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Interaction analysis of classroom behaviour of effective and ineffective college of education teachers

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Abstract
The present study is an attempt to determine the interaction analysis patterns of effective and ineffective college of education teachers with special reference to Flanders Fourteen Behavioural Ratios. This will have great implications for the Human Resource Manpower at higher stage of education. After knowing the general interaction patterns in case of effective teachers for higher education, and to redirect their training experiences towards accomplishing the desirable interaction patterns inside the classroom. Teacher's personal qualities, mastery over the subject matter and some other skills are undoubtedly the basic features of effective teaching. However, what a teacher does inside the classroom is equally important. Therefore a classroom is a place where interaction patterns emerge on the basis of Presage-Process-Product criterion. Therefore, it is appropriate that 'analyzing classroom interaction' patterns are the best way to understand the effectiveness of a teacher in a classroom and its resultant impact on the quality of the product. The study revealed that: the effective and ineffective college teachers differ on fourteen behavioural ratios (verbal behaviour). The result of the study reveals that effective college teachers significantly differ on teacher talk (TT), pupil talk (PT), indirect teacher talk (ITT), direct teacher talk (DTT) and silence confusion (S/C) indices of classroom teaching verbal behaviour. The effective and ineffective college teachers differ significantly on Pupil initiative ratio (PIR), Teacher response ratio (TRR), Teacher question ratio (TQR), Content cross ratio (CCR), Indirect/ direct ratio (I/DR), Vicious circle ratio (VCR), Pupil steady state ratio (PSSR), Instantaneous teacher response ratio (ITRR) and Instantaneous teacher question ratio (ITQR) and are significant at 0.01 level.

Keywords: interaction analysis, classroom behaviour, effective and ineffective

Introduction
The systematic observation techniques are used for analysing the teaching activities systematically and objectivity. The flow of classroom events can be recorded and analysed. It provides the structure of teaching events and flow of teacher-behaviour. Thus, the teaching activities are diagnosed and provide the awareness about the teaching event and components, but teaching or teacher behaviour cannot be evaluated or graded. The theory of teacher-behaviour has oriented the concept of interaction analysis of teaching. The systematic observation is a set of procedures. It uses a system of categories, encodes and quantifies classroom behaviour of teachers and students. The systematic observation represents a useful means of identifying, studying, classifying and measuring specific variables as they interact within educational learning situations. The purpose of developing observational system is that a teacher can be trained to use them in analysing classroom behaviour and for planning and studying his own teaching activities. Since 1940, the efforts have been made in this direction to develop the systems of observation. The works of with all Flanders and Amidon (1960), Medlay and Mitzel (1948) and Galloway (1968) have developed systems of observation for studying the classroom teaching activities. During the last decade some educational researchers have been trying to develop concepts in terms of which classroom interaction could be described. Only when it is possible to describe the teacher classroom behaviour reliably it is possible to manipulate variables to cause modifications in the classroom behaviour. If relevant aspect of teacher behaviour cannot be modified it make little sense to prescribe change in that behaviour (Neujahr, 1972) [6]. Attempts have been made to analyze interaction process in a classroom. Of seventy nine such instruments reviewed in a study forty seven were used in teacher training (Simon and Boyer (eds.), 1970). Classes from elementary schools to colleges have been systematically observed. Researchers have collected data through observers in classroom, photographs, movies, audiotapes and videotapes. They have used a wide variety of basic units for their analysis. Smith and Meux (1963) attempted verbal interaction in terms of logical character; Taba's (1964) study is unique in its dependence on development psychology, the study of Bellack, *et al*. (1966) analytical system is based on cognitive view point; Adams (1967) [8] analyzed classroom activities in terms of their structural and functional aspects. The work of Paul Gump (1967) [8] represents a different line of classroom research namely ecological research. Anderson (1969) based his system on evolutionary concepts. The observational system which is widely known and used is that of Flanders (1960 (b)). The basic assumption of this system is that classroom interaction is a series of events and that teaching behaviour consists of acts or patterns of behaviours, embedded to the chain of classroom events. Flanders used ten

category observational instruments to obtain a measure of teacher influence.

