CHAPTER VI

ADJUSTMENT

The dictionary meaning of adjustment is to make things right, suitable and convenient. Adjustment is an act of putting things in due relation to the individual and the environment.

The biological concept of 'adaptation' has been borrowed and changed somewhat by the psychologist and re-named 'adjustment' to emphasize the individual's struggle to get along or survive in his or her social and physical environment.¹

A human being is born with inner drives and motives and has to adjust with all sorts of complicacies and unpleasantness of the environment he lives in. To overcome these unpleasantness and complicacies and to solve the arising problems of the environment, adjustment is necessary.

The problems of adjustment are universal. The nature of the problems often changes from one period of life to another. For example a key problem for adolescents and young adults is the determination of their psychological and social

¹ Lazarus, R.S. : Patterns of adjustment (Mcgraw hill Kogakusha, Ltd.), 1975, p. 3.
In psychology the term 'adjustment' has particular recognition. According to P.M. Synods adjustment is 'a satisfactory relation of an organism to its environment'.

Boring defines adjustment as 'the process by which a living organism maintain a balance between its needs and the circumstances, that influence the satisfaction of these needs.'

According to Skinner adjustment means how well a person gets along in a situation. It is a matter of degree, a description of the relation between the individual and the environment.

The period of adolescence is the most important period of human development. A detailed discussion has been

2 Ibid., p. 16.


made about adolescent's development, particularly to their physical, social and emotional aspects and the problems related to these aspects in the previous chapter. Adolescents are surrounded by problems, uncertainties and conflicts and these can be solved by helping them in the process of proper and normal adjustment. Adjustment has the essence of personal happiness. A person who cannot adjust is often a burden to the family and to the society. Adjustment is linked with an individual's physiological growth and development, social development, emotional development and also in the attainment of sexual maturity as well as moral development. Each of these aspects has its influence directly or indirectly on the adjustment of adolescents.

The place of adjustment in relation to the physical, social and emotional aspects of the adolescents is discussed hereafter.

**Physical Adjustment**

The famous dictum, 'A sound mind in a sound body proves true because it signifies the importance as well as the necessity of physical activities in order to have a sound mind. It is often observed that a physically weak girl or boy finds life hard and dull and face difficulties to adjust themselves in the various situations of life.

The structural and physiological changes during adolescence influence their behaviour in the following way —
(i) Modifications in the physiological balance derived from variability in growth of some organs in comparison to others and from the onset of puberty itself act to induce a readiness to fluctuations in mood and socio-emotional responses. (ii) Alteration in the intra-organic pattern, especially as affected by sexual saturations, affect social-sexual motives particularly. (iii) Growth in abilities, motor and mental, provide a foundation for modification in interest and activities. (iv) Changes in bodily build and in physiological processes, in turn, force the individual into new social contact, (v) and the social-cultural setting in which they occur.

In general, boys and girls tend to be about equally strong during childhood, but with the coming of adolescence, the differences in favour of the boys begin to appear. There is great prestige value in strength for a boy, but none whatever for a girl. Boys show increasing strength and skill with every passing year, whereas girls show either a failure to gain or an actual decrease. If the school's programme of sports is sufficiently wide, almost every adolescent who wants to be successful in such fields can find something that he can do well.

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The psychologists are of opinion that physical, mental, emotional, social and moral development are interlinked. The growth and development of any of these aspects affects the growth and development of others. The growth and development of the nervous system influences the growth and development of the intellectual powers.

It has been found out that emotional and social adjustment is also linked with physical growth and development. The girls and boys having normal physical growth and development are accepted by their age-group, the physical deviates who are very small, very large, too fat or too thin etc. remain isolated. They are often nick named, ridiculed, and denied participations in the play and recreational activities enjoyed by their age associates. As a result, it brings serious maladjustment and personality problems. Moreover upon the balanced growth and development of the internal as well as external organs depends upon the balanced functioning of the body systems. The functioning of the body system decides the interest, attitude and total behaviour of an individual. For example, glands and their functioning affect the emotional behaviour to a great extent. Similarly their anatomical development, the development of the circulatory, respiratory systems etc. give the person the required abilities for participating in various motor activities. This proves that
physical development influences and total make up of an individual and thus needs a very careful attention.  

Regular participation in co-curricular activities which involves physical activities of the girls and boys is important and should be allowed both in and outside the participation in physical activities.

**Social Adjustment**

The adolescent years are pre-eminently a period of social development and adjustment. With the oncoming of adolescence, the boy or girl becomes acutely aware of social pressures and relationships.

Luella Cole, in her book, 'Adolescence psychology', points out that adolescent's social skills are underdeveloped and awkward, but for that every reason boys and girls need precisely the kind of experiences they crave, in order that they may acquire poise and adjust themselves to the demand of the society. Therefore, the adult, whether parent or teacher has a definite role in relation to the spontaneous social life of the adolescence. She further states that adolescents are tremendously sensitive to social stimuli, no other problem seems to them as important as the establishment of themselves in their own society. 

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Adolescents social life tends to 'just grow'. It is often purposeless and inchoate. Pupils should of course enjoy their activities, but they should also grow into poised and more mature individuals. The academic and non-academic work of a school should be correlated that each reinforces the other and they become two related means by which pupils may best realize their possibilities, develop their talents and pursue their interests.\(^\text{10}\)

It has been found out that an adolescent girl or boy who is bored a great deal of the time is probably also a person who often is anxious or resentful. His boredom is due to the part of the barreness of his environment. It also results because he does not have the freedom to throw himself into interests of his own choosing or that he feels ill at ease when left to himself as though he is unable to enjoy or even to endure his own company in solitude.\(^\text{11}\)

Again adolescence is a period of intense emotions. Emotional behaviour dominates the social characteristics and qualities of adolescents. The area of specific interests and social contacts get widened during adolescence. Besides, individual characteristics, the culture, socio-economic status

\(^{10}\) Ibid., p. 614.

