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EFFECTIVENESS OF THE REMEDIAL PROGRAM ON M.ED. STUDENT TEACHERS FOR THE PROBLEM SOLVING OF 'COEFFICIENT OF CORRELATION'

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In post-graduation courses research is one of the important issue which studied by many researchers. Application of statistics is the techniques in researches are not easy task for the student teachers of M.Ed. so the researchers while teaching in the class got many problems regarding correlation of coefficient. The student of M.Ed. course only has knowledge at 10 or 12 standards. They don't have any education after this class. Hence the researcher has decided to develop a remedial program on correlation of coefficient and studied about its effectiveness.

Introduction –

Statistics concepts and techniques are today universally recognized as essential equipment for students of the behavioral science and research. It is also true for the field of education, society and psychology etc. statistics is the science of collecting, analyzing presenting and interpreting data. Currently it is the need to turn the large amount of data available in many fields into useful information has simulated both theoretical and practical developments in statistics. Data may be classified as either qualitative or quantitative and after classification of data the researcher has to apply the statistical tools to reach the decisions of the study. The specification of statistics enables the researcher to estimates his data analysis cost in time, money and make whatever arrangements are make whatever arrangements are necessary to reserve time on data processing facilities. Many methods are used to analyze the data as measures of central tendency, measures of dispersion, T-value etc. co-relation is one of them.

Correlation is a measure of association between variables in correlated data; the change in the magnitude of 1 variable is associated with a change in the magnitude of another variable either in the same or in the opposite direction. Many times the concept used in the context of linear relationship between 2 continuous variables. The Pearson correlation coefficient is used for jointly normally distributed data and The Spearman rank difference correlation method used as a measure of monotonic association. Both correlation of coefficient are scaled such that they range from -1 to +1, where 0 indicated that there is no linear or monotonic association. Hypothesis tests and confidence level can be used to address the statistical significance of the results and to estimate the strength of the relationship in the population from which the data were sampled. The aim of the research paper is to guide the students to use the statistical techniques for interpretation of correlation of coefficient.

Need and significance-

Test scores of the students re-present a series of determinations of a continuous variable taken along a numerical scale. The measure of the relationship between test scores and other measures of the relationship between test scores and other measures of performance the co-relation of co-efficient is important in education and psychology. The methods of correlation are of many types. The researcher can use method according to the topic and the data gather. In the syllabus of M. Ed. degree course as the SavitribaiPhulePune University,three methods of co-relation are given for study. The methods are as Rank difference Method of co-relation by Spearman, Product Moment Method by Pearson. Finding the co-relation with different methods is very difficult for the student teachers of M. Ed. Mostly the students studied Rank difference method of co-relation in B. Ed. degree course. The students of M.Ed. course of Dr. D. Y. Patilcollege of Education, Aurangabad are having difficulties to solve the problems regarding the correlation of coefficient.

Pearson product moment correlation method-

Correlation is a measure of monotonic association between 2 variables. In correlation data the change in the magnitude of 1 variable is associated with a change in the magnitude of another variable, either in the same or in the opposite direction. That means higher value of 1 variable tends to be associated with either in the same or in the opposite direction. In other words, higher values of 1 variable tend to be associated with either higher or lower values of the other variable and vice versa. The correlation is denoted by 'r'.

The Spearman Rank difference correlation method-

Spearman rank correlation can be used for an analysis of the association between data where relationship appears to be monotonic but nonlinear. It is a abbreviated as 'p/rho. In this method ordinal data can be ranked. There is not any restriction in use of Spearman's method of correlation in continuous variables. These are uses of correlation of coefficient in research.

For this purpose the researcher had conducted a research study on this topic. The researcher prepared a remedial program on the difficulties of these students and applied.

Objectives of the study-

1. To find out the difficulties of M.Ed. student teachers in calculating the problems on co-relation using the rank difference method of Spearman.
2. To study the difficulties of M.Ed. student teachers in calculating the problems on co-relation using the Pearson's method.
3. To study the difficulties of M.Ed. student teachers in calculating the problems on co-relation using the Pearson's method of scatter diagram.
4. To study the effect of the remedial program on the M.Ed. student teachers used to solve the difficulties getting in solution of the problems on the basis of co-relation of coefficient by Spearman and Pearson.