Interaction analysis (Flanders, 1967) [8] facilitates the observation of teacher-pupil verbal interchange by using a time sampling technique and coding. Observe are trained in the method before they observe a teacher. After this training, their observations in coded form are analyzed and placed in the form of suggestions, which will aid the observed individual in modifying his behaviour. Of the teacher is using patterns of verbal communication that are not consistent with his intentions, he would profit from feedback that reveals their nature. If a training programme seeks to develop specified behaviour in teachers, interaction analysis might assist teacher and other in observing the progress made towards acquisition of desired skills. The observer records a code number one to ten. No category is necessarily better than any other. It is the patterning and frequency of categories that is important. By sampling about every three seconds, the observer will have made about four hundred entries in twenty minutes. From these data, matrix may be drawn up, which may provide a number of possible analyses of verbal communication. A second matrix after a teacher has evaluated his efforts may indicate the degree of progress he has made.

Review of Literature

The following latest review has been cited for the present study:

Amatari (2015) [5] Interaction Analysis is that in a normal classroom situation, verbal communication is predominant; the teacher exerts a great deal of influence on the student and the student's behaviour is affected to a great extent by this type of teacher behaviour exhibited. Mehraj, N. (2015) [46] investigated that Foundation and Methodology Course teacher educators on verbal teaching behaviour of Flanders categories were found insignificant on teacher talk and silence/confusion; teacher response ratio; content cross ratio and indirect/direct ratio; vicious circle ratio and steady state ratio indices of verbal teaching behaviour of Flanders categories. Foundation and Methodology Course teacher educators on verbal teaching behaviour found significant on pupil talk and direct teacher talk and pupil initiative ratio and teacher question ratio; instantaneous teacher response ratio and instantaneous teacher question ratio indices of classroom verbal behaviour of Flanders categories. The analysis revealed that the Methodology Course teacher educators use an indirect method of teacher involvement inside the classroom and encourages and supports student's participation and accepts, clarifies, praises and develops the ideas and feelings expressed by the pupil on indirect teacher talk and foundation course teacher educators restrict student's participation of verbal behaviour of Flanders categories. Methodology course teacher educators put more questions as compared to foundation course teacher educators who make frequent use of questions about content. Methodology course teacher educators restrict the freedom and student participation more than the foundation course teacher educators. Mulyati, A. F. (2013) investigated that the teacher to support students to have more opportunity to speak during the lesson. Finally, this study suggests further study to conduct similar research which covers different skills. Feng (2013) [18] found that two behaviors, the student's play and the teacher's guidance, appeared most frequently. Widiyatmoko (2013) studied that the results of the analysis showed that the most dominant characteristic in classroom interaction was the content cross. It showed that the students were active enough in the classroom interaction. Emmanuel (2013) [17] found that students of Economics in Cross River State secondary schools do not consider the interactive pattern of their teachers as adequate and helping them better achieve academically, and they do not consider the student-student interactive pattern as adequate and helping them better to achieve academically. Goronga (2013) found that the teacher talked more than the pupils did. This means that classroom verbal interaction in primary classrooms is still teacher- dominated. Precious (2012) [57] studied teacher behaviour means the behaviour or activities of persons as they go about doing whatever is required of teachers particularly those activities which are concerned with the guidance and direction of the learning activities of students. Abdullah (2011) [45, 58] revealed that Jordanian teachers practice the instructional classroom management style more than the other management styles such as behaviour management and people management. The behaviour of children must be controlled and it may be assumed that children are unable to adequately monitor and control themselves. The correlation between instructional management style and personal teacher efficacy is likely to be cyclical, such that instructional management style affects a teacher's belief in his or her personal efficacy and vice versa. The more the teachers have personal teaching efficacy the more the practice classroom management styles and vice versa.

