

# Impact the class room verbal behaviour patterns of rural science teachers for secondary schools

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■ **ABSTRACT** : The study based on impact of class rooms of secondary schools (U.P.) during the years 2011-12 and 2012-13 through verbal behaviour pattern of rural science teachers which revealed that the magnitude for teacher talk remained higher (85.88%) over (80.02%) in case of rural female against male teachers. However, the magnitude of rural pupil talk was observed lower (13.49%) of female teachers against male (18.12%), which indicated more participation of rural male teachers over female due to more silence or confusion which was due to more acceptable behaviour putting higher number of questions for the development of students. The pupil initiation ratio indicated better in male teachers (35.34%) against female (33.38%) on account of their significant nature of better initiation of opportunities for discussion with the students. Finally the content cross ratio was also observed higher among female teachers over male *i.e.* 75.76 per cent over 61.46 per cent.

■ **KEY WORDS** : Education, Behaviour pattern, Science teachers, Content cross ratio

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The teaching of science in the Indian context, particularly at school level has received the attention of the national level institutions like NCERT and UGC on the hand, and the faculties of education of universities and institutes of advanced study on the other (Flanders, 1971; Pandey, 1997). there is not a growing concern for improving the class room interactional setting by making systematic study of the ebb and flow of class room events while the teacher is face to face with his class.

In our contemporary civilization and culture, science has become a part and parcel of our life. In the advanced countries, science has entered the very fabric of life and even in less advanced countries its impact on life is felt in an ever increasing manner, science today dominates not only a wide area of a select group of people in a society but has become part of every day's job of almost everybody at all the places. Such a situation obviously demands person's acquaintance with science, both as a product as well as a process. A man without contact with science and its manifestations will be complete misfit in modern society. If we conceive education

as process for preparation of society efficient citizen, it is imperative that each individual of the society acquires knowledge of science as well as scientific attitude of mind as a consequent discipline. This warrants training of teacher for teaching science effectively to large numbers.

Several systems of systematic observation have been reported over the past three decades the most popular ones for studying verbal behaviour of teachers, which comprise Flanders interaction analysis categories (FIAC), Richard Ober's Reciprocal Categories system (RCS), Amidon and Hunter's Verbal Interaction Category system (VICS), and Bentley and Miller's Equivalent Talk Categories (ETC). All these systems of observation have been employed to specially delineate the pattern of verbal interactions and the nature of direct and indirect influence oriented behaviours, strategies and tactics used for both teachers and students.

The broad parameters on which this study was planned consisted of the descriptive analysis of the interactional setting available in the rural science teachers for secondary school of eastern U.P.

**Objectives:**

To estimate the extent of directness and indirectness in the class room behaviour pattern of secondary school rural science teachers.

**Hypothesis:**

The verbal behaviour of rural male and female science teachers are different in terms of various categories of teachers and students talk in respect of indirectness.

**RESEARCH METHODS**

In the present study ex-post facto method has been used. The study belongs to the category of naturalistic observation of teachers in the secondary level class of eastern U.P. and is based on an ex-post facto method.

The logic of ex-post facto-method is that analysis and empirical verification of variable “Y” in a backward manner. The researcher can proceed from the observed difference in “Y” in a bid to find out and establish the possible causal factors. Ex-post facto research is concerned mainly with description and explanation of factors associated with observed events.

**Sampling:**

The techniques of purposive random sampling was employed to select teachers for the sample. Fifty science teachers of eastern U.P. were selected In the sample frame of 50 rural science teacher (25 rural male and 25 female science teachers) of secondary school of eastern U.P.

**Tools:**

In the present study Flander’s ten category system was used by the investigators analyzing and establishing interaction behaviour of Flanders Interaction Analysis Category System (FIACS).

The Flanders Interaction Analysis Categories (FIAC) was for studying the verbal behaviour of the teachers pertaining to directness and indirectness in their teaching behaviours. It has ten categories, out of which seven categories were used when the teacher is talking, two were

	Category	Behaviour
Response : Indirect teacher talk	1	Accepts feelings
	2	Praises or encourages
	3	Accepts or uses ideas of pupils
	4	Asks questions
Initiation direct teacher talk	5	Gives lectures
	6	Gives directions
	7	Criticizes or justifies authority
Response : Pupil talk initiation	8	Student response
	9	Student initiation
	10	Confusion or silence

used, when any pupil is talking, one category was used to indicate silence or confusion.

The total classroom communication in this system is described in terms of three possibilities teacher talk, pupil talk and silence or confusion. Table A depicts 10 categories of Flanders Interaction Analysis System as used here.

**RESEARCH FINDINGS AND DISCUSSION**

The direct and indirect behaviour patterns of science teachers have been found to be related to learning outcomes and pupil growth. The analysis of directness/indirectness in the teaching behaviours of rural science teachers has been studied by using FIACS as the tool for data collection. Directness implies lecturing, giving directions and criticisms intended to regulate and control pupil behaviour whereas indirectness denoted to acceptance of feelings, praise and encouragement and use of pupil ideas. In this study, the extent of directness and indirectness in the classroom teaching behaviours of rural science teachers has been studied. The study was confined to the teaching behaviour of 50 rural male and 50 female science teachers of eastern U.P. The results based on 10 x 10 master matrices for both the categories of teachers which are summarized in Table 1 and in terms of 10 variables are shown in Table 2.

