CHAPTER IV

ANALYSIS AND INTERPRETATION
CHAPTER - IV

ANALYSIS AND INTERPRETATION

SECTION - I

VALIDATION OF THE PHYSICAL EDUCATION TEACHER'S SUCCESS SCALE:

In this section the physical education teacher's success scale has been validated and discussed as follows:

Item Analysis

The original items constructed on different sub-areas of teacher success were 171, which were reduced to 81 on the opinion of the jury of physical education experts. The scale items were further reduced to 68 after discussions with physical education teachers and heads of institutions, which led to ascertaining the content validity of the scale.

In order to do item analysis/validity, the scale consisting of 68 items, along with a forwarding letter, was given to 40 heads of institutions comprising of 100 physical education teachers to evaluate the teachers on this particular format. The point biserial method was used to work out the co-efficients of correlation for item analysis. The results of the point biserial method are presented in Table 4.1, below:
Table 4.1

Showing co-efficients of correlation for item-
alysis by the point biserial method

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Coefficients of Correlation *</th>
<th>Item No.</th>
<th>Coefficients of Correlation*</th>
<th>Item No.</th>
<th>Coefficients of Correlation*</th>
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<td>.36</td>
<td>68</td>
<td>.36</td>
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</tr>
</tbody>
</table>

*Correlation coefficients as per Table 25 of Garrett (1970) Sixth Edition:

at .01 = .257
df = N-2

at .05 = .197

= 100-2 = 98.
The higher and the lower co-efficients of correlation were .70 (Item 20) and .24 (Item 43). All the values, except on Item 43 were, found to be statistically significant at the .01 level of confidence. Item 43 was also found statistically significant at the .05 level of confidence as detailed in Table 25 of Garrett (1970). As all the values of the items were found to be statistically significant, they were retained on the body of the scale and all the 68 items were found to be valid.

Reliability

The coefficient of correlation of the reliability of the scale was worked out firstly by the test-retest method. It was found to be .97, which was highly significant. It was also worked out by the split half method on the data of 100 teachers of physical education and was found to be .88, which was again highly significant. The scale was thus found to be reliable.

Validity of the scale:

First of all the content validity of the scale was ensured by breaking up the total area of teachers' success into sub-areas and building up pertinent items on these sub-areas. The validity, was again ensured by getting expert opinion. This was further confirmed by getting the opinion of physical education teachers and heads of the institutions as a result of which only 68 items were left in the body of the scale.
Out of 267 schools, a sample of 50 in which there was only one physical education teacher each was selected. Data pertaining to the achievement in sports and games of these 50 schools was got from the District Education Officer concerned in order to know if any of their teams got the first, second, third or fourth positions at zonal and district-level competitions in the inter school competitions. These performances were evaluated by giving each institution numerical values to the first four positions secured at zonal and district-level competitions in any sports discipline. These numerical values were allotted by discussing the scheme with subject experts.

An evaluation of the same 50 physical education teachers was obtained from the heads of the institutions on the scale. Then the product moment coefficients of correlation were worked out by comparing the scores on the scale with the teachers' performances as demonstrated by the positions won in competitions by their students. The validity of the coefficient of correlation was found to be .73. This was significantly higher so as to make the scale valid.

Thus, the scale was found to be practical, as it had worked well at the time of administration, and reliable and valid, and was declared fit to be used for this investigation.
SECTION - II
SUCCESSFUL AND LESS SUCCESSFUL PHYSICAL EDUCATION TEACHERS

Introduction:

The data collected as a result of the testing programme was first arranged on the basis of successful and less successful teachers by eliminating the buffer group falling between + $\frac{1}{2}$ SD and - $\frac{1}{2}$ SD. It consisted of 242 successful and 164 less successful teachers. Their standard deviation, mean, standard error and significance of difference between the mean were worked out and tabulated, i.e. in six tables, one each for the three main variables and one each for the three components of the variable creativity. The details of each variable are now discussed on the basis of statistical data available after programming it on a computer.

Results and discussions

Adjustment

Table 4.2
Comparative score of successful and less successful teachers on the variable adjustment

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-value</th>
<th>Group with higher Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful teachers</td>
<td>242</td>
<td>473.47</td>
<td>106.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less successful teachers</td>
<td>164</td>
<td>435.62</td>
<td>102.67</td>
<td>3.57*</td>
<td>Successful teachers</td>
</tr>
</tbody>
</table>

*P < .01
The data in Table 4.2 showing a comparison of the adjustment levels of successful and less successful teachers on the variable adjustment, did indicate that a significant difference existed between them ($t = 3.57$—statistically significant at the .01 level of confidence, $p < .01$). A comparison of the means of the two groups of the teachers also revealed that the mean of successful teachers was higher than the mean of less successful teachers. This indicated that the group of successful teachers was better adjusted than the less successful teachers.

The better adjustment of successful teachers could be attributed to a high level of interest in their jobs, which might also be indicative of their better adjustment with their family and life in general. Their success levels could also be attributed to better facilities in their schools, better understanding with their heads, and a better social and teaching atmosphere in schools, while those teachers who were less successful, generally speaking, might not be fully availing of the opportunities which come their way or might not be well adjusted with the school atmosphere, their heads or other teachers. Successful teachers could also be better qualified or better developed in their disciplines than less successful teachers. It has mostly been noticed that while less successful teachers do not utilise the facilities which are available to them, successful teachers pave the way for and create more facilities
for themselves and their students. All these assumptions became clear during the testing programme. Several teachers who were later categorised as less successful teachers on the basis of their performance on the scale, took their jobs casually and did not utilise their existing capacities, while those who were later categorised as successful teachers were teachers with initiative and did their jobs with genuine and intrinsic interest. That the successful or less successful groups were better or not so well adjusted was partly due to the physical teacher education programme of the State. It was noticed that there were no seminars, no workshops and no in-service training programmes for the teachers of physical education, as a result of which those teachers who were a bit sluggish and slow did not improve their practical and teaching skills, but those who were active and had got some original genuine interest and skill in their trades, continued to be more energetic and successful, despite the lack of adequate State-sponsored programmes.

Thus the better adjustment of successful physical education teachers as compared to less successful teachers could be attributed to their professional environment. Those teachers who had job-satisfaction generally were better adjusted with their work, whatever the prevailing conditions.

The policy and procedures adopted for admission to the colleges of physical education i.e. for course of physical
training instructor, D.P.Ed. and B.P.Ed., were such that the admissions were not made on the basis of preliminary tests or sports proficiency, as a result in several cases those candidates entered the profession and became physical education teachers who otherwise had a little interest and background of the profession. The result was that such teachers continued to be less successful than those who were successful and had a genuine interest and background in and a taste for the profession.

The above findings were in line with Sperling (1942) who had found that the development of a more socially desirable personality and adjustment accompanied a greater degree of success and experience in physical education activities. These results were also in line with Dodge (1943), who had found that successful teachers established better social contacts and were also more willing to assume responsibilities. The better adjustment of successful teachers than less successful teachers is also confirmed by Frost (1970), who propounded that physical education teachers and coaches must be attentive to the fact that social and cultural forces are operating constantly and a thorough understanding of these is necessary in any effort to know the several factors causing and revealing behaviours in the sports set-up. Mann (1988) found that successful athletes were considerably better in all areas of adjustments as compared to unsuccessful athletes. Malhotra (1976) found in his study
that a less adjusted teacher's behaviour was more direct whereas more adjusted one's behaviour was indirect in his teaching. Chayya (1974) also found that there was a significant difference between the personality adjustment of effective and influential teachers and that of ineffective ones.

The following studies are also in line with the findings of this investigation:

Evans Norman (1960) in his study found that the successful teachers who had better adjustment in the different sphere of his life and work would perform his professional duties well, and feels contended and leads a happy life.

Sinha (1984) also found that high achievers have better adjustment than low achievers and that low achievers have average intelligence and a conventional and common approach. Amra (1988) in her study reported that sports girls belonging to rural and urban areas were better adjusted on all variables of adjustment as compared to non-sports girls.