Assumptions –

1. M.Ed. student teachers studied co-relation coefficient in B.Ed. class.
2. M.Ed. students always get difficulties in solving the problem of statistics.

Hypothesis –

The researcher defined the null hypothesis –

1. There is no significant difference in the achievement pre-test and post-test of M.Ed. student teachers as using the Spearman's and Pearson's method of co-relation.

Research Method –

The researcher used the Experimental method of research to solve the problem of M.Ed. student teachers. The researcher firstly used the traditional method of teaching i.e. using Chalk and blackboard to teach the co-relation sums. After teaching, a pretest conducted to find out the quarries in solving the problems of co-relations. After some days a remedial program prepared to solve the quarries of the M.Ed. student teachers. It had applied as per plan of researcher. Lastly to find out the effect of the remedial program, again a post test conducted on the student teachers. The results of study, tested on the significance level of 0.05 and 0.01 of reliability.

Population and Sample –

There are 40 M.Ed. student teachers learning in the class but out of which 33 students got difficulties in solving the problems of co-relation of coefficient.

Tool –

Pre-Test and Post- Test is the tool used for data collection.

Variables –

1. **Dependent variable-** Remedial program
2. **Independent variable -** difficulties of the student teachers and Achievement of the student teachers.
3. **Constant variable-** The student teachers of M.Ed. student teachers.

Difficulties got in rank difference method and product moment method of co-relation –

1. Student teachers got problem in ranking the scores in order of merit by judging X and Y.
2. Formulating the table of D and D2.
3. Remembering correct formula of Spearman's rank difference and Pearson's product moment method.
4. To calculate the mean and distance of mean from scores in Pearson's method of co-relation.
5. Difficulties in multiplying the +numbers and –numbers of the columns XY.

The program used to solve the problems is as follows.

1. Use of scales and calculators as support system.
2. Power point presentation used for teaching of correlation.

3. Printing material with solved examples provided to get ideas for solving the sums.
4. Individual guidance for solving the problems of correlation.
5. Practice of solving the sums had given to the M.Ed. student teachers.

Data Analysis –

Pre-test- out of 37 student teachers 33 student teachers got difficulties. After analysis of data, only these students had given the treatment. The pre test was of 20 marks. Three examples had given for solution.

Difficulties got in solving the problems as follows-

Table no.1. Of analysis of difficulties-

Sr. no.	Item	Student (N)	Percentage (%)
01	Systematic chart formation	07	21.21
02	Ranking the score in order of merit	28	84.85
03	Formulating the table D1 and D2	23	69.70
04	Remember correct formula	17	51.51
05	Calculation of mean and distance of mean from scores	31	93.94
06	Multiplication of numbers in column	14	42.42
07	Significance level in the table	23	69.70

Post test-

The post test was of 20 marks. Three examples had given for solution in this test also. The scores got in this test are analyzed and the significant difference calculated.

Table no. 2- Significant difference of scores of Pre-test and Post-test-

Group	Mean	Standard Deviation	Sample	t-value	Significant Difference	Acceptance /rejection of hypothesis
Pre Test	8.15	3.11	33	4.25	0.05(significant)	Rejected
Post test	14.06	3.84	33		0.01(significant)	

Degree of freedom (df) = N-2 = 33-1 =32. CR value for df 31 is 2.03 and 2.72 at the level of 0.05 and 0.01 which is less than the t-value 4.25. So there is significant difference in the pre test and post test.

Major findings-

1. Most of the student teachers got difficulties in ranking the no. in order merits.
2. Most of the M.Ed. student teachers got difficulties in the calculation of mean and distance of

mean from the scores.

3. There is significant difference in the achievement of pre test and post test M.Ed. student teachers.
4. It means that the remedial program is useful to remove the errors or difficulties of student teachers committed in solving the problems of co-relations on the basis of different methods.

Conclusions-

1. Use of power point, practice for solution of the problem, use of printing material, scales, calculators, charts, as supportive system for solution of the Spearman and Persons method of correlation is effective for the student teachers.
2. Interest can be developing in the student teachers with using the remedial program.
3. Fear of the student teachers towards about statistical application can be reduced.
4. Utilization of this statistical technique in research will be do at large number.

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