# 32 Principles of Data Interpretation

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| Group | ID | Principles of Data Interpretation |
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| **Cause** | 14 | Make no causal inferences from correlation coefficients. |
| Cause | 15 | Any two variables can be correlated. The resultant correlation coefficient might or might not be meaningful. |
| Cause | 25 | Rising test scores do not necessarily mean rising achievement. |
| **Explain** | 6 | Beware of convenient claims that, what ever the calamity, public schools are to blame. |
| Explain | 7 | Beware of simple explanations for complex phenomena. |
| Explain | 23 | If a situation really is as alleged, ask, "So what?" |
| **Facts** | 1 | Do the arithmetic |
| Facts | 2 | Show me the data |
| Facts | 5 | Be sure the rhetoric and the numbers match. |
| **Tests** | 17 | Make certain that any test aligned with a standard comprehensively tests the material called for by the standard. |
| Tests | 18 | On a norm-referenced test, nationally, 50 percent of students are below, by definition. |
| Tests | 20 | Standardized norm-referenced tests will ignore and obscure anything that is unique about a school. |
| Tests | 24 | Achievement and ability tests differ mostly in what we know about how students learned the tested skills. |
| Tests | 26 | The law of WYTIWYG applies: What you test is what you get. |
| Tests | 27 | Any tests offered by a publisher should present adequate evidence of both reliability and validity. |
| Tests | 29 | Do not use a test for a purpose other than the one it was designed for without taking care to ensure it is appropriate for the other purpose. |
| Tests | 30 | Do not make important decisions about individuals or groups on the basis of a single test. |
| Tests | 32 | In evaluating a testing program, look for negative or positive outcomes that were not part of the program. For example, are subjects not tested being neglected? Are scores on other tests showing gains or losses? |
| **Assembly** | 3 | Look for and beware of selectivity in groups |
| Assembly | 8 | Making certain you know what statistic is being used when someone is talking about the "average." |
| Assembly | 9 | Be aware of whether you are dealing with *rates* or *numbers*. Similarly, be aware of whether you are dealing with *rates* or *scores*. |
| Assembly | 11 | Be aware of whether you are dealing with *ranks* or *scores*. |
| Assembly | 16 | Learn to be "see through" graphs to determine what information they actually contain. |
| Assembly | 22 | Any attempt to set a passing score or a cut score on a test will be arbitrary. Ensure that is is arbitrary in the sense of arbitration, not in the sense of being capricious. |
| Assembly | 28 | Make certain that descriptions of data do not include improper statements about the type of scale being used. For example "The gain in math is twice as large as the gain in reading." |
| **Bias** | 31 | In analyzing test results, make certain that no students were improperly excluded from the testing. |
| Bias | 19 | A norm-referenced standardized achievement test must test only material that all children have had an opportunity to learn. |
| Bias | 21 | Scores from standardized test are meaningful only to the extent that we know that all children have had a chance to learn the material which the test tests. |
| **Context** | 4 | When comparing groups, make sure the groups are comparable |
| Context | 10 | When comparing rates or scores over time, make sure the groups remain comparable as the years go by. |
| Context | 12 | Watch for Simpson's paradox. |
| **Randomness** | 13 | Do not confuse statistical significance and practical significance. |