of the family, sex-education, all affect their social interests and contacts. Among adolescents, some are highly extrovert and sociable, the others like to remain aloof and shirk from social contacts and participations. This shows that adolescence is a period of maximum social awareness, increasing social relationships and intimate friendships and as such must be provided with a wide area of interests and opportunities for making social adjustments and to learn social qualities.\textsuperscript{12}

The development of social behaviour is influenced by the physique and health which one possess. A healthy boy or girl with a normal physique develops self-confidence and a sense of self-respect. He or she has the abilities and strength to make themselves adjusted in the changing social situations. He or she is always cheerful, co-operative, mix easily with people and maintain proper social relations. On the other hand a girl or boy suffering from illness or having poor health or any physical deformities and defects develops the feelings of inferiority and finds difficulties in social adjustment. This shows the importance of proper physical health and development in order to have good social adjust­ment.\textsuperscript{13} The emotional development of an adolescent bears a

\textsuperscript{12} Mangal, S.K. \textit{Educational psychology}. (P. Brothers Educational Publishers, 1982, p. 121.

\textsuperscript{13} Ibid., pp. 122-123.
positive correlation with the social development. Emotional adjustability and maturity is one of the very important elements of social maturity. For successful living, social adjustment is necessary. According to Hurlock, social adjustment means the success with which a person adjusts with people in general and to the group with which he is identified in particular.¹⁴

Social competency must play an important role in the kind of social adjustment the adolescent makes. Social competency means the facility in dealing with people and social situations. Social competency gives the adolescent poise and self-confidence, traits that are of great value in any social situations. These traits added to the good impression he makes because of his social skills which will go far towards assuming his social approval, irrespective of any undesirable traits he may have. The social groupings of adolescence includes chums, cliques, crowds, formally organized groups and gang - each of which serve certain needs in an adolescent's life and contributes to his socialization process.¹⁵

Robert S. Ellis in his book 'Educational psychology', refers to participation of adolescents in social activities for


normal social adjustment. He points out that adolescent girls and boys must successfully participate in social activities and must have the experience of giving and accepting invitations, of making introductions, of carrying on interesting conversations, of playing games at parties and of dancing properly. Social poise and confidence comes from successful experience in social activities. 16

The social development of the girls and boys is greatly influenced by the social environment and functioning of the schools. Human relationships maintained by the schools, the kinds of programmes and activities performed, its traditions, values and principles, the social qualities and social development of the girls and boys. The school having a healthy social and democratic atmosphere inculcates so many social virtues among the students, while a poor and unhealthy atmosphere of the school and a negative social behavioural characteristics of the teachers and school mates cast a bad influence upon the social behaviour of the child. This shows clearly that the school environment must be healthy for the proper development of social traits. Social virtues and good democratic living can be learnt by the girls and boys through curricular and co-curricular activities, proper methods of instruction and normal personal contact between students and

Extra-curricular activities are necessary for social training. Some social training is given through regular academic work, but there is need for much more extensive social participation and training which the academic works of a school cannot meet alone.18

The social growth proceeds through a recognized series of levels, just as do mental and physical growth. The co-curricular activities of a school should be helpful in developing the social capacities of boys and girls.19

Luella Cole has pointed out in her book 'Adolescence psychology' that the effect of participation in co-curricular activities is almost favourable. The pupil who has an integral part in the social life of the school does better academic work than the pupil of equal ability who does not.20


Emotional Adjustment

Emotional development is an important aspect of human life. Emotions are accompanied by extensive bodily changes that involve specially the heart, lungs and muscles. But these emotions vary little from one age level to another. 21

Any vivid experience that is accompanied by intense emotions have a profound effect on one's attitudes, values and future behaviour. The effect may be favourable or unfavourable depending on the emotion aroused, its intensity, previous experience with the emotion, and the preparation one has had for it. In general the more pleasant the emotion, the more favourable the effect. The unfavourable effects of unpleasant emotions can be so devastating that control of emotions is necessary if the individual is to make good personal and social adjustment. Continuous emotional strain stemming from personal inadequacies or poor environmental conditions, keeps the adolescent stirred up, ready to over respond to any situation. He becomes high strung, uncomfortable and ineffectual. In times emotional strain can bring on ill-health, both physical and mental. 22


The emotional balance is once again disturbed in adolescence. During this stage an adolescent experiences violent and intense current of emotional experiences. It becomes difficult for an adolescent to control his emotions because the functioning of sex glands makes them restless. Besides, emotions fluctuates during this stage, which makes them moody, sometimes happy, and sometimes extremely sad. All this happens in a short time. Therefore, there is a great need of the training of emotions and proper channelization of emotional energy. The proper emotional adjustment of an adolescent depends mostly on proper health and good physical development. A good physical health has a positive correlation with emotional development. Any deficiency in physical side - internal or external creates emotional problems. The boys and girls who are weak in somatic structure or suffering from illness are more emotionally upset and unstable than children whose health is better.23

An emotion is an experience that affects an individual's vital processes, stimulating him to greater activity than is normal. Emotional life furnishes that basic drive that impel an individual to action. These drives vary in strength not only from person to person, but from age to age. When they can not be satisfied, they lead to frustration and conflict, which may be resolved in a number of ways, some of which are more

healthy than others. Emotion inevitably find some outlet, if one is blocked, another is substituted.  

Most adolescents in a terrifying attempt to find a way out of his wilderness, seek a solution that will restore to them a feeling of unity, an attempt to reconcile the conflicts within them and to dissolve the painful ambivalences. They want to seek solutions to the conflicts. Rebellion too, is an essential dimension of life. The dream of over throw, the promise of change, the discovery of the unusual, they joy of creation is the hope that continues to pump the blood in the veins, and make life worth struggling for. The adolescent presumably is engaged in a struggle to emancipate himself from his parents. Since his behaviour is now largely under the control of peer group members, he begins to adopt idiosyncratic clothing, mannerisms, lingo and other forms of peer group behaviour. Because of the conflicting values and pressures to which the adolescent is exposed, he is ambivalent, frightened, unpredictable and often irresponsible in his behaviour. Moreover, the adolescent finds himself in a transition stage in which he is neither child nor adult, he is highly confused even about his own identity.  