Mangal (1984) pointed out that any advancement in the field of education depends upon the degree of involvement of the teacher in his work, which in turn, depends upon the degree of adjustment of the teacher with himself and his own environment. The level of adjustment of the teacher is directly linked with efficiency and success in his work. He further added that the assessment of adjustment properly done, might prove helpful in segregating the poorly adjusted teachers from those who were better adjusted.
Blair, Jones and Simpron (1956), remarked that effective and adjusted teachers did much to bring about pupil adjustment, the maladjusted and less effective ones might prove a potential cause of this problem of indiscipline and delinquency among the students.

**Testing of the hypotheses:**

Our hypothesis 1 was: "A significant difference would exist in the adjustment of successful and less successful physical education teachers". The significantly better adjustment of the successful teachers as compared to less successful physical education teachers was confirmed by the present investigation and thus fell in line with the first hypothesis, confirming it.

**Socio-economic status**

Table 4.3

Comparative scores of the socio-economic status of successful and less successful teachers.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t-ratio</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>242</td>
<td>24.61</td>
<td>9.25</td>
<td>4.64*</td>
<td>Successful teachers</td>
</tr>
<tr>
<td>Less successful</td>
<td>164</td>
<td>20.24</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* * P<.01
The data shown in Table 4.3, comparing successful and less successful physical education teachers on the variable of socio-economic status, indicated that a significant difference exists between them ($t=4.64$—statistically significant at the .01 level of confidence, $P < .01$). The higher mean of the successful teachers as compared to less successful teachers indicated that the group of successful teachers had a higher socio-economic status. Therefore, those teachers who had better socio-economic status or background were more successful than those who belonged to a comparatively lower socio-economic status. This higher status might be due to more exposure to mass media, better mixing with other social groups, a better standard of living, already having a background of being brought up in a good family and also more interaction with other teachers of different professions. It has been reported by the Kothari Education Commission (1964-66) that the single most important factor which can affect the education of the child is better teachers. The process of teaching will definitely improve if the socio-economic status of the teachers is improved. This is why whenever any commission on education has been appointed, it has always been recommended higher salaries for teachers so as to improve their socio-economic status.

These findings are in line with the opinion of educationists and counsellors that success in teaching, along
with other factors, is a product of economic circumstances of the family and its socio-economic background.

The results shown in the work of Jolly (1969) indicate that economic status contributed towards job dissatisfaction. Roger (1953) and Anjaneyulu (1968) found that inadequate salary was one of the main factors for job dissatisfaction among teachers.

Roberts (1977) found, teachers' good wages as one of the most important job motivation factors. Frost (1970) found that those who came from poor families generally felt a greater need of status and acceptance by their peers.

One of the findings of Shukla and Mishra (1980), that those who belong to a low socio-economic status are more maladjusted than those who have a comparatively higher socio-economic status and background, stands confirmed by the present investigation. The results of the present investigation also fall in line with the findings of Young (1939), namely, that, along with other objective factors, socio-economic status is also related with success in teaching.

Sushma (1939) in her study found that generally the criminals are from lower class of socio-economic status. She further reported in her study that socio-economic status and achievement motivation are significantly correlated.
Our third hypothesis was that the "socio-economic background of teachers would have a significant relationship to success in teaching". The results depicted in Table 4.3 and analysis do show that those teachers who were more successful had a higher socio-economic status than those who had a lower socio-economic status. This showed a positive relationship between success in teaching and social economic background. Thus the hypothesis that the socio-economic background of teachers would have significant relationship with success in teaching is acceptable.

**Creativity Components**

**Table 4.4**

Comparative score of successful and less successful teachers in fluency as a component of creativity

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'ratio</th>
<th>Group with higher mean</th>
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<tbody>
<tr>
<td>Successful teachers</td>
<td>242</td>
<td>57.16</td>
<td>17.22</td>
<td>5.12*</td>
<td>Successful teachers</td>
</tr>
<tr>
<td>Less successful teachers</td>
<td>164</td>
<td>48.58</td>
<td>15.51</td>
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</tr>
</tbody>
</table>

* P < .01

The data in Table 4.4, comparing the difference between fluency of successful and less successful teachers of
physical education, did reveal that a significant difference existed between them (t = 5.12—statistically significant at the .01 level of confidence $P < .01$). The higher mean of successful teachers than the mean of less successful teachers did go to indicate that the more successful teachers had more fluency in their behaviour. This might be due to the fact that all those teachers who are more successful have a very definite concept of themselves and are clear in their thinking as well as activities, making them more fluent. The fluency could also be attributed to the better personality adjustment of this group, as has been shown in Table 4.2. The fact that successful teachers were better adjusted, might have made them clear in their thinking and activities, which in turn might be responsible for their more fluency. It has also been established that a better adjusted personality generally has better and clearer thinking about all aspects of life which makes them more fluent. Then it could be that self-confidence, emerging from success in performance, adds fluency in the teachers' activities. Fluency could also be attributed to social causes, which probably helped them develop better relations with others, as is evident from the data in Table 4.4. Better social relations generally help in bringing about balanced and fluent behaviour. Thus due to a variety of factors, successful teachers excelled the less successful teachers in fluency. In the teaching profession, especially at the school level,
the work of the teacher is often supervised by the Headmaster or Principal who gives suggestions for better performance. In the case of successful teachers the suggestions could be perceived as encouragement, enhancing their fluent nature, while in the case of less successful teachers such suggestion might make them feel humble, leading to less fluency in behaviour.

The significantly more developed fluency in the behaviour of successful teachers over less successful teachers tested by this investigator does find approval from the findings of Raina (1970) that there existed positive relationships between fluency, teaching practice marks.

Storm and Larimore (1970) reported that figural elaboration (Torrance Tests of Creative Thinking) was significantly related to teaching success and found coefficient of correlation between fluency and teaching success as high as 0.60. Knoell (1953) also found that correlations between fluency and teaching success was significant. Rash (1987) in his study found that language fluency produced significant and positive relationship with teaching effectiveness and success, thus confirming the findings of this investigation.
Table 4.5
(ii) Comparative Scores of successful and less successful teachers in flexibility as a component of creativity

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>242</td>
<td>26.56</td>
<td>7.96</td>
<td>4.08*</td>
<td>Successful teacher</td>
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<tr>
<td>Less successful</td>
<td>164</td>
<td>23.38</td>
<td>7.27</td>
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</tbody>
</table>

* P < .01

The data in Table 4.5 comparing successful and less successful physical education teachers, the component flexibility of creativity indicates that a significant difference existed between them (t = 4.08—statistically significant at the .01 level of confidence P < .01). The higher mean of successful teachers than those of less successful teachers did indicate that the flexibility aspect of creativity was more pronounced amongst successful teachers than less successful teachers taken up for the study. This might be illustrative of their being more successful in their profession. Thus teachers or other professionals who are more successful in their jobs are generally more flexible in their behaviour and are more capable of adjustments. That those who were more successful were found to be better adjusted in their behaviour is indicated in Table 4.2.
The above findings of the investigator have been confirmed in the studies of McGarvey (1983) who reported that effective and successful teachers were more flexible than ineffective and less successful teachers. Crocker (1968) also found the existence of significant relation between flexibility and teaching practice marks and the coefficient of correlation between flexibility and teaching practice marks as high as \( r = 0.41 \). However, Duschner (1987) studies did not fall in line with this investigation who reported inconsistent relationship between flexibility and perceived teaching effectiveness/success.

Table 4.6

(iii) Comparative score of successful and lesser successful teachers in originality as component of creativity

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful teachers</td>
<td>242</td>
<td>43.68</td>
<td>11.39</td>
<td>5.93*</td>
<td>Successful teachers</td>
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<td>Lesser successful teachers</td>
<td>164</td>
<td>36.73</td>
<td>11.90</td>
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</table>

* \( p < .01 \)

The data in Table 4.6 comparing the originality of successful teachers with that of less successful teachers did indicate that a significant difference existed between them (\( t = 5.93 \)--statistically significant at .01 level of confidence \( p < .01 \)). The higher mean of
successful teachers as compared with that of less successful teachers did show that originality was comparatively more developed amongst the successful teachers as compared to less successful teachers.

