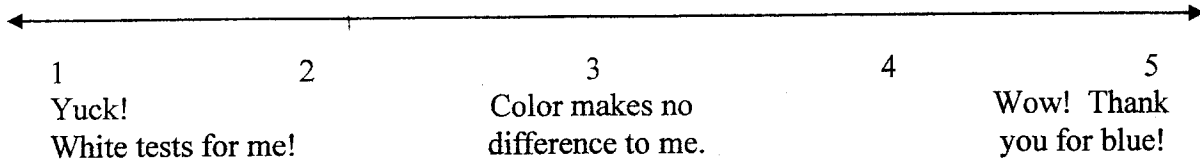
The first test I give in a quarter is white, and the second is blue, followed on hand-back day with the Likert scale. After that, I usually bring some of both colors in with me, and usually about 20% of the students (more than actually said they liked the blue on the Likert scale) definitely choose blue.

Assessment has many factors, and I thought you might be interested in the possible effect of color on assessment.

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MATH 1420
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What do you think about blue tests?



Comments about anything are most welcome:

Name: (Optional, unless you feel quite strongly about the color of exams ☺)

From Winter, 2004 to Fall, 2006, I had overall n = 269 students.

I thought there might be a difference between

| | 1 (Yuck) | 2 | 3 | 4 | 5 (Wow) |
|---------------------------------|----------|---|-----|----|-------------------|
| College Algebra | 2 | 3 | 66 | 18 | 13 |
| Intermediate Algebra | 2 | 5 | 87 | 20 | 15 |
| Elementary Algebra/ Geometry | 2 | 1 | 15 | 14 | 6 |
| | 6 | 9 | 168 | 52 | 34 = 269 students |

but I don't see much difference. I do teach a basic math class followed by elementary and intermediate algebra, but I do that over the Nebraska satellite system as live interactive TV to students in the various prisons in Nebraska, as well as local students, and didn't want to fiddle with colored exams, particularly with offering the later choices, in that setting.

Note: This is an example of "Action Research"—Essentially, an on-going evaluation of an activity in which students contribute to the assessment process. It is practical, and differs from traditional research in that scholarly research of related articles may not even occur, or, if it is done, can be done during the action research. It is often designed for local or personal use, and simply helps a teacher answer questions about learning and assessment within his or her classroom, with the idea of improving or validating what is currently being done.

Questions and comments are indeed welcome! cbuller@mcneb.edu