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During adolescence, the feelings of inferiority manifest themselves. During this stage an adolescent begins to consider his ability and personality and he wants to understand his place in the world. Moreover at this stage anger and anxiety manifests. The causes of anger are primarily social. The adolescent gets into a situation in which he feels himself embarrassed, ridiculous, offended or annoyed.26

Gosell and his associates, Ilga and Ames have labelled adolescence period as times of 'disequilibrium'—when insecurities, tensions and indecisions are readily recognized. There are times, when the individual is 'out of focus', when his behaviour causes more problems for others than is normal, and when he is happy and well adjusted than usual. Studies of adolescence reveal that not all by any means experience sufficient storm and stress to disturb either themselves or the adults in their lives. Any emotion may be experienced in a heightened and intense form in adolescence. As the adolescent leaves the world of childhood, radical changes take place in his pattern of life. Since he is often unprepared for his new roles, he experiences strong and unusual feelings of inadequacy. When adolescent fails to achieve aspiration, he develops feelings of inadequacy.27


The school life plays an important role in the emotional development of girls and boys. The healthy conducive atmosphere of the school always results in the balanced emotional development of girls and boys. The method of teaching, the organization of co-curricular activities, the normal and healthy social life of the school, the relationship among the staff members and the head of the institution, the attitude of the teachers towards students influences the emotional development of the girls and boys.\(^{28}\)

Luella Cole in her book 'adolescence psychology', suggests for the provision of number of outlets in the schools to channelize the aroused emotions of the adolescents.\(^{29}\)

All these proves that emotional training requires varied opportunities for emotional expression and these cannot be provided through the conventional school curriculum, and as such co-curricular activities are necessary as a part of the school programme in order to help the adolescents in proper emotional development.


The influence of co-curricular activities in the adjustment pattern of adolescent girls and boys of secondary schools in their physical, emotional and social aspects has been investigated by adopting the procedures as described earlier. In this chapter an attempt has been made to analyse and interpret the results of the investigation.

In order to find out the influence of co-curricular activities on the physical, emotional, and social aspects of the adolescent girls and boys of the secondary schools, a sample of 200 girls and boys has been taken. This sample was selected and divided into two groups - one experimental group and the other one control group. The experimental group consists of students who participate in different co-curricular activities program. The control group consists of students who do not show the desire to participate in the co-curricular activities programme of the school.

The scores of both the groups have been analysed and results interpreted by adopting statistical procedures.
A. The Influence of Co-curricular Activities in the Adjustment Pattern of the Adolescent Girls and Boys of Secondary Schools in their Physical Aspect:

Analysis and Interpretation.

(1) To find out the influence of co-curricular activities on the physical aspect of both the Experimental and Control group, the questionnaire consisting of five statements on physical aspect was applied to the girls and boys. One point was given for each 'yes' answer, and 0 point for each 'no' answer. It was found that 60 students scored 5 points out of 5, 10 students scored 4 points out of 5, and 3 students scored 3 points out of 5, the rest of the students scored 0 points. Hence, the total number of points scored by the 100 students of the experimental group:

\[
= (5 \times 60 + 4 \times 10 + 3 \times 3) = 349
\]

\[\text{Mean} = \frac{349}{100} = 3.49 \quad \text{(since Mean} = \frac{1}{n} \sum x_i)\]

\[\frac{1}{n} \sum x_i^2 = \frac{1}{100} \left(25 \times 60 + 16 \times 10 + 9 \times 3\right) = 1687\]

where \(n\) total no. of student \(x_i\) point scored by \(i\)th student.
Now it is known that,

\[
\text{Standard Deviation} = \sigma = \sqrt{\frac{1}{n} \sum (x_i - \bar{x})^2}
\]

where the total no. of students \( \bar{x} \) mean,

\[
= \sqrt{\frac{1}{100} \times 1687 - (3.49)^2} \\
= \sqrt{\frac{1}{16.87} - (3.49)^2} \\
= \sqrt{16.87 - 12.1801} \\
= \sqrt{4.6899} \\
= 2.1656
\]

The mean that has been found = 3.49, and \( \sigma = 2.1656 \) in physical aspect in the experimental group.

(ii) To find out the physical influence of co-curricular activities on the girls and boys of the control group, the same questionnaire and point scoring method was applied. It was found, out after the application that 10 students scored 5 points out of 5, 60 students scored 4 points out of 5, and 17 students scored 3 points out of 5, and the rest of the students scored 0 points.

Here the total no. of points scored by the 100 students

\[
= (5 \times 10 + 4 \times 60 + 3 \times 7) = 341
\]

\[
\therefore \text{Mean} = \frac{341}{100} = 3.41
\]
Now \( \frac{1}{n} \sum x_i^2 = (25 \times 10 + 16 \times 60 + 9 \times 17) = 1363 \)

It is known that,

\[
\text{Standard Deviation} = \sqrt{\frac{1}{n} \sum x_i^2 - \bar{x}^2}
\]

(the symbol of the formula carries usual meaning)

\[
= \sqrt{\frac{1}{100} \times 1363 - (3.41)^2}
= \sqrt{13.63 - 11.6281}
= \sqrt{1.0019}
= 1.4149
\]

Now the mean and standard deviation in physical influence in control group is 3.41 and 1.4149 respectively.

After calculating the mean and SD of both the groups in physical influence area, standard error was calculated and the following formula was applied.

\[
V_D = \sqrt{\frac{V_1^2}{N_1} + \frac{V_2^2}{N_2}}
\]

where \( V_1 \) is the standard deviation in physical adjustment in experimental group.

\( V_2 \) is the SD in the physical adjustment of the control group.
$N_1$ and $N_2$ means total no. of students in experimental and control group respectively.

