CHAPTER VIII
INTERACTIONAL ANALYSIS
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The present chapter aims to study the interactional effects of type of school, teaching stream, teaching style and personality type on teacher effectiveness of secondary school teachers. It purports to verify the following hypothesis:

9. (a) There will be significant interactional effects of
   i) Teaching style x personality type
   ii) Teaching style x teaching stream
   iii) Personality type x teaching stream
   iv) Teaching style x type of school
   v) Personality type x type of school
   vi) Type of school x teaching stream
   on teacher effectiveness of secondary school teachers.

(b) There will be significant interactional effects of
   i) Teaching style x personality type x type of school
   ii) Teaching style x personality type x teaching stream
   iii) Teaching style x teaching stream x type of school
   iv) Personality type x teaching stream x type of school
   on teacher effectiveness of secondary school teachers.

(c) There will be significant interactional effect of
   teaching style x personality type x teaching stream x type of school
   on teacher effectiveness of secondary school teachers.
HYPOTHESIS 9 (a)

Hypothesis 9 (a) states, “There will be significant interactional effects of:

i) Teaching style x personality type
ii) Teaching style x teaching stream
iii) Personality type x teaching stream
iv) Teaching style x type of school
v) Personality type x type of school
vi) Type of school x teaching stream

on teacher effectiveness of secondary school teachers.”

The data were analysed through 2x2x2x2 ANOVA technique with a view to identify independent and combined effects of teaching styles (teacher-centered and learner-centered), personality types (introversion-extraversion), teaching stream (humanities and science streams) and type of school (government and private) on teacher effectiveness. Table 8.9.1 presents summary of ANOVA with respect to teacher effectiveness of school teachers.
Table 8.9.1
Summary of 2x2x2x2 ANOVA with respect to Teacher Effectiveness

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean squares</th>
<th>F-ratios</th>
<th>Level of Significance</th>
</tr>
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<tbody>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Type of School</td>
<td>17232.612</td>
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<td>17232.612</td>
<td>39.488</td>
<td>.01</td>
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<tr>
<td>Stream</td>
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<td>1</td>
<td>669.209</td>
<td>1.533</td>
<td>NS</td>
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<td><strong>First Order Interactions (2x2)</strong></td>
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<td>TS x PT</td>
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<td>44.441</td>
<td>.102</td>
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<td>568.976</td>
<td>1.304</td>
<td>NS</td>
</tr>
<tr>
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<td>28.907</td>
<td>.066</td>
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<td>TS x Type of school</td>
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<td>701.998</td>
<td>1.609</td>
<td>NS</td>
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<td><strong>Second Order Interactions (2x2x2)</strong></td>
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<td></td>
<td></td>
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<td>TS x PT x Type of School</td>
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<td>.151</td>
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<td>TS x PT x Stream</td>
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<td>66.627</td>
<td>.153</td>
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<td>PT x Stream x Type of School</td>
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<td>.05</td>
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<td><strong>Third Order Interactions (2x2x2x2)</strong></td>
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<tr>
<td>TS x PT x Stream x Type of School</td>
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<td>106.728</td>
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<td><strong>Error Variance</strong></td>
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<td>436.398</td>
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<td>20972681</td>
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</table>
RESULTS

Main Effects

Main Effect of Type of School

A look over Table 8.9.1 reveals that for the variable type of school value of mean squares is 17232.612 and F-ratio is 39.488 for 1/384 df which is statistically significant at .01 level of confidence.

Main Effect of Teaching Stream

A perusal of ANOVA Table 8.9.1 shows that teaching stream mean square value is 669.209 and F ratio for the variable teaching stream of school teachers is 1.533 for 1/384 df which is not significant at any level of confidence.

Main Effect of Teaching Styles

Results entered in Table 8.9.1 show that the mean square value is 2921.819 and the F ratio for the variable teaching styles (TS) of school teachers is 6.695 for 1/384 df which is significant at .01 level of confidence.

Main Effect of Personality Types

A look over Table 8.9.1 reveals mean square value 12.174 and F-ratio for the variable, Personality types (PT) of school teachers is 0.028 for 1/384 df which is not statistically significant at any level of confidence.

Interactional effects

For finding out the interactional effects of teaching styles, personality types, teaching stream and type of school on teacher effectiveness, first order interactions were computed. The results of ANOVA have been shown in Table 8.9.1.

First Order Interaction Effects (2 x2)

Teaching Styles x Personality Types

Table 8.9.1 reveals that F-ratios for the interactional effects of personality types and teaching styles of school teachers was 0.102 for 1/384 df which was not significant at any statistical level of confidence. As reported in Table 8.9.1 the individual effect of teaching style was significant at .01 level, but the individual effect of personality type was not significant at any level.
**Teaching Styles x Teaching Stream**

Table 8.9.1 further depicts that F-ratio for the interactional effect of teaching stream and teaching styles of school teachers was 1.304 for 1/384 df which was not significant.