Chen (2015) [34] reported that there was no statistically significant gender imbalance in term of attention allocation from the teacher in the classroom; however girls tend to receive more positive responses from the teacher than boys do; boys tend to be more active in the early period of class while, in contrast, girls are getting more attention from their teacher in the later period of class. Ajaja (2013) [3] the study indicated a significant difference in classroom behaviour scores among teachers with 0–5, 6–10, and 11 and above years of experience and a perfect correlation between years of experience and classroom behaviour. Dhaliwal (2013) [16] indicate that teachers need to discuss with colleagues their current perceptions and attitudes towards working with those students who present challenges and investigate ways of working positively with these students. Mc Clowry (2011) [45, 58] found irrespective of gender, students whose temperaments were high maintenance and intermediate were more likely than industrious students to receive negative teacher.

Methodology of the Study

The present study has been undertaken through the descriptive method of research. This method has been the most popular and widely used method of research in social science and education. The descriptive method is designed to obtain pertinent and precise information concerning the current status or phenomena and also draw any conclusions from the facts discovered.

Statement of the Problem

The problem taken for the present investigation reads as,

"Interaction Analysis of Classroom Behaviour of Effective and Ineffective College of Education Teachers".

Objectives of the Study

The study has been designed to achieve the following objectives:

1. To identify 'effective' and 'ineffective' college of education teachers;
2. To compare the effective and ineffective college of education teachers on their verbal classroom Behaviour;
3. To compare the effective and ineffective college of education teachers on Fourteen Behavioural Ratios.
4. To compare effective and ineffective college teachers on non-verbal teacher classroom behaviour.

Hypotheses

The following hypotheses have been formulated for the purpose of the present study:

1. Effective and ineffective college of education teachers significantly differ on their verbal classroom behaviour;
2. Effective and ineffective college of education teachers significantly differ on Fourteen Behavioural Ratios.
3. Effective and ineffective college of education teachers significantly differ on non-verbal teacher classroom behaviour.

Tools Used

In any piece of research, selection of tools is very important. There will be wastage of time and energy on the part of the investigator, if he would not make use of the valid and reliable tools for his or her research. Therefore, a competent investigator looks into all possible measures which can help him in arriving the desired results. Accordingly, the present investigator adopted the following tools for the collection of data.

The following tools were used in order to collect the required data.

1. Nadeem's Teacher Effectiveness Scale (TES 1993) was administered to Degree college students, teachers and principals for the purpose of identification of effective and in-effective college of education teachers.
2. Observation schedule on the basis of Flanders Model was used to assess teachers' classroom verbal behaviour.
3. Self constructed Non-Verbal Behaviour Checklist.

Sample

The initial sample for the present study was 120 college of education teachers randomly selected from Colleges of Education (Govt College of Education, M. A. Road Srinagar, Govt College of Education, Canal Road, Jammu, Muslim Educational Trust Sopore, Rehmat-E-Alam College of Education, Tahira Khanams College of Education Lawaypora, Vishwa Bharti College of Education, Akalpur Road. Muthi Jammu and Gandhi Memorial College of Education, Bantalab, Jammu) of Jammu and Kashmir Provinces. 'Teacher Effectiveness Scale' was applied to all these teachers. The upper 27% and lower 27% based on the scores of TES (Teacher Effectiveness Scale) were considered as effective and ineffective teachers respectively. The final sample was 64 college of education teachers only as under:

Table 1

Type of College	Initial Sample	Final Sample	
		Effective	Ineffective
Colleges of Education	120	32	32
Total = 64			

Analysis of Data

Data analysis is the process of systematically applying statistical and logical techniques to describe and illustrate condense and recap and evaluate data. Good, Barr and Scates write, "Analysis is a process which enters into research in one form or another form the very beginning...It may be fair to say that research consists in general of two larger steps-the gathering of data, and the analysis of these data, but no amount of analysis can validly extract from the data factors which are not present."