Now, $\sqrt{V'D} = \sqrt{\frac{(2.1656)^2 + (1.4149)^2}{100}}$

\[
= \sqrt{\frac{4.6896 + 2.0019}{100}}
\]

\[
= \sqrt{\frac{0.0469 + 0.0200}{100}}
\]

\[
= \sqrt{0.0669}
\]

\[
= 0.25865
\]

\[
= 0.2587
\]

To find out the significance of difference for both the groups in physical area of adjustment and total, critical ratio was calculated and the following formula was applied.

\[
CR = \frac{D}{\sqrt{V'D}} \quad \text{where } D \text{ is the difference of mean}
\]

Hence $CR = \frac{3.49 - 3.41}{0.2587}$

\[
= \frac{0.08}{0.2587}
\]

\[
= 0.3092
\]

The following table no. 14 shows the comparison between the experiment group and control group in the area of physical adjustment.
Table 14 showing the comparison between the experiment group and control group in the area of physical adjustment

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean</th>
<th>SD</th>
<th>CR</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>3.49</td>
<td>2.1656</td>
<td></td>
<td>Calculated value being less than tabulated value both at .01 level and .05 level.</td>
</tr>
<tr>
<td>Control group</td>
<td></td>
<td></td>
<td>0.3092</td>
<td>Hence not significant at .01 level and .05 level</td>
</tr>
</tbody>
</table>

Conclusion:

It has been found out that it is not significant both at .01 level and .05 level. Hence we do not reject our null hypothesis that co-curricular activities has influence on the physical aspect of the adolescent boys and girls of the secondary schools.

B. The Influence of Co-curricular Activities in the Adjustment Pattern of the Adolescent Girls and Boys of Secondary Schools in their Emotional Aspects:

To find out the influence of co-curricular activities on the emotional aspects of the adolescent girls and boys, the same form of standardised questionnaire with 36 statements on emotional aspects was applied to both the experimental and control groups. The same method of point system was used, and it was found after calculations that the total points scored...
by 100 students in the experimental group is 2847, and in the control group 2830.

Now $x_i^2$ in experimental and control group is respectively 82685 and 89318 where $x_i$ is the point scored by $i$th student.

The Mean and SD for experimental and control group

The following is the result of the Mean and SD in emotional adjustment for experimental group.

Mean = $\frac{1}{n} \sum x_i$

where $n$ total no. of students $x_i$ is the point scored by $i$th student

$$\frac{2847}{100} = 28.47$$

$$SD = \sqrt{\frac{1}{n} \sum x_i^2 - \bar{x}^2} = \sqrt{\frac{82685}{100} - (28.47)^2} = \sqrt{826.85 - 810.54} = \sqrt{16.31} = 4.04$$

The Mean and SD for emotional adjustment in the experimental group is 28.47 and 4.04 respectively.
The Mean and SD in emotional adjustment in control group

Mean = \frac{2830}{100} = 28.30

SD = \sqrt{\frac{1}{n} \sum (x_i - \bar{x})^2}

= \sqrt{\frac{893.18}{100} - (28.30)^2}

= \sqrt{92.29}

= 9.60

The Mean and SD for control group in emotional adjustment respectively 28.30 and 9.60.

After calculating Mean and SD of both the groups in emotional adjustment area, standard error was calculated by applying the formula as in the physical adjustment.

\[ V'_{u} = \sqrt{\frac{\frac{\sigma^2}{N_1}} + \frac{\sigma^2}{N_2}} \]

= \sqrt{\frac{(4.04)^2}{100} + \frac{(9.60)^2}{100}}

= \sqrt{\frac{16.3216}{100} + \frac{92.16}{100}}

= \sqrt{1632 + 9216}

= \sqrt{10848}

= 1.0415

To find out the significance of difference, the Ch. has been found out, which is -
\[ CR = \frac{D}{\sqrt{\frac{1}{n} + \frac{1}{m} + \frac{1}{n-1} + \frac{1}{m-1} + \frac{1}{n-2} + \frac{1}{m-2}}}, \text{ where } D \text{ is the difference of mean,} \\
= \frac{28.47 - 28.30}{1.0415} \\
= \frac{0.17}{1.0415} \\
= 0.16 \\

The following table 15 shows the comparison between the experimental and control group in the area of emotional adjustment.

**Table No. 15**

Table 15 showing the comparison between the experimental and control group in the area of emotional adjustment.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean</th>
<th>SD</th>
<th>DR</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>28.47</td>
<td>4.04</td>
<td></td>
<td>Calculated value is less than tabulated at 5 per cent and 1 per cent level of probability. hence not significant at .01 level and .05 level.</td>
</tr>
<tr>
<td>group</td>
<td></td>
<td></td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Control group</td>
<td>28.30</td>
<td>9.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:**

It is found that it is not significant both at .01 level and .05 level. Hence we do not reject our null hypothesis that co-curricular activities has influence on the emotional aspects of the adolescent girls and boys of the secondary schools.
C. The Influence of Co-curricular Activities in the Adjustment Pattern of the Adolescent Girls and Boys of Secondary Schools in their Social Aspects

To find out the influence of co-curricular activities on the social aspects of adolescent girls and boys of the secondary schools, the same form of questionnaire, consisting of 24 statements on social aspects was applied to both the groups. The same system of scoring points was applied as that of physical and emotional.

The different scoring of each group was calculated and it was found that the total points scored by the experimental group is 1859 and by the control group 1750.

Now $\sum x^2$ in experimental and control group is respectively 35496 and 35420 where $x_i$ is the point scored by the $i^{th}$ student.

In the following is shown the findings of mean and $s_o$ for experimental and control group in the social aspect respectively.

