CHAPTER VI

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This chapter includes discussion of results according to the hypotheses tested. Both the quantitative and qualitative data are utilized.

Hypothesis 1. There will be significant main as well as interaction effects of teacher and school type on teachers' expectations, competency and teaching strategies.

The main effect of teacher type was significant on teachers' total expectations and all its dimensions (expectations from school, self and colleagues, parents and students), competency and all its dimensions (personal characteristics, professional characteristics, academic background, pupil-teacher relations, classroom management, miscellaneous behaviour), and some of the teaching strategies and dimensions (meaning orientation approach, deep approach, relating ideas, intrinsic motivation, strategic approach, achievement motivation, styles and pathologies of teaching strategy and globetrotting). Refer table nos. 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7 and 5.8.

School type had significant main effects on total expectations and all its dimensions (like expectations from school, self and colleagues, parents and students), total competency and some dimensions (academic background, pupil-teacher relations, miscellaneous characteristics) and some
teaching strategies and their dimensions (meaning orientation, intrinsic motivation, reproducing orientation, extrinsic motivation, achieving orientation and comprehensive teaching). Refer table nos. 5.1, 5.3, 5.4, 5.5, 5.6, 5.7 and 5.8.

The interaction effects of teacher and school type were significant on total expectations and its dimensions (expectations from school, self and colleagues, parents and students), total competency and some dimensions (professional characteristics, academic background, pupil-teacher relations and miscellaneous behaviour), some of the teaching strategies and dimensions (meaning orientation, deep approach, relating ideas, intrinsic motivation and gleberotting). Refer table nos. 5.1, 5.4, 5.5, 5.6, 5.7 and 5.8. The hypothesis 1 was thus, partially supported.

The mean scores of the non-tribal teachers were consistently higher than the tribal teachers on all variables. Thus, the results relating to teacher type influencing the three dependent measures and the dimensions of these provided support to the hypothesis of differences between the tribal and the non-tribal teachers. The consistently high ratings of the non-tribal teachers on expectations variable and its dimensions yielded to the explanation of variations in socio-cultural orientations of the two groups. In the social milieu of the non-tribals, a higher emphasis was placed on the achievement and accomplishments of individual members. The
teachers were thus, encouraged to develop higher expectations and they often found them fulfilled. In tribal social milieu, the levels of aspiration and achievement were kept low, inculcating in the tribal teachers the tendency of low expectations. In terms of the 'self-fulfilling prophecy' model advocated by Rosenthal and Jacobson (1968), higher teacher expectations on all dimensions would show better fulfillment. Not only the teachers own, but others' expectations also were fulfilled by their own activities.

According to Ryans (1969), teachers differed in competency. Some were more competent than others. In this research, non-tribal teachers as a group were found more competent compared to the tribal teachers. This research was thus, suggestive of the probability of competency as a group behaviour. It seemed that the individual traits did not necessarily determine a teacher's competency. Perhaps all individuals coming from a socio-cultural background and orientation displayed certain common characteristics which comprised competency. The non-tribal socio-cultural milieu was more conducive and thus the non-tribal teachers acquired better competency than their tribal counterparts.

The non-tribal teachers compared to the tribal teachers, used certain teaching strategies more often and more consistently like meaning orientation approach and styles and pathologies of teaching. An adoption of such strategies by the teachers was considered to be partly determined by social and partly by personal expectations. Some of these
strategies might be linked indeed to their better academic achievement and to the conscious choice of the strategies which would make instruction effective and learning meaningful.

In fact, an explanation of functional relationships among the dependent measures can be offered perhaps in terms of the process theories of work motivation. The process theories were concerned with the cognitive antecedents of motivation or effort and the way they related to one another. Vroom's (1964) expectancy theory of motivation suggested that the choices made by a person among alternative courses of action were lawfully related to psychological events occurring contemporaneously with the behaviour. Thus, the non-tribal teachers would assume that their expectancy may meaningfully relate to both competence and teaching strategy. Since most of the dimensions were found related to the crucial components of the teaching-learning environment, namely personal attributes, academic environment and interpersonal relationships, it seemed possible to infer that the non-tribal teachers had a better cognitive appraisal of the global teaching-learning situation and thereby showed higher scores than the tribal teachers. A higher teacher profile of the non-tribal teachers would have also been reflected because of their prior exposure to an enriched psychological environment in which they develop a more positive self-concept of themselves. A positive self-concept along with a better cognitive appraisal would certainly infuse in them optimism, confidence, better social competence and even
better planning and co-ordination. Such trends were evident in results relating to intrinsic motivation, globetrotting and classroom management aspects of teaching strategy and competency.