**Personality Types x Teaching Stream**

A look over Table 8.9.1 reveals that F ratio for two way interactional effects of teaching stream and personality types of school teachers with respect to teacher effectiveness was 0.066 which was not significant at any level of confidence.

**Teaching Styles x Type of School**

Table 8.9.1 further depicts that F-ratio for the interactional effect of teaching stream and teaching styles of school teachers was 0.770 which is not significant.

**Personality Types x Type of School**

Table 8.9.1 shows that F-ratios for the interactional effects of personality types and type of school was .071 which was not significant at any statistical level of confidence. As reported in Table 8.9.1 the individual effect of type of school was significant at .01 level but the individual effect of personality type was insignificant.

**Teaching Stream x Type of School**

Table 8.9.1 is further indicative of the fact that F-ratios for the interactional effects of teaching stream and type of school was 1.609 for 1/384 df which was not significant at any statistical level of confidence. As reported in Table 8.9.1 the individual effect of type of school was significant at .01 level but the individual effect of teaching stream was insignificant.
DISCUSSION OF RESULTS

Main Effects

Main Effect of Type of school

Entries made in Table 8.9.1 reveal that F-ratio regarding the main effect of type of school on teacher effectiveness was statistically significant at .05 level of confidence. This implies that teachers teaching in government and private schools differ in their teacher effectiveness. This denotes that the type of schools in which teachers teach affects their teacher effectiveness in a significant way. Further, higher mean scores of teacher effectiveness of private school teachers (M=234.99) than the mean scores of government school teachers (M=220.79) as shown in Table 7.2.1 indicate that private school teachers are higher in teacher effectiveness as compared to government school teachers.

Main Effect of Teaching Stream

A perusal of ANOVA Table 8.9.1 shows that F ratio regarding the main effect of teaching stream of school teachers was not significant at any level of confidence. It indicates that teaching stream of school teachers does not affect their teacher effectiveness in a significant way. In the present study two types of teaching streams were taken up humanities stream and science stream. This indicates that teachers teaching humanities stream and teachers teaching science stream are more or less equal in their teacher effectiveness. Ghali (2005) have also reported similar results and concluded that teaching stream was not an influencing factor for teacher effectiveness.

Main Effect of Teaching Styles

Results entered in Table 8.9.1 show that the F ratio regarding the main effect of teaching styles of school teachers on the teacher effectiveness was
significant at .01 level of confidence. It shows that teaching styles of teachers have significant influence on their teacher effectiveness. Mean scores of teachers teaching through learner-centered teaching style (M=235.66) were higher than the mean scores of teachers teaching through teacher-centered teaching style (M=223.59) as shown in Table 7.8.1.6. This suggests that teachers teaching through learner-centered teaching style are having higher teacher effectiveness than teachers teaching through teacher-centered teaching style. These findings support the findings of Whittington and Raven (1995).

Main Effect of Personality Types

Table 8.9.1 reveals that F-ratio regarding the main effect of personality types (PT) of school teachers on teacher effectiveness was not statistically significant at any level of confidence. This suggests that Introversion-extraversion dimension of personality types does not influence teacher effectiveness of school teachers.

Interactional Effects

First Order Interactions

Teaching Styles x Personality Types

As shown in Table 8.9.1 interactional effect of personality type and teaching styles on teacher effectiveness was insignificant as denoted by insignificant F-ratio. The individual effect of personality type was insignificant and that of teaching styles was significant at .01 level but the joint effect came out to be insignificant. The two variables conjointly do not interact in a significant way to influence teacher effectiveness of school teachers.
Teaching Styles X Teaching Stream

Table 8.9.1 further denotes that F-ratios with regards to the interactional effect of teaching stream and teaching styles on teacher effectiveness of school teachers was insignificant. This implies that stream (science and humanities) and teaching styles of teachers (teacher centered and learner centered teaching styles) do not interact significantly to influence teacher effectiveness.

Personality Types x Teaching Streams

Entries made in Table 8.9.1 regarding interactional effects of teaching stream and personality types on teacher effectiveness depict insignificant F-ratio. It implies that personality types and teaching stream do not have significant conjoint effect on teacher effectiveness.

Teaching style x Type of school

Table 8.9.1 further denotes that F-ratios regarding the interactional effect of teaching styles and type of school on teacher effectiveness of school teachers was insignificant. This suggests that type of school (Government and private school) and teaching styles (teacher centered and learner centered) do not jointly effect the teacher effectiveness significantly.

Personality Types x Type of School

Entries made in Table 8.9.1 regarding interactional effects of personality types and type of school on teacher effectiveness depict insignificant F-ratio. It implies that personality types and type of school do not have significant conjoint effect on teacher effectiveness.

