

CLASSROOM VERBAL BEHAVIOUR PATTERN OF SECONDARY SCHOOL SCIENCE TEACHERS

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The modern civilization is a scientific civilization. This is an age where modern society is completely drawn into the scientific environment; and science has become an integral part of our life and living. Now we can not think of a world without science. (Das, 1985)

The citizen of the modern world sees countless manifestations of science all around him. There is no aspect of man's life today which has not been influenced by science one way or the other. The achievements and benefits of science, in fact, touch all sectors and all levels of the modern society.

The recent trend in science teaching has shown a distinct tendency of general change in emphasis from mere acquisition of facts to the development of functional learning from unrelated knowledge units to contents logically organized about problems that concern the pupils. One of the primary goals of science teaching is to give knowledge and information about the world we live in. The school science course has to reflect these objectives in a very close and intimate manner. The UNESCO source book for science teaching (1978) had rightly stressed the broad parameters for improving science teaching.

Several systems of systematic observation have been reported over the past three decades the most popular ones for studying verbal behaviour of teachers comprise Flander's Interaction Analysis Categories (FIAC), Richard Ober's Reciprocal Category 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 interaction and the nature of direct and indirect influence-oriented behaviour strategies and tactics used both by teacher and students.

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The broad parameters on which this study was planned consisted of the descriptive analysis of the interactional setting available in the pre-service and in-service science teachers of secondary schools located in Varanasi district.

OBJECTIVES OF THE STUDY:

To estimate the extent of directness and indirectness in the classroom verbal behaviour of Pre-service and In-service science teachers.

HYPOTHESIS:

The verbal behaviour of Pre-service and in-service science teachers are different in terms of various variables of teacher and student in respect of indirectness.

METHODOLOGY:

Sample: The technique of purposive random sampling was employed to select teachers for the sample. 50 science teachers of Varanasi districts were selected. In the sample frame of 50 science teachers, 25 Pre-service and 25 In-service science teachers of secondary school of Varanasi district were taken as sample.

Tools: In the present study Flander's Interaction Analysis Category System (FIACS) is used by the investigator for analyzing and establishing interaction behaviour.

RESULTS AND DISCUSSION:

The direct and indirect behaviour pattern 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 science teachers has been studied by using FIAC as the tool for data collection. In this study the extent of directness and indirectness in the classroom teaching behaviours of science teachers has been studied.

The study was confined to the teaching behaviour of 25 Pre-service and 25 In-service science teachers of Varanasi district. The results based 10x10 master matrices for both the categories of teachers are summarized in terms of 10 variables are shown in Table1.

Table-1 showing Teaching Behaviour of Pre-service and In-service Science Teachers in Terms of 10 variables

S.N.	Variables	In-Service (in %)	Pre-Service (in %)
1.	Teacher Talk	83.92	79.75
2.	Pupil Talk	14.66	19.10
3.	Silence or Confusion	1.42	1.15
4.	Teachers Response Ratio	22.11	32.58
5.	Teacher Question Ratio	15.10	16.51
6.	Pupil initiation Ratio	34.62	37.81
7.	Content Cross Ratio	68.41	56.98
8.	Steady State Ratio	78.77	75.93
9.	Pupil Steady State Ratio	98.77	99.97
10.	I/D Ratio	0.24	0.23

It may be noted from the perusal of table-1 that the percentage figure for Teacher Talk (TT), Steady State Ratio (SSR) and Content Cross Ratio (CCR) for Pre-service science teachers are 79.75%, 75.93% and 56.98% respectively as against the percentage figure for the same in respect of in-service science teachers being 83.92%, 78.77% and 68.41% respectively. It may be generally stated that although the magnitude of difference are not very high, the verbal behaviour of in-service teachers in respect of Teacher Talk, Steady State Ratio and Content Cross Ratio appear to be different and higher as compared to pre-service science teachers.

The percentage figure for Pupil Talk (PT), Teacher Response Ratio (TRR), Teacher Question Ratio (TQR), Pupil Initiation Ratio (PIR) and Pupil Steady State Ratio (PSSR) for In-service science teachers are 14.66%, 22.11%, 15.10%, 34.62% and 98.77% respectively while for pre-service science teachers these figure are 19.10%, 32.58%, 16.51%, 37.81% and 99.97% respectively. This shows that the pre-service science teachers, teacher behaviour appear to be different and higher as compared to in-service science teachers in respect of pupil talk, teacher response ratio, teacher question ratio, pupil initiation ratio and pupil steady state ratio.

The magnitude of silence or confusion in case of pre-service science teachers is 1.15% and in case of in-service teachers is 1.42% which shows that the difference is significant in nature.

The percentage of I.D. Ratio for in-service and pre-service science teachers are 0.24% and 0.23% respectively. It may therefore be stated that the In-service science teachers appear to be relatively indirect as compared to pre-service science teachers.

The analysis of data pertaining to classroom interactional setting of different variables of science teachers here warrant the following generalization and conclusions

Teacher-Talk is very high in both the categories i.e. in-service and pre-service science teachers, but the magnitude for teacher talk is found to be higher in case of in-service science teachers than pre-service science teachers. However, this difference does not seem to be significant enough and may be due to sampling error.

The participation of pupils in the classroom interactional pattern as evident from the pupil talk is found to be lower in magnitude in comparison to that of teacher talk. The magnitude of pupil talk is lower for in-service science teachers than pre-service science teachers. This difference indicates that pre-service science teachers involve more students in development of lesson than in-service science teachers.

The period of silence or confusion are mostly broken by the teachers. The difference between silence and confusion is of very marginal in nature for both the categories i.e. in-service and pre-service science teachers but it is relatively higher for in-service science teachers than pre-service teachers. However, this difference is not significant.

Teacher response ratio is found to be higher for pre-service science teachers than in-service science teachers. It is very significant in nature. This clearly indicates that pre-service science teachers more frequently use and praise the student's idea than in-service science teachers.

The magnitude of teacher question ratio is found to be higher for pre-service science teachers as compared to in-service science teachers. i.e. the tendency of asking question is found to be higher in pre-service science teachers.

Pupil initiation ratio is found to be higher for pre-service science teachers and is lower for in-service science teachers and the actual magnitude of difference is significant in nature. This may be due to the fact that in-service science teachers ask

more questions and give less chances to students to initiate but the pre-service science teachers provide ample opportunity to initiate the discussion.

The content cross ratio is found to be higher in case of in-service science teachers than pre-service science teachers. In both the cases i.e. in-service and pre-service science teachers, the teachers tend to lay more emphasis on the content transaction.

The amount of steady state ratio is found to be lower in magnitude in case of pre-service science teachers as compared to in-service science teachers.

The amount of PSSR is found to be higher for pre-service science teachers and is lower in case of in-service science teachers but the actual magnitude of difference is marginal in nature and is not significant.

I.D. ratio is found to be higher in case of in-service science teachers as compared to that of pre-service teachers.

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