Identification of the 'Effective' and 'Ineffective' College Teachers

Stratified Random Sampling Method was employed for the present study. It was mandatory to identify the effective and ineffective college of education teachers from the sampling number and therefore, Nadeem's Teacher Effectiveness Scale (TES 1993) which includes three subscales viz. Teacher's Self Rating Scale, Principals Rating Scale and Students Rating Scale and was administered to an initial sample of 120 subjects to identify the effective and ineffective college of education teachers. The Extreme Group Technique (EGT) of 27% high scorer and 27% low scorer were identified as effective and ineffective teachers respectively which are as under:

Table 2: Showing the final sample for the study

Group	College of Education Teachers
Effective	32 (120)
Ineffective	32 (120)
Total Sample	**64**

Table 2 makes it clear that out of the total initial sample of 120 college 0f education teachers were selected for the present study after applying the Extreme Group Technique (EGT). As such out of 64 College of Education Teachers, equal number of 32 effective and 32 ineffective each from group were selected for the final study.

Percentage occurrence of categories for Effective and Ineffective Teachers of Colleges of Education

Table 3: Showing the percentage occurrence of categories for Effective and Ineffective Colleges of Education Teachers. (N=32 Each Group)

Categories		Percentage occurrence	
		Effective (N=32)	**Ineffective (N=32)**
Teacher Talk	Accepts feelings of the pupils	3.96	3.98
	Praises or encourages them	13.11	8.33
	Accepts the pupils ideas	12.34	7.79
	Ask relevant questions	7.63	3.30
	Lecturing	46.38	57.33
	Give proper directions	3.08	5.21
	Criticizing or justifying authority	0.88	3.15
Pupil Talk	Pupil talk response	7.46	3.07
	Pupil talk initiation	3.92	1.81
Silence	Silence or confusion	1.24	6.04
Total		**100.00%**	**100.00%**

Table 3 The above table shows the percentage of occurrence of the effective and ineffective College of Education teachers on Flanders 10 categories. The table reveals that the effective College of Education teachers have 3.96% accepts feelings of the pupils, 13.11% praises or encourages pupils, 12.34% accepts the pupils ideas, 7.63% ask relevant questions, 46.38% lecturing, 3.08% give proper directions, 0.88% criticizing or justifying authority in Teacher Talk. In case of ineffective College of Education teachers 3.98% accepts feelings of the pupils, 8.33% praises or encourages, 7.79% accepts the pupils ideas, 3.30% ask relevant questions, 57.33% lecturing, 5.21% give proper directions, 3.15% criticizing or justifying authority, in Teacher Talk. The table also reveals that the percentage of occurrence during the Pupil Talk of effective College of Education teachers 7.46% pupil talk response, 3.92% pupil talk initiation during the pupil talk. While ineffective College of Education teachers have 3.07% pupil talk response, and 1.81% pupil talk initiation during the pupil talk. The occurrence of silence or confusion of effective College of Education teachers is 1.24% and 6.06% in case of ineffective College of Education teachers.

Comparison of the Effective and Ineffective College of Education Teachers on their verbal classroom behaviour of Flanders Categories.

Table 3: Showing mean difference of Effective and Ineffective College of Education teachers on their verbal classroom behaviour of Flanders Categories. (N=32 Each Group)

Categories		Group	Mean	S.D.	t-value
Teacher Talk	Accepts feelings	Effective	6.21	2.736	1.89
		Ineffective	4.70	3.704	
	Praises or encourages	Effective	20.73	10.995	4.49**
		Ineffective	10.00	8.189	
	Accepts or uses ideas of pupils	Effective	19.15	10.834	4.37**
		Ineffective	9.18	7.355	
	Asks questions	Effective	11.97	5.582	7.14**
		Ineffective	4.09	3.004	
	Lecturing	Effective	38.37	6.36	1.74
		Ineffective	35.98	3.96	
	Giving directions	Effective	4.82	4.073	1.75
		Ineffective	6.33	2.814	
	Criticizing or Justifying authority	Effective	1.45	1.481	3.95**
		Ineffective	4.18	3.678	
Pupil Talk	Pupil talk response	Effective	11.73	8.171	5.14**
		Ineffective	3.67	3.772	
	Pupil talk initiation	Effective	6.09	5.752	3.68**
		Ineffective	2.03	2.640	
Silence	Silence or Confusion	Effective	1.58	1.347	3.02**
		Ineffective	3.06	2.474	

