C H A P T E R - V

R E S U L T S A N D D I S C U S S I O N
R E L A T E D T O
P U P I L - T E A C H E R S

CHAPTER V

RESULTS AND DISCUSSION RELATED TO PUPIL—TEACHERS

5.0.0 INTRODUCTION

The present study was conducted to fulfil the five objectives as mentioned in chapter I. The results related to the first and second objectives have been presented in chapter III and chapter IV respectively. The present chapter is devoted to present the results and discussion related to the remaining three objectives. These objectives are:

(3) To study the effect of feedback (in the form of comments) upon changing the classroom performance of the pupil-teachers.

(4) To study the relationship between qualifications, teaching methods, sex, place of residence and teaching experience of pupil-teachers and their classroom performance in terms of observers' comments and achievement marks.

(5) To study the relationship between the observers' comments and achievement marks obtained by the pupil-teachers in practice lessons and achievement marks obtained by them at the annual examination.

5.1.0 RESULTS AND DISCUSSION

The data related to the demographic variables of pupil-teachers and observers, and the types of comments were collected as mentioned in chapter II. The data related to the last three objectives as stated in caption 5.0.0 were analysed by using Analysis of Variance (2 x 3) with repeated measures followed by the Newman-Keuls method as given in the book titled "Statistical Principles in Experimental Design" by B.J.Winer, page No.309 and product-moment correlation. For variables (a) positive comments (b) negative comments and (c) achievement marks, the Newman-Keuls method was employed to test the significance of difference between three lesson stages. The variablewise results are presented in the following captions.

5.2.0 ANALYSIS OF VARIANCE FOR POSITIVE COMMENTS

The major effects of different levels of qualifications, different lesson stages and their interaction effect upon the positive comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.1.

TABLE 5.1

Summary of Analysis of Variance for Positive Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-value
Between Subjects -	322.230	249		
Qualifications (A)	10.070	1	10.070	7.998 **
Subjects within Groups	312.160	248	1.259	
Within Subjects -	396.548	500		
Lesson Stages (B)	23.564	2	11.782	15.680 **
A x B	0.274	2	0.137	0.182
B x Subjects within Groups	372.710	496	0.751	

** Significant at 0.01 level.

5.2.1 Positive Comments with respect to Qualifications of Pupil-Teachers

The F-value for the positive comments received by the graduate and postgraduate pupil-teachers is 7.998 (vide Table 5.1). This value is significant at 0.01 level with df of 1/248. It means that the positive comments received by the pupil-teachers having different qualifications differ significantly.

Further, the mean of positive comments received by the graduate pupil-teachers is 1.82 which is significantly higher than the mean of the positive comments received by postgraduate pupil-teachers, namely, 1.50. It is inferred that the graduate pupil-teachers did better in their teaching practice in comparison to their counterparts.

On the basis of these results, the hypothesis 9 (H9) namely, "There is no significant difference between the means of thé comments (positive/negative) obtained by the pupil-teachers of different qualifications (graduate/postgraduate) in practice lessons",in the case of positive comments, is rejected.

The results show that the postgraduate pupil-teachers differed significantly from the graduate pupil-teachers in receiving positive comments in their lessons. The mean of positive comments received by graduate pupil-teachers was higher than that of the postgraduate pupil-teachers. This shows that the graduate pupil-teachers received more positive comments for reinforcement, motivation and appreciation etc., than the postgraduate pupil-teachers. The reason for this could be that

the graduate pupil-teachers might be young and inexperienced and, therefore, they might be nervous during classroom teaching. Hence, in order to encourage them, observers might have given more positive comments. On the other hand, the postgraduate pupil-teachers were mature in understanding and better informed about the subject matter. Due to this, they might have taught with less fear and might not be nervous during the teaching. Because of this, observers might not have given many positive comments to them for encouragement and motivation. Hence, the postgraduate pupil-teachers might have received positive comments only on their strong points/aspects of teaching. Another probable reason could be that observers might have high expectations for the classroom performance, from the postgraduate pupil-teachers and, in turn, did not give more weightage to it. But, in the case of the graduate pupil-teachers, observers might have appreciated small act and gave more positive comments.

5.2.2. Positive Comments with respect to Lesson Stages

The F-value for the positive comments received by the pupil-teachers at different lesson

stages is 15.680 (vide table 5.1) which is significant at 0.01 level with df of 2/496. It means that the means of positive comments received by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.1 (a).

TABLE 5.1 (a)

Significance of Difference between Means of the Positive Comments of Different Lesson Stages Using the Newman-Keuls Method

Lesson Stages		Final b_3	Intermediate b_2	Initial b_1	r	$S\bar{B}q$ 0.95 (r, 496)	$S\bar{B}q$ 0.99 (r, 496)
Ordered Means		1.42	1.58	1.99			
Difference between pairs		b_3	b_2	b_1			
	b_3		0.16 *	0.57 **	3	0.182	0.227
	b_2			0.41 **	2	0.152	0.200

* Significant at 0.05 level

** Significant at 0.01 level

$S_{\bar{B}} = 0.055$

It can be seen from Table 5.1 (a) that the mean of positive comments received by the pupil-teachers

at the initial stage is significantly higher than the intermediate and final stages. In both cases, the level of significance is 0.01 while, on the other hand, the mean of positive comments at the intermediate stage is significantly higher than the final stage and the level of significance is 0.05. It may therefore be inferred that the mean of positive comments decreases as the number of lessons given by the pupil-teachers increases. Thus, the hypothesis 7 (H7), namely, "There is no significant difference between the means of comments (positive/negative) given by observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" in the case of positive comments is rejected.

The results show that the mean of positive comments received by the pupil-teachers at initial stage (1 to 10 lessons), intermediate stage (11 to 20 lessons) and final stage (21 to 30 lessons) differed significantly. The mean of positive comments received by the pupil-teachers at the initial stage was significantly higher than the mean of positive comments received at the intermediate stage and also that of the final stage. Similarly, the mean of positive comments at

the intermediate stage was significantly higher than the final stage. These comments are related to Golbal Evaluation, Pupil involvement, etc. Some of the examples are, "Good attempt", "Work hard, you can do better", "You were helping each student for classroom involvement" etc. This means that as number of lessons increases the occurance of positive comments goes on decreasing.

Perhaps, the pupil-teachers were given more positive comments in the form of reinforcement at the initial stage. Subsequently, the positive comments decreased in the intermediate and final stages. The observers might have commented only on new and individualistic behaviour of the pupil-teachers. Another probable reason could be that observers must have lost interest in giving positive comments at the advanced stage of practice teaching as it becomes a routine affair. Thus, the positive comments decreased as the stage of practice lessons advanced.

5.2.3 The Interaction Between Qualifications of Pupil-Teachers and Lesson Stages

From Table 5.1, it can be seen that the F-value for the interaction between qualifications

of the pupil-teachers and the lesson stages is 0.182 which is not significant. This means that there is no significant interaction effect on the positive comments due to the qualifications and the lesson stages. This can be seen from Table 5.1 (b) and Figure 5.1.

TABLE 5.1 (b)

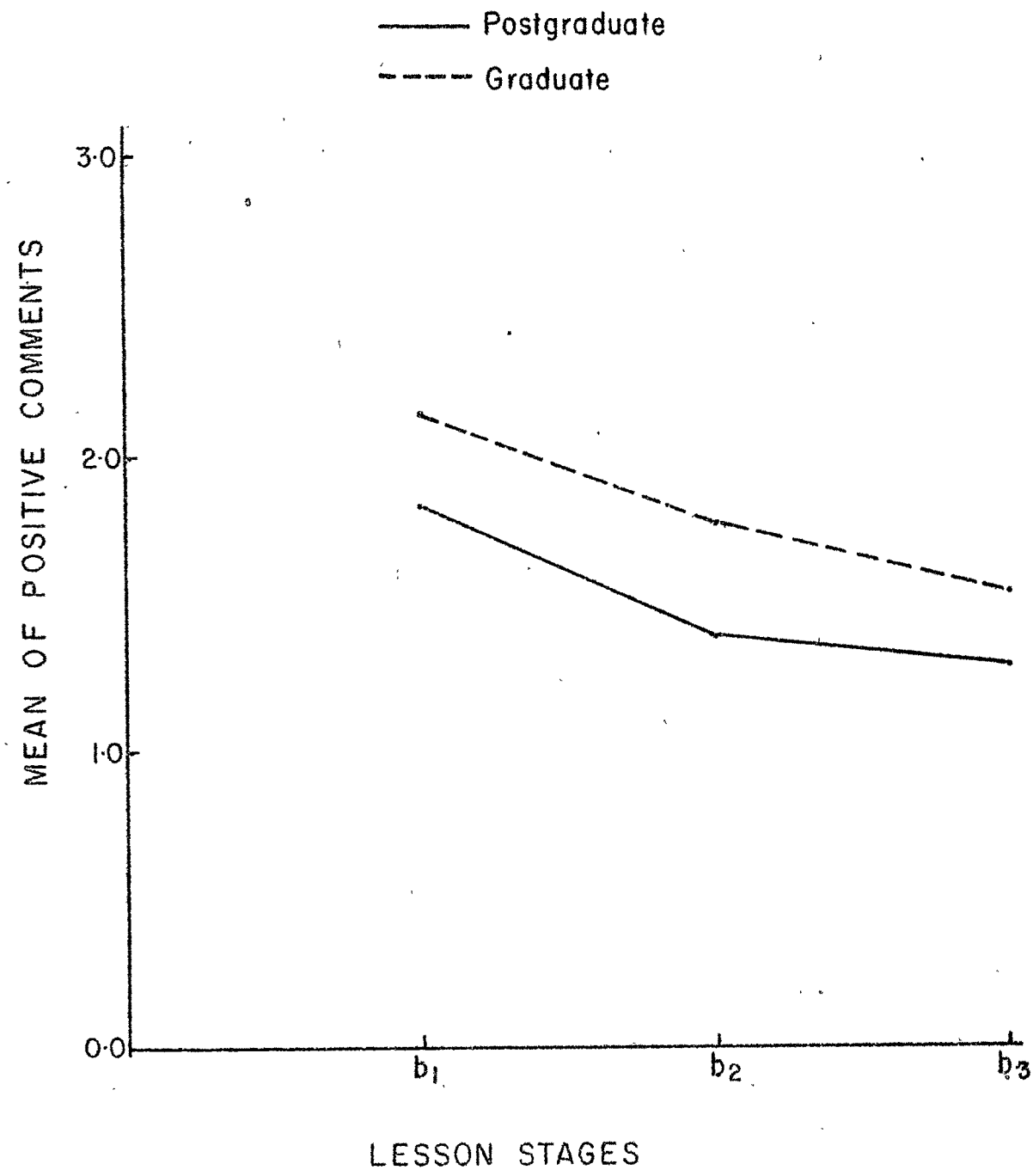
Mean of Positive Comments of Pupil-Teachers of different Qualifications.

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Graduate Pupil-Teachers b_1	2.14	1.77	1.54
Postgraduate Pupil-Teachers b_2	1.83	1.39	1.29

It, further, means that/postgraduate and gra- /the duate pupil-teachers maintained similar progress in all the three stages. The decrease in the means of positive comments from initial to final stages was gradual.

Fig. 5·1

INTERACTION BETWEEN QUALIFICATIONS OF PUPIL-TEACHERS AND LESSON STAGES



5.3.0 ANALYSIS OF VARIANCE FOR NEGATIVE COMMENTS

The major effects of different levels of qualifications, different lesson stages and their interaction effect upon the negative comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.2.

T A B L E 5.2

Summary of Analysis of Variance for Negative Comments of Pupil-Teachers.

Source of Variance	S.S.	df	M.S.S.	F-Value
Between Subjects	486.747	249		
Qualifications (A)	0.137	1	0.137	0.070
Subjects within Groups	486.610	248	1.962	
Within Subjects	855.838	500		
Lesson Stages (B)	466.620	2	233.310	297.362**
A x B	0.069	2	0.034	0.044
B x Subjects within Groups	389.149	496	0.785	

** Significant at 0.01 level

5.3.1 Negative Comments with respect to Qualifications of Pupil-Teachers.

The F-value for the negative comments received by the graduate and postgraduate pupil-teachers

is 0.070 which is not significant. This means that the negative comments received by the pupil-teachers having different qualifications do not differ significantly. Furthermore, the mean of negative comments received by the graduate pupil-teachers is 1.890 which is not significantly different from the mean of negative comments received by the postgraduate pupil-teachers which is 1.934. This means both graduate and postgraduate pupil-teachers, on an average, get equal number of negative comments.

On the basis of these results, the hypothesis 9 (H9), namely, "There is no significant difference between the means of comments (positive/negative) obtained by the pupil-teachers of different qualifications (graduate/postgraduate) in practice lessons" in the case of negative comments is not rejected.

The results show that different qualifications did not bring significant difference in receiving negative comments. That is, irrespective of the level of qualifications of the pupil-teachers, they received, on an average, equal number of negative comments. This may be because majority of the graduate as well as the postgraduate pupil-

teachers were inexperienced. In the real classroom situations both might have committed similar type of mistakes related to different aspects of classroom teaching. This might have led the observers to give, on an average, equal number of negative comments.

5.3.2 Negative Comments with respect to Lesson Stages

The F-value for the negative comments received by the pupil-teachers with different qualifications at different lesson stages is 297.362 which is significant at 0.01 level with df of 2/496 (vide Table 5.2). It means that the mean of negative comments received by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.2(a).

TABLE 5.2 (a)

Significance of Difference between Means of Negative Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Final b_3	Intermediate b_2	Initial b_1
Ordered Means	0.90	1.46	3.39

		b_3	b_2	b_1	r	$S_{\bar{B}q}$ 0.95 (r,496)	$S_{\bar{B}q}$ 0.99 (r,496)
Diff. between pairs	b_3		0.56**	2.49**	3	0.185	0.231
	b_2			1.93**	2	0.155	0.204

** Significant at 0.01 level

$S_{\bar{B}} = 0.056$

It can be seen from Table 5.2 (a) that the mean of the negative comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and the final stages. Further, the mean of negative comments at the intermediate stage is significantly higher than the final stage. In all three cases, the differences are significant at 0.01 level. It is, therefore, deduced that the mean of negative comments decreases as the number of lessons given by the pupil-teachers increases.

Thus, the hypothesis 7 (H7), namely, "There is no significant difference between the means of comments (positive/negative) given by observers to pupil-teachers at different practice lesson stages of practice-teaching programme" in the case of negative comments is rejected.

The results show that the mean of negative comments received by the pupil-teachers at the initial stage (1 to 10 lessons), intermediate stage (11 to 20 lessons) and final stage (21 to 30 lessons) differed significantly. The pupil-teachers received more negative comments at the initial stages. These negative comments were related to the problems of presentation, content, method, errors, factual mistakes, discipline problems, etc. The excess of these shortcomings at the initial stage could be on account of the fact that the pupil-teachers were exposed to real classroom situations for the first time. They were just beginning to learn the skills of teaching. Subsequently, when they learnt the techniques and methods of teaching, they committed lesser mistakes and, in turn, received lesser number of negative comments.

The other probable reason for the decrease in number of negative comments at the later two stages could be that the observers did not like to mention same negative comments time and again. When observers felt that the pupil-teachers cannot improve any more, they reduced giving suggestions. They must have given negative comments only on such occasions where factual mistakes occured and/or problematic situations arose such as, - "You do not know where is equator, better you leave this subject.", "He was sit near the Windmill" "Students are making noise and you are teaching undisturbed", etc.

5.3.3 The Interaction between Qualifications of Pupil-Teachers and Lesson Stages

From Table 5.2, it can be seen that the F-value for the interaction between the qualifications of pupil-teachers and the lesson stages is 0.044 which is not significant. This means that there is no significant interaction effect on the negative comments due to the qualifications and the lesson stages. This can be seen from Table 5.2 (b) and Figure 5.2.