That the successful teachers were more original hypothetically could be attributed to their being more interested in their jobs. Their interest, being, it can be argued, led them to think of innovative ways to involve the students in sports and games. Thus in order to arouse the students' interest in sports a successful teacher will try to introduce new methods, techniques and practices and think of original ways of doing so. It is significant that those who were found to be having a higher score on originality had earlier been found better adjusted and more fluent.

This investigation's results indicating a higher degree of originality amongst successful teachers than less successful teachers are in line with the conclusions drawn by Misra (1983) who had found that an educational system's success in producing original thinkers and good citizens depend upon the availability of teachers with originality, whose personality and activities would influence the teaching learning behaviour in the classroom. Singh (1985) also confirmed the studies of Misra (1983) above thus approving the results of this investigation.
Table 4.7

(iv) Comparative Score of successful and less successful teachers on the variable creativity

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
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<td>Successful teachers</td>
<td>242</td>
<td>127.38</td>
<td>34.69</td>
<td>2.82*</td>
<td>Successful teachers</td>
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<tr>
<td>Less successful teachers</td>
<td>164</td>
<td>113.24</td>
<td>65.53</td>
<td></td>
<td></td>
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</tbody>
</table>

* P < .01

The data in Table 4.7 compares successful and less successful teachers on creativity and does indicate a significant difference between the two (t = 2.82—statistically significant at the .01 level of confidence P < .01). The higher mean of more successful teachers than the mean of less successful teachers does indicate that the group of successful teachers was more creative than the group of less successful teachers. This could be attributed to the fact that the former group of teachers thinks of ways and means to pave their way to success by adopting innovative methods to involve their students in physical activities. Thus the group of innovative teachers might also be more original, flexible and fluent in their behaviour, which is confirmed by the data in Tables 4.4, 4.5 and 4.6 of this study. Creativity could also be attributed
to their professional competence and success in their profession.

An echo of the findings of this investigation, that successful teachers are more creative than less successful teachers, could be found in the findings of Misra (1983) and Singh (1985), namely that original and creative teachers are emotionally more stable, assertive, conscientious, venturesome, tender-minded, shrewd, experimenting, self-sufficient, controlled and successful. This investigation also goes along with the findings of Asha and Dharmindar (1985), who had found that creative teachers were more effective than less creative teachers.

James (1985) in his studies concluded that highly creative teachers were more successful and effective in teaching. Sansanwal and Jariel (1979) found that high creative teachers had qualities thought to be worthwhile for teaching success. Morrow (1984) comparing teachers on creativity reported that highly creative teachers fostered more positive social interactions and were able to tolerate and encourage higher level of student productivity than less creative teachers. The above studies were in line with the findings of this investigation and that of Mato (1988) who reported that successful and effective teachers had a significant superiority on intelligence, creative thinking and brightness than less successful and effective teachers.
Testing of hypothesis

Our Hypothesis 2 was that "significant differences would exist on the creative thinking of successful and less successful physical education teachers". The findings of the present investigation, which revealed that successful teachers were more creative than less successful teachers, approved of this hypothesis.

Table 4.8

Showing significant results of successful and less successful physical education teachers in adjustment, socio-economic status, fluency, flexibility, originality and creativity

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Variable</th>
<th>Successful teachers</th>
<th>Less successful teachers</th>
<th>t-value with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
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<tr>
<td>1</td>
<td>Adjustment</td>
<td>242</td>
<td>473.47</td>
<td>106.36</td>
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<td>2</td>
<td>Socio-economic status</td>
<td>242</td>
<td>24.61</td>
<td>9.25</td>
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<td>3</td>
<td>Fluency</td>
<td>242</td>
<td>57.16</td>
<td>17.22</td>
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<td>4</td>
<td>Flexibility</td>
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<td>26.56</td>
<td>7.96</td>
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<td>5</td>
<td>Originality</td>
<td>242</td>
<td>43.68</td>
<td>11.39</td>
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<td>6</td>
<td>Creativity</td>
<td>242</td>
<td>127.38</td>
<td>34.69</td>
</tr>
</tbody>
</table>

* Significant at the 0.1 level of confidence i.e. P<.01

The data shown in Table 4.8 indicate the significant results of all the six variables of the study. The successful physical education teachers are evidently better adjusted, have a higher
socio-economic status and score higher on fluency, flexibility, originality and creativity than less successful teachers. All these results validate Hypotheses 1, 2 and 3, namely, that successful and less successful physical education teachers will differ significantly with regard to the variables adjustment, socio-economic status and creativity.

Conclusions:

1. Successful physical education teachers are better adjusted than the less successful teachers.
2. Successful physical education teachers have a higher socio-economic status and belong to a better background than less successful teachers.
3. Successful physical education teachers have more fluency as an aspect of creativity than less successful teachers.
4. Successful physical education teachers have more flexibility as an aspect of creativity than less successful teachers.
5. Successful physical education teachers have more originality in their work than less successful teachers.
6. Successful physical education teachers are more creative than less successful teachers.
SECTION - III

COMPARISON OF PHYSICAL EDUCATION TEACHERS ON THE BASIS OF SEX

Introduction

The total data of 406 physical education teachers of the investigation was arranged on the basis of sex. It consisted of 241 males and 165 females physical education teachers. Their mean, standard deviation, standard error and 't' values were worked out. These two groups of different sexes were compared for all the six variables of the study. The details of each variable are discussed below on the basis of statistical data available after programming it on a computer.

Results and Discussions

Adjustment

The data in Table 4.9, comparing male and female physical education teachers on the variable adjustment, shows that a statistically significant difference existed between them ($t = 2.17$—statistically significant at .05 level of confidence $p < .05$).

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>241</td>
<td>478.73</td>
<td>105.76</td>
<td>2.17**</td>
<td>Male teachers</td>
</tr>
<tr>
<td>Females</td>
<td>165</td>
<td>471.98</td>
<td>106.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** $p < .05$
The higher mean of male teachers as compared with female teachers went to indicate that the male teachers are better adjusted than female physical education teachers.

This difference could be attributed to the fact that the male teachers, being more dominant and of physically stronger build, have better control over the students. This goes a long way in making them more successfully adjusted as far as adjustment is concerned. Male physical education teachers in a male-dominated society like India find it easier to control their classes than female physical education teachers.

The difference in adjustment could also be attributed to biological reasons—Female teachers curtail their participation in physical activities with the students for a certain period in each month or, when they are pregnant. On the other hand, male teachers have no biological constraints for participating in games and sports throughout the year. In the field of physical education it has been observed that those teachers were more successful, who regularly participated along with the students in physical activities. Generally, schools in Punjab are co-educational and many a time joint physical activities are organised. In such a situation, we found, male physical education teachers were better adjusted and therefore more successful than female physical education teachers, whose chances of success were comparatively lesser.
The higher success levels of male physical education teachers could also be attributed to the fact that in Punjabi culture women have more responsibilities than men since they, in addition to their job, look after the house and the children. This takes up a lot of their time, thus restricting their social as well as official activities and making their adjustment more difficult than that of male physical education teachers.

Our findings of significantly better adjustment of male physical education teachers as compared to female physical education teachers did fall in the line with the findings of Pack (1936) and Anjaneyulu (1968) who observed, women teachers were more sensitive to social relationship and academic conditions and were less adjusted with work than men teachers. Bhavsar (1975), Suvarcha (1976), Neill (1977), Nirmal (1977), Mohanti & Pani (1979), Sharma (1981) and Malhotra (1981) in their studies found males to be more adjusted than females further confirmed our findings. However, the findings of Bhardwaj (1985), Patel and Joshi (1977) and Gupta and Singal (1971b) reported no significant interaction between adjustment and sex differed from the findings of this investigation.

