MATHEMATICA Policy Research

FEBRUARY 2018

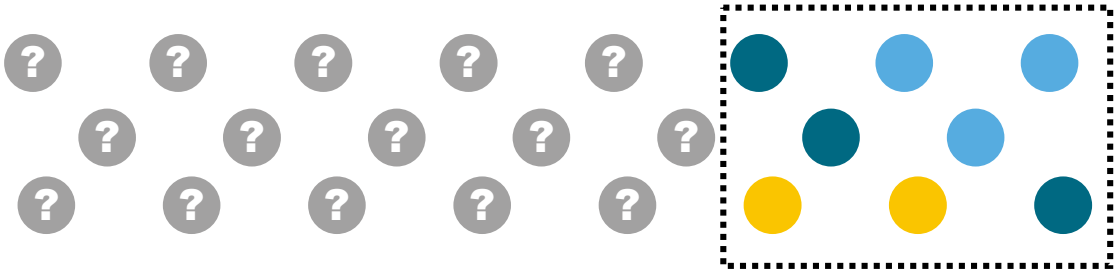
THINGS to CONSIDER

Interpreting Your Results:
Creating three buckets of possibilities

How is the minimum meaningful effect that I select used to determine my results?

When you test your technology, your data will reflect the observed outcomes for the students or teachers who used the technology. But those values are only some of the possible outcomes. In order to know the true effect of the technology you would need to test it with all students everywhere. But that's not possible, so your results will reflect some uncertainty about the technology's effectiveness.

All possible outcomes

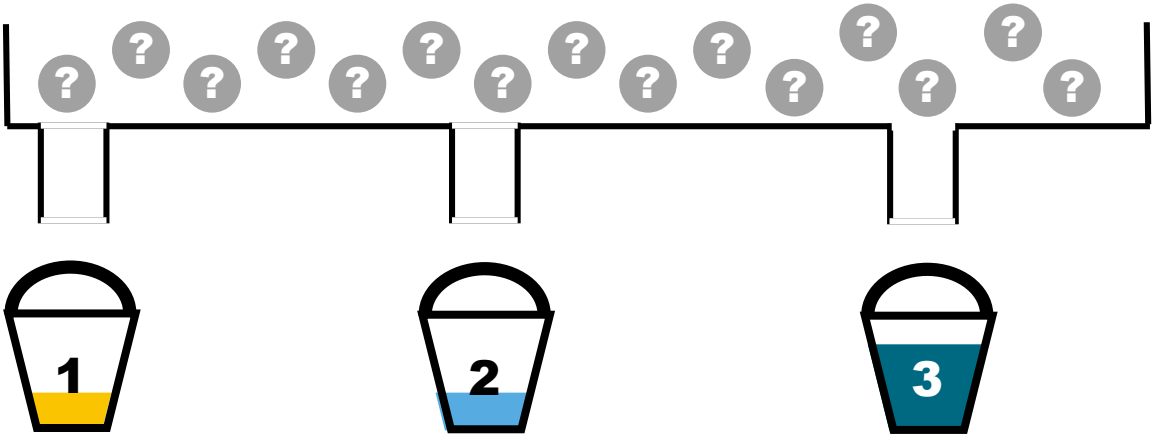


What you observe

Minimum Meaningful Effect (MME)

The MME represents the amount of change that you would need to see in order to think of the results as meaningful. The MME you decide to set will depend on the scale of the outcome measure (such as a 300-point standardized test) and also on the cost and intensity of the intervention. If the change is within this range, we say that the difference falls within the region of practical equivalence. For example, if the range of possible points on a test is 0-1,000, any change less than 10 points (or 1%) may be practically equivalent to 0 (or no change).

The Coach uses the outcomes you observed to predict what all the other possible outcomes could be, and sorts the outcomes into three different buckets. These buckets are determined by you based on the value you select as the "minimum meaningful effect" (MME). This is the smallest amount of change you would view as valuable. Based on your MME, three buckets are created, and the possible outcomes are sorted into them.



Treatment group performs worse than comparison group by an amount greater than the MME.

Difference in outcomes between the treatment and comparison groups is less than the MME.

Treatment group performs better than comparison group by an amount greater than the MME.

The bucket with the largest number of possible outcomes is your most likely result. The fullness of the bucket represents the probability that the true effect will be found in that bucket.