Pretest-Posttest Designs

In this design, which uses two groups, one group is given the treatment and the results are compared to the other group, which is not given the treatment. This design allows researchers to compare the final posttest results between the two groups, giving them an idea of the overall effectiveness of the intervention or treatment. The principle behind this design is relatively simple, and involves randomly assigning subjects between two groups, a test group and a control group. The control group receives no treatment, over the same period of time, as the test group. The main problem with this design is that it improves internal validity but sacrifices external validity.

One example is education, where researchers want to monitor the effect of a new teaching technique. For many true experimental designs, pretest-posttest designs are the preferred method to determine whether the group given the treatment showed a significant difference. This test allows a number of distinct analyses, giving researchers the tools to filter out experimental noise and compare participant groups and measure the degree of change occurring as a result of the intervention. Other areas include evaluating the effects of counseling, and measuring psychological constructs. The only stipulation is that the subjects must be randomly assigned to groups, in a true experimental design, to ensure that the groups are equivalent. The principle behind this design is relatively simple, and involves randomly assigning subjects between two groups, a test group and a control group. The control group receives no treatment, over the same period of time, as the test group.

Problems With Pretest-Posttest Designs

1. Assignment bias: One major problem is the assignment of participants to groups. In many experiments, participants are assigned to groups based on whether they are an expansion of the posttest only design with nonequivalent groups, this method is more costly, but avoids many weaknesses of the simple pretest-posttest designs.

2. Sample selection: Another problem is the selection of participants. Pretesting is a process of ensuring that an experiment has a strong level of validity, because the pretest ensures that the groups are equivalent. The various analyses that can be performed upon a two-group control group pretest-posttest designs are (Fig 1):

(A) Improvement is seen in both groups, giving them an idea of the overall effectiveness of the intervention or treatment.

(B) Improvement is seen in both groups, giving them an idea of the overall effectiveness of the intervention or treatment.

(C) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(D) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(E) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(F) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(G) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(H) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(I) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(J) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(K) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(L) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(M) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(N) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(O) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(P) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(Q) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(R) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(S) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(T) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(U) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(V) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(W) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(X) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(Y) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)

(Z) Both groups showed an improvement, then the researcher must attempt to uncover the reasons behind this. (A)