**significant at 0.01 level,
*significant at 0.05 level

Table 3 A perusal of the above table indicates that the effective and ineffective College of Education teachers do not differ on 'accepts feelings', 'lecturing', and 'giving directions' in Teacher Talk. While as the mean scores of effective College of Education teachers (20.73), (19.15), (11.97), and (1.45) is better than the mean scores of ineffective College of

Education teachers showing significant difference at 0.01 level on 'Praises or encourages', 'accepts or uses ideas of pupils' 'asks questions' and 'criticizing or justifying authority' respectively in Teacher Talk. Similarly, the mean scores of effective College of Education teachers (11.73), (6.09) and (1.58) is slightly better than the mean scores of ineffective College of Education teachers showing significant difference at 0.01 level on 'pupil talk response', 'pupil talk initiation' and silence/confusion category respectively.

Comparison of Effective and Ineffective College of Education Teachers on the basis of Flanders Fourteen Behavioural Ratios.

Table 4: Showing mean difference of Effective and Ineffective College of Education Teachers on the basis of Flanders Fourteen Behavioural Ratios. (N=32 Each Group)

	Group	Mean	Std. Deviation	t-value
Teacher talk (TT)	Effective	87.66	5.700	1.018NS
	Ineffective	89.00	4.826	
Pupil talk (PT)	Effective	36.81	8.589	6.17**
	Ineffective	22.09	10.409	
Indirect teacher talk (ITT)	Effective	50.91	9.769	6.03**
	Ineffective	66.88	11.344	
Direct teacher talk (DTT)	Effective	11.28	5.698	5.82**
	Ineffective	4.41	3.481	
Silence/ confusion (S/C)	Effective	1.22	1.039	7.00**
	Ineffective	6.63	4.241	
Pupil initiative ratio (PIR)	Effective	78.28	35.362	5.61**
	Ineffective	36.47	22.829	
Teacher response ratio (TRR)	Effective	30.41	22.624	0.65NS
	Ineffective	35.75	40.526	
Teacher question ratio (TQR)	Effective	33.34	10.385	4.57**
	Ineffective	21.34	10.582	
Content cross ratio (CCR)	Effective	14.03	5.397	7.22**
	Ineffective	5.56	3.852	
Indirect/ direct ratio (I/DR)	Effective	54.44	9.595	2.90**
	Ineffective	61.13	8.813	
Vicious circle ratio (VCR)	Effective	54.00	7.175	5.08**
	Ineffective	41.44	12.005	
Pupil steady state ratio (PSSR)	Effective	27.16	77.652	1.79
	Ineffective	88.84	178.820	
Instantaneous teacher response ratio (ITRR)	Effective	41.94	14.103	4.91**
	Ineffective	28.94	4.970	
Instantaneous teacher question ratio (ITQR)	Effective	22.75	18.109	3.99**
	Ineffective	9.50	4.951	

**Significant at 0.01 level *Significant at 0.05 level NS=Not Significant

The table shows that the mean difference of the effective and ineffective College of Education teachers on fourteen behavioural ratios (verbal behaviour). The result reveals that effective College of Education teachers significantly differ on pupil talk (PT), indirect teacher talk (ITT), direct teacher talk (DTT) and silence confusion (S/C) and Pupil initiative ratio (PIR), Teacher question ratio (TQR), Content cross ratio (CCR), Indirect/ direct ratio (I/DR), Vicious circle ratio (VCR), Pupil steady state ratio (PSSR), Instantaneous teacher response ratio (ITRR) and Instantaneous teacher question ratio (ITQR) indices of classroom teaching verbal behaviour and are significant at 0.05 level. While as, Teacher talk (TT) and Teacher response ratio (TRR) and Pupil steady state ratio (PSSR) indices of classroom behaviour are insignificant.

