APPENDIX G

Computing the Significance of Mean Differences.
(as an example)

Use of Radio in Urban and Rural Schools.

Urban	Rural
$N_1 = 10$	$N_2 = 30$
$X_1 = 10$	$X_2 = 21$
$x_1^2 = 10$	$x_2^2 = 21$
$M_1 = 1.00$	$M_2 = 0.70$

$$\Sigma x^2 = X - \frac{(X)^2}{N}$$

$$\Sigma x_1^2 = 10 - \frac{(10)^2}{10} \qquad \Sigma x_2^2 = 21 - \frac{(21)^2}{30}$$

$$= 0 \qquad = 6.3$$

$$\sigma_D = \sqrt{\frac{\Sigma x^2_1 + \Sigma x^2_2}{(N1 - 1) + (N2 - 1)} \times \frac{1}{N1} + \frac{1}{N2}}$$

$$= \sqrt{\frac{0 + 6.3}{9 + 29} \times 0.133}$$

$$= \sqrt{\frac{6.3}{38} \times 0.133}$$

$$= \sqrt{0.165 \times 0.133}$$

$$\pm \sqrt{0.0219}$$

$$= 0.1485$$

$$t = \frac{D - 0}{\sigma_D}$$

$$t = \frac{D - 0}{\sigma_D}$$

$$= \frac{(1.00 - 0.70) - 0}{\frac{0.30}{0.1485}}$$

$$= \frac{0.30}{0.1485}$$

$$= 2.02$$

$$df = (N1 - 1) + (N2 - 1)$$

$$= 9 + 29$$

$$= 38$$

From statistics' table D for df 38 t value is 2.02 at 0.05 level and 2.27 at 0.01 level. Here computed 't value' is 2.02 hence, it is significant at o.o5 level.