TABLE 5.2 (b)

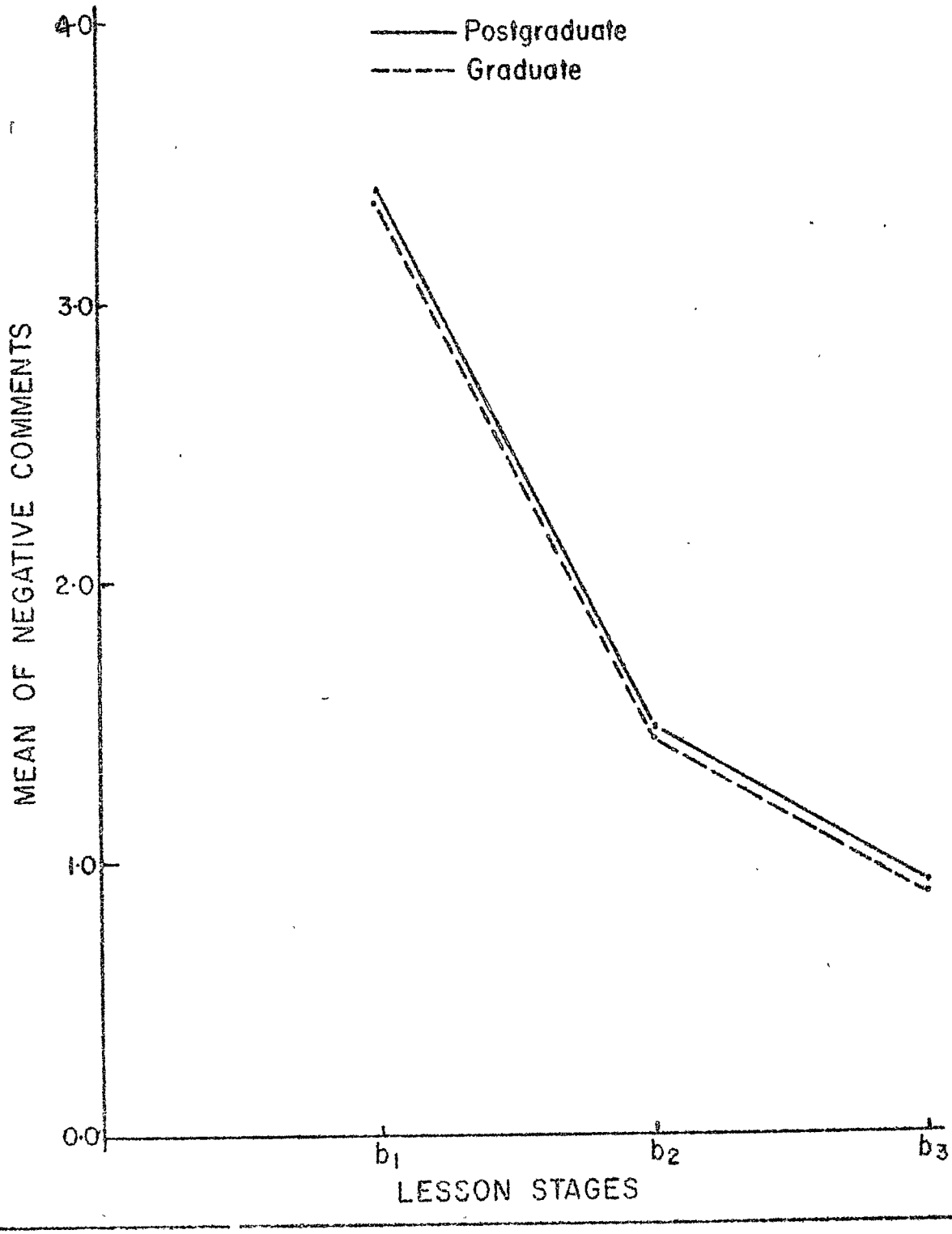
Mean of Negative Comments of Pupil-teachers of different Qualifications

	Initial b1	Intermediate b2	Final b3
Graduate Pupil-Teachers	3.36	1.44	0.88
Postgraduate Pupil-Teachers	3.41	1.47	0.92

From Table 5.2 (b) and Figure 5.2, it can be seen that both graduate as well as postgraduate pupil-teachers received, on an average, more negative comments at the initial stage than the intermediate stage and also the final stage. Thus, both groups committed more mistakes at the initial stage as compared to the intermediate and final stages. This shows that both the groups had improved over their weak points and they improved steadily with the increasing number of lessons. None of the group improved faster than the other and, therefore, there was no interaction effect between the qualifications of pupil-teachers and the lesson stages on the negative comments received by them.

Fig. 5·2

INTERACTION BETWEEN QUALIFICATIONS OF PUPIL-TEACHERS AND LESSON STAGES



5.4.0 ANALYSIS OF VARIANCE FOR ACHIEVEMENT MARKS

The major effects of different levels of qualifications, different lesson stages and their interaction effect upon the achievement marks received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.3 below.

TABLE 5.3

Summary of Analysis of Variance for Achievement marks of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	496.169	249		
Qualifications (A)	2.329	1	2.329	1.170
Subjects within Groups	493.840	248	1.991	
Within Subjects:	268.949	500		
Lesson Stages (B)	113.573	2	56.787	181.544**
A x B	0.206	2	0.103	0.329
B x Subjects within Groups	155.170	496	0.313	

** Significant at 0.01 level

5.4.1 Achievement Marks with respect to Qualifications of Pupil-Teachers

The F-value for the achievement marks obtained by the graduate and postgraduate pupil-teachers is 1.170 which is not significant. It means that the achievement marks obtained by the pupil-teachers having different qualifications do not differ significantly. Further, the mean of achievement marks obtained by the graduate pupil-teachers is 6.194 which is not significantly different from the mean of achievement marks of 6.346 obtained by the postgraduate pupil-teachers. This means that there is no significant difference in the classroom performance of the graduate and postgraduate pupil-teachers.

On the basis of these results, the hypothesis, 10 (H 10) namely, "There is no significant difference between the means of achievement marks obtained by the pupil-teachers of different qualifications (graduate/postgraduate) in practice lessons" is not rejected.

The results show that the mean of achievement marks of the graduate pupil-teachers did not differ significantly from that of the postgraduate pupil-teachers. That is, both groups of pupil-

teachers might have improved upon their weak points to the same extent because they got, on an average, equal number of negative comments. The observers pointed out the weak points of the pupil-teachers to the same extent.

5.4.2 Achievement Marks with respect to Lesson Stages

The F-value for the achievement marks obtained by the pupil-teachers at the different lesson stages is 181.544 (vide Table 5.3). This value is significant at 0.01 level with df of 2/496. It means that the mean of achievement marks obtained by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.3 (a).

T A B L E 5.3 (a)

Significance of Difference between Means of Achievement Marks of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Initial b_1	Intermediate b_2	Final b_3
Ordered Means	5.57	6.43	6.83

		b_1	b_2	b_3	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Difference between pairs.	b_1		0.86**	1.26**	3	0.116	0.144
	b_2			0.40**	2	0.097	0.127

** Significant at 0.01 level

$S_{\bar{B}} = 0.035$

It can be seen from Table 5.3 (a) that the mean of achievement marks obtained by the pupil-teachers at the final stage was significantly higher than the intermediate and the initial stages. Similarly, the mean of achievement marks at the intermediate stage was significantly higher than the initial stage. In all the three cases, the level of significance is 0.01 level. It may,

therefore, be deduced that the mean of achievement marks increases as the number of lessons given by the pupil-teachers increases. Thus, the hypothesis 8 (H 8) namely, "There is no significant difference between the means of achievement marks given by observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" is rejected.

The results show that there was a definite improvement in performance of the pupil-teachers as the number of lessons increased. Pupil-teachers received less achievement marks at the initial stage than at the intermediate and final stages. Similarly, achievement marks at the intermediate stage were less than the final stage. It means that at initial stage of practice-teaching, pupil-teachers got less achievement marks and at the final stage they got more achievement marks.

Pupil-teachers received less achievement marks at the initial stage of practice-teaching because classroom situations and methods of teaching were new to them. But, gradually, as the practice-teaching progressed and number of

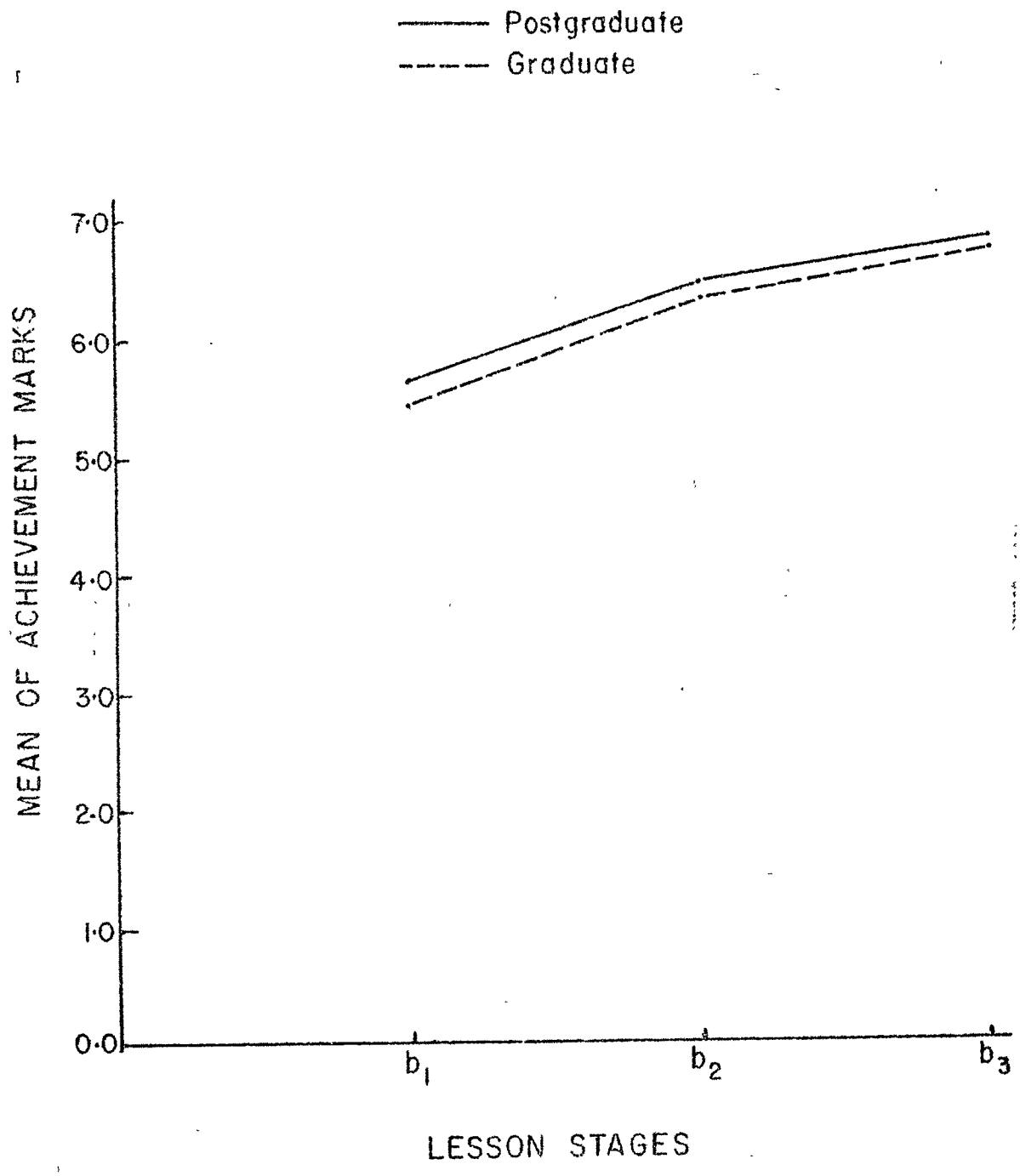
lessons given by them increased, pupil-teachers improved in their classroom performance and, in turn they got more achievement marks. At the final stage they improved to the maximum according to their capacity. Thus, there was a gradual change in the performaane of the pupil-teachers due to continuous feedback in the form of positive and negative comments which is reflected in their achievement marks.

5.4.3 The Interaction between Qualifications of Pupil-Teachers and Lesson Stages

From Table 5.3, it can be seen that the F-value for the interaction effect between the qualifications of pupil-teachers and the lesson stages is 0.329 which is not significant. This means that there is no significant interaction effect on the achievement marks due to the qualifications and the lesson stages. This can be seen from Table 5.3 (b) and Figure 5.3.

Fig. 5·3

INTERACTION BETWEEN QUALIFICATIONS OF PUPIL-TEACHERS AND LESSON STAGES



T A B L E 5.3 (b)

Mean of Achievement Marks of Pupil-Teachers Having Different Qualifications

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Graduate Pupil-Teachers	5.46	6.36	6.77
Postgraduate Pupil-Teachers	5.67	6.49	6.88

From Table 5.3(b) and Figure 5.3, it can be seen that both the groups had improved as the number of lessons progressed. There was a steady improvement in both the cases and, therefore, there was no significant interaction effect between the qualifications of pupil-teachers and the lesson stages on achievement marks.

5.5.0 ANALYSIS OF VARIANCE FOR POSITIVE COMMENTS

The major effects of different teaching methods, different lesson stages and their interaction effect upon the positive comments received by the pupil-teachers were studied by

employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.4.

TABLE 5.4

Summary of Analysis of Variance for Positive Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	322.277	249		
Teaching Methods (A)	0.187	1	0.187	0.144
Subjects within Groups	322.090	248	1.299	
Within Subjects:	406.048	500		
Lesson Stages (B)	33.272	2	16.636	22.140**
A x B	0.096	2	0.048	0.062
B x Subjects within Groups	372.680	496	0.751	

** Significant at 0.01 level

5.5.1 Positive Comments with respect to Teaching Methods of Pupil-Teachers

It can be seen from Table 5.4 that F-value for the positive comments received by the pupil-teachers of science and humanities teaching methods is 0.144. This value is not significant. It means

that the positive comments received by the pupil-teachers of different teaching methods do not differ significantly. Further, the mean of positive comments received by the science pupil-teachers is 1.739 and by the humanities pupil-teachers is 1.774. These two means of positive comments do not differ significantly. It is, therefore, inferred that the science pupil-teachers and the humanities pupil-teachers do not differ significantly in their classroom performance.

On the basis of this result, the hypothesis 11 (H 11) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the pupil-teachers of different teach-methods (science/humanities) in practice lessons" in the case of positive comments is rejected.

From the results, it can be observed that the science and humanities pupil-teachers did not differ significantly in receiving positive comments. That is, they received, on an average, equal number of positive comments. This means that the teaching methods did not have any influence

on the performance of pupil-teachers. Both the groups were given motivating and appreciating comments equally. As the pupil-teachers were new to techniques of teaching, their performance was also of the same type and hence they might have received, on an average, equal number of positive comments.

5.5.2 Positive Comments with respect to Lesson Stages

The F-value for the positive comments received by the pupil-teachers of science and humanities subjects at the different lesson stages is 22.140 which is significant at 0.01 level with df of 2/496 (vide Table 5.4). This means that the mean of positive comments received by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.4 (a).

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TABLE 5.4 (a)

Significance of Difference Between Means of Positive Comments of Different Lesson Stages, Using the Newman-Keuls Method

Lesson Stages		Final b_3	Intermediate b_2	Initial b_1			
Ordered Means		1.51	1.73	2.10			
		b_3	b_2	b_1	r	$S\bar{B}q$ 0.95 (r, 496)	$S\bar{B}q$ 0.99 (r, 496)
Difference between pairs	b_3		0.22**	0.59**	3	0.182	0.227
	b_2			0.37**	2	0.152	0.200

** Significant at 0.01 level

$S\bar{B}$ = 0.055

It can be observed from Table 5.4 (a) that the mean of positive comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and the final stages. Further, the mean of positive comments at the intermediate stage is significantly higher than the final stage. The differences in all the three cases are significant at 0.01 level. It may, therefore, be inferred that the mean of positive comments decreases as the number of lessons given by the pupil-teachers increases. Thus, the hypothesis 7 (H 7)

namely, "There is no significant difference between the means of comments (positive/negative) given by observers to the pupil-teachers at different practice lessons stages of practice-teaching programme" in the case of positive comments is rejected.

The discussion of these results is the same as given in caption 5.2.2

5.5.3 The Interaction Between Teaching Methods Of Pupil-Teachers and Lesson Stages

From Table 5.4, it can be seen that the F-value for the interaction between the teaching methods of the pupil-teachers and the lesson stages is 0.062 which is not significant. This means that there is no significant interaction effect on the positive comments due to the teaching methods and the lesson stages. This can be seen from Table 5.4 (b) and Figure 5.4.