Mean = $\frac{1859}{100}$

= 18.59

$s_o = \sqrt{\frac{1}{n} \sum x^2 - \bar{x}^2}$

= $\sqrt{\frac{35496}{100} - 345.58}$

= $\sqrt{9.38}$

= 3.06
The mean and SD for control group in social adjustment.

\[
\text{Mean} = \frac{1750}{100} = 17.50
\]

\[
\text{SD} = \sqrt{\frac{1}{n} \sum (x_i - \bar{x})^2} = \sqrt{\frac{354.20}{100} - (17.50)^2}
\]

\[
= \sqrt{354.20 - 306.25} = \sqrt{47.95} = 6.9245
\]

After calculating the mean and SD of both the groups in social adjustment area, standard error was calculated by applying the formula as in the physical adjustment and emotional adjustment.

\[
V^2 \text{SE} = \sqrt{\frac{(6.9245)^2}{100} + \frac{(3.06)^2}{100}}
\]

\[
= \sqrt{\frac{47.9487}{100} + \frac{9.3636}{100}} = \sqrt{.4794 + .0936} = \sqrt{.573} = .756
\]

To find out the significance of difference, the result of the CR is shown in the following:
\[ C_k = \frac{D}{V:} \quad \text{where } D \text{ is the difference of Mean.} \]

\[ C_k = \frac{18.59 - 17.50}{.756} = \frac{1.09}{.756} = 1.4417 = 1.441 \]

In the following table no. 16, the comparison between the experimental and control group in the area of social adjustment is shown.

**Table No.16**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean</th>
<th>SD</th>
<th>( C_k )</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>18.59</td>
<td>3.06</td>
<td>1.441</td>
<td>Calculated value is less than tabulated at 5 per cent and 1 per cent level of probability. Hence not significance at .01 level and .05 level.</td>
</tr>
<tr>
<td>Control group</td>
<td>17.50</td>
<td>6.9245</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:**

On the above table no. 16, it is seen that, it is not significant both at .01 level and .05 level. Hence we do not reject our null hypothesis that co-curricular activities has influence on the social aspects of the adolescent girls and boys of the secondary schools.
Discussion of Results

The possibilities of introducing co-curricular activities compulsorily in the school curriculum is studied from the viewpoint of its influence on the physical, emotional and social aspect of the adolescent girls and boys of the secondary schools.

The test carried on by the investigator on the selected sample reveals clearly that there is an influence of co-curricular activities on the physical, emotional and social aspects of adolescent girls and boys of the secondary schools.

It can be mentioned that the mal-adjustment in these three areas of the adolescents will make them the burden of society. Therefore, as found from the results the participation in the different programmes of the co-curricular activities will help the adolescents in harmonious adjustment in life in any situation.

The results of the studies reveal that the experimental group and the control group differ from each other in the area of physical adjustment (Table 14) and hence do not reject the null hypothesis that co-curricular activities has influence on the physical aspect of the adolescent girls and boys of the secondary schools.

The aspects covered under physical adjustment in
the questionnaire form are physically fit, feeling of lethargic, increase of appetite, playing together with both the sex, and reducing the extra fat of the body. In these 5 items the responses of the experimental group is more positive than that of the control group.

Therefore, it can be interpreted that co-curricular activities has influence on the physical aspect of the adolescent girls and boys.

The findings of this study in respect of health adjustment are in agreement with Updyke and Johnson (1969). Updyke and Johnson also hold similar views that activities like games and sports promote physiological efficiency which is reflected in endurance, strength and ability.°

The co-curricular activities provide emotional balance in many ways. In the present study it has been found that the experimental group showed better adjustment than the control group (Table no. 15). The findings in this area do not reject the null hypothesis and reveals that co-curricular activities has influence on the emotional aspects of the adolescent girls and boys of the secondary schools. The aspects covered under emotional adjustment in the questionnaire form are, feeling monotonous, attentive.

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self-confidence, good conduct, showing good behaviour to others, talking gently, feeling shy, feeling of restlessness, feeling of unsteadiness, concentration in works, independence, balancing the mind, solving problems, complexities in the mind, the feeling of leadership in every work, irritating mind, sitting alone, showing interest for others, ignoring others, becoming cautious, washing away bad habits, the joy of working together, getting more careful than before, thinking about self, increased mental attention, the show of nature, dirty feelings about opposite sex, disciplined life, following rules and regulations, the bad feelings about others, too inquisitive, escaping from others approach, learning to be patient, feeling mental happiness. In these 36 items the responses of the experimental group is more positive than that of the control group.

Therefore, it can be interpreted that co-curricular activities has influence on the emotional aspect of the adolescent girls and boys of the secondary schools.

The findings of this study in respect of emotional adjustment are in agreement with Hurlock (1942), Rogers (1962) and Cureton (1963).  

Hurlock is of opinion that physical exercises and play activities like jumping, skating, climbing, swimming etc. drain off the pent up emotional stream and rejuvenate the person who was disrupted when the emotion was aroused.

Rogers also came into conclusion that adolescents also need plenty of activities to release strong emotions.

Thus the present findings also hold similar views as that of Hurlock and Rogers that co-curricular activities exert influence on the emotional adjustment of adolescent girls and boys.

The co-curricular activities helps the adolescents in social adjustments also.

The present study shows that the experimental group showed better adjustment than the control group in the area of social adjustment. (Table no. 16). The findings in this area do not reject our null hypothesis and reveals that co-curricular activities has influence on the social aspect of adolescent girls and boys. The aspects covered under social adjustment in the Questionnaire form are, like, showing interest to the outer world, learning to be friendly and to make friendship, participating in social works, learning to

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32 Rogers, Dorothy: The psychology of adolescence, New York, Appleton century crofts, 1962.
be up and doing in social works, learning to show gentle behaviour to others, stopped fighting with brothers and sisters at home, learning to be obedient to the school teachers and following school rules, learning to follow the rules of the society, learnt to involve in social organizations, stopped gossiping in leisure hours, learnt to play games and do good works in leisure hours, learning to be social, learning to love the country more, learning to shape oneself into good a citizen of the country, learning social manners, learning to be co-operative, learning to express properly, learning to bring forth inner talents, learning more about the environment, learning to be sporting, do not feel 'alone', do not think much about self, do not feel shy to do works, learning to adjust in society. In these twenty-four items, the responses of the experimental group is positive than that of the control group.

Therefore, it can be interpreted that co-curricular activities has influence on the social aspects of the adolescent girls and boys of the secondary schools.