Category of behaviour	Category	Male science teachers (%)	Female science teachers (%)
Accept feelings	1	0.48	0.24
Praises or Encourages	2	4.02	2.96
Accept or uses ideas of pupils	3	3.29	2.10
Ask questions	4	11.42	7.50
Lecturs	5	43.81	62.66
Gives directions	6	14.10	9.52
Criticizes of justifies authority	7	2.82	1.12
Student response	8	11.70	8.82
Student initiation	9	6.36	4.55
Silence or confusion	10	2.00	0.55

Sr. No.	Variables	Male (%)	Female (%)
1.	Teacher talk	80.02	85.88
2.	Pupil talk	18.12	13.49
3.	Silence or confusion	1.97	0.87
4.	Teachers response ratio	31.58	32.98
5.	Teachers question ratio	20.86	10.77
6.	Pupil initiation ratio	35.34	33.88
7.	Content cross ratio	61.46	75.76
8.	Steady state ratio	77.17	80.67
9.	Pupil steady state ratio	99.37	98.15
10.	I/D ratio	0.34	0.18

It may be noted from the perusal of Table 1 that the percentage of acceptance of students feelings praises or encourages, accept or uses of pupils ideas, question asked by the teachers, give directions, criticize or justifies authority, student response, student initiation and silence or confusion in case of rural male science teachers were 0.48, 4.02, 3.29, 11.42, 14.10, 2.82, 11.70, 6.36 and 2.00, respectively which were higher than that for rural female science teachers. The percentage figure for the same in respect of female science teachers being 0.24, 2.96, 2.10, 7.50, 9.52, 1.12, 8.82, 4.55 and 0.55, respectively. As against this, the percentage figure of lectures for rural female science teachers was 62.66 which is relatively higher than that for rural male science teachers the value being 43.81.

It may be further observed from Table 2 that the percentage figure for teacher talk (TT), teacher response ratio (TRR), content cross ratio (CCR) and steady state ratio (SSR) for rural female science teachers were 85.88, 32.98, 75.76 and 80.67, respectively as against the percentage figure for the same in respect of rural male science teachers being 80.02, 31.58, 61.46 and 77.17 per cent, respectively. It may be stated that although the magnitude of differences are not very high, the verbal behaviour of rural female science teachers in respect of teacher talk, teacher response ratio, content cross ratio and steady state ratio appear to be different and higher than that of rural male science teachers.

The percentage figures for pupil talk (PT), teacher question ratio (TQR), pupil initiation ratio (PIR) and pupil steady state ratio (PSSR) for rural male science teacher were 18.12 per cent, 20.86 per cent, 35.34 per cent and 99.37 per cent, respectively while the rural female science teachers these figures were 13.49 per cent, 10.77 per cent, 33.88 and 98.15 per cent, respectively this showed that the rural male science teachers behaviour appeared to be different and higher than that of the rural female science teachers.

The magnitudes of silence or confusion and I/D ratio in case of rural male science teachers were 1.97 per cent and 0.34, respectively while for rural female science teachers these figures were 0.87 per cent and 0.18 per cent, respectively which showed that the differences were significant in nature of rural male science teachers and appeared to be relatively indirect as compared to the rural female science teachers.

### Generalizations and conclusions:

The analysis of data pertaining to class room interactional setting for different categories and variables of science teachers here warrant the following generalization and conclusions:

- Teacher talk was very high in both the categories *i.e.* in rural male and female science teachers but the magnitude for teacher talk was found higher in the case of rural female

(85.88%) than rural male science teacher (80.02%).

- The magnitude of pupil talk was lower for rural female science teachers (13.49%) than rural male science teachers (18.12%). This difference indicated that rural male science teachers took more student participation in the development of lesson than rural female science teachers.
- The period of silence or confusion are mostly broken by the teachers. The difference between silence or confusion was significant in nature for both the categories *i.e.* rural male and female science teachers but it was relatively higher for rural male science teachers (1.97%) than rural female science teachers (0.87%).
- The amount of teacher question ratio (TQR) was found to be higher in case of rural male science teachers (20.86%) and lower in case of rural female science teachers (10.77%). This was of general acceptance that male science teachers put a lot of questions to develop their lesson.
- Pupil initiation ratio was found to be higher for male science teachers (35.34%) and was lower in case of female science teachers (33.88%) and the actual magnitude of difference was significant in nature. This is due to the fact the female science teachers ask more question and give less chances to students to initiate but the male science teacher provide opportunity to initiate the discussion.
- The content cross ratio was found to be (75.76%) in case of female science teachers and for male science teacher (61.46%). In both the cases *i.e.* female and male science teachers, the teachers tended to lay more emphasis on the content transaction. But it was found to be relatively higher in case of female science teachers.

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