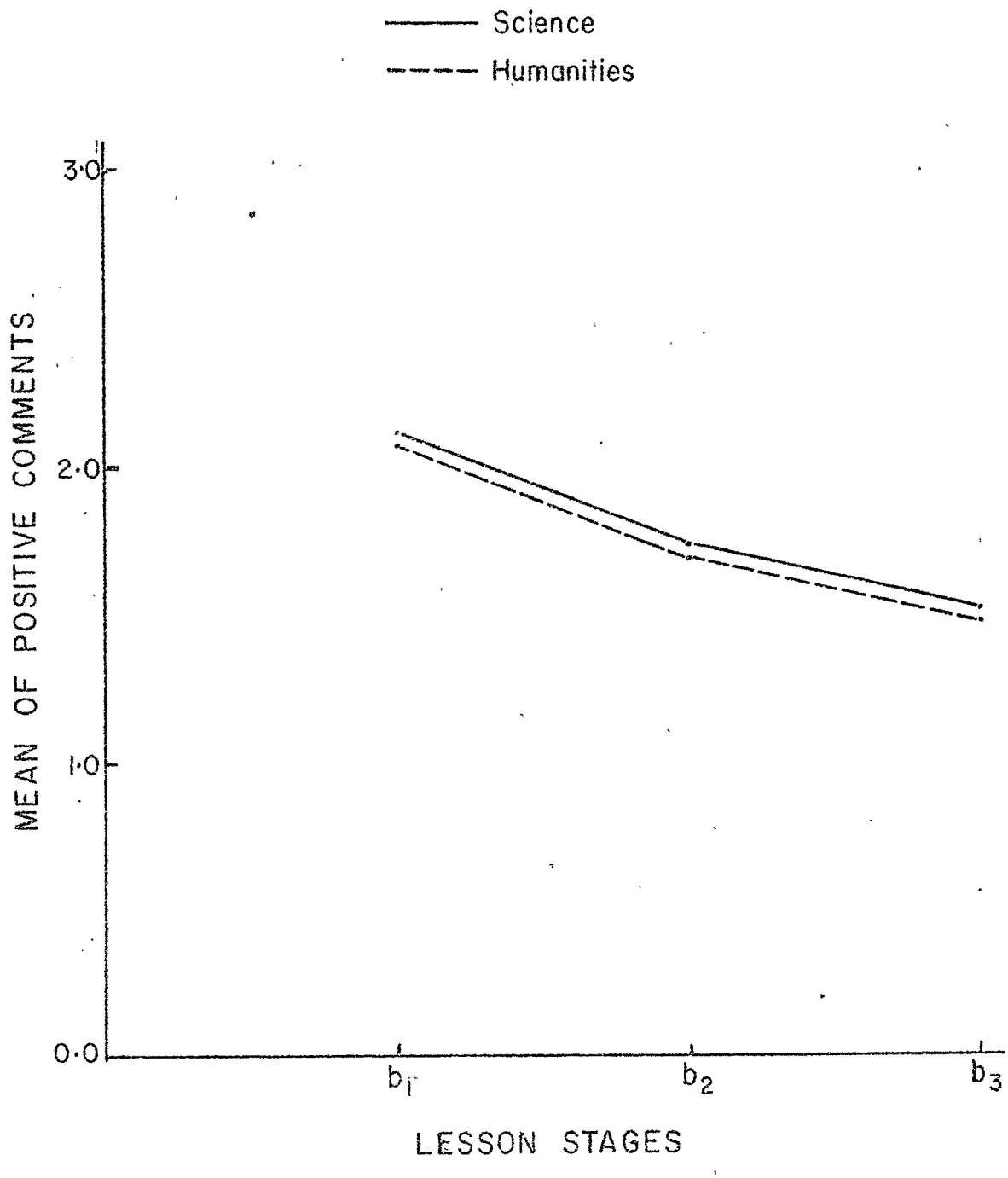
T A B L E 5.4 (b)

Mean of Positive Comments of Pupil-Teachers with different Teaching Methods

	Initial Stage b 1	Intermediate Stage b 2	Final Stage b 3
Science Pupil-Teachers	2.12	1.75	1.53
Humanities Pupil-Teachers	2.08	1.70	1.49

Fig. 5·4

INTERACTION BETWEEN TEACHING METHODS OF PUPIL-TEACHERS AND LESSON STAGES



From Table 5.4 (b) and Figure 5.4, it can seen that the science and humanities pupil-teachers maintained similar progress in all the three stages. The decrease in the mean of positive comments from initial to final stages was gradual.

5.6.0 ANALYSIS OF VARIANCE OF NEGATIVE COMMENTS

The major effects of different teaching methods, different lesson stages and their interaction effect upon the negative comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.5

TABLE 5.5

Summary of Analysis of Variance for Negative Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	486.415	249		
Teaching Methods (A)	18.692	1	18.692	9.911**
Subjects within Groups	467.723	248	1.886	
Within Subjects:	971.269	500		
Lesson Stages (B)	581.321	2	290.661	375.095**
A x B	5.608	2	2.804	3.618 *
B x subjects within Groups	384.340	496	0.775	

**Significant at 0.01 Level *Significant at 0.05 level

5.6.1 Negative Comments with respect to Teaching Methods of Pupil-Teachers

The F-value for the negative comments received by the pupil-teachers of science and humanities subjects is 9.911 which is significant at 0.01 level with df of 1/248 (vide Table 5.5). This signifies that the negative comments received by the pupil-teachers having science and humanities teaching methods differ significantly. Moreover, the mean of negative comments received by the humanities pupil-teachers is 1.988 which is significantly higher than the mean of negative comments 1.620 received by the science pupil-teachers. This reflects that the science pupil-teachers do better in their teaching practice in comparison to the pupil-teachers of humanities subjects.

On the basis of these results, the hypothesis 11 (H 11) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the pupil-teachers of different teaching methods (science/humanities) in practice lessons" in the case of negative

comments is rejected.

The results show that the science pupil-teachers differed significantly from the humanities pupil-teachers in receiving negative comments. Science pupil-teachers received significantly less negative comments than the humanities pupil-teachers. It can be inferred from this result that the science pupil-teachers committed less mistakes than the humanities pupil-teachers. Science pupil-teachers received less negative comments because of their sound preparation and systematic way of teaching in comparison to humanities pupil-teachers.

5.6.2 Negative Comments with respect to Lesson Stages

The F-value for the negative comments received by the pupil-teachers at the different lesson stages is 375.095 which is significant at 0.01 level with df of 2/496 (vide Table 5.5).

This means that the mean of negative comments received by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between

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them was tested by using the Newman-Keuls method. The results are given in Table 5.5 (a).

TABLE 5.5 (a)

Significance of Difference between Means of Negative Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages		Final b_3	Intermediate b_2	Initial b_1	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Ordered Means		0.85	1.36	3.22			
Difference between pairs	b_3		0.51**	2.37**	3	0.185	0.231
	b_2			1.86**	2	0.155	0.204

** Significant at 0.01 level
$S_{\bar{B}}$ = 0.056

It can be observed from Table 5.5 (a) that the mean of negative comments received by the pupil-teachers at the initial stage was significantly higher than the intermediate and the final stages. Similarly, the mean of negative comments at the intermediate stage was significantly higher than the initial stage. In all the cases, the level of significance is 0.01. It is, therefore,

deduced that the mean of negative comments decreases as the number of lessons given by the pupil-teachers increases. Thus, the hypothesis 7 (H 7) namely, "There is no significant difference between the means of comments (positive/negative) given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" in the case of negative comments is rejected.

The results are same as discussed in caption 5.3.2 and, therefore, they have not been discussed here again.

5.6.3 The Interaction between Teaching Methods of Pupil-Teachers and Lesson Stages.

From Table 5.5, it can be seen that the F-value for the interaction between the teaching methods of pupil-teachers and the lesson stages is 3.618 which is significant at 0.05 level with df of 2/496. This means that there is a significant interaction effect on the negative comments due to the teaching methods and the lesson stages. This can be seen from Table 5.5 (b) and Figure 5.5.

TABLE 5.5 (b)

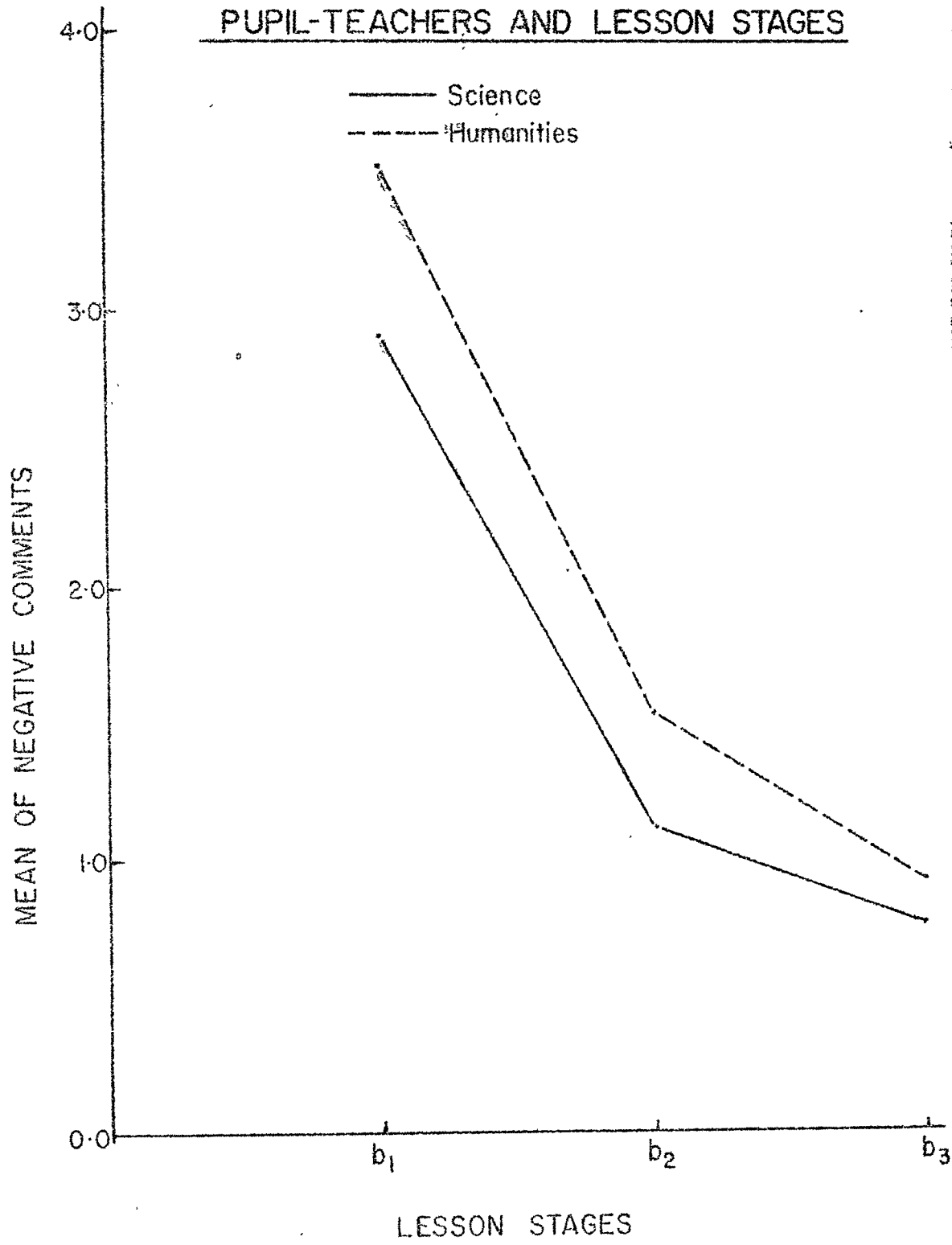
Means of Negative Comments of Pupil-Teachers with Different Teaching Methods

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Science Pupil-Teachers	2.91	1.18	0.77
Humanities Pupil-Teachers	3.52	1.53	0.92

From Table 5.5 (b) and Figure 5.5, it can be seen that both science as well as humanities pupil-teachers received, on an average, more negative comments at the initial stage, than the intermediate stage, and final stage. Thus, both the groups committed more mistakes at the initial stage as compared to the intermediate and final stages. This shows that both the groups of pupil-teachers had improved over their weak points but with the increasing number of lessons humanities the pupil-teachers improved faster than the science pupil-teachers. Due to this rate, the curves have tendency to meet at a point, and therefore, there was a significant effect of interaction

Fig.5·5

INTERACTION BETWEEN TEACHING METHODS OF PUPIL-TEACHERS AND LESSON STAGES



between the teaching methods of pupil-teachers and the lesson stages on the negative comments received by them.

5.7.0 ANALYSIS OF VARIANCE FOR ACHIEVEMENT MARKS

The major effects of different teaching methods, different lesson stages and their interaction effect upon the achievement marks received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.6.

TABLE 5.6

Summary of Analysis of Variance for Achievement Marks of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	496.077	249		
Teaching Methods (A)	54.487	1	54.487	30.594**
Subjects within Groups	441.590	248	1.781	
Within Subjects:	317.493	500		
Lesson Stages (B)	164.303	2	82.152	266.468**
A x B	0.280	2	0.140	0.455
B x Subjects within Groups	152.910	496	0.308	

**Significant at 0.01 level

5.7.1 Achievement Marks with respect to Teaching Methods of Pupil-Teachers

The F-value for the achievement marks obtained by the pupil-teachers of science and humanities subjects is 30.594. This value is significant at 0.01 level with df of 1/248 (vide Table 5.6). This means that the achievement marks obtained by the pupil-teachers having different teaching methods differ significantly. Furthermore, the mean of achievement marks obtained by the pupil-teachers of science teaching method is 6.689 which is significantly higher than the mean of achievement marks 6.064 obtained by the pupil-teachers of humanities teaching method. It is inferred that the pupil-teachers of science teaching method do better than the pupil-teachers of humanities teaching method in their teaching practice.

On the basis of this result, the hypothesis 12 (H 12), namely, "There is no significant difference between the means of achievement marks obtained by the pupil-teachers of different teaching methods (science/humanities) in practice lessons" is rejected.

The results show that there is a significant difference in the achievement marks obtained by the science and humanities pupil-teachers. Science pupil-teachers obtained higher achievement marks than the humanities pupil-teachers. This indicates that overall classroom performance of the science pupil-teachers was better than the pupil-teachers of humanities. These results also explain that the science pupil-teachers were having sound background of the subjects which resulted in gaining more marks than their counterparts. Moreover, the science pupil-teachers received equal number of positive comments and less negative comments than the pupil-teachers of humanities which was reflected in the achievement marks. They scored more marks because they were superior to humamities pupil-teachers.

5.7.2 Achievement Marks with respect to Lesson Stages

The F-value for the achievement marks obtained by the pupil-teachers of science and humanities teaching methods in different lessons is 266.468 which is significant at 0.01 level

with df of 2/496 (vide Table 5.6). This reflects that the mean of achievement marks obtained by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in table 5.6 (a)

T A B L E 5.6 (a)

Significance of Difference between Means of Achievement Marks of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Initial b_1	Interme-diate b_2	Final b_3
Ordered Means	5.65	6.56	6.94

		b_1	b_2	b_3	r	$S\bar{B}q$ 0.95 (r, 496)	$S\bar{B}q$ 0.99 (r, 496)
Difference between pairs	b_1		0.91**	1.29**	3	0.116	0.144
	b_2			0.38**	2	0.097	0.127

** Significant at 0.01 level

$S\bar{B}$ = 0.035

It can be seen from Table 5.6 (a) that the mean of achievement marks obtained by the pupil-teachers at the final stage was significantly higher than

the intermediate and the initial stages. The average marks, similarly, at the intermediate stage was significantly higher than the initial stage. In all the three cases, the level of significance is 0.01 level. It is, therefore, deduced that the mean of achievement marks obtained by the pupil-teachers increases as the number of lessons given by them increases. Thus, the hypothesis 8 (H 8) namely, "There is no significant difference between the means of achievement marks given by observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" is rejected.

These results are similar to the one discussed under caption 5.4.2 and, therefore, it is not discussed here.

5.7.3 The Interaction between Teaching Methods of Pupil-Teachers and Lesson Stages.

From Table 5.6, it can be seen that the F-value for the interaction between the teaching methods of pupil-teachers and the lesson stages is 0.455 which is not significant. This means that there is no significant interaction effect

on the achievement marks due to the teaching methods and the lesson stages. This can be seen from Table 5.6 (b) and Figure 5.6.