The findings of this study in respect of social adjustment are in some extent in agreement with Kuhlen and Lee (1945).33

33 Kuhlen Raymond and Beatrice, J. Lee : Personality characteristics in social adaptability in adolescence. (Journal of Educational Psychology), 1945, p. 321.
Kuhlen and Lee reported that through participation in physical education activities, a person learns social adjustment by developing the social qualities which are expected of him to make him a proper member of the social group.

Therefore, participation in the co-curricular activities programme helps in flowering social qualities like, co-operation, tolerance, friendliness, loyalty, courtesy etc. which are required in a person to adjust in a democratic society.
FIG. 1: INFLUENCE OF PARTICIPATION IN CO-CURRICULAR ACTIVITIES IN THE PHYSICAL ASPECT OF ADOLESCENT GIRLS AND BOYS.
FIG. 2: INFLUENCE OF PARTICIPATION IN CO-CURRICULAR ACTIVITIES IN THE EMOTIONAL ASPECT OF ADOLESCENT GIRLS AND BOYS.
FIG. 3: INFLUENCE OF PARTICIPATION IN CO-CURRICULAR ACTIVITIES IN THE SOCIAL ASPECT OF ADOLESCENT GIRLS AND BOYS.
A. Physical Education and Its Effect on the Adolescent Girls and Boys.

B. A Comparative Assessment of the Opinions on the Subject of Co-curricular Activities by Students, Teachers and Parents.

C. The Effect of Participation of Co-curricular Activities on the Mental Aspect of the Adolescent Girls and Boys.
A. Physical Education and Its Effect on the Adolescent Girls and Boys:

Physical education plays an important role in the life of adolescent girls and boys. To find out the opinions of the adolescent girls and boys about participation in physical education, the Investigator took a sample of one hundred girls and boys, ranging from class VIII to class X, and distributed a copy of the 'attitude measurement for physical education' of Giridhar Prasad and Manju Thakur, Psychology department, Bihar University, Muzaffapur. The results of this attitude measurement is discussed below.

**Table No. 17**

Showing the Importance of Physical Education

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Statements</th>
<th>Fully Agree</th>
<th>Agree</th>
<th>Doubtful</th>
<th>Do not Agree</th>
<th>Fully not agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Education should be given to both boys and girls in the same manner</td>
<td>54</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Physical Education should be compulsory in schools</td>
<td>46</td>
<td>41</td>
<td>6</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Physical Education is as important for students as general education</td>
<td>47</td>
<td>31</td>
<td>20</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4.</td>
<td>Sports and Games is for boys and not for girls</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>5.</td>
<td>The students should give more interest in their studies than physical education</td>
<td>35</td>
<td>25</td>
<td>15</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>In physical education importance must be laid on the mental development of the students</td>
<td>51</td>
<td>45</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>The girls should do regular morning exercise like boys</td>
<td>46</td>
<td>31</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>The girls should participate in games and sports like boys</td>
<td>51</td>
<td>36</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>While doing exercises it is better if the girls can wear minimum clothes</td>
<td>32</td>
<td>49</td>
<td>11</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>10.</td>
<td>The girls become characterless when they participate in the games and sports</td>
<td>5</td>
<td>5</td>
<td>11</td>
<td>25</td>
<td>54</td>
</tr>
<tr>
<td>11.</td>
<td>From the social point of view, girls should not participate in games and sports</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>26</td>
<td>53</td>
</tr>
<tr>
<td>12.</td>
<td>It is a waste of time for boys and girls to participate in games and sports</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>13.</td>
<td>The knowledge of physical transformations during adolescence must be given to the boys and girls</td>
<td>53</td>
<td>28</td>
<td>12</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
14. Knowledge of physical education is more necessary for boys than girls 17 20 7 14 42

15. Due to the physical differences boys and girls should not receive physical education in the same manner 13 36 20 14 17

16. Physical education should be compulsory in school curriculum 54 40 4 2 0

Conclusions:

Table No. 17 shows that every student tested realizes the importance of physical education.

The investigator found that every student given the test had the knowledge of physical education. They know the true significance of the term 'Physical Education'.

It was found that students expressed their desire for the introduction of physical education in the school. They have realised the importance of physical education for both boys and girls.

* A sample of the 'attitude measurement for physical education of Giridhar Prasad and Manju Thakur, Psychology department, Bihar University, Murzaffapur has been given in the Appendix VII.
(i) Case study of adjusted and maladjusted girls and boys.

(ii) Interview with few teachers of secondary schools.

Results:

A case study on fifty selected girls and boys was made by the investigator. The students selection was done with the help of teachers and parents. The students were selected from different classes starting from class VIII to class X. The students were taken an 'interview' also.

Twenty-five girls and boys participating in games and sports and other physical and mental activities were found to be very 'adjusted'. These students appeared to be forwarding, smart and easy to talk with. They all expressed their good effects from participation in physical and mental activities and at the same time reported that they are not satisfied with limited form of activities provided in the school.

Another twenty-five girls and boys who never participate in any form of physical or mental activities were selected with the help of teachers and parents. This sample was found to be mal-adjusted. These students showed blunt dull look and appeared to be very shy. Teachers reported that these students always remained aloof from school functions and from all the physical and mental activities. They never come out to display abilities even in minor games and sports.
Regarding the Intelligent Quotient, the students participating in games and sports and other physical and mental activities showed better academic proficiency. Their I.Q. was found to be ranging from 90 to 110. These students did not show any bad results in their school career.

On the other hand, the students who never participates in any activity of the school were found to be inferior in comparison to their counterparts. These students were found to be below average and mediocre. During their school career they did not show any extra brilliancy in any field, whether academical or physical.

Results regarding the students who never participates in school's or outside physical and mental activities show that, they face some common difficulties to which they need to adjust.

(i) They face difficulties regarding participation in the different activities of the school.

(ii) They face difficulties in maintaining relationship with friends and sometimes even with the members of the home.