The non-tribal teachers did not differ significantly from their tribal counterparts on the use of evidence, reproducing orientation, surface approach, syllabus boundness, fear of failure, extrinsic motivation, achieving orientation, disorganized study method, negative attitude to teaching, comprehensive teaching, operation teaching and improvidence. Many of these strategy dimensions did not require specific skill-oriented behaviours. The lack of significant differences on achieving orientation, fear of failure, operation teaching however, seemed to indicate that both the tribal and non-tribal teachers did not perceive the total environment as very challenging to achievement. For example, both types of teachers indulged in improvidence and negative attitude towards teaching or syllabus boundness. This might have happened due to the routine constraints experienced by the teachers or/and also because of the lack of general sensitivity to the tribal milieu, which is deprived on many physical counts, but also rich if skillfully used.

School type did not have significant main effect on the personal characteristics, professional characteristics and classroom management dimensions of competency. The effect was not significant on many dimensions of teaching strategies,
namely relating ideas, use of evidence, surface approach, syllabus boundness, fear of failure, strategic approach, disorganized study method, negative attitude to teaching, achievement motivation, styles and pathologies of teaching, globetrotting, operation teaching and improvidence. The 't' test revealed inter-school differences on these and other dimensions. The findings showed a trend towards a superior orientation in non-tribal psycho-social environment. The non-tribal schools differed significantly from both tribal and mixed schools. On many dimensions, the non-tribal schools were the best, while on some other dimensions the mixed schools were found better than the tribal schools. Teachers in non-tribal schools had higher expectations, were more competent and used more of meaning orientation, achieving orientation, strategic approach, styles and pathologies of teaching, comprehensive teaching, globetrotting and operation teaching strategies than their counterparts in tribal and mixed schools. Teachers in non-tribal schools were also more intrinsically motivated than those in tribal and mixed schools. Thus, in terms of inter-personal relationships, orientations, attitudes and effective teaching styles, teachers in the non-tribal schools scored higher compared to the tribal and mixed schools.

It might be argued that the teachers in non-tribal schools had better exposure which led to their better communication skills, higher expectations from school, self and colleagues, parents and students. The higher professional
competence of the teachers in non-tribal schools could be attributed to their improved perceptual and academic skills among them. Along with the personal and job content, job context variables contributed to competence. The absence of significant differences between teachers in tribal and mixed schools on these dimensions implied that the teachers in tribal and mixed schools had shared values because of common characteristics. The achievement motivation and the use of strategic approach were known to be influenced by one's psychological adaptation to life situations and dominant value systems.

Teachers in non-tribal schools used comprehensive teaching, globetrotting, and operation teaching more than their counterparts in tribal and mixed schools. The teachers in tribal and mixed schools were comparable in the use of these approaches. Interestingly, teachers in all three types of schools (tribal, non-tribal and mixed) adopted improvidence approach almost to an equal extent, suggesting the role of certain universal psychological processes used by different types of teachers in different types of schools.

The significant interaction effects of teacher and school type on total expectation and all its dimensions, total competency and some of its dimensions (including interpersonal relationships, motivation, personal characteristics and some dimensions of teaching strategies) indicated that many of the psycho-social variables assumed meaning in relation to the teachers' characteristics in
particular school settings. The particular settings perhaps evoked certain characteristic behaviours in teachers and particular teacher behaviours might be interpreted differently in different settings. Non-tribal teachers in non-tribal schools performed higher on most dimensions of expectations, competency and teaching strategy compared to their counterparts in the tribal and mixed schools. The common belief of many educational policy makers that the tribal teachers in tribal setting would perform better compared to their placement in a non-tribal or mixed school situation (New Policy on Education, 1986) was thus not supported by present results. In fact a note of caution seemed to be in order that the non-tribal teachers could be employed to perform more effectively and efficiently even in tribal schools to make teaching a success.

The lack of significant interaction effects on some of the dimensions of competency and teaching strategies (namely personal characteristics, classroom management, use of evidence, reproducing orientation, surface approach, syllabus boundness, fear of failure, extrinsic motivation, achieving orientation, disorganised study method, negative attitude to teaching, achievement motivation, styles and pathologies of teaching, comprehensive teaching, operation teaching and improvidence) could mean that these were affected by the nature of teachers or by the characteristics of the schools independently. In other words, non-tribal teachers in tribal schools might not contribute as much meaningfully as they would in non-tribal schools and vice versa.
Thus, the hypothesis that there would be significant teacher and school type main as well as interaction effects on teacher's expectations, competency and teaching strategy was partially accepted.