TABLE 5.6 (b)

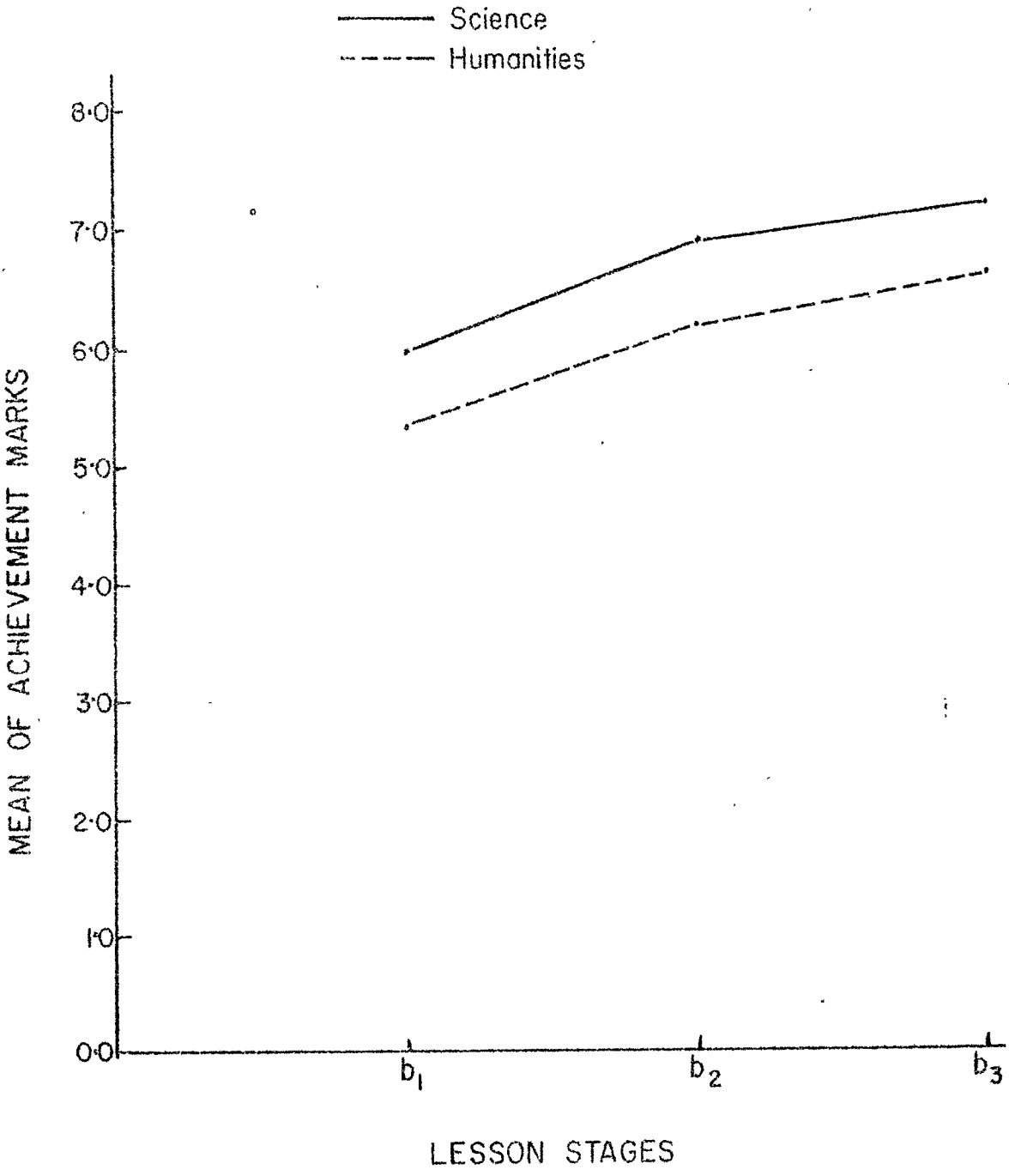
Mean of Achievement Marks of Pupil-Teachers with Different Teaching Methods

	Initial Stage b1	Intermediate Stage b2	Final Stage b3
Science Pupil-Teachers	5.94	6.90	7.23
Humanities Pupil-Teachers	5.35	6.21	6.64

From Table 5.6 (b) and Figure 5.6, it can be seen that both groups had improved as the number of lessons increased. There was a steady improvement in both the cases and, therefore, there was no significant effect of interaction between the teaching methods and the lesson stages on the achievement marks.

Fig. 5·6

INTERACTION BETWEEN TEACHING METHODS OF PUPIL-TEACHERS AND LESSON STAGES



5.8.0. ANALYSIS OF VARIANCE FOR POSITIVE COMMENTS

The major effects of sex, different lesson stages and their interaction effect upon the positive comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.7

TABLE 5.7

Summary of Analysis of Variance for Positive Comments of Pupil-Teachers

Source of Variance.	S.S.	df.	M.S.S.	F-Value
Between Subjects:	322.839	249		
Sex (A)	12.761	1	12.761	10.209**
Subjects within Groups	310.078	248	1.250	
Within Subjects:	416.244	500		
Lesson Stages (B)	43.190	2	21.595	28.721**
A x B	0.123	2	0.061	0.082
B x Subjects within Groups	372.931	496	0.752	

** Significant at 0.01 level

5.8.1 Positive Comments with respect to Sex of Pupil-Teachers

The F-value for the positive comments received by the male and female pupil-teachers is 10.209 which is significant at 0.01 level with df of 1/248 (vide Table 5.7). This means that the positive comments received by the male pupil-teachers differ significantly from that of the female pupil-teachers. Further, the mean of positive comments received by the male pupil-teachers is 1.852 which is significantly higher than the mean of positive comments 1.648 received by the female pupil-teachers. It is, therefore, deduced that the male pupil-teachers did better in their teaching practice than the female pupil-teachers.

On the basis of these results, the hypothesis 13 (H 13) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the male and female pupil-teachers in practice lessons" in the case of positive comments is rejected.

The results show that the male and female pupil-teachers differed significantly in receiving the positive comments. The mean of positive

comments received by the male pupil-teachers was significantly higher than that of the female pupil-teachers. From this result, it can be inferred that the male pupil-teachers received more comments of appreciation than their counterparts. The probable reason of this could be that themale pupil-teachers must be confident and systematic in teaching right from the initial stage of teaching while the female pupil-teachers might be lacking in these qualities and hence received less positive comments.

5.8.2 Positive Comments with respect to Lesson Stages

The F-value for the positive comments received by the male and female pupil-teachers at the different lesson stages is 28.721 which is significant at 0.01 level with df of 2/496 (vide Table 5.7).

This reflects that the mean of positive comments received by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by the Newman-Keuls method. The results are given in Table 5.7 (a).

TABLE 5.7 (a)

Significant of Difference Between Means of Positive Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages		Final b3	Intermediate b2	Initial b1	r	$S_{\bar{B}}q0.95$ (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Ordered Means		1.48	1.69	2.07			
		b3	b2	b1			
Difference between pairs	b3		0.21**	0.59**	3	0.182	0.227
	b2			0.38**	2	0.152	0.200

** Significant at 0.01 level

$S_{\bar{B}} = 0.55$

From Table 5.7 (a), it can be seen that the mean of positive comments received by the pupil-teachers in the initial stage is significantly higher than the intermediate and the final stages. Further, the mean of positive comments at the intermediate stage is significantly higher than the final stage. The level of significance in all the three cases is 0.01. It is, therefore, deduced that the mean of positive comments received by the pupil-teachers decreases as the number of lessons given by them increases. Thus, the hypothesis 7 (H 7), namely,

"There is no significant difference between the means of comments (positive/negative) given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" in the case of positive comments is rejected.

This result is similar to the one discussed under the caption 5.2.2 and therefore it is not discussed here.

5.8.3 The Interaction between Sex of Pupil-Teachers and Lesson Stages

From Table 5.7 it can be seen that the F-value for the interaction between sex of the pupil-teachers and the lesson stages is 0.082 which is not significant. This means that there is no significant interaction effect on the positive comments due to sex and the lesson stages. This can be seen from Table 5.7 (b) and Figure 5.7

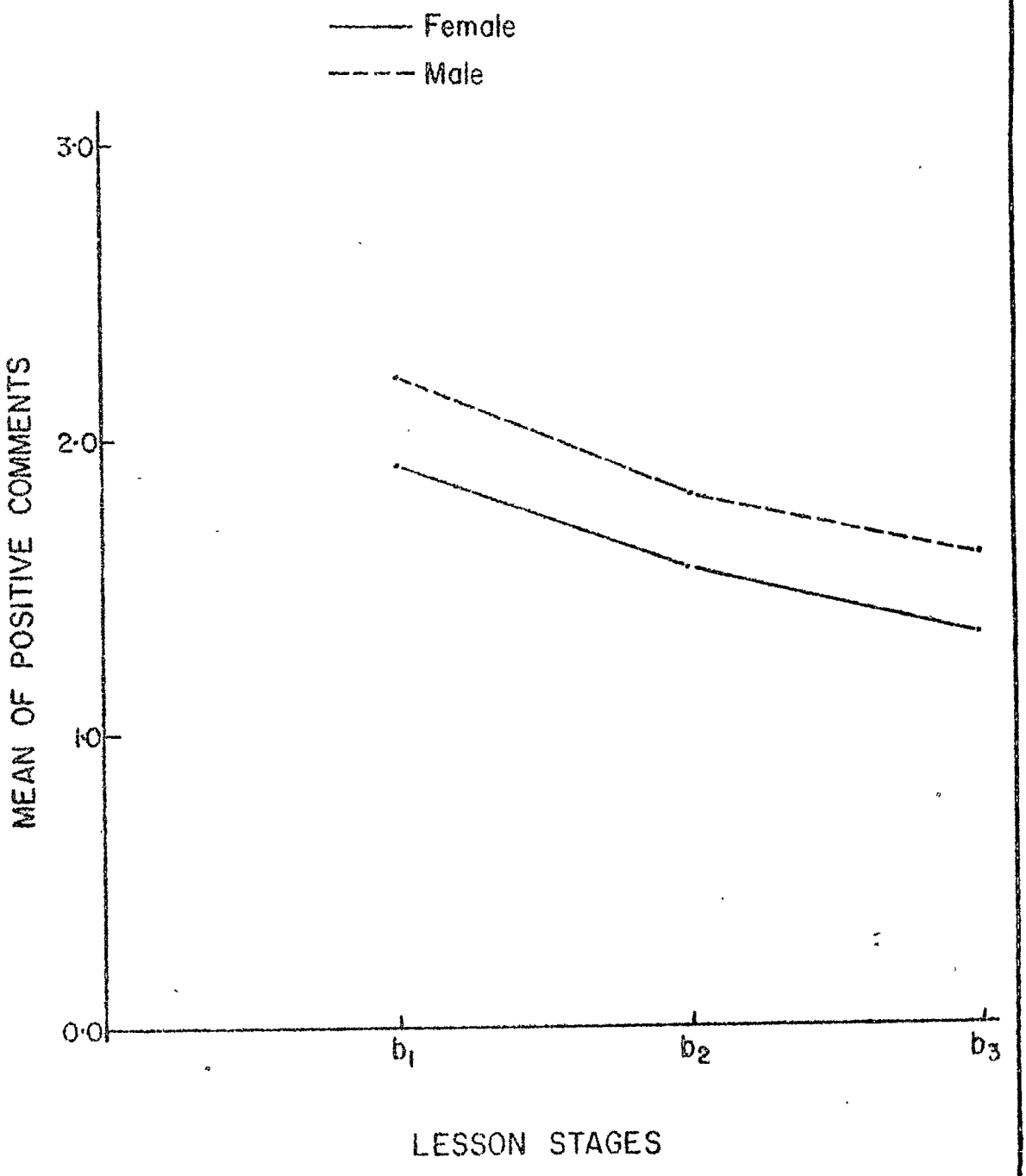
TABLE 5.7 (b)

Mean of Positive Comments of Male and Female Pupil-Teachers.

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Male Pupil-Teachers	2.21	1.81	1.61
Female Pupil-Teachers	1.92	1.57	1.35

Fig.5.7

INTERACTION BETWEEN SEX OF PUPIL-TEACHERS AND LESSON STAGES



From Table 5.7 (b) and Figure 5.7, it can be seen that the male and female pupil-teachers maintained similar progress in all the three stages. The decrease in the mean of positive comments from the initial to the final stage was gradual.

5.9.0 ANALYSIS OF VARIANCE FOR NEGATIVE COMMENTS

The major effects of sex, different lesson stages and their interaction effect upon the negative comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.8

TABLE 5.8

Summary of Analysis of Variance for Negative Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	486.193	249		
Sex (A)	21.718	1	21.718	11.595**
Subjects within Groups	464.475	248	1.873	
Within Subjects:	1212.497	500		
Lesson Stages (B)	823.072	2	411.536	525.320**
A x B	0.859	2	0.430	0.548
B x Subjects within Groups	388.566	496	0.783	

**Significant at 0.01 level

5.9.1 Negative Comments with respect to Sex of Pupil-Teachers

The F-value for the negative comments received by the male and female pupil-teachers is 11.595 (vide Table 5.8). This value is significant at 0.01 level with df of 1/248. This means that the negative comments received by the male and female pupil-teachers differ significantly. Furthermore, the mean of negative comments received by the female pupil-teachers is 2.098 which is significantly higher than the mean of negative comments 1.750 received by the male pupil-teachers. It is inferred that the male pupil-teachers did better than the female pupil-teachers in their teaching practice.

On the basis of these results, the hypothesis 13 (H 13) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the male and female pupil-teachers in practice lessons" in the case of negative comments is rejected.

The results show that the male pupil-teachers differed significantly from the female

pupil-teachers in receiving negative comments. The mean of negative comments received by the male pupil-teachers was less than the female pupil-teachers. This significant difference showed that the male pupil-teachers did better and committed lesser mistakes in teaching than their counterparts. Usually a person is prone to make errors due to lack of confidence, lack of preparation etc. Same might have happened with the female pupil-teachers and so they might have received more negative comments.

5.9.2 Negative Comments with respect to Lesson Stages

From Table 5.8 it can be seen that the F-value for the negative comments received by the male and female pupil-teachers at the different lesson stages is 525.320. This value is significant at 0.01 level with df of 2/496. This means that the mean of negative comments received by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.8 (a).

TABLE 5.8 (a)

Significance of Difference Between Means of Negative Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Final b_3	Intermediate b_2	Initial b_1			
Ordered Means	0.92	1.48	3.39			
	b_3	b_2	b_1	r	$S_{\bar{B}q}$ 0.95 (r, 496)	$S_{\bar{B}q}$ 0.99 (r, 496)
Difference between pairs b_3		0.56**	2.47**	3	0.185	0.230
Difference between pairs b_2			1.91**	2	0.155	0.204

** Significant at 0.01 level

$S_{\bar{B}} = 0.056$

From Table 5.8 (a) it can be observed that the mean of negative comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and final stage. Similarly, the mean of negative comments at the intermediate stage is significantly higher than the final stage. In all the three cases, the differences are significant at 0.01 level. It may, therefore, be inferred that the mean of negative comments received by the pupil-teachers decreases

as the number of lessons given by them increases. Thus, the hypothesis 7 (H 7) namely, "There is no significant difference between the means of comments (positive/negative) given by the observers to the pupil-teachers at the different practice lesson stages of the practice-teaching programme" in the case of negative comments is rejected.

The results are similar to those discussed in caption 5.3.2 and therefore these have not been discussed here.

5.9.3 The Interaction Between Sex of Pupil-Teachers and Lesson Stages

From Table 5.8, it can be seen that the F-value for the interaction between sex of the pupil-teachers and the lesson stages is 0.548 which is not significant. This means that there is no significant interaction effect on the negative comments due to sex and the lesson stages. This can be seen from Table 5.8 (b) and Figure 5.8

T A B L E 5.8 (b)

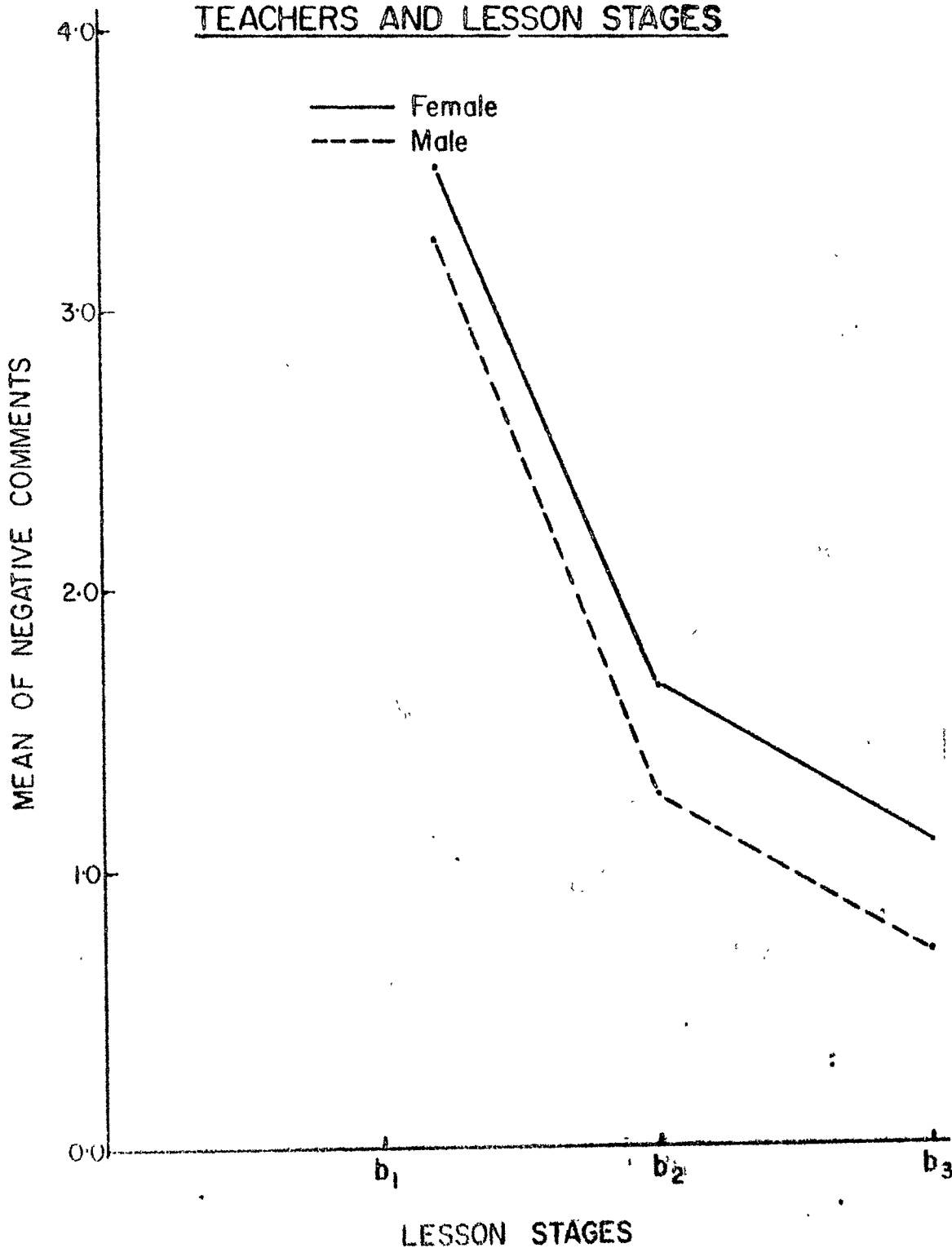
Mean of Negative Comments of Male and Female Pupil-Teachers

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Male Pupil-Teachers	3.26	1.28	0.72
Female Pupil-Teachers	3.51	1.67	1.11

From Table 5.8 (b) and Figure 5.8, it can be seen that both the male and female pupil-teachers received on an average more negative comments at the initial stage, than the intermediate stage and the final stage. Thus, both groups committed more mistakes at the initial stage as compared to the intermediate and the final stage. This shows that both the groups had improved over their weak points and they improved steadily with the increasing number of lessons. None of the group improved faster than the other and, therefore, there was no effect of interaction between sex of the pupil-teachers and the lesson stages on the negative comments received by them.