(iii) They face difficulties regarding health and society.
(iv) They fail to decide their future or vocation. Such students fail to adjust physically, socially and emotionally.

Co-curricular activities must help in the process of integrating the students physically, emotionally and socially. The case study of the students who participate in games and sports and other activities showed that such students are successful in maintaining good relations between the family members and with friends and others. They are socially adjustable, physically superior and emotionally balanced.

**Interview with the Teachers**

**Results:**

The investigator interviewed some of the school teachers with the intention of knowing their opinions towards co-curricular activities.

Every teacher interviewed, expressed their desire of introducing co-curricular activities as a compulsory subject. They all feel that the existing provisions of co-curricular activities are not sufficient, and wants more and more activities to be included in the programme. Besides, the importance of co-curricular activities in the physical, emotional and social development was felt by all the teachers.

* A questionnaire sample of the case study of adjusted and mal-adjusted has been given in the Appendix III.
* A questionnaire sample given to the selected secondary school teachers has been given in the Appendix IV.
B. A Comparative Assessment of the Views on
the Subject of Co-curricular activities
by Selected Students, Teachers and Parents:

In this chapter, the investigator is giving a
comparative assessment on the subject of co-curricular activi-
ties, based on the opinions of students, teachers, and parents.

**Students:**

The investigator selected 50 adjusted and maladjusted
students to apply student's questionnaire and for interview and
she was assisted in this regard by the Headmaster or Principal
and by few teachers. The co-operation of the teachers has
helped her to collect the list of names of the students who
actively take part in various co-curricular activities, who show
good performance in studies, who are well behaved and gentle, and
another list of names of the students who do not participate in
any form of co-curricular activities, show reluctance to
participate, and poses problems in schools.

These two types of students were divided into two groups.
The first category of students fall under adjusted group, and
the second category fall under maladjusted group. These two
samples were observed, studied and interviewed many a times to
make a comparative assessment. The questionnaire applied is
shown in appendix III.

The sample selected was observed first in and out of
school hours. The frequent visits to the school has helped the
investigator to be friendly with the selected sample, and this has also helped to approach the students personally at their homes.

The interview and questionnaires were conducted and applied at home. The investigator let them know about the purpose of her visit, interviewing, and questionnaire distributions. They were requested to answer without any reluctance and fear as their names will be kept secret and unpublished.

The questionnaire comprised of questions based on (i) personal data, (ii) family data, (iii) health data, and (iv) educational data. The questionnaire was at first applied to the sample listed under adjusted group. These students numbered twenty-five. These students participate in manifold school activities, mixes freely with their mates and poses no problems to the teachers. After distribution of the questionnaire, they have answered easily, and promptly the questions asked by the investigator.

while discussing with the parents of these students, the investigator learnt that except some minor problems, the parents of these students do not find any problems with them.

Some of the students selected has taken part in inter-school games and sports and the sample selected is a regular participant of co-curricular activities in and out of school. These students equally show good performances in studies and find no problems of adjusting with their senior,
During the talks, they reported that, in spite of their great interests in games and sports and other forms of co-curricular activities, they are not getting sufficient scope to participate in school, and at the same time they have to pay attention and interest to their school works as well. They also expressed that performance of good results in school is counted more than good performance in any kind of co-curricular activities. The sample was observed to be jolly and friendly and at the same time mixing freely and friendly with their teachers and friends.

The investigator next dealt with the sample marked under maladjusted group. In the similar way, the investigator visited them many a times in school and at home in order to create an air of friendliness. In a loving and friendly environment the questionnaires were distributed. They were also explained the purpose of questionnaires and that their names will be kept secret and unpublished.

While answering the questionnaires, a nervous tendency was observed. They were told many a times to give the true answers. The answers in the questionnaire form, particularly in the educational and health data were unsatisfactory.

During observation in school, it was found that they like to stay alone. They avoid playing with their friends in and out of school hours. They were also reported to be staying
out of participations in co-curricular programme of the school. Two boys of the selected sample were found to be rough, unruly, defying the commands of the seniors and teachers. These students were found to be below average in their school works.

In a comparison note, it can be well marked that the students participating in social as well as co-curricular activities are better adjusted than the ones who avoids and does not participate.

**Teachers:**

The investigator had discussions with the teachers in charge of games and sports of the secondary schools. Questionnaires were distributed to collect their opinions regarding the importance of co-curricular activities in the students' life, and the regular participation of students in these activities. (The questionnaire distributed to the teachers is shown in appendix IV).

Out of one hundred questionnaires distributed, sixty questionnaires were selected on the basis of complete answers and legible handwriting.

The teachers whole heartedly support co-curricular activities programme. They have expressed that such a good programme is failing to put a strong grip in the schools due to availability of good campus or fields, school halls, lack of sufficient funds. In order to arouse more interests among the students, more and more new activities should be introduced.
They also feel that the Government should take new interests and assist financially so that co-curricular activities play a vital role in the life of the students.

Parents:

A separate interview was taken to twenty parents. Out of this sample, fifteen showed liberal attitude towards participation in different forms of co-curricular activities. They feel that participation in such activities helps in the all-round development of the children, but expressed at the same time that due to keen competitions in studies, they are bound to restrict the participations of their children in such activities. They also feel that participations in such activities has helped their children physically, and also cultivating good habits, and manners.

The rest of the interviewed parents complained that regular participations in co-curricular activities has withdrawn their interests from studies. The children feel tired to study after participations in such activities. These parents have a negative attitude towards co-curricular programme.
C. The Effect of Participation of Co-curricular Activities on the Mental Aspect of the Adolescent Girls and Boys:

A study on the influence of participation of co-curricular activities in the mental aspect of adolescent girls and boys have been made. To find out the effect of participation in this aspect, the same procedure is adopted as is in the physical, social and emotional aspects. An analysis and interpretations of the results of this study is discussed in detail below.