Teaching Stream x Type of School

Table 8.9.1 further denotes that F-ratios for the interactional effect of teaching stream and type of school on teacher effectiveness of school
teachers was insignificant. This suggests that teaching stream and type of school do not have significant conjoint effect on teacher effectiveness.

Hence the hypothesis 9 (a) which states, “There will be significant interactional effects of

i) Teaching style x personality type
ii) Teaching style x teaching stream
iii) Personality type x teaching stream
iv) Teaching style x type of school
v) Personality type x type of school
vi) Type of school x teaching stream

on teacher effectiveness of secondary school teachers,” was rejected.

HYPOTHESIS- 9 (b)

Hypothesis, 9 (b) states, “There will be significant interactional effects of

i) Teaching style x personality type x type of school
ii) Teaching style x personality type x teaching stream
iii) Teaching style x teaching stream x type of school
iv) Personality type x teaching stream x type of school

on teacher effectiveness of secondary school teachers.”

RESULTS

Second Order Interaction Effects (2x2x2)
Teaching Styles x Personality Types x Type of School

Results entered in Table 8.9.1 presenting summary of ANOVA show that the F-ratio for the three way interactional effect of teaching styles, personality type and type of school come out to be 0.151 for 1/384 df which was not significant at any level of confidence.
Teaching Styles x Personality Types x Teaching Stream

A perusal of ANOVA entered in Table 8.9.1 depicts that the F-ratio for the three way interactional effect of teaching styles, personality type and teaching stream of school teachers was 0.153 which was not significant at any level of significance.

Teaching Styles x Teaching Stream x Type of School

Summary of ANOVA given in Table 8.9.1 shows that the F-ratio for the three way interactional effect of teaching styles, type of school and teaching stream of school teachers was 5.561 for 1/384 df which was significant at 0.05 level of significance.

Personality Types x Teaching Stream x Type of School

Table 8.9.1 presents summary of ANOVA and show that the F-ratio for the three way interactional effect of personality types, type of school and teaching stream of school teachers was 3.837 which was significant at .05 level of significance.

DISCUSSION OF RESULTS

Second Order Interactions

Teaching styles x personality types x type of school

A look over Table 8.9.1 reveals that the F-ratio regarding interactional effect of teaching styles, personality types and type of school on teacher effectiveness was not significant at any level of significance. It means that the three independent variables do not interact in a significant way to influence teacher effectiveness of school teachers.
Teaching styles x personality types x teaching stream

Also the three way interactional effects of teaching styles, personality types and teaching stream on teacher effectiveness was not significant at any level of significance. It means that the three independent variables conjointly do not interact in a significant way to influence teacher effectiveness of school teachers.

Teaching styles x teaching stream x type of school

A perusal of ANOVA Table 8.9.1 depicts that the F-ratio with regards to interactional effect of teaching styles, teaching stream and type of school on teacher effectiveness was significant at .05 level of significance. It means that the three independent variables interact conjointly in a significant way to influence teacher effectiveness of school teachers.

Personality types x teaching stream x type of school

Results entered in Table 8.9.1 show that the F-ratio for three way interactional effect of type of school, personality types and teaching stream on teacher effectiveness was significant at .05 level of significance. It means that the three independent variables conjointly interact in a significant way to influence teacher effectiveness of school teachers.

Hence, the hypothesis 9 (b) which states, “There will be significant interactional effects of

i) Teaching style x personality type x type of school

ii) Teaching style x personality type x teaching stream

iii) Teaching style x teaching stream x type of school

iv) Personality type x teaching stream x type of school

on teacher effectiveness of secondary school teachers,” was partially accepted.
HYPOTHESIS 9 (c)

Hypothesis 9 (c) states, “There will be significant interactional effect of teaching style x personality type x teaching stream x type of school on teacher effectiveness of secondary school teachers.”

RESULTS

Third Order Interaction Effects (2x2x2x2)

Teaching Styles x Personality Types x Teaching Stream x Type of School

Results entered in Table 8.9.1 regarding (2x2x2x2) ANOVA with respect to teacher effectiveness of school teachers show the interactional effects of four variables i.e. type of school (government and private), teaching streams (humanities and science streams), personality types (introvert-extrovert) and teaching styles (teacher-centered and learner-centered). The F-value came out to be .0245 for 1/384 df and which was not significant at any level of significance.

DISCUSSION OF RESULTS

A perusal of Table 8.9.1 reveals that the F-ratio regarding interactional effect of teaching styles x personality types x teaching stream and type of school on teacher effectiveness was not statistically significant at any level of significance. It implies that all the four independent variables conjointly do not interact in a significant way to influence teacher effectiveness of secondary school teachers.

Hence, Hypothesis 9(c) which states, “There will be significant interactional effect of type of school, teaching stream, teaching style and personality type on teacher effectiveness of secondary school teachers,” was rejected.