Fig. 5·8

INTERACTION BETWEEN SEX OF PUPIL-TEACHERS AND LESSON STAGES



5.10.0 ANALYSIS OF VARIANCE FOR ACHIEVEMENT MARKS

The major effects of sex, different lesson stages and their interaction effect upon the achievement marks received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.9

TABLE 5.9

Summary of Analysis of Variance for Achievement Marks of Pupil-Teachers.

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	496.136	249		
Sex (A)	0.982	1	0.982	0.492
Subjects within Groups	495.154	248	1.997	
Within Subjects:	368.115	500		
Lesson Stages (B)	212.639	2	106.320	339.789 **
A x B	0.245	2	0.123	0.392
B x Subjects within Groups	155.231	496	0.313	

** Significant at 0.01 level

5.10.1 Achievement Marks with respect to the Sex of the Pupil-Teachers

The F-value for the achievement marks obtained by the male and female pupil-teachers is 0.492

which is not significant (vide Table 5.9). This means that the achievement marks obtaned by the pupil-teachers of either sex do not differ significantly. Furthermore, the mean of achievement marks 6.251 obtained by the male pupil-teachers is not significantly different from the mean of achievement marks 6.175 obtained by the female pupil-teachers. It is inferred that there is no significant difference in the classroom performance of the male and female pupil-teachers.

On the basis of this result, the hypothesis 14 (H 14) namely, "There is no significant difference between the means of the achievement marks obtained by the male and female pupil-teachers in practice lessons" is not rejected.

The results show that there was no significant difference in achievement marks obtained by the male and female pupil-teachers. The pupil-teachers of both sex scored an equal number of achievement marks in their practice lessons. This means that the overall classroom performances of the male and female pupil-teachers were not different though the male pupil-teachers received more positive comments and less negative comments

than the female pupil-teachers, they got equal number of marks. It can be inferred from this that specific prescription in the form of negative comments helped the female pupil-teachers to improve their performance while a few positive comments gave false confidence in male pupil-teachers and thus they might have become careless and ultimately the female pupil-teachers matched the male pupil-teachers in their classroom performances. Hence, pupil-teachers of both sex secured equal number of achievement marks.

5.10.2 Achievement Marks with respect to Lesson Stages

The F-value for the marks obtained by the male and female pupil-teachers in the different lesson stages is 339.789 which is significant at 0.01 level with df of 2/496 (vide Table 5.9). This means that the mean of achievement marks obtained by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by using the Newman-Keuls Method. The results are given in Table 5.9 (a).

TABLE 5.9 (a)

Significance of Difference Between Means of Achievement Marks of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Initial b_1	Intermediate b_2	Final b_3
Ordered Means	5.49	6.37	6.78

		b_1	b_2	b_3	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Difference between pairs	b_1		0.88**	1.29**	3	0.116	0.144
	b_2			0.41**	2	0.097	0.127

** Significant at 0.01 level

$S_{\bar{B}} = 0.035$

It can be observed from Table 5.9 (a) that the mean of achievement marks obtained by the pupil-teachers at the final stage is significantly higher than the intermediate and the initial stages. The mean of achievement marks at the intermediate stage is also significantly higher than the initial stage. The differences in all the three cases are significant at 0.01 level. It may, therefore, be deduced that the achievement marks increases as the number of lessons given by the pupil-teachers increases. Thus, the hypothesis 8 (H 8) namely,

"There is no significant difference between the means of achievement marks given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" is rejected.

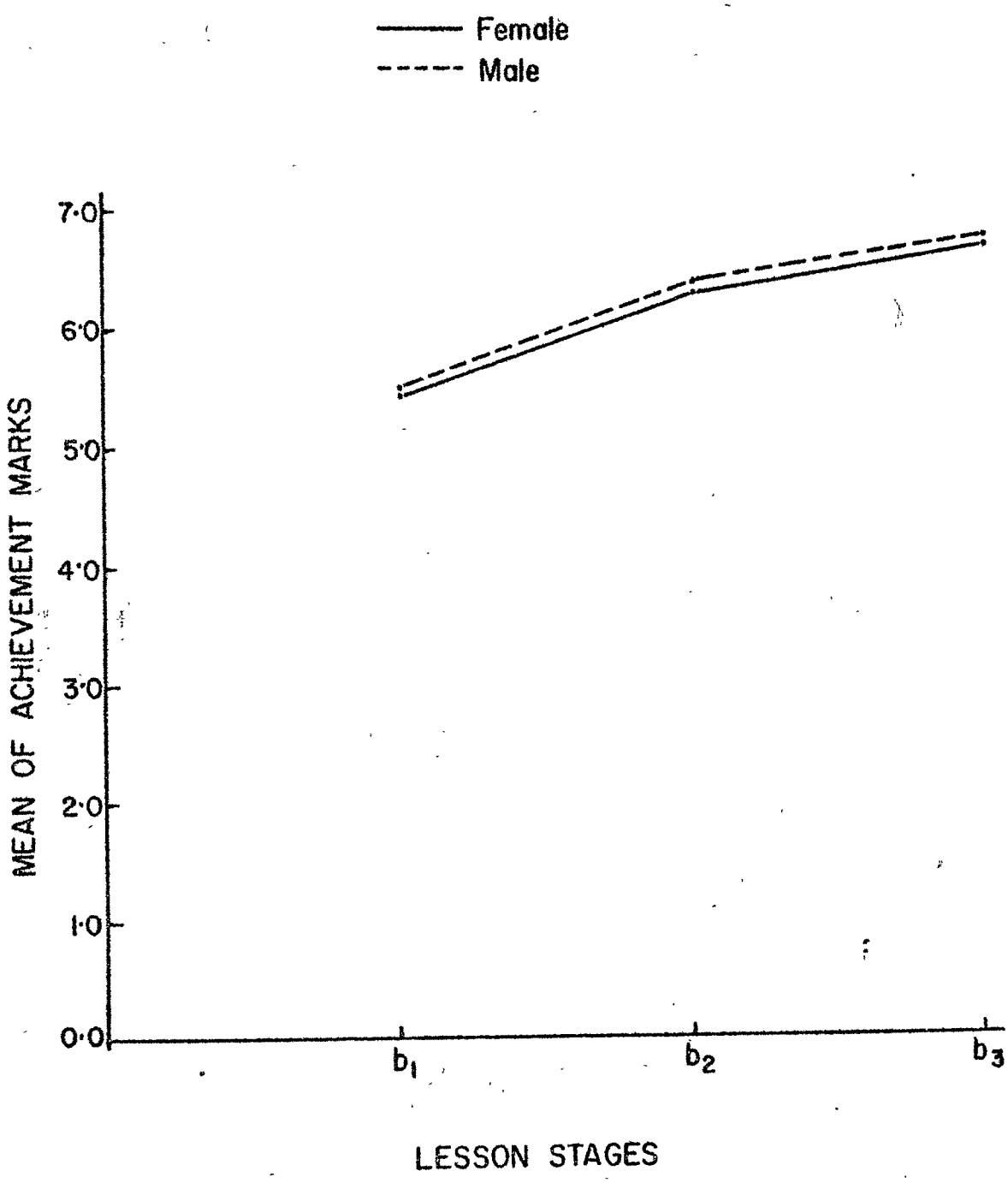
This result is similar to the one discussed under the caption 5.4.2 and, therefore, it is not discussed here.

5.10.3 The Interaction Between Sex of Pupil-Teachers and Lesson Stages

From Table 5.9, it can be seen that the F-value for the interaction between sex of the pupil-teachers and the lesson stages is 0.392 which is not significant. This means that there is no significant interaction effect on the achievement marks due to sex and lesson stages. This can be seen from Table 5.9 (b) and Figure 5.9.

Fig. 5·9

INTERACTION BETWEEN SEX OF PUPIL-TEACHERS AND LESSON STAGES



T A B L E 5.9 (b)

Mean of Achievement Marks of Male and Female Pupil-Teachers

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Male Pupil-Teachers	5.52	6.42	6.81
Female Pupil-Teachers	5.46	6.31	6.75

From Table 5.9 (b) and Figure 5.9, it can be seen that both the groups had improved as the number of lessons increased. There was a steady improvement in both the cases and, therefore, there was no significant effect of interaction between sex of the pupil-teachers and the lesson stages on the achievement marks.

5.11.0 ANALYSIS OF VARIANCE FOR POSITIVE COMMENTS

The major effects of different areas of place of residence, different lesson stages and their interaction effect upon the positive comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.10.

T A B L E 5.10

Summary of Analysis of Variance for Positive Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	322.421	249		
Place of Residence (A)	0.119	1	0.119	0.091
Subjects within Groups	322.302	248	1.299	
Within Subjects:	409.580	500		
Lesson Stages (B)	36.191	2	18.096	24.349 **
A x B	4.762	2	2.381	3.204 *
B x Subjects within Groups	368.627	496	0.743	

** Significant at 0.01 level

* Significant at 0.05 level

5.11.1 Positive Comments with respect to Place of Residence of Pupil-Teachers

The F-value for the positive comments received by the pupil-teachers from rural and urban areas of place of residence is 0.091 which is not significant (vide Table 5.10).This suggests that the positive comments received by the pupil-teachers of two different residential

areas do not differ significantly. Moreover, the mean of positive comments 1.772 received by the pupil-teachers from rural area of place of residence is not significantly different from the mean of positive comments 1.754 received by the pupil-teachers from urban area. This reflects that there is no significant difference in teaching performance of the pupil-teachers from rural and urban areas of place of residence.

On the basis of this, the hypothesis 15 (H15) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the pupil-teachers of different areas of place of residence (rural/urban) in practice lessons" in the case of positive comments is not rejected.

The results show that there is no significant difference in receiving positive comments by the pupil-teachers from rural and urban areas of place of residence. Both the types of pupil-teachers got on an average equal number of positive comments. This means that place of resi-

dence did not influence the positive aspects of their teaching performance. Both were given equal number of positive comments for reinforcement and motivation. The classroom situations, teaching techniques, etc. were new to the majority of the pupil-teachers and they might have learnt at the same pace and hence they received on an average equal number of positive comments.

5.11.2 Positive Comments with respect to Lesson Stages

The F-value for the positive comments received by the pupil-teachers at the different lesson stages is 24.349 which is significant at 0.01 level with df of 2/496 (vide Table 5.10).

This reflects that the mean of positive comments received by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.10 (a).

TABLE 5.10 (a)

Significance of Difference Between Means of Positive Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Final b_3	Intermediate b_2	Initial b_1
Ordered Means	1.51	1.72	2.06

		b_3	b_2	b_1	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Difference between pairs	b_3		0.21**	0.55**	3	0.182	0.227
	b_2			0.34**	2	0.152	0.200

** Significant at 0.01 level

$S_{\bar{B}} = 0.055$

From Table 5.10 (a), it can be seen that the mean of positive comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and the final stages. Further, the mean of positive comments at the intermediate stage is significantly higher then the final stage. In all the three cases, the level of significance is at 0.01. It may, therefore, be deduced that the mean of positive comments received by the pupil-teachers decreases as the

number of lessons given by them increases.

Thus, the hypothesis 7 (H 7) namely, "There is no significant difference between the means of comments (positive/negative) given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" in the case of positive comments is rejected.

These results are the same as discussed in the caption 5.2.2 and, therefore, they have not been discussed here.

5.11.3 The Interaction Between Place of Residence of Pupil-Teachers and Lesson Stages

From Table 5.10 it can be seen that F-value for the interaction between place of residence of the pupil-teachers and the lesson stages is 3.204 which is significant at 0.05 level with df of 2/496. This means that there is significant interaction effect on the positive comments due to the place of residence and the lesson stages. This can be seen from Table 5.10 (b) and Figure 5.10.

TABLE 5.10 (b)

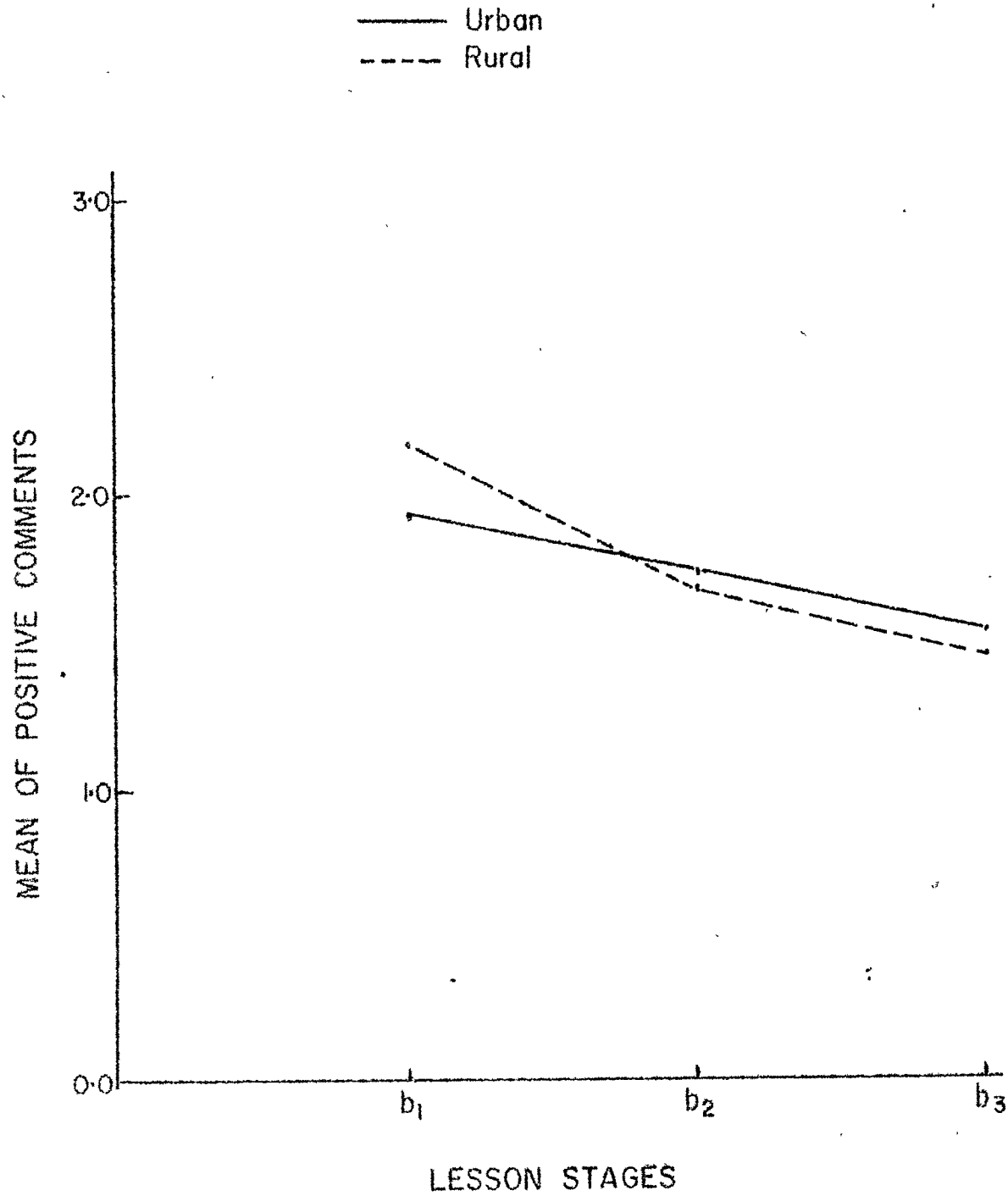
Mean of Positive Comments of Pupil-Teachers having Different Places of Residence

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Place of Residence in Rural area	2.18	1.68	1.46
Place of Residence in Urban area	1.94	1.76	1.56

From Table 5.10.(b) and Figure 5.10, it can be seen that there was a significant effect of interaction between the place of residence and the lesson stages on the positive comments. At the initial stage, pupil-teachers from rural area received more positive comments than the pupil-teachers from urban area. But in the case of pupil-teachers from rural area, there was a sudden decrease in the positive comments whereas there was a steady decrease in positive comments in the case of pupil-teachers from urban area.