The findings of Antonelli & Mascallani (1973) who had stated on the basis of data on top 351 Halian athletes that male athletes had better adjustment than female athletes confirmed the findings of this investigation.
Comparative scores of male and female physical education teachers on socio-economic status variable.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>241</td>
<td>23.10</td>
<td>9.32</td>
<td>0.65**</td>
<td>Male teachers</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>22.47</td>
<td>9.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**P > .05

The data in Table 4.10 comparing male and female teachers on the variable socio-economic status, shows that the mean of male teachers was 23.1 and that of female teachers 22.47. The standard deviation of males was 9.32 and that of female teachers 9.86. The significance of the difference between the means was 0.65, which was found to be statistically non-significant at the .05 level of confidence (P > .05). This went to indicate that so far as the socio-economic status of male and female teachers was concerned, there existed no significant difference amongst them. It could thus be concluded that both sexes had a similar socio-economic status and background.

The non-significant difference between the male and female teachers on the variable socio-economic status could be
attributed to certain socio-cultural factors dominating the Punjab economy. Punjab is a middle-class dominated society and very few people live on the extreme ends of society. The trend of the marriage of women teachers with male teachers has become quite common and which helps the couple to improve their economic position. In such a situation generally almost all male teachers in the country have working wives and their economic life styles are largely determined by such circumstances. The women physical education teachers were no exception. They apparently had a similar type of economic satisfaction as that of male physical education teachers. It has also been observed in the teaching community generally that most couples are both teachers and if both do not happen to be teachers, the socio-economic status of the spouse was almost the same as that given to teachers generally. It is seldom the case that the husband of a physical education teacher is a senior civil services officer or a big landlord or a business magnate. 

Thus generally, the official status of both the male and female teachers is often cumulatively raised to a middle class strata, eliminating the differences in their socio-economic background.

The almost similar socio-economic status of male and female physical education teachers might also be attributed to the fact that the pay structure of government employees as well as the non-government employees have undergone such a change during the past five years or so, that there is hardly
any difference in pay structure of Class III employees. The tax structure and the deductions in salaries have been so arranged that the carry-home pay packet of most of them has become the same; thus reducing the gap between the economic status of different employees of the Class III cadre. This factor might also be responsible for the decrease of socio-economic status of the teachers of different sexes. Also the discrimination of pay on the basis of sex is not there at all.

This investigation is in line with findings of Dade (1967) and Jones (1977) who reported that socio-economic status was non-significant for boys and girls.

However, the above findings are not in line with the findings of Babelon and Saillard (1973) who pointed out that the relationship between father's occupation and job selection was more pronounced for boys than girls, whereas Esslinger (1976) expressed similar views in favour of girls. Dixit (1968) investigated sex role consciousness among male and female subjects and found significant differences between upper and lower class socio-economic status groups whereas in a study by Pierce and Bowman (1962), the hypothesis that high achieving subjects come from homes with high socio-economic status as compared to low achieving subjects was supported for girls but rejected for boys.
**Creativity components**

**Table 4.11**

Comparative scores of male and female physical education teachers on the variable of fluency as component of creativity

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>241</td>
<td>53.26</td>
<td>17.34</td>
<td>0.61**</td>
<td>Female</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>54.32</td>
<td>16.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**P > .05**

The data in Table 4.11 showing a comparison of male and female physical education teachers on the variable fluency did indicate that the mean of males was 53.26 and that of women 54.32. The standard deviation of male teachers was 17.34 and that of women 16.67. The 't' value of the comparison was 0.61 which was not found to be statistically significant (P > .05). This indicated that so far as fluency was concerned, both groups were similar in their behaviour, indicating thereby that there was no difference on the variable on the basis of sex.

The similar fluency in the behaviour of male and female physical education teachers could be attributed to their similar educational qualifications, pay structures, job requirements and socio-economic status. Fluency of
individuals could also be influenced by the type of training received, along with personality characteristics. Similar types of training in physical education might well have contributed to the same type of fluency behaviour among both male and female teachers.

The present investigation did not see eye to eye with the findings of Gakhar (1974) who had attributed superiority of female students over their male counterparts on the dimension of fluency. However, our results corroborated the findings of Thorat (1977) who could not find any difference in fluency amongst males and females of college students. It also fell in line with the results of studies by Lal (1977) and Raina (1970) who could not observe any difference among male and female teacher trainees on the variable fluency. This investigation's results, however, did not fall in line with the findings of Bedi (1974) and Tiwari & Sharma (1978) who had reported the superiority of female students over males on the variable fluency.

Table 4.12
Comparative scores of male and female physical education teachers on flexibility as a component of creativity.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>241</td>
<td>25.44</td>
<td>8.54</td>
<td>0.50**</td>
<td>Male teacher</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>25.04</td>
<td>6.70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**P > .05
The treatment of the data on male and female physical education teachers in Table 4.12 on the variable flexibility showed that the mean of the male teachers was 25.44 and that of female teachers 25.04. The standard deviation of the males was 8.54 and of the females 6.70. The 't' value was 0.50 which was statistically not significant at the .05 level of confidence (P>.05), indicating thereby that flexibility in the behaviour of teachers of the two sexes was similar and they could not be discriminated on the basis of flexibility. The similar type of flexibility amongst male and female physical education teachers could be attributed to common socio-economic, political and educational backgrounds, pre-service and in-service training and service conditions. The socio-economic conditions existing in India in general and Punjab in particular, the teaching profession does not attract intelligent people, more so in the field of physical education. As teachers of both sexes belonged to the same type of social fabric and displayed similar levels of performance on the flexibility aspect of creativity, our results confirm the assumption that gender is not a critical factor in this context, that is, performance on this variable is independent of gender.

Our perception of non-significant differences in the flexibility of male and female physical education teachers went along with the findings of Gakhar (1974) and Raina (1970)
who had stated that male and female students did not
der differ on the variable of flexibility. Our observations also
fell in line with the results of the findings of Thorat
(1977), who did not find any difference in flexibility amongst
boys and girls of colleges. This work also corroborated the
observations of Lal (1977) who did not find any difference
amongst male and female teacher trainees on the variable of
flexibility. However, the findings of the study go contrary
to the findings of Bedi (1974) and Tiwari & Sharma (1978)
who reported the superiority of female over males on the
variable flexibility.

### Table 4.13

Comparative scores of male and female physical education
teachers on originality as a component of creativity

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>241</td>
<td>42.02</td>
<td>12.27</td>
<td>2.33**</td>
<td>Male teachers</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>39.19</td>
<td>11.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**P < .05

A comparison of male and female physical education
teachers on the variable originality in Table 4.13 indicate
that the mean of the male group was 42.02 and that of female
The standard deviation of males was 12.27 and that of females 11.62. The 't' value was 2.33, which was significant at the .05 level of confidence (P<.05). The mean of the male group was higher than the mean of the female group, indicating thereby that male physical education teachers had more of the originality in their behaviour than the female physical education teachers. The higher levels of originality displayed in the behaviour of the male teachers might be attributed to the secondary position given to women in India's male-dominated society, Punjabis being no exception. In Indian culture, whatever boasts might be made about social changes going on, the fact remains that women do not have much independence and generally look to their parents when unmarried, to the husband when married and to their sons when old. This curtails the development of their originality in self, since they look towards males for guidance rather than work out original ways to solve their problems.

The women physical education teachers also have to look after the home and their children and usually do not participate in such programmes as seminars, workshops and allied activities where people get together, share their experiences, exchange ideas and conceive innovative activities making them original. The chances of participation in such programme of male physical education teachers are more than women physical education teachers.
Our findings of the superiority of male teachers over female teachers on the variable originality do not support Gakhar (1974) who had found from data on Class X students that male and females could not be distinguished on the variable of originality. Our results also did not fall in line with the findings of Thorat (1977) and Lal (1977), who in different studies found only insignificant differences between the two sexes on this variable.

However, the following studies proved that the males are superior to females on the variable of originality. Torrance (1966) found in respect of second and third grade children that boys were clearly superior to girls as far as originality of their ideas is concerned. This shows genetic superiority of males over females on the variable originality.