Hypothesis 2: There will be significant relationships between teachers' demographic characteristics and their expectations, competency and teaching strategies.

Teachers' educational qualifications and years of service did not have significant relations with their expectations, competency and adoption of meaning orientation approach. While income had significant positive relationship with these, age and expectation were negatively related. The hypothesis 2 was thus partially accepted.

The study used four demographic characteristic of teachers namely educational qualifications, years of service, income and age. It was observed that two demographic variables namely income and age had significant relationship with some teacher attributes. Income had positive and significant correlation with teachers' expectations, competence and use of meaning orientation approach to teaching. A negative but significant relationship was found between teachers' age and expectations. However, educational qualifications and years of service did not correlate with teachers' expectations, competency and the four teaching
strategies like meaning orientation, reproducing orientation, achieving orientation and styles and pathologies of teaching strategy (Refer table 5.9).

The findings could be explained in terms of social psychological theories which emphasized the role of economic variables in shaping social behaviour. Teachers in high income group had either landed property which gave them ample income or had working spouse or both. Economic security gave them a sense of social security. It also instilled confidence and sense of work commitment in them. They had positive attitudes, higher expectations and competency and adopted meaning orientation approach in teaching students. These results found support in the earlier findings by Ryans (1969) Debnath (1971) and Jangira (1972) who found socio-economic status as an important factor in effective teaching.

In Indian society, age and socio-economic status were well recognised dimensions of differential behavioural norms. As age increased, peoples' involvement and active participation in programmes of action decreased. In educational institutions the elderly teachers expressed that they had already lived most of their life and they had little to look forward. On the other hand, young people were expected to take more responsibility and have higher expectations from the schools, self and colleagues, parents and students. Thus, it was evident that the younger teachers who were also young in the profession, had higher professional characteristics and greater commitment. The
results corroborated the findings of Dale (1967) and Ryans (1969). They indicated that age was an important factor in determining teacher effectiveness. Ryans commented that generally the scores of older teachers (55 years and above) showed this group at a disadvantage compared with younger teachers. The longitudinal studies by Fuller (1969) and Felder et al. (1979) also revealed similar trends. They suggested that teacher effectiveness might increase through the early years of a teacher career and probably did not continue to be so in a linear fashion. Veeraraghavan and Bhattacharya (1989) also reported similar results. It appeared that perhaps the posting of younger teachers in tribal areas could bring improvement in the education of the tribals.

The finding of absence of a positive relationship between teachers' educational qualifications and their competence was different from the findings of Ryans (1969), Debnath (1971) and Jangira (1972). They found that teachers' academic achievement and training were important determinants of effective teaching. Similarly, lack of positive relationship between teachers' years of service (experience) and competence in this study did not support the findings of Saxena (1968), Debnath (1971) and Mehta (1972). However it supported the findings of Ryans (1969) who obtained that teachers with extended experience scored lower than less experienced teachers on most of the variables measuring teacher competence.
Hypothesis 3: The main as well as interaction effects of matched teacher-students type, school type, students' gender and educational class will be significant on students' psychological differentiation and academic achievement.

There were no significant main effects of matched teacher-students type, school and gender type on students' psychological differentiation. The main effect of educational class was significant. Some of the interaction effects were also significant. Matched teacher-students type, school and educational class had significant main effects on academic achievement. Gender did not have significant main effect. Among the interaction effects, matched teacher-students type and school type, matched teacher-students type and gender were significant (Refer table nos. 5.10, 5.14 and 5.15). Thus, on the basis of the results, hypothesis 3 was partially proved.

Matching teacher-students similar condition (tribal teachers teaching tribal students or the non-tribal teachers teaching non-tribal students) or matching teacher-students dissimilar condition (tribal teachers teaching non-tribal students or non-tribal teachers teaching tribal students) did not have significant influence on students' psychological differentiation. Thus, the results ruled out the possibility of teacher type facilitating the cognitive functioning of students. It seemed that students' psychological differentiation developed independent of teacher-students socio-cultural congruity or ethnic similarity.
There were no significant differences in the psychological differentiation of students studying in tribal, non-tribal and mixed schools. Results indicated that though the three types of schools included in the study varied considerably in infrastructure, population composition and academic functioning, this did not contribute to differences in the psychological differentiation of students. The psychological differentiation of students developed equally in all the types of schools. Thus, the finding was in contradiction to the proposed hypothesis