Fig. 5·10

INTERACTION BETWEEN PLACE OF RESIDENCE OF PUPIL-TEACHERS AND LESSON STAGES



5.12.0 ANALYSIS OF VARIANCE FOR NEGATIVE COMMENTS

The major effect of different areas of place of residence, different lesson stages and their interaction effect upon the negative comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.11

TABLE 5.11

Summary of Analysis of Variance for Negative Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	486.295	249		
Place of Residence (A)	17.858	1	17.858	9.459**
Subjects within Groups	468.437	248	1.888	
Within Subjects:	1166.188	500		
Lesson Stages (B)	776.920	2	388.460	502.536**
A x B	5.953	2	2.977	3.851 *
B x Subjects within Groups	383.315	496	0.773	

** Significant at 0.01 level
* Significant at 0.05 level

5.1 2.1 Negative comments with respect to Place of Residence of Pupil-Teachers

The F-value for the negative comments received by the rural and urban pupil-teachers is 9.459 which is significant at 0.01 level with df of 1/248 (vide Table 5.11). It means that the negative comments received by the pupil-teachers of urban and rural areas differ significantly. Furthermore, the mean of negative comments 2.093 received by the pupil-teachers from urban area is significantly higher than the mean of negative comments 1.773 received by the pupil-teachers from rural area. It is deduced that the pupil-teachers from rural area did better in their classroom performance than their counterparts.

On the basis of these results, the hypothesis 15 (H 15) namely, "There is no significant difference between the means of the comments (positive/negative) obtained by the pupil-teachers of different areas of place of residence (rural/urban) in practice lessons" in the case of negative comments is rejected.

The results show that there was a significant difference between the rural and urban pupil-teachers in receiving negative comments. The mean of negative comments received by the pupil-teachers from rural area of place of residence was less than that of the urban area of place of residence. This means that the pupil-teachers from rural area were well prepared and committed less mistakes than their counterparts. Another probable reason could be that the pupil-teachers from rural area might have problems of expression rather than content whereas the urban pupil-teachers might have committed more mistakes in content and hence might have received more negative comments than the pupil-teachers from rural area. Language influences the expression of pupil-teachers and so their errors of pronunciation and expression might have been overlooked by the observers because it is well knitted with their life style. Thus it can be concluded that the pupil-teachers from urban area of place of residence received more negative comments than the pupil-teachers from rural area of place of residence.

5.12.2 Negative Comments with respect to Lesson Stages

The F-value for the negative comments received by the pupil-teachers at the different lesson stages is 502.536 which is significant at 0.01 level with df of 2/496 (vide Table 5.11).

It reflects that the mean of negative comments received by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.11(a).

T A B L E 5.11 (a)

Significance of Difference Between Means of Negative Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Final b_3	Intermediate b_2	Initial b_1
Ordered Means	0.93	1.50	3.37

		b_3	b_2	b_1	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Difference between pairs.	b_3		0.57**	2.44**	3	0.185	0.231
	b_2			1.87**	2	0.155	0.204

** Significant at 0.01 level

$S_{\bar{B}} = 0.056$

It can be seen from Table 5.11 (a) that the mean of negative comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and the final stages. Similarly, the mean of negative comments at the intermediate stage is significantly higher than the final stage. In all the three cases, the level of significance is 0.01. It is, therefore, inferred that the mean of negative comments received by the pupil-teachers decreases as the number of lessons given by them increases.

Thus, the hypothesis 7 (H 7) namely, "There is no significant difference between the means of comments (positive/negative) given by the observers to the pupil-teachers at different practice-lesson stages of the practice-teaching programme" in the case of negative comments is rejected.

The results are similar to those discussed in the caption 5.3.2 and, therefore, these have not been discussed here again.

5.12.3 The Interaction Between Place of Residence of Pupil-Teachers and Lesson Stages

From Table 5.11, it can be seen that the F-value for the interaction between place of residence of pupil-teachers and the lesson stages is 3.851 which is significant at 0.05 level with df of 2/496. This means that there is a significant interaction effect on the negative comments due to the place of residence and the lesson stages. This can be seen from Table 5.11 (b) and Figure 5.11.

TABLE 5.11 (b)

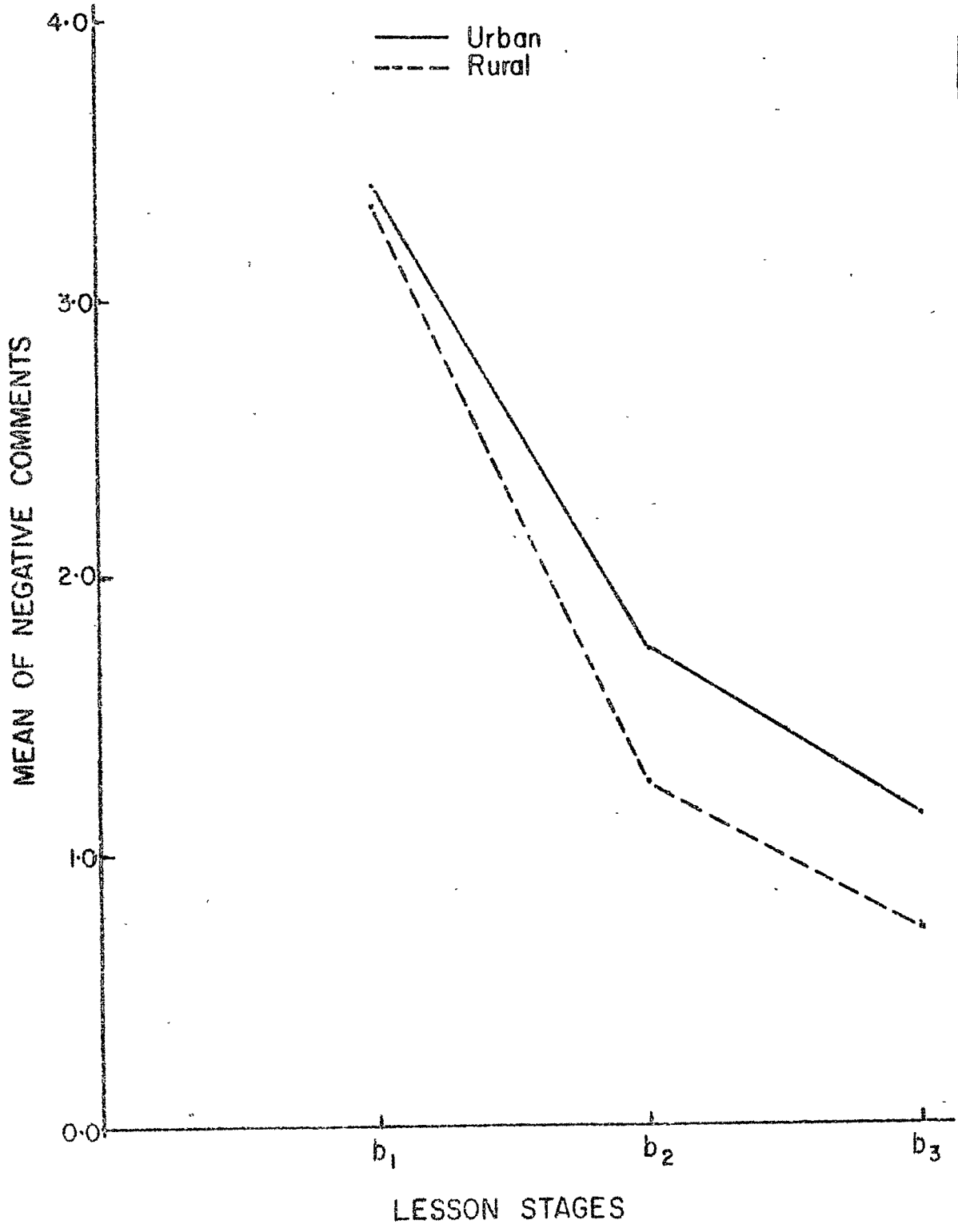
Mean of Negative Comments of Pupil-Teachers having Different Places of Residence

	Initial Stage b1	Intermediate Stage b2	Final Stage b3
Place of Residence in Rural Area	3.34	1.26	0.72
Place of Residence in Urban Area	3.40	1.73	1.14

The interaction between place of residence of Pupil-Teachers and the lesson stages on the negative comments is significant which can be seen from Table 5.11 (b) as well as from Figure 5.11.

Fig. 5·11

INTERACTION BETWEEN PLACE OF RESIDENCE OF PUPIL-TEACHERS AND LESSON STAGES



The pupil-teachers from rural area improved faster than the pupil-teachers from urban area. At the initial stage, both the groups received equal number of negative comments but in the later two stages, the pupil-teachers from rural area received less negative comments than those from the urban area.

5.13.0 ANALYSIS OF VARIANCE FOR ACHIEVEMENT MARKS

The major effects of different areas of place of residence, different lesson stages and their interaction effect upon the achievement marks received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.12.

T A B L E 5.12

Summary of Analysis of Variance for Achievement Marks of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	497.713	249		
Place of Residence (A)	7.857	1	7.857	3.978*
Subjects within Groups	489.856	248	1.975	
Within Subjects:	361.211	500		
Lesson Stages (B)	205.820	2	102.910	328.786**
A x B	0.119	2	0.059	0.190
B x Subjects within Groups	155.272	496	0.313	

**Significant at 0.01 level
* Significant at 0.05 level

5.13.1 Achievement Marks with respect to Place of Residence of Pupil-Teachers

The F-value for the achievement marks obtained by the pupil-teachers from rural and urban areas of place of residence is 3.978 which is significant at 0.05 level with df of 1/248 (vide Table 5.12). This means that the achievement marks obtained by the pupil-teachers from rural

and urban areas differ significantly. Moreover, the mean of achievement marks 6.355 obtained by the pupil-teachers from urban area is significantly higher than the mean of achievement marks 6.133 obtained by the pupil-teachers from rural area. It is inferred that the pupil-teachers from urban area do better in their classroom performance than their counterparts.

On the basis of these results, the hypothesis 16 (H 16) namely, "There is no significant difference between the means of ... achievement marks obtained by pupil-teachers of different areas of place of residence (rural/urban) in practice lessons" is rejected.

The results show that the pupil-teachers from urban area got significantly higher achievement marks than their counterparts. And, the pupil-teachers from urban area on an average got more negative comments than their counterparts. Since the pupil-teachers from urban area were made aware of their weak points related to different aspects of classroom teaching and might have got specific prescriptions, they

might have improved over their weak points whereas the pupil-teachers from rural area were not made aware of their weak points to the extent of their counterparts and, therefore, they might not have been able to overcome their weak points. Thus, this might have affected their classroom performance and might have got on an average less achievement marks than the pupil-teachers from urban area.

5.13.2 Achievement Marks with respect to Lesson Stages

The F-value for achievement marks obtained by the pupil-teachers at the different lesson stages is 328.786 which is significant at 0.01 level with df of 2/496 (vide Table 5.12).

It means that the mean of achievement marks obtained by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.12 (a).

T A B L E 5.12 (a)

Significance of Difference Between Means of Achievement Marks of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Initial b_1	Intermediate b_2	Final b_3
Ordered Means	5.52	6.40	6.80

		b_1	b_2	b_3	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Difference between pairs	b_1		0.88**	1.28**	3	0.116	0.144
	b_2			0.40**	2	0.097	0.127

** Significant at 0.01 level

$S_{\bar{B}} = 0.035$

It can be seen from Table 5.12 (a) that the mean of achievement marks obtained by the pupil-teachers at the final stage is significantly higher than the intermediate and the initial stages. Further, the mean of achievement marks at the intermediate stage is significantly higher than the initial stage. In all the three cases, the differences are significant at 0.01 level. It is, therefore, inferred that the mean of achievement

marks obtained by the pupil-teachers increases as the number of lessons given by them increases.

Thus, the hypothesis 8 (H 8) namely, "There is no significant difference between the means of achievement marks given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" is rejected.

The results are similar to the one discussed under caption 5.4.2 and, therefore, it is not discussed here.

5.13.3 The Interaction Between Place of Residence of Pupil-Teachers and Lesson Stages

From Table 5.12, it can be seen that the F-value for the interaction between the place of residence of pupil-teachers and the lesson stages is 0.190 which is not significant. This means that there is no significant interaction effect on the achievement marks due to the place of residence and the lesson stages. This can be seen from Table 5.12 (b) and Figure 5.12.

Fig. 5·12

INTERACTION BETWEEN PLACE OF RESIDENCE OF PUPIL-TEACHERS AND LESSON STAGES

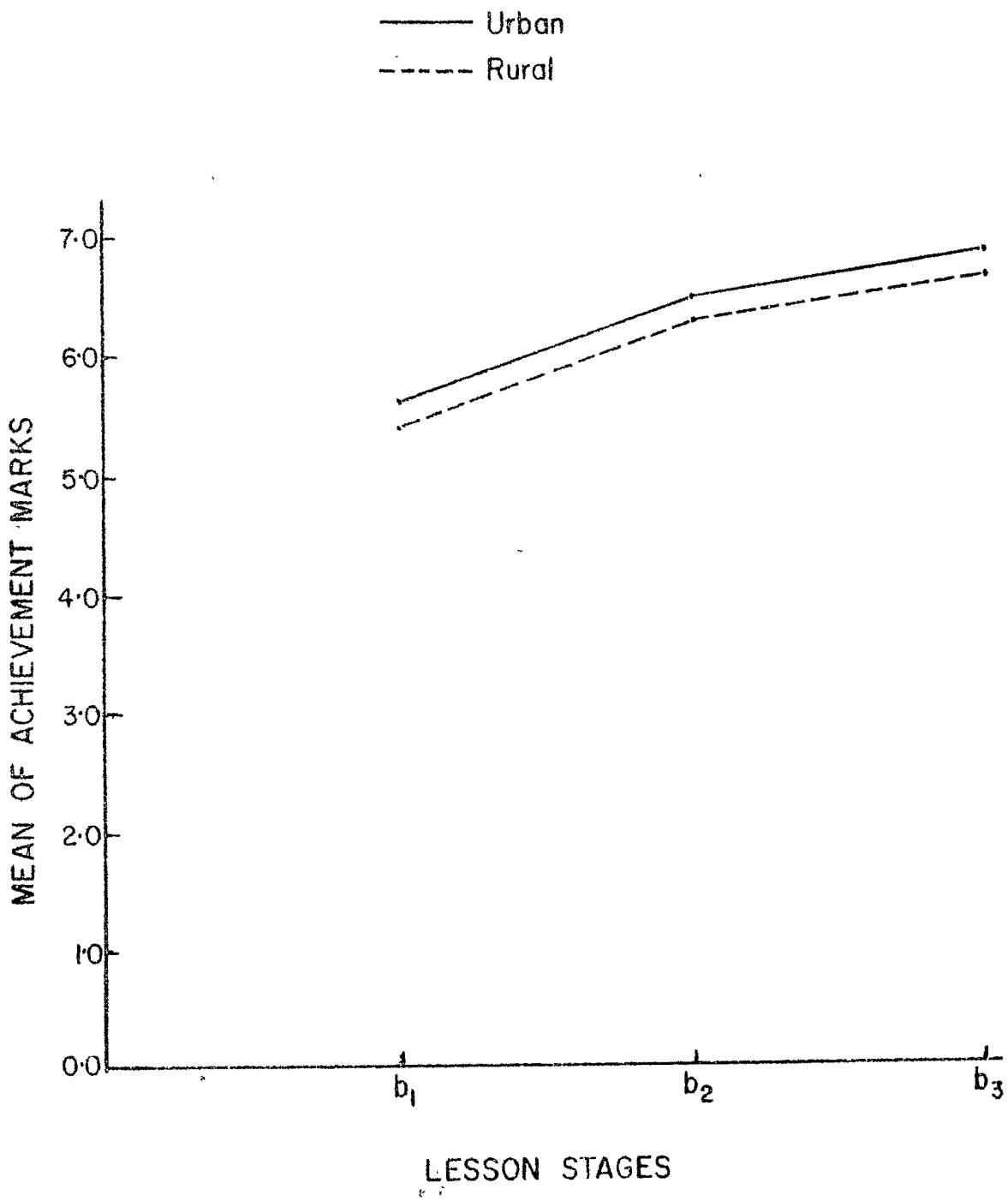


TABLE 5.12 (b)

Mean of Achievement marks of Pupil-Teachers having Different Places of Residence

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Place of Residence in Rural Area	5.41	6.30	6.69
Place of Residence in Urban Area	5.62	6.50	6.91

From Table 5.12 (b) and Figure 5.12, it can be seen that both the groups improved their classroom performance as the number of lessons increased. This improvement was gradual in both the cases.