In connection with a dissertation submitted to the University of Minnesota, Prakash (1966) conducted a study on an Indian sample taken from New Delhi schools. The males here scored significantly higher on the originality dimension and confirmed the findings of this study that males had more of originality in their behaviour than females.

Raina (1970) found that males scored significantly higher on the originality dimensions of creativity when non-verbal form of creativity tests were administered.
Table 4.14
Comparative scores of creativity of male and female physical education teachers.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>241</td>
<td>120.74</td>
<td>36.33</td>
<td>0.45**</td>
<td>Female</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>123.02</td>
<td>64.97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** P > .05

The data in Table 4.14 comparing male and female physical education teachers shows that the mean of male teachers was 120.74 while it was 123.02 in the case of women teachers. The standard deviation of male teachers was 36.33 while that of women teachers was 64.97. The 't' value was 0.45 which was not statistically significant (P > .05) at the .05 level of confidence. This went to indicate that so far as the variable creativity was concerned, it was developed in similar ways in both groups. This could be attributed to the fact that the teaching profession as a whole, school teaching in general and physical education programmes in particular, do not attract the cream of society. These days the first preference of students of both sexes is to opt for engineering or medical courses, the second preference is for civil administration jobs, the third is for technical professional courses and the last preference is for teaching in schools. As such mostly average and below average
students who might not be creative or very intelligent opt for physical education courses.

Our results showing a non-significant difference in creativity between male and female physical education teachers did not see eye to eye with Torrance (1961, 1966 and 1971), who found a number of differences between the sexes in measures of creative thinking. It also did not go along with the findings of Price (1962), who said that females were superior in creativity than males. Our observations also did not fall in line with the results of either Trembly (1964), who stated that on creativity, women were superior to men. The results also did not confirm the findings of Rawat & Aggarwal (1977) who found that boys scored high on creative thinking as compared to girls.

The results of our study also did not corroborate findings of Bedi (1974), who had reported the superiority of females on the variable of creativity over males. However, it did fall in line with the findings of Thorat (1977), Lal (1977) and Goyal (1973) who had reported insignificant sex differences on the variable creativity.
Table 4.15

Showing results of males and females physical education teachers in adjustment, socio-economic status, fluency, flexibility, originality and creativity

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Variable</th>
<th>Male Teachers</th>
<th>Female Teachers</th>
<th>t-value</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N M SD</td>
<td>N M SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Adjustment</td>
<td>241 478.73 106.76</td>
<td>165 471.98 106.13</td>
<td>2.17**</td>
<td>Male</td>
</tr>
<tr>
<td>2</td>
<td>Socio-economic status</td>
<td>241 23.10 9.32</td>
<td>165 22.47 9.86</td>
<td>0.65*</td>
<td>Male</td>
</tr>
<tr>
<td>3</td>
<td>Fluency</td>
<td>241 53.26 17.34</td>
<td>165 54.32 16.67</td>
<td>0.61*</td>
<td>Female</td>
</tr>
<tr>
<td>4</td>
<td>Flexibility</td>
<td>241 25.44 8.54</td>
<td>165 25.04 6.70</td>
<td>0.50*</td>
<td>Male</td>
</tr>
<tr>
<td>5</td>
<td>Originality</td>
<td>241 42.02 12.26</td>
<td>165 39.19 11.62</td>
<td>2.33**</td>
<td>Male</td>
</tr>
<tr>
<td>6</td>
<td>Creativity</td>
<td>241 120.74 36.33</td>
<td>165 123.02 64.97</td>
<td>0.45*</td>
<td>Female</td>
</tr>
</tbody>
</table>

** Significance at the .05 level of confidence (P<.05)

* Non significant at the .05 level of confidence (P>.05)

The data shown in the table 4.15 indicate significant results for adjustment and originality component of creativity whereas results for socio-economic status, fluency, flexibility and composite creativity are non significant thereby proving that comparatively males are better adjusted and have original thinking than females. However, no significant difference exists between males and females on the variables of socio-economic status, fluency, flexibility and composite creativity.
Testing of the hypothesis:

Our hypothesis No.4 was: "Male and female teachers would significantly differ with regard to adjustment, socio-economic status and creativity variables.

The comparatively better adjustment of males as compared to females, and higher levels of originality among males as compared to females, did not approve of the above hypothesis. However, the similar types of socio-economic status, fluency, flexibility and creativity of male and female physical education teachers did confirm the hypothesis.

Thus the hypothesis was only partially confirmed.

Conclusions:

1. Male physical education teachers were better adjusted than female physical education teachers.
2. Male and female physical education teachers belonged to the same socio-economic stratum.
3. Male and female physical education teachers had the same type of fluency in their behaviour.
4. Male and female physical education teachers behaved in the same way on the variable flexibility.
5. Male physical education teachers excelled female physical education teachers on the variable originality.
6. Male and female physical education teachers did not differ on the variable creativity.
SECTION - IV

GOVERNMENT AND PRIVATE SCHOOL PHYSICAL EDUCATION TEACHERS:

Introduction:

A grant-in-aid system was introduced by the Britishers in order to encourage private entrepreneurs to work in co-ordination with the Government to educate the elite so that they could run the country with their help. Even though the grants were nominal and had conditions attached with them, the funds were nevertheless a source of economic help and, more important, granted the schools official recognition. The system cultivated discipline among teachers, students as well as the managements of privately managed institutions. Model government schools too were opened. Superior teaching manpower was recruited in these model institutions.

With the recognition of the role of democracy in education and the popularisation of the slogan "education for democracy," the realisation took firm root that privately managed schools were playing as important a role in the process of education, socialisation, national reconstruction and democratisation as was being done by those schools which drew total economic sustenance from public funds. It was also increasingly felt that similar, if not the same facilities should be provided to privately managed schools as was being
given to government schools. One result was that the same grades which were given to teachers in government schools began to be given to private school teachers. Grants for other facilities like libraries, laboratories and co-curricular activities were also provided on the same pattern and deficits in the expenditure of privately managed schools was compensated to the extent of 95% by the Government. However, service conditions, the interest of the management, loyalty to the institution, recognition of services by the managing bodies and the modes of recruitment continued to vary and a good deal of differences continued to exist between the two types of institutions. We thus decided to investigate two selected variables—physical education teachers working in government schools and privately managed schools.

The total data of 406 physical education teachers of the investigation was arranged on the basis of their service in government and private recognised schools. It consisted of 234 government teachers of physical education and 172 private teachers of physical education working in the high/higher secondary schools of Punjab State and Chandigarh Union Territory.
Results and discussions

Adjustment

Table 4.16

Comparative scores of Government and private school physical education teachers on the variable of adjustment

<table>
<thead>
<tr>
<th>Name of the Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with high mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government school physical education</td>
<td>234</td>
<td>478.18</td>
<td>109.68</td>
<td>4.52*</td>
<td>Govt. school teachers</td>
</tr>
<tr>
<td>teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private school physical education</td>
<td>172</td>
<td>430</td>
<td>95.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* P < .01

A comparison of Government and private school teachers on the variable adjustment in Table 4.16 indicated a significant difference between them (t = 4.52—statistically significant at the .01 level of confidence P < .01). The higher mean of Government physical education teachers than those who worked in privately managed schools did indicate that who worked in Government schools were better adjusted than those in private schools.

The comparatively better adjustment of Government school teachers as against private school teachers could be attributed to better service conditions prevailing in
Government schools. As the situation exists elsewhere in India, so in Punjab and Chandigarh Government servants feel secure with the conditions of service. They have strong unions. Headmasters, Principals and even District Education Officers are wary of being harsh with them. It has been well said that it is difficult to get into a Government job but very easy to retain it. The private management, it was seen, do not provide adequate facilities for games and sports, but nevertheless expect high results in competitions. This puts physical education teachers under great stress. The gap between what is expected and what is achieved leads to tensions, reflecting unsatisfactory adjustment.