Comparison of the Effective and Ineffective College of Education Teachers on non-verbal teacher's classroom behaviour

Table 5: Showing mean difference of the Effective and Ineffective College of Education Teachers on non-verbal teachers classroom behaviour. (N=32 Each Group)

Item No.	Observations	Effective (%age)		Ineffective %age	
		Yes	No	Yes	No
1.	Blushes	0	100	14.34	85.66
2.	Changes voice during the run of lesson	28.57	71.43	8.93	91.07
3.	Drinks water during the run of lecture	0.00	100	1.79	98.21
4.	Encourages students initiative	40.98	59.02	22.32	77.68
5.	Expresses a jolly mood	16.96	83.04	16.07	83.93

6.	Frowns at students	0	100	0	100
7.	Gets irritated easily	0	100	0	100
8.	Makes eye contact	22.03	77.97	14.29	85.71
9.	Moves across the classroom to go to each individual child	68.75	31.25	29.46	70.54
10.	Nods Head	69.64	30.36	14.29	85.71
11.	Pats the students	57.38	42.62	25.89	74.11
12.	Pauses in speech pattern	77.68	22.32	29.46	70.54
13.	Proceeds towards windows in the classroom during the run of lesson	51.79	48.21	16.07	83.93
14.	Shakes head	71.43	28.57	13.39	86.61
15.	Stares at some students	16.96	83.04	19.64	80.36
16.	Stumbles while walking inside the classroom	11.61	88.39	34.82	65.18
17.	Turns pale	9.82	90.18	35.71	64.29
18.	Uses gestures for communication	74.11	25.89	14.29	85.71
19.	Yells at students	0	100	0	100
20.	Any other non-verbal behaviour indicator used by the teacher	10.50	89.50	14.22	85.78

Table 5 shows the ratings on various non-verbal behaviour of effective and ineffective College of Education teachers. The results indicate that there is not a single case of blushes, drinking water during the run of lecture, frowns at some students, gets irritated easily and yells at students only in case of effective College of Education teachers. While as effective and ineffective college of education do not differ on frowns at students, gets irritated easily, and stares at some students' dimension of non-verbal teacher behaviour. The table reveals that there is a significant mean difference of effective and ineffective College of Education teachers on non-verbal behaviour dimensions on blushes, changes voice during the run of lecture, encourages students initiative, expresses a jolly mood, makes eye contact, moves across the classroom to go to each individual child, nods head, pats the students, pauses in speech pattern, proceeds towards windows in the classroom during the run of lecture, shakes head, stares at some students, stumbles while walking inside the classroom, turns pale, and use of gestures, and are significant at 0.01 level. While as, any other non-verbal behaviour indicator used by the teacher is also significant at 0.05 level.

Table 6: Master Matrix (10x10) showing classroom interaction of Effective College of Education Teachers (N=32)

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**	**%age**
1	26	28	42	22	27	9	5	36	2	5	202	3.96
2	71	96	107	102	96	5	1	87	99	4	668	13.11
3	25	79	66	144	107	5	9	119	62	13	629	12.34
4	31	79	79	40	39	6	2	89	15	9	389	7.63
5	12	272	196	35	1729	79	19	9	4	9	2364	46.38
6	11	65	10	8	46	6	2	5	2	2	157	3.08
7	5	2	7	3	15	6	1	3	2	1	45	0.88
8	1	2	78	9	234	19	3	21	5	8	380	7.46
9	17	41	35	19	54	14	1	11	3	5	200	3.92
10	3	4	9	7	17	8	2	0	6	7	63	1.24
Total	202	668	629	389	2364	157	45	380	200	63	5097	100.00