5.14.0 ANALYSIS OF VARIANCE FOR POSITIVE COMMENTS

The major effects of teaching experience, different lesson stages and their interaction effect upon the positive comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.13.

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T A B L E 5.13

Summary of Analysis of Variance for Positive Comments of Pupil-Teachers

Source of Variance	S.S.	df.	M.S.S.	F-Value
Between Subjects:	322.242	249		
Teaching Experience (A)	7.712	1	7.712	6.082*
Subjects within Groups	314.530	248	1.274	
Within Subjects:	403.762	500		
Lesson Stages(B)	30.679	2	15.340	20.399**
A x B	0.085	2	0.042	0.056
B x Subjects within Groups	372.998	496	0.752	

* Significant at 0.05 level
** Significant at 0.01 level

5.14.1 Positive Comments with respect to Teaching Experience of Pupil-Teachers

The F-value for the positive comments received by the inexperienced and experienced pupil-teachers is 6.082 (vide Table 5.13). This value is significant at 0.05 level with df of 1/248. It means the positive comments received by the inexperienced and experienced pupil-teachers

differ significantly. Furthermore, the mean of positive comments received by the experienced pupil-teachers is 1.941 which is significantly higher than the mean of positive comments 1.717 received by the inexperienced pupil-teachers. It is deduced that the experienced pupil-teachers do better in their teaching practice in comparison to their counterparts.

On the basis of these results, the hypothesis 17 (H 17) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the experienced and inexperienced pupil-teachers in practice lessons" in the case of positive comments is rejected.

The results show that the pupil-teachers, who were having teaching experience received, on an average, more positive comments in comparison to those who did not have teaching experience. This might be because the pupil-teachers who had taught in the schools were well acquainted with the problems related to classroom management, participation of students, etc. When they were told about different aspects of classroom teaching, the experienced pupil-teachers

might have understood them in the right perspective and, therefore, the experienced pupil-teachers could do better in the classroom and hence got more positive comments.

5.14.2 Positive Comments with respect to Lesson Stages

The F-value for the positive comments received by the pupil-teachers at the different lesson stages is 20.399 which is significant at 0.01 level with df of 2/496 (vide Table 5.13). It means that the mean of positive comments received by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.13 (a).

T A B L E 5.13 (a)

Significance of Difference between Means of Positive Comments of Different Lesson Stages

Using the Newman-Keuls Method

	Final	Inter-mediate	Initial
Lesson Stages	b_3	b_2	b_1
Ordered Means	1.57	1.79	2.16

		b_3	b_2	b_1	r	$S_{\bar{B}}q$ 0.95 (r, 496)	$S_{\bar{B}}q$ 0.99 (r, 496)
Difference between pairs	b_3		0.22**	0.59**	3	0.182	0.227
	b_2			0.37**	2	0.152	0.200

** Significant at 0.01 level

$S_{\bar{B}} = 0.055$

It can be observed from Table 5.13 (a) that the mean of positive comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and the final stages. Further, the mean of positive comments at the intermediate stage is significantly higher than the final stage. The differences in all the three stages are significant at 0.01 level.

It is, therefore, inferred that the mean of positive comments received by the pupil-teachers decreases as the number of lessons given by them increases.

Thus, the hypothesis 7 (H 7) namely, "There is no significant difference between the means of positive comments given by the observers to the pupil-teachers at different lesson stages of the practice-teaching programme" in the case of positive comments is rejected.

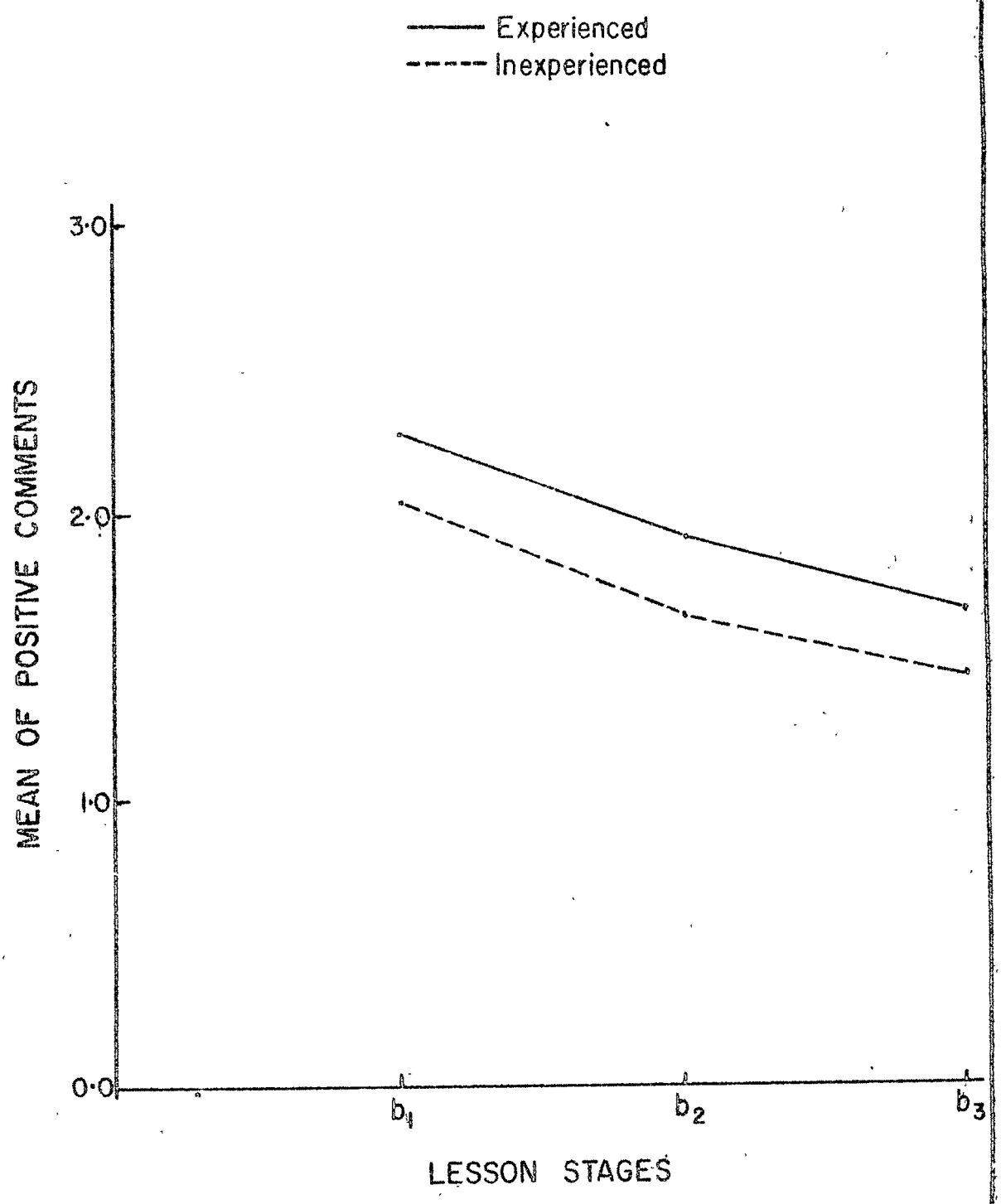
The discussion of these results is the same as given in caption 5.2.2.

5.14.3 The Interaction Between Teaching Experience of Pupil-Teachers and Lesson Stages

From the Table 5.13, it can be seen that the F-value for the interaction between the teaching experience of pupil-teachers and the lesson stages is 0.056 which is not significant. This means that there is no significant interaction effect on the positive comments due to the teaching experience and the lesson stages. This can be seen from Table 5.13 (b) and Figure 5.13.

Fig. 5·13

INTERACTION BETWEEN TEACHING EXPERIENCE OF PUPIL-TEACHERS AND LESSON STAGES



T A B L E 5.13 (b)

Mean of Positive Comments of Inexperienced and and Experienced Pupil-Teachers

	Initial Stage b1	Intermediate Stage b2	Final Stage b3
Inexperienced Pupil-Teachers	2.04	1.65	1.45
Experienced Pupil-Teachers	2.28	1.92	1.68

From Table 5.13 (b) and Figure 5.13 it can be seen that both the groups received on an average more positive comments at the initial stage than at the intermediate and final stages. The positive comments decreased with the increase in the number of lessons. This decrease is gradual.

5.15.0 ANALYSIS OF VARIANCE FOR NEGATIVE COMMENTS

The major effects of teaching experience, different lesson stages and their interaction effect upon the negative comments received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.14.

T A B L E 5.14

Summary of Analysis of Variance for Negative Comments of Pupil-Teachers

Source of Variance	S.S.	df	M.S.S.	F-Value
Between Subjects:	486.795	249		
Teaching Experience (A)	10.763	1	10.763	5.607*
Subjects within Groups	476.032	248	1.919	
Within Subjects:	881.189	500		
Lesson Stages (B)	492.313	2	246.157	321.984**
A x B	9.662	2	4.831	6.319**
B x Subjects within Groups	379.214	496	0.764	

** Significant at 0.01 level

* Significant at 0.05 level

5.15.1 Negative Comments with respect to Teaching Experience of Pupil-Teachers

The F-value for the negative comments received by the inexperienced and experienced pupil-teachers is 5.607 which is significant at 0.05 level with df of 1/248 (vide Table 5.14). It means that the negative comments received by the inexperienced and experienced pupil-teachers do

differ significantly. Furthermore, the mean of negative comments received by the inexperienced pupil-teachers is 1.960 which is significantly higher than the mean of negative comments 1.670 received by the experienced pupil-teachers. It is inferred that the experienced pupil-teachers did better in their teaching practice than the inexperienced pupil-teachers.

On the basis of these results, the hypothesis 17 (H 17) namely, "There is no significant difference between the means of comments (positive/negative) obtained by the experienced and inexperienced pupil-teachers in practice lessons" in the case of negative comments is rejected.

The results show that the pupil-teachers without teaching experience received on an average more negative comments than their counterparts. This might be because the classroom control, methods of teaching, etc. were new to them. They might have become nervous because they might not have thought of the types of problems they faced in the class. All these might have led them to commit more mistakes

and therefore, they got more negative comments than the pupil-teachers with teaching experience.

5.15.2 Negative Comments with respect to Lesson Stages

The F-value for the negative comments obtained by the inexperienced and experienced pupil-teachers at different lesson stages is 321.984 which is significant at 0.01 level with df of 2/496 (vide Table 5.14).

It means that the mean of negative comments received by the pupil-teachers at the initial, intermediate and final stages differed significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.14 (b).

T A B L E 5.14 (b)

Significance of Difference Between Means of Negative Comments of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Final b_3	Interme-diate b_2	Initial b_1			
Ordered Means	0.88	1.39	3.18			
	b_3	b_2	b_1	r	$S\bar{B}q$ 0.95 (r, 496)	$S\bar{B}q$ 0.99 (r, 496)
Difference between pairs	b_3	0.51**	2.30**	3	0.182	0.227
	b_2		1.79**	2	0.152	0.200

** Significant at 0.01 level

$S\bar{B}$ = 0.055

From Table 5.14 (a), it can be observed that the mean of negative comments received by the pupil-teachers at the initial stage is significantly higher than the intermediate and final stages. Moreover, the mean of negative comments at the intermediate stage is significantly higher than the final stage. The level of significance of differences in all the three cases is at 0.01. It is, therefore, inferred that the mean of negative comments decreases as the number of lessons given by the pupil-teachers decreases.

Thus, the hypothesis 7 (H 7) namely, "There is no significant difference between the means of comments (positive/negative) given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" in the case of negative comments is rejected.

The results are the same as discussed in caption 5.3.2 and, therefore, they are not discussed here.

5.15.3 The Interaction Between Teaching Experience of Pupil-Teachers and Lesson Stages

From Table 5.14, it can be seen that the F-value for the interaction between the teaching experience of pupil-teachers and the lesson stages is 6.319 which is significant at 0.01 level with df of 2/496. It means that there is a significant interaction effect on the negative comments due to the teaching experience and the lesson stages. This can be seen from Table 5.14 (b), and Figure 5.14.

T A B L E 5.14 (b)

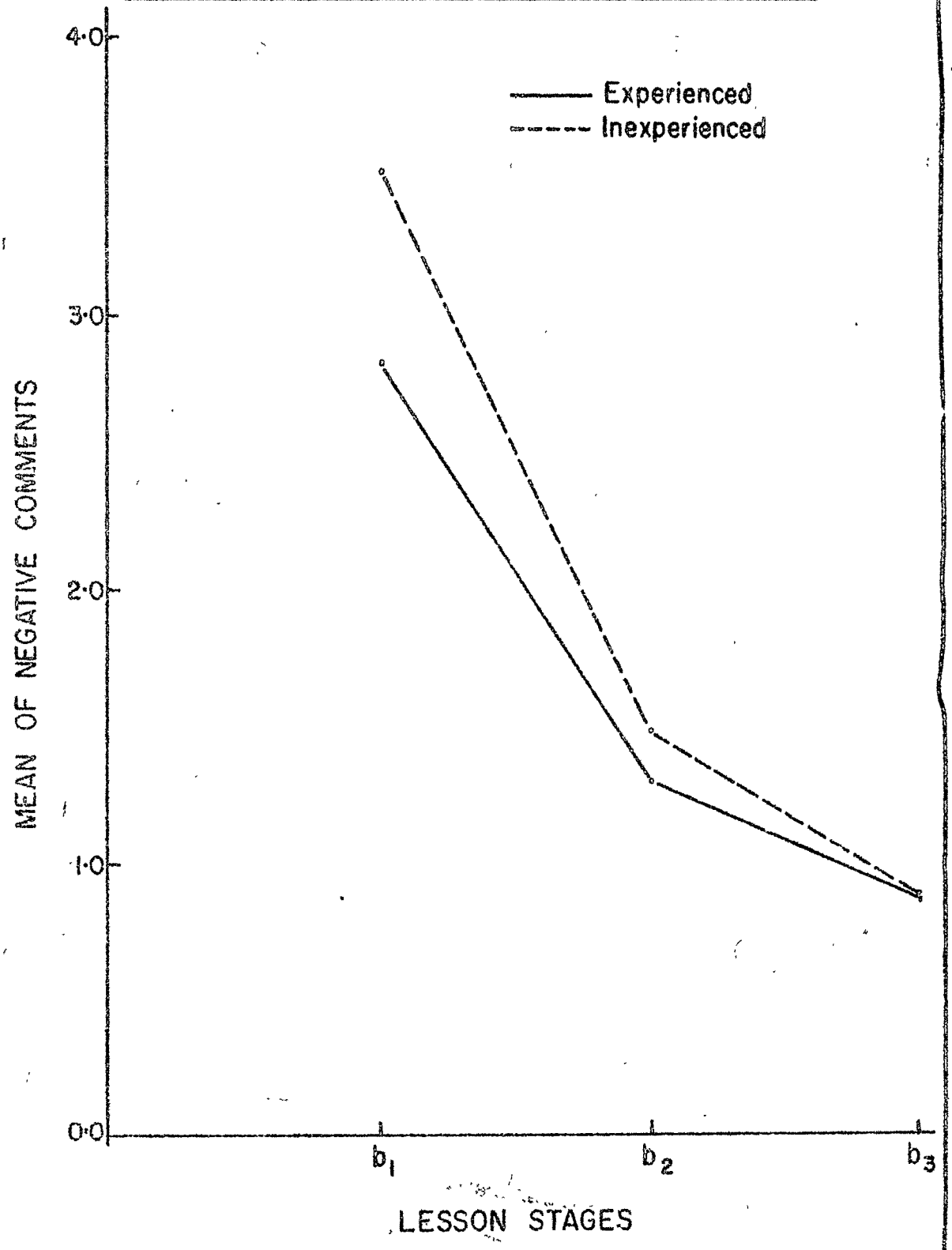
Mean of Negative Comments of Inexperienced and Experienced Pupil-Teachers.