The differences in adjustment could also be attributed to the fact that those who worked in Government schools did not have to do much extra teaching work like adjusted or extra periods etc. If they were asked to do so, they often refused to oblige the Headmaster or Principal. In private schools, on the other hand teachers are asked to do extra work and they have no alternative but to oblige. This could be one reason for their poor adjustment.

Another factor for the lesser degree of adjustment of private school physical education teachers as compared to their Government counterparts could be that aided private schools are often run on the staff strength allotted to them more than two decades ago, while many new posts have been
sanctioned in almost all government schools. The student strength of almost all private schools has increased manifold. Their managements run the schools with overcrowded classes or have to recruit teachers out of their own funds. When they make such recruitments, such teachers often paid less than what is given to their colleagues in the same school. Besides, they are made to work more and have little security of service. In several cases they are not even paid for the summer vacations because their services are terminated before the summer vacation and they are recruited afresh when the school reopens after the holidays. They are deprived of increments, leave and other benefits of service. Such things do not happen in Government schools where all benefits were awarded to the teachers.

Hypothetically stated, the differences in service conditions lead to the difference in adjustment levels between the two categories of the teachers. On the other hand better service conditions attract better teachers and such persons are better adjusted.

Socio-economic status

Table 4.17
Comparative scores of Government and private school physical education teachers on the variable socio-economic status

<table>
<thead>
<tr>
<th>Name of the Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government school physical education</td>
<td>234</td>
<td>25.04</td>
<td>9.48</td>
<td>5.60*</td>
<td>Government school teachers</td>
</tr>
<tr>
<td>teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private school physical education</td>
<td>172</td>
<td>19.87</td>
<td>8.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* P < .01
A comparison of government school physical education teachers with privately managed school teachers of physical education showed that a significant difference existed between the two ($t = 5.60$—statistically significant at the .01 level of confidence $p < .01$). The higher mean of Government school teachers as compared with the privately managed school teachers did indicate that those teachers employed in government schools belonged to a higher socio-economic strata as compared to those employed in private schools.

The higher socio-economic status of the teachers of Government schools as compared with the teachers of private schools could be attributed to the fact that most of the teachers who were employed in these schools were senior in both age and service. The government school teachers seem to have been placed better than private schools teachers in terms of service conditions, salary, work and fringe benefits. Further, they have more promotional avenues. Thus service conditions, pensionary benefits, higher salary, gratuity and other benefits contribute to a great extent in raising the socio-economic conditions of the government school teachers.

The lower socio-economic status of private school teachers could also be attributed to the fact that the management of the schools which mostly comprise shopkeepers
or farmers often interfered in the working of the school and let down teachers in the eyes of the public. It is a matter of common knowledge that teachers of private schools often try to ingratiate themselves with the members of the management, even at the cost of their self-respects and integrity. The cumulative effect of this is that the teachers of Government schools have a much higher socio-economic status as compared to the teachers employed in private schools.

Creativity Components

Fluency

Table 4.18

Comparative scores of Government and private school teachers on the variable of fluency as component of creativity.

<table>
<thead>
<tr>
<th>Name of the Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government school teachers</td>
<td>234</td>
<td>58.94</td>
<td>17.25</td>
<td>7.75*</td>
<td>Government school teachers</td>
</tr>
<tr>
<td>Private school teachers</td>
<td>172</td>
<td>46.54</td>
<td>13.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* P < .01

A comparison of Government school physical education teachers with private school physical education teachers on the variable of fluency in Table 4.18 indicated that a significant difference existed between the two groups of
teachers (t = 7.75— statistically significant at the .01 level of confidence p < .01). The higher mean of Government school teachers as compared with private school teachers did depict that the Government school teachers had more fluency than the private school teachers. The significantly better developed fluency of the Government school teachers as compared with the private school teachers could be attributed to the fact that generally the method of recruitment of private school teachers, barring a few exceptions, was not based on abilities, educational records, academic excellence, higher intelligence, merit or competition; it was rather based on acquaintances, relationships, influence, caste and religious factors. It is true that money and influence played a major role in the recruitment of teachers in government schools as well. Nevertheless minimum standards were maintained and teachers were at least selected on the basis of some competition, interviews and at times demonstrations. The resultant effect was that the mode of recruitment of government school teachers was more refined, better defined and broadbased, and these were responsible for the recruitment of more intelligent and creative teachers than done in private schools.

The higher levels of fluency in the behaviour of Government school teachers as compared to private school teachers could also be attributed to the fact that generally
only those teachers who were not in a position to get government jobs went in for private school jobs. The result was that the cream was taken away by the government schools and only the skimmed-milk was left for the private schools.

The fact remains that trained teachers still opt to go in for government jobs, even when there has been a marked improvement in the service conditions of private school teachers, and, as a result several clear distinctions continue between government teachers and those in private service.

**Flexibility:**

<table>
<thead>
<tr>
<th>Name of the Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government school teachers</td>
<td>234</td>
<td>26.92</td>
<td>7.93</td>
<td>5.07*</td>
<td>Government school teachers</td>
</tr>
<tr>
<td>Private school teachers</td>
<td>172</td>
<td>23.04</td>
<td>7.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* P < .01
A comparison of government and private school physical education teachers on the component of flexibility showed that there existed a significant difference between them (t=5.07—statistically significant at .01 level of confidence P<.01). The higher mean of government school teachers as compared to that of private school teachers did indicate that the teachers of government schools were more flexible than the teachers of private schools. This could be attributed to the service conditions of the teachers of government schools who enjoyed more facilities than the teachers of private schools.

The far better facilities enjoyed by people in government service in general and teachers in particular perhaps explains why those looking for employment prefer going in for government jobs, leaving the less fortunate ones for private school jobs.

The differences might also be attributed to the fact that the interference of the management in private schools has either kept away the better staff of teachers or it has not been able to harness the talent amongst their teachers for creative thinking.
Originality:

**Table 4.20**

Comparative scores of Government and private school physical education teachers on originality as a component of creativity

<table>
<thead>
<tr>
<th>Name of the Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with high mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government school teachers</td>
<td>234</td>
<td>45.13</td>
<td>11.14</td>
<td>9.09*</td>
<td>Government school teachers</td>
</tr>
<tr>
<td>Private school teachers</td>
<td>172</td>
<td>35.09</td>
<td>10.85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* * P<.01

The treatment of data in Table 4.20, comparing government and private school teachers of physical education on the component originality, indicated that a significant difference existed between them (t=9.09—statistically significant at the .01 level of confidence P<.01). The higher mean of the teachers who were teaching in government schools as compared to those who were employed in private schools did reveal that originality was more prevalent among government school teachers rather than among private school teachers.

The significantly higher levels of originality in the behaviour of government school teachers as compared to the private school teachers could be attributed to the attraction of government jobs over private school jobs, drawing better trained manpower to government schools as compared to private schools. The attraction could also be due to
better service conditions, more facilities, more fringe benefits and the more attractive terms and conditions of government jobs. It could also emerge from more attractive facilities such as pensionary benefits, leave travel concession, leave encashment rules, benefits of leave, medical facilities, and allotment of government accommodation, facilities of which are rarely available from private institutions in the Punjab and Chandigarh.

Creativity:

**Table 4.21**

Comparative scores of Government and private school teachers on creativity variable.

<table>
<thead>
<tr>
<th>Name of the Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government school teachers</td>
<td>234</td>
<td>131.02</td>
<td>34.49</td>
<td>4.51*</td>
<td>Government school teachers</td>
</tr>
<tr>
<td>Private school teachers</td>
<td>172</td>
<td>108.94</td>
<td>63.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* P<.01

The data in Table 4.21 showing a comparison between government and private school teachers on the variable of creativity did indicate a significant difference between them (t = 4.51—statistically significant at the .01 level of confidence p<.01). The higher mean of government school physical education teachers as compared to that
of private school physical education teachers indicated that the behaviour of government teachers was more creative than the behaviour of private school teachers. The significantly more developed levels of creativity among government teachers could be attributed to the better developed components of creativity, that is flexibility, fluency and originality, in which the government school teachers had excelled the private school teachers. The higher levels of creativity could also be attributed to the better service conditions and more fringe benefits given to government school teachers as compared to private school teachers, which were probably responsible for attracting more intelligent and creative persons to government school jobs. Again it could be derived that the process of screening, interview and recruitment in government schools was such that comparatively superior manpower was given jobs whereas in private schools ulterior motives might have more say in the process of recruitment, thus depriving better qualified manpower of the posts.