Table 7: Master Matrix (10x10) showing classroom interaction of Ineffective College of Education Teachers (N=32)]

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**	**%age**
1	21	18	29	9	11	14	15	21	5	15	158	3.98
2	41	9	22	28	25	36	41	62	11	56	331	8.33
3	16	29	11	12	65	19	34	8	19	96	309	7.78
4	26	9	4	7	12	10	2	4	19	38	131	3.30
5	11	183	197	34	1731	79	24	2	3	13	2277	57.33
6	5	65	10	8	102	6	2	5	2	2	207	5.21
7	5	2	7	3	95	6	1	3	2	1	125	3.15
8	1	2	14	9	59	9	3	12	5	8	122	3.07
9	9	2	6	14	19	12	1	5	0	4	72	1.81
10	23	12	9	7	158	16	2	0	6	7	240	6.04
Total	158	331	309	131	2277	207	125	122	72	240	3972	100.00

Discussion

The effective and ineffective College of Education teachers do not differ on 'accepts feelings', 'lecturing', and 'giving directions' in Teacher Talk. While as the mean scores of effective College of Education teachers (20.73), (19.15), (11.97), and (1.45) is better than the mean scores of ineffective College of Education teachers showing significant difference at 0.01 level on 'Praises or encourages', 'accepts or uses ideas of pupils' 'asks questions' and 'criticizing or justifying authority' respectively in Teacher Talk. Similarly,

the mean scores of effective College of Education teachers (11.73), (6.09) and (1.58) is slightly better than the mean scores of ineffective College of Education teachers showing significant difference at 0.01 level on 'pupil talk response', 'pupil talk initiation' and silence/confusion category respectively.

The mean difference of the effective and ineffective College of Education teachers on fourteen behavioural ratios (verbal behaviour) The study reveals that effective College of Education teachers significantly differ on pupil talk (PT), indirect teacher talk (ITT), direct teacher talk (DTT) and silence confusion (S/C) and Pupil initiative ratio (PIR), Teacher question ratio (TQR), Content cross ratio (CCR), Indirect/ direct ratio (I/DR), Vicious circle ratio (VCR), Pupil steady state ratio (PSSR), Instantaneous teacher response ratio (ITRR) and Instantaneous teacher question ratio (ITQR) indices of classroom teaching verbal behaviour and are significant at 0.05 level. While as, Teacher talk (TT) and Teacher response ratio (TRR) and Pupil steady state ratio (PSSR) indices of classroom behaviour are insignificant.

The ratings on various non-verbal behaviour of effective and ineffective College of Education teachers. The results indicate that there is not a single case of blushes, drinking water during the run of lecture, only in case of effective College of Education teachers, frowns at students, gets irritated easily, and yells at students dimension of non-verbal teacher behaviour in case of effective and ineffective College of Education teachers. The table reveals that there is a significant mean difference of effective and ineffective College of Education teachers on non-verbal behaviour dimensions on changes voice during the run of lecture, encourages students initiative, makes eye contact, moves across the classroom to go to each individual child, nods head, pats the students, pauses in speech pattern, proceeds towards windows in the classroom during the run of lecture, shakes head, stumbles while walking inside the classroom, turns pale, and use of gestures, and are significant at 0.01 level. While as, any other non-verbal behaviour indicator used by the teacher is also significant at 0.05 level. The dimensions of non-verbal behaviour of the College of Education teachers, like, expresses a jolly mood, stares at some students, are insignificant at both the levels.