	Initial Stage b_1	Interme-diate Stage b_2	Final Stage b_3
Inexperienced Pupil-Teachers	3.51	1.48	0.89
Experienced Pupil-Teachers	2.84	1.30	0.87

From Table 5.14 (b) and Figure 5.14, it can be seen that the pupil-teachers without teaching experience got on an average more negative comments at the initial stage than

Fig. 5·14

INTERACTION BETWEEN TEACHING EXPERIENCE OF PUPIL-TEACHERS AND LESSON STAGES



their counterparts. There was a sudden fall in the negative comments received by the pupil-teachers without teaching experience in the later two stages and hence there was an interaction.

5.16.0 ANALYSIS OF VARIANCE FOR ACHIEVEMENT MARKS

The major effects of teaching experience, different lesson stages and their interaction effect upon the achievement marks received by the pupil-teachers were studied by employing ANOVA (2 x 3) with repeated measures. The results are given in Table 5.15.

T A B L E 5.15

Summary of Analysis of Variance for Achievement Marks of Pupil-Teachers

Source of Variance	S.S.	Df.	M.S.S.	F-Value
Between Subjects:	495.877	249		
Teaching Experience (A)	93.310	1	93.310	57.485**
Subjects within Groups	402.567	248	1.623	
Within Subjects:	304.218	500		
Lesson Stages (B)	148.906	2	74.453	238.861**
A x B	0.678	2	0.339	1.088
B x Subjects within Groups	154.634	496	0.312	

** Significant at 0.01 level

5.16.1 Achievement Marks with respect to Teaching Experience of Pupil-Teachers

The F-value for the achievement marks obtained by the inexperienced and experienced pupil-teachers is 57.485 which is significant at 0.01 level with df of 1/248 (vide Table 5.15). This means that the achievement marks obtained by the inexperienced and experienced pupil-teachers differ significantly. Moreover, the mean of achievement marks obtained by the experienced pupil-teachers is 6.892 which is significantly higher than the mean of achievement marks 6.033 obtained by the inexperienced pupil-teachers. It is, therefore, deduced that the experienced pupil-teachers did better in their teaching practice than the inexperienced pupil-teachers.

On the basis of these results, the hypothesis 18 (H18), namely, "There is no significant difference between the means of achievement marks obtained by the experienced and inexperienced pupil-teachers in practice lessons" is rejected.

The results show that the achievement marks received by the pupil-teachers with teaching experience was significantly higher than their counterparts.

This is in consonance with the positive negative comments received by the pupil-teachers with teaching experience. That is, they received more positive comments and less negative comments in comparison to the pupil-teachers without teaching experience. Therefore, they ought to get high achievement marks and it is thus reflected in their achievement marks.

5.16.2 Achievement Marks with respect to Lesson Stages

The F-value for the achievement marks obtained by the inexperienced and experienced pupil-teachers at the different lesson stages is 238.861. This value is significant at 0.01 level with df of 2/496 (vide Table 5.15).

It reflects that the mean of achievement marks obtained by the pupil-teachers at the initial, intermediate and final stages did differ significantly. The significance of difference between them was tested by using the Newman-Keuls method. The results are given in Table 5.15 (a).

TABLE 5.15 (a)

Significance of Difference Between Means of Achievement Marks of Different Lesson Stages: Using the Newman-Keuls Method

Lesson Stages	Initial b_1	Intermediate b_2	Final b_3
Ordered Means	5.73	6.65	7.01

		b_1	b_2	b_3	r	$S_{\bar{B}q}$ 0.95 (r, 496)	$S_{\bar{B}q}$ 0.99 (r, 496)
Difference between pairs	b_1		0.92**	1.28**	3	0.116	0.144
	b_2			0.36**	2	0.097	0.127

** Significant at 0.01 level

$S_{\bar{B}} = 0.035$

It can be seen from Table 5.15 (a) that the mean of achievement marks obtained by the pupil-teachers at the final stage is significantly higher than the intermediate and initial stages. Further, the mean of achievement marks at the intermediate stage is significantly higher than the initial stage. The differences in all the three cases are significant at 0.01 level. It is, therefore, deduced that the mean of achievement marks obtained by the pupil-teachers increases

as the number of lessons given by them increases. Thus, the hypothesis 8 (H 8) namely, "There is no significant difference between the means of achievement marks given by the observers to the pupil-teachers at different practice lesson stages of the practice-teaching programme" is rejected.

The results are similar to the one discussed under caption 5.4.2 and, therefore, they have not been discussed here.

5.16.3 The Interaction Between Teaching Experience of Pupil-Teachers and Lesson Stages

From Table 5.15, it can be seen that the F-value for the interaction between the teaching experience of pupil-teachers and the lesson stages is 1.088 which is not significant. It implies that there is no effect of interaction between the teaching experience of pupil-teachers and the lesson stages on the achievement marks. This can be seen from Table 5.15 (b) and Figure 5.15.

T A B L E 5.15 (b)

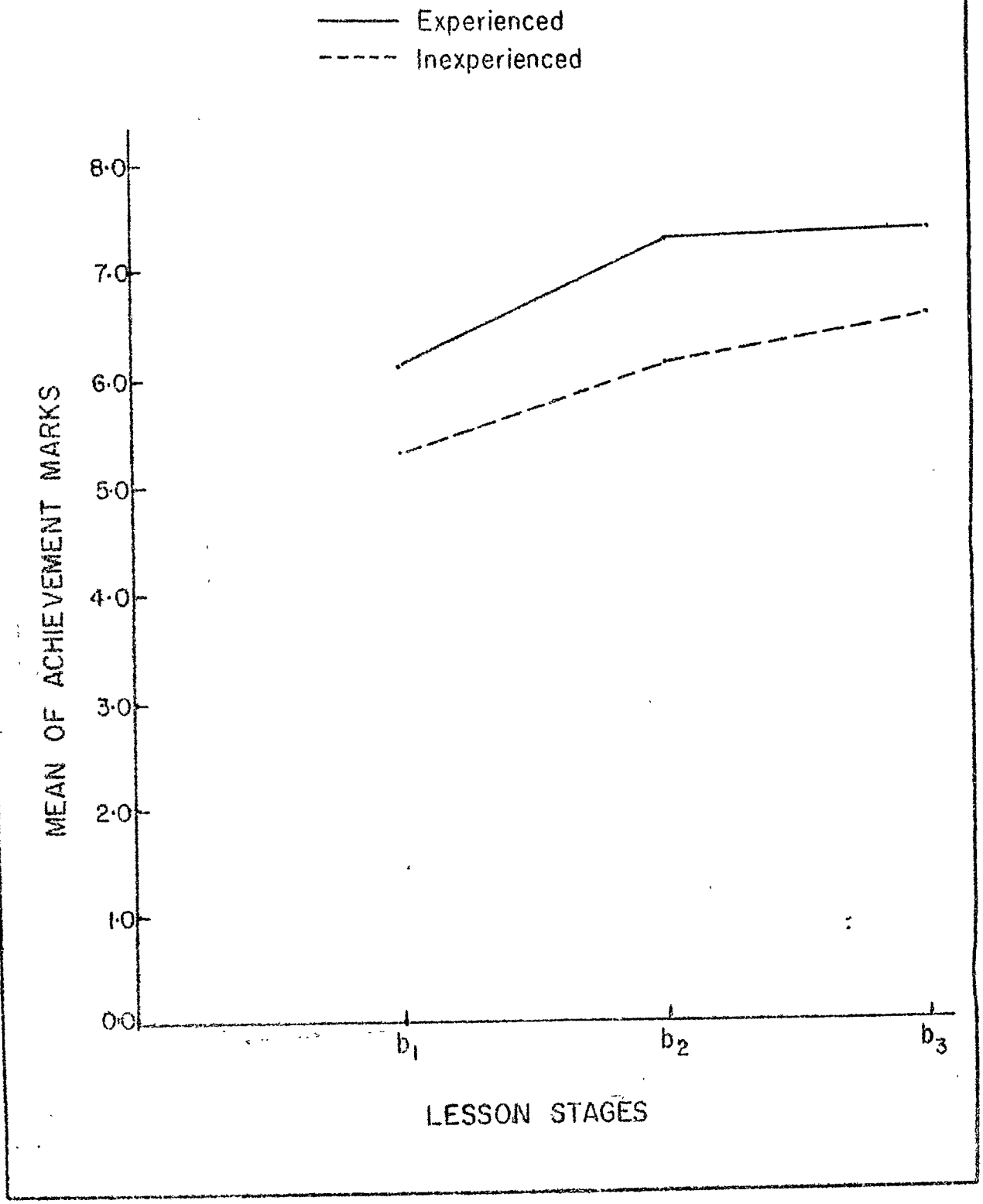
Mean of Achievement Marks of Inexperienced and Experienced Pupil-Teachers

	Initial Stage b_1	Intermediate Stage b_2	Final Stage b_3
Inexperienced Pupil-Teachers	5.32	6.17	6.61
Experienced Pupil-Teachers	6.13	7.13	7.41

From Table 5.15 (b) and Figure 5.15, it can be seen that on an average the achievement marks received by the pupil-teachers of both groups increases with the increase in the lessons. This increase is gradual in the case of both the groups.

Fig. 5·15

INTERACTION BETWEEN TEACHING EXPERIENCE OF PUPIL-TEACHERS AND LESSON STAGES



5.17.0 CORRELATION BETWEEN POSITIVE COMMENTS, NEGATIVE COMMENTS, ACHIEVEMENT MARKS AND ANNUAL MARKS.

The relationship between the means of positive comments, negative comments, achievement marks and annual marks were studied by computing the product-moment correlation. The results are given in Table 5.16.

TABLE 5.16

Correlation Between Positive Comments, Negative Comments, Achievement Marks and Annual Marks of Pupil-Teachers (N= 250)

Variables	Positive Comments	Negative Comments	Achievement Marks	Annual Marks.
Positive Comments				
Negative Comments	0.173 **			
Achievement Marks	0.064	-0.504 **		
Annual Marks	0.013	-0.351 **	0.643 **	

** Significant at 0.01 level.

5.17.1 Correlation Between Positive and Negative Comments

The coefficient of correlation between the mean of positive comments and the mean of negative comments received by the pupil-teachers is 0.173. This value

is positive and significant at 0.01 level. It means that there is a significant relationship between the positive and negative comments received by the pupil-teachers but the common variance shared by them is to the extent of 3 per cent only. In other words, it can be said that when the pupil-teachers received more positive comments, they also received more negative comments from the observers or when they received less positive comments, the negative comments received by them were also less. This might be because the observers have given the comments to make the pupil-teachers aware of their positive and negative aspects of teaching. While criticising the negative aspects of classroom teaching of the pupil-teachers, the observers also appreciated the nominal aspects of their teaching so that pupil-teachers may not lose confidence and become nervous during practice-teaching. The results also indicate that when pupil-teachers received less positive comments, they also received less negative comments. This might be because as the practice lessons increased, the pupil-teachers improved in their practice teaching and in turn got less negative

comments. At the same time the observers might not have liked to give positive comments repeatedly.

5.17.2 Correlation Between Positive Comments and Achievement Marks.

The coefficient of correlation between the average of positive comments and the average of achievement marks obtained by the pupil-teachers is 0.064 (vide Table 5.16). This value is not significant. It means that the the average of achievement marks obtained by the pupil-teachers do not depend on the positive comments received by them.

This means that whether the pupil-teachers received more positive comments or less positive comments, their achievement marks did not change accordingly. This might be because the positive comments given to the pupil-teachers might be for encouragement, partial appreciation, etc. These comments are given in order to motivate the pupil-teachers to understand the various techniques of teaching and to face the problems in the classroom rather than run away from them. Whereas achievement marks are usually given on the over-

all performance of the pupil-teachers. Partial appreciation of the lesson may not influence the total performance of the pupil-teachers in the practice teaching. Thus, the positive comments and the achievement marks are independent of each other.

5.17.3 Correlation Between Positive Comments and Annual Marks.

The coefficient of correlation between the average of positive comments and the average of annual marks obtained by the pupil-teachers is 0.013 which is not significant (vide Table 5.16). This means there is no significant relationship between the average of positive comments and the average of marks obtained by the pupil-teachers at the annual examination. It may, therefore, be deduced that the average of annual marks obtained by the pupil-teachers do not depend upon the average of positive comments received by them during practice-teaching. On the basis of the results discussed in captions 5.17.2 and 5.17.3, the hypothesis 19 (H_{19}), namely, "There is no significant relationship between the posi-

tive comments and the achievement marks obtained by the pupil-teachers in their practice-lessons and also with the achievement marks obtained by them at the annual examination" is not rejected.

It means that the marks received by the pupil-teachers at the annual examination and the positive comments received during practice-teaching are independent of each other. This might be because the positive comments given by the observers during practice-teaching were related to the pupil-teachers' behaviour in the classroom and other related activities. These might have changed from lesson to lesson and were mainly to sustain the motivation of the pupil-teachers. The lessons given by the pupil-teachers at the time of annual examination were observed by one internal-examiner and one external examiner. Their average constitute the annual marks. Here, the overall performance of the pupil-teacher was judged and accordingly the marks are given. Therefore, the two variables under discussion are independent of each other.

5.17.4 Correlation Between Negative Comments and Achievement Marks.

The coefficient of correlation between the average of negative comments and the average of achievement marks obtained by the pupil-teachers is -0.504 which is negative and significant at 0.01 level (vide Table 5.1o). This suggests that there is an inverse relationship between the average of negative comments and the average of achievement marks. The common variance shared by them is of 25 per cent. It is inferred from this inverse relationship that when the pupil-teachers receive more negative comments in their lessons during practice teaching, they obtain less marks and vice-versa.

The results indicate that when the pupil-teachers got on an average more negative comments, correspondingly tney got less achievement marks and vice-versa. This might because the negative comments were given to make the pupil-teachers aware of their drawbacks. When the observers found more drawbacks they gave more negative comments in order to highlight each one of them and side by side, naturally, they gave less marks.

5.17.5 Correlation Between Negative Comments and Annual Marks.

The coefficient of correlation between the average of negative comments and the average of annual marks obtained by the pupil-teachers is -0.351 (vide Table 5.16). This value is negative and significant at 0.01 level. It, therefore, suggests that there is an inverse relationship between the average of negative comments received by the pupil-teachers in their lessons and the average of marks obtained by them at the annual examination. They share the common variance of 12 per cent. It is, therefore, inferred that when the pupil-teachers receive more negative comments in their lessons during practice-teaching, they obtain less marks at the annual examination and vice-versa.

The results indicate that when the pupil-teachers got on an average more negative comments correspondingly they got less marks at the annual examination and vice-versa. This might be because the pupil-teachers who got more negative comments might not have taken them in the right sprit. Or, it is quite possible that they might

have lost interest and confidence in teaching, and might have become nervous at the time of annual examination because they received on an average more negative comments. All this might have come in their way of teaching at the time of annual examination and hence got less marks.

On the basis of the results discussed in captions 5.17.4 and 5.17.5, the hypothesis 20, (H_{20}), namely, "There is no significant relationship between the negative comments and the achievement marks obtained by the pupil-teachers in their practice-lessons and also with the achievement marks obtained by them at the annual examination" is rejected.

5.17.6 Correlation Between Achievement Marks and Annual Marks.

The coefficient of correlation between the average of achievement marks and the annual marks obtained by the pupil-teachers is 0.643 (vide Table 5.16). This value is positive and significant at 0.01 level. It means that there is a significant relationship between the average achievement marks and the annual marks obtained by the pupil-teachers and they share a common

variance of 41 per cent. It may, therefore, be deduced that when the pupil-teachers get more marks in their lessons during practice-teaching, they get more marks at the annual examination. Similarly, when they get less marks in their lessons, they also get less marks at the annual examination. Therefore, the hypothesis 21 (H_{21}), viz., "There is no significant relationship between the achievement marks obtained by the pupil-teachers in their practice-lessons and the achievement marks obtained by them at the annual examination" is rejected.

The results show that the pupil-teachers who received less marks during practice teaching also secured less marks at the time of annual examination and vice-versa. This might be because the pupil-teachers who could not improve upon the weak aspects of their teaching, during the practice-teaching also committed the same mistakes in the annual examination and vice-versa. Since those pupil-teacherss who received more marks during the practice-teaching also received more marks in the annual examination, the evaluation during practice-teaching can be considered to have efficient predictive value.

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