The general neglect of physical education activities by the private schools, lack of facilities like grounds, equipment and so on, and misuse of physical education teachers' services for other academic work could be the other reasons for the difference in creativity levels. The more creative teachers do not usually opt for jobs in private schools and those who do, find their creativity given
Testing of the Hypothesis:

Our Hypothesis was: "Government and private school physical education teachers will significantly differ with regard to their adjustment, socio-economic status and the variable creativity.

Table 4.22

showing significant results of Government and privately managed school physical education teachers in adjustment, socio-economic status, fluency, flexibility, originality and creativity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Govt. school teachers</th>
<th>Private school teachers</th>
<th>'t'</th>
<th>Group with higher mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Adjustment</td>
<td>234</td>
<td>478.18</td>
<td>109.68</td>
<td>172</td>
</tr>
<tr>
<td>Socio-economic status</td>
<td>234</td>
<td>25.04</td>
<td>9.48</td>
<td>172</td>
</tr>
<tr>
<td>Fluency</td>
<td>234</td>
<td>58.94</td>
<td>17.25</td>
<td>172</td>
</tr>
<tr>
<td>Flexibility</td>
<td>234</td>
<td>26.92</td>
<td>7.93</td>
<td>172</td>
</tr>
<tr>
<td>Originality</td>
<td>234</td>
<td>45.13</td>
<td>11.14</td>
<td>172</td>
</tr>
<tr>
<td>Creativity</td>
<td>234</td>
<td>131.02</td>
<td>34.49</td>
<td>172</td>
</tr>
</tbody>
</table>

* stands for significance at the .01 level of confidence (p < .01)

The data shown in Table 4.22 indicate the significant results of all the six variables of the study. The data shows that
physical education teachers who were working in Government schools had excelled the teachers who were employed in private schools on the variables of adjustment, socio-economic status, fluency, flexibility, originality and creativity. In other words those teachers who were teaching physical education in Government schools were better adjusted, had a higher socio-economic status and scored higher in fluency, flexibility, originality and creativity, than the teachers of privately managed schools. All these results do validate Hypothesis 5, namely that Government and private school physical education teachers will significantly differ with regard to their adjustment, socio-economic status and the variable creativity.

Conclusions:

1. Physical education teachers who taught in Government schools were better adjusted than those physical education teachers who taught in privately managed schools.

2. Physical education teachers who taught in Government schools had a higher socio-economic status than those physical education teachers who taught in private schools.

3. Physical education teachers who taught in Government schools had more fluency in their behaviour than those physical education teachers who taught in privately managed schools.
4. Physical education teachers who taught in Government schools had more of flexibility in their behaviour than those physical education teachers who taught in privately managed schools.

5. Physical education teachers who taught in Government schools had more originality in their behaviour than those physical education teachers who taught in private schools.

6. Physical education teachers who taught in Government schools were more creative than those physical education teachers who taught in privately managed schools.
SECTION - V

PREDICTION OF CREATIVITY AND RELATIONSHIP BETWEEN ADJUSTMENT, SOCIO-ECONOMIC STATUS AND CREATIVITY:

Introduction

In order to work out a regression equation about the prediction of creativity from adjustment and socio-economic status of physical education teachers and to find out the relationship between them, the data was given proper statistical treatment and the standard deviation, mean, standard error, regression co-efficient, partial and multiple co-efficients of correlation and degree of freedom were worked out on the total sample of the study. The data so treated were tabulated into two tables, that is, number 4.23 and 4.24. From the data in Table 4.23 the regression equation was worked out and from the data in Table 4.24, the relationships between adjustment and creativity, socio-economic status and adjustment and the combined effect of adjustment and socio-economic status on creativity were established and reported.

Results and Discussion:

The regression equation

For the purpose of prediction of the most likely measurement of the dependent variable from the known measurements of independent variables, the regression equation is
applied. It is, in fact, the most probable of the dependent variable which can be obtained from the given value of the independent variable. The equation can be used in case of two or more than two variables. If the number of variables are more than four then other than correlational techniques are recommended by statisticians. Here, one thing needs to be clearly understood that the prediction can only be "most probable" in the present context or situation. This means that the prediction may probably be the best under the existing conditions, but at the same time may not be precise enough to be of accurate measurement. In fact, the golden principle given by Guilford (1978) is that "the higher the correlation, the greater the accuracy of prediction and smaller the error of prediction".

One needs to be clear in one's mind about the limitation of the regression equation— that it is always an estimation rather than a tool for accurate judgements. It is, therefore, to be used with caution.

The present investigation

In the present study, the impact of six different variables, i.e. adjustment, socio-economic status, creativity, fluency, flexibility and originality on different groups of physical education teachers were studied. In fact, these six variables could actually be classified into three variables, i.e. adjustment, socio-economic status and creativity, since
fluency, flexibility and originality were only different components of creativity. In order to predict the proportion of these variables amongst the successful teachers of physical education, the regression equation involving three variables, i.e. adjustment, socio-economic status and creativity was worked out. This was done with the objective that as and when selections of physical education teachers are made or as and when trainees are admitted to different courses of physical education, the equation could be made use of. This would provide a framework to get a picture of the probability of the success of such teachers or would-be teachers.

Table 4.23
Regression co-efficients, SDs, Means and standard errors of three variables

<table>
<thead>
<tr>
<th>Name of Variable</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Regression coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustment</td>
<td>458.182</td>
<td>106.396</td>
<td>.0232</td>
<td>.05697</td>
</tr>
<tr>
<td>Socio-economic status</td>
<td>22.847</td>
<td>9.538</td>
<td>.2589</td>
<td>-.06354</td>
</tr>
<tr>
<td>Creativity</td>
<td>121.667</td>
<td>49.928</td>
<td>37.12</td>
<td>97.015</td>
</tr>
</tbody>
</table>

The results of the data in Table 4.23 showed the standard deviation, mean, standard error and coefficients of regression of all three variables, i.e. adjustment, socio-economic status and creativity. The regression equation was worked out from the data.
First of all the regression coefficients of the combination of different variables were worked out. This was as under:

a. Regression coefficient of adjustment and creativity. = 0.05697

b. Regression coefficient of socio-economic status and creativity. = -0.06354

c. Regression coefficient of adjustment, socio-economic status and creativity. = 97.015

From the data of the regression coefficient, the regression equation was worked out with the help of the formula given by Guilford:

\[ X_3 = a + bx_1 + cx_2 \]

wherein, \( a \), \( b \) and \( c \) are the regression coefficients,

- \( x_1 \) and \( x_2 \) are the independent variables, i.e. adjustment and socio-economic status, and
- \( x_3 \) is the dependent variable, i.e. creativity.

The equation thus worked out after substituting the values of \( a \), \( b \) and \( c \) by data obtained after statistical analysis was:

\[ x_3 = (.97015 + 02) + (.5697 - 01) x_1 -(.6354-01)x_2 \]

\[ =97.015 + 0.05697 x_1 - .06354 x_2 \]

As said, in this equation \( x_3 \) stands for creativity, \( x_2 \) for socio-economic status and \( x_1 \) for adjustment.
Use of the equation

Now with the help of this equation $x_3$, i.e. creativity, can be worked out if $x_1$, i.e. adjustment, and $x_2$, i.e. socio-economic status, are known. This can be possible in the case of an individual as well as a group of teachers. In order to be a creative sportsman, one needs to be flexible, fluent and original in his behaviour. Thus, on the grounds of this criteria, such physical education teachers can be given positions in our schools as will be able to infuse or inculcate their qualities amongst the students and the nation could be able to achieve excellence in sports. Hence this equation could be useful for the selection of physical education teachers.