A total number of eight hundred girls and boys of secondary schools ranging from class VIII to class X were taken as a sample and questionnaires set up on mental aspects were distributed. Earlier the students were requested to give correct answer and the purpose of such study was explained clearly. They were told that the answers will be a secret only to the investigator. The questionnaires were collected and a scrutiny was made regarding complete, incomplete and over-writing statements. After a lapse of one month, another set of the same type of questionnaires were distributed to the selected four hundred sample from the earlier eight hundred. The answers of these students were verified with their first ones, and those found incomplete, incorrect and doubtful were eliminated. From this sample two hundred were selected and another set of questionnaire were distributed. Here with the help of teachers and
Principal, the students were grouped into two groups. The group of students who shows interest and participates in co-curricular activities were termed experimental group. The other group who lacks interest and does not participate in activities were termed control group. These two groups consisted of both boys and girls. The scores of both these groups have been analysed and results interpreted by adopting the same statistical procedure as done earlier in the physical, social, and emotional aspects. The sample of the questionnaire in the mental aspect is given in the appendix.

The given five statements in the questionnaire were as follows, which enquires about the effect of participation in various co-curricular activities programme of the school and outside the school.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Now, I can think independently</td>
<td>........ True or false</td>
</tr>
<tr>
<td>2. Now, I enjoy participating in good talks and discussions</td>
<td>........ True or false</td>
</tr>
<tr>
<td>3. I feel that my reasoning power is gradually improving</td>
<td>........ True or false</td>
</tr>
<tr>
<td>4. I feel strongly that both boys and girls should equally participate in co-curricular activities</td>
<td>........ True or false</td>
</tr>
<tr>
<td>5. I am learning to be more careful and alert with all my works</td>
<td>........ True or false</td>
</tr>
</tbody>
</table>
Experimental Group

Out of one hundred students of the experimental group, 60 students scored 5 out of 5, 10 students scored 4 out of 5, 3 students scored 3 out of 5, the rest of the students scored 0 points. Here 1 point is given to the 'Yes' answer and no points to the 'No' answer. The total number of points scored by the 100 students.

\[ 5 \times 60 + 4 \times 10 + 3 \times 3 = 349 \]

\[ \therefore \text{The mean is } \frac{349}{100} = 3.49 \text{ (since mean } = \frac{1}{n} \sum x_i) \]

\[ \therefore \frac{1}{n} \sum x_i^2 = \frac{1}{100} \left( 25 \times 60 + 16 \times 10 + 9 \times 3 \right) \]

where \( n \), total number of student,

\( x_i \) pt. scored by \( i \)th student.

Now, standard deviation is

\[ SD = \sqrt{\frac{\frac{1}{n} \sum x_i^2 - \bar{x}^2}{\bar{x}}} \]

where \( n \), total number of student

\[ \bar{x}, \text{ mean} \]

\[ \sqrt{\frac{1}{100} \times 1647 - (3.49)^2} \]

\[ = \sqrt{16.87 - (3.49)^2} \]

\[ = \sqrt{16.87 - 12.1801} \]

\[ = \sqrt{4.6899} \]

\[ SD = 2.1656 \]

Now we have the mean as 3.49 and standard deviation as 2.1656 in the mental aspect of the experimental group.
Control Group

In the control group it was found after collection and scrutiny of the questionnaires 10 students scored 5 out of 5, 60 students scored 4 out of 5, 17 students scored 3 out of 5, and the rest of the students scored 0 points.

The total number of points scored by the 100 students,

$$= (5 \times 10 + 4 \times 60 + 3 \times 17) = 341$$

\[ \therefore \text{ The mean is } \frac{341}{100} = 3.41 \]

Now, \[ \frac{1}{n}\sum x_i^2 = (25 \times 10 + 16 \times 60 + 9 \times 17) = 1363 \]

Now the standard deviation is calculated,

$$\text{SD} = \sqrt{\frac{1}{n}\sum x_i^2 - \overline{x}^2}$$

$$= \sqrt{\frac{1}{100} \times 1363 - (3.41)^2}$$

$$= \sqrt{1363 - 11.6281}$$

$$= \sqrt{2.0019}$$

$$\text{SD} = 1.4149$$

Now mean of the control group = 3.41
and standard deviation is = 1.4149

The means and standard deviation of the groups are calculated and standard error was found out and the following
formula was applied -

\[ V'^D = \sqrt{\frac{V_1^2}{N_1} + \frac{V_2^2}{N_2}} \]

where \( V_1 \) is the SD in mental effect of the experimental group

\( V_2 \) is the SD in the mental effect of the control group.

\( N_1 \) and \( N_2 \) are the total number of students in experimental and control group respectively.

Now, \( V'^D \) = \[ \sqrt{\frac{(2.1656)^2}{100} + \frac{(1.4149)^2}{100}} \]

\[ = \sqrt{\frac{4.6698}{100} + \frac{2.0019}{100}} \]

\[ = \sqrt{0.0469 + 0.0200} \]

\[ = \sqrt{0.0669} \]

\[ = 0.25865 \]

\[ = 0.2587 \]

To find out the significance of difference for both the groups in mental area and total, critical ratio is calculated and the following formula is applied

\[ DR = \frac{D}{V'^D} \]

where \( D \) is the difference of the mean,
Therefore CR

\[
\frac{3.49 - 3.41}{0.2587} = \frac{0.08}{0.2587} = 0.3092
\]

The comparison between the two groups in the area of mental effect after participation in co-curricular activities is shown below in Table 18.

**Table No. 18**

The comparison between the two groups in the area of mental effect after participation in co-curricular activities.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean</th>
<th>SD</th>
<th>CR</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>3.49</td>
<td>2.1656</td>
<td>0.3092</td>
<td>The calculated value being less than tabulated value both at .01 level and .05 level. Hence not significant at .01 and .05 level</td>
</tr>
<tr>
<td>Control Group</td>
<td>3.41</td>
<td>1.4149</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:**

Now we can come to a conclusion that it is not significant both at .01 level and .05 level, which proves that there is a positive effect of participation in co-curricular activities on the mental aspect of the adolescent girls and boys.