The master matrix of effective College of Education Teachers reveals that the total `lecturing` scores to 46.38%. The total `giving directions` amount to 3.08% in case of effective College of Education teachers, ask questions is 7.63%. the matrix shows that the maximum tallies (1729) have been observed in the cell (5-5) which means that 46.38% of the total time. The cell entry (2-3), (2-4), (2-5), (2-6), (2-9) contain 107, 102, 96, 5, 1 tallies respectively. The cell entry (4-2), (4-3), (4-4), (4-5), (4-6), (4-8), (4-9) and (8-4), (8-9), (9-2), (9-3), (9-4), (9-5). are 79, 79, 40 39, 6, 89, 15 and 9, 5,41, 35, 19, 54. All the cell entry indicate one major thing that the flow of the interaction is desirable. The effective College of Education teachers praises and encourages the student's ideas and subsequently accepts the student ideas and builds up his own discussion. The effective College of Education teachers invite questions from the students and explaining the concepts thoroughly. A glance at the two matrices reveals the differential patterns of classroom interaction in case of two groups of teachers.

The master matrix of ineffective College of Education Teachers reveals that the total `lecturing` scores to 57.33%. The total `giving directions` amount to 5.21% in case of ineffective College of Education teachers, ask questions is 3.30%. the matrix shows that the maximum tallies (1731) have been observed in the cell (5-5) which means that 57.33% of the total time. The cell entry (2-3), (2-4), (2-5), (2-6), (2-9) contain 22, 28, 25, 36, 11 tallies respectively. The cell entry (4-2), (4-3), (4-4), (4-5), (4-6), (4-8) and (8-4), (8-9), (9-2), (9-3), (9-4), (9-5) are 9, 4, 7, 12, 6, 10, 4 and 9, 5, 2, 6, 14, 519. All the cell entry indicate one major thing that the flow of the interaction is undesirable. The ineffective College of Education teachers do not praise and encourages the student's ideas and subsequently do not accepts the student ideas and builds up his own discussion. The ineffective College of Education teachers also do not invite questions from the students and explain the concepts thoroughly.

A glance at the two matrices reveals the differential patterns of classroom interaction in case of two groups of teachers.

Findings

1. The proportion of teacher talk' in case of effective college of education teachers was significantly higher than that of ineffective college teachers.
2. The extent of pupil talk' was found to be higher in the classroom managed by effective college of education teachers than that of ineffective college teachers.
3. The periods of silence' or confusion' were found to be comparatively more in the classes of ineffective college of education teachers than in case of effective college teachers.
4. The findings of the research shows that effective college of education teachers in comparison to ineffective college of education teachers accept feelings of the pupils; clarify; praise and encourage make lessons interesting, and give positive reinforcement inside the classroom.
5. The study reveals that effective college of education teachers in comparison to ineffective college of education teachers accept and develop the ideas expressed by the pupils inside the classroom.
6. The findings of the study reveal that effective college of education teachers in comparison to ineffective college of education teachers ask questions about the content, involves thinking and reasoning inside the classroom.
7. The study reveals that effective college of education teachers in comparison to ineffective of education college teachers ask questions about the content, involves thinking and reasoning inside the classroom.
8. Pupil talk in response to teacher talk and students giving answers to questions asked by the teacher is more in case of effective college of education teachers as compared to ineffective college of education teachers.
9. Talk by pupils, expressing own ideas of pupils, initiating new topics and asking thoughtful questions is more in case of effective college of education teachers as compared to ineffective college of education teachers.
10. Effective and ineffective Degree college of education teachers were insignificant on two categories of direct

teacher talk (lecturing, give proper directions).

11. The effective College of education teachers in comparison to ineffective College of education teachers were found to be significantly higher on classroom interaction behavioural ratios. viz; Direct Teacher Talk (DTT), Pupil Initiative Ratio (PIR), Teacher Question Ratio (TQR), Cross Content Ration (CCR), Vicious Circle Ratio (VCR), and Instantaneous Teacher Response Ratio (ITRR), and Instantaneous Teacher Question Ratio (ITQR). However, they were found significantly lower on Indirect teacher talk (ITT), Silence/ confusion (S/C), Indirect/direct ratio (I/DR), and Instantaneous teacher response ratio (ITRR) than ineffective teachers.
12. The effective and ineffective College of education teachers were found insignificant on Pupil Talk (PT), Teacher Response Ratio (TRR), and Pupil steady state ratio (PSSR) of classroom interaction behaviour.

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