The socio-economic status of students is generally known or made available at the time of their admission to schools. The adjustment of the students can easily be worked out by using standard tools and techniques. The creativity of these students can easily be gauged and used as forceful evidence for providing them guidance, not only in sports but in almost all kinds of life situations.

Here in the regression equation which we have framed, creativity is a dependent variable and socio-economic status and adjustment are independent variables. When one thinks of some variables as being causes of another one, or even when we want to make a prediction about one variable from
our knowledge of several other variables correlated with it, then we call that one variable a dependent variable and the one or many on which it depends as the independent variable or variables. Independent variables are so called because one can manipulate them at will or because they vary by the nature of things and, consequently, one expects the dependent variable to vary accordingly.

Guilford (1978) has stated the principle behind this type of equation thus:

Although multiple correlation problems can be extended to any number of variables, before we consider the solution with more than three, it is desirable to examine some general principles which apply for any number of variables but which can be seen more clearly when there are only three.

The main principles are that (1) a multiple correlation increases as the size of the correlation between dependent and independent variable correlation increases and (2) a multiple correlation increases as the size of the inter-correlation of the dependent variable decreases.

Testing of the hypothesis No. 6

Our hypothesis said: "Creative thinking abilities of physical education teachers can be predicted from their adjustment and socio-economic scores". The working out of the equation:

\[
\begin{align*}
x_3 &= (.97015 + .02) + (.5697 - 01) x_1 \\
&\quad - (.6354 - 01) x_2 \\
&= 97.015 + 0.05697x_1 \\
&\quad -0.06354x_2
\end{align*}
\]

goess to indicate that the above hypothesis No. 6 is confirmed since creativity \(x_3\) can be predicted from the scores of adjustment \(x_1\) and socio-economic status \(x_2\).
Relationship between adjustment, socio-economic status and creativity:

The data regarding the individual and combined relationship of the independent variables, i.e. adjustment and socio-economic status, to the dependent variable creativity is shown in Table 4.24.

In order to arrive at the relationship between adjustment and creativity, the coefficient of correlation by the multiple correlation method between the different variables was worked out. The coefficient came to 0.121. This was found to be significant at the .05 level of confidence. The correlation was positive, which indicated that the better adjusted a physical education teacher was, the more creative he would be.

The positive relationship between adjustment and creativity among physical education teachers could be attributed to the fact that those teachers who were better adjusted could find both the time and energy to make innovations to adjust to various situations in their lives. This in turn helped them to adjust with their jobs in an even more effective way.

The positive and significant relationship between adjustment and creativity is confirmed by the results of this study, as seen from Table 4.2, which points to the fact that the more successful physical education teachers were better
Table 4.24

Individual and combined relationship of adjustment and socio-economic status upon creativity for physical education teachers

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Variable</th>
<th>N</th>
<th>df</th>
<th>Variable</th>
<th>N</th>
<th>df</th>
<th>'R'</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjustment</td>
<td>406</td>
<td>404</td>
<td>Creativity</td>
<td>406</td>
<td>404</td>
<td>0.121*</td>
</tr>
<tr>
<td>2</td>
<td>Socio-economic status</td>
<td>406</td>
<td>404</td>
<td>Creativity</td>
<td>406</td>
<td>404</td>
<td>-0.0079</td>
</tr>
<tr>
<td>3</td>
<td>Socio-economic status and adjustment</td>
<td>406</td>
<td>404</td>
<td>Creativity</td>
<td>406</td>
<td>404</td>
<td>0.122*</td>
</tr>
</tbody>
</table>

N = Number of subjects \( \text{df} = N - 2 = \text{degree of freedom} \)

* significant at the .05 level of confidence \( R < .121 \)

adjusted than less successful teachers, indirectly suggesting that there was a positive relationship between the two. Similarly, the data in Table 4.7 indicated that the better adjusted teachers were more creative than the not so well adjusted teachers, suggesting thereby that those teachers who were better adjusted were more creative. This was supported by the findings shown under serial No.1 of Table 4.24.

In a nutshell, the data in both these tables indicated that there was a positive kind of relationship between adjustment and creativity. These results are also confirmed by the relationship between adjustment and creativity shown by serial No.1 of Table 4.24, wherein it was found to be statistically significant at the .05 level of confidence.

The data under serial No.2 of Table 4.24 depicted the relationship between socio-economic status and creativity. The coefficient of correlation was -.0079, which was found to be statistically non-significant. Because the value of "R" was negative, a negative correlation between the two was indicated. Besides the fact that the relationship was not found to be statistically significant, it was seen that even when the relationship was negative, it was at such a low level that it is possible that an error factor or some variable other than the ones in question crept in. It could thus be inferred that there was no relationship between
socio-economic status and creativity. This leads to the conclusion that it is essential that creative physical education teachers should belong to a high socio-economic status group. In fact they could belong to any socio-economic group.

The data regarding the significance of the difference between socio-economic status of successful teachers and less successful teachers in Table 4.3 indicated that the difference was significant and teachers with a higher socio-economic status belonged to the successful group of teachers while teachers with a lower socio-economic status did not. Thus, indirectly, it was also found that those teachers who had a higher socio-economic status were more creative than the teachers who were of lower socio-economic status. These findings were not really confirmed by the data in Table 4.24 as is evident from serial No.2. However, the insignificant difference between the male and female samples as far as socio-economic status is concerned (Table 4.10) did fall in line with the results that there was no significant difference between socio-economic status and creativity.

The data under serial No.3 in Table 4.24 showed the multiple correlation of creativity with the combined effect of adjustment and socio-economic status. The value of "R" was found to be .122, which was significant at the .05 level of confidence. The relationship was positive, indicating thereby that those who were adjusted in a better way and
also belonged to a high socio-economic status were more creative than those who had lower adjustment levels and did not possess much socio-economic status. The combined effect that was significant at the .05 level of confidence showed that if the experiment was repeated 100 times, 95 times a similar relationship would be arrived at.

The significantly positive relationship of the combined effect of adjustment and socio-economic status with creativity could be attributed to the fact that there existed a similar type of relationship between adjustment and creativity, whereas the negative effect of socio-economic status was only at an insignificant level, which could not have been able to reduce or nullify the impact of adjustment to a considerable extent. In other words, it could be inferred that the combined positive relationship of socio-economic status and adjustment with creativity was mainly due to the significantly positive relationship between adjustment and creativity. This could again be attributed to the fact that creative teachers could have found ways and means to adjust in a better way or otherwise have been already well adjusted and thus been in a position to introduce innovative methods to improve upon their activities.

Thus, it was indicated by the data in Table 4.24 that the relationship between adjustment and creativity and the combination of adjustment and socio-economic status was
positive and significant. However, the relationship between just socio-economic status and creativity was negative and insignificant. The data also showed that adjustment combined with socio-economic status travelled a long way in the same direction, while socio-economic status and creativity did not go in the same direction and also did not move a long way.

**Testing of hypothesis:**

Our Hypothesis 7 was: "Significant differences would exist in the inter-relationship among the variables of adjustment, socio-economic status and creative thinking of physical education teachers".

The results of the positive significant relationship between adjustment and creativity at the .05 level of confidence and the combined effect of socio-economic status and adjustment with creativity, again at the .05 level of confidence validated the hypothesis. However, the statistically insignificant relationship between socio-economic status and creativity appears to falsify the above hypothesis. Thus, Hypothesis 7 stands only partially confirmed.

**Conclusions:**

1. Creativity can be predicted from the variables of adjustment and socio-economic status.
2. A significant and positive relationship exists between adjustment and creativity among physical education teachers and as such adjustment can be a predictor of creativity.

3. No significant relationship exists directly between the creativity and socio-economic status of physical education teachers.

4. A significant relationship exists between the combined effect of socio-economic status and adjustment on the one hand and the creativity of physical education teachers on the other and as such the combination of adjustment and socio-economic status can be a predictor of creativity.

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