

**TABLE 10.3** A Hypothetical Set of Data of Four Participants

**Between-Persons Error.**

Differences occur between participants. For example, Person A increased 1 point from Group Q to Group Z, and Person B increased 3 points. This is not consistent change and is therefore a source of error—the inconsistent differences are not due to having different groups.

Participant	Groups	
	Q	Z
A	3	4
B	0	3
C	2	3
D	3	6
$M = 2$		$M = 4$

**Within-Groups Error.**

Differences occur within each group, even though all participants experienced the same treatment in each group. This is a source of error—the differences are not due to having different groups.

**Between-Groups Effect.**

We will use the test statistic to determine whether this difference is significant. This is the difference we are interested in testing.

There are three places where differences can occur. Mean differences (the between-groups effect) are the differences we are testing. The other two places where differences occur are regarded as errors in that they have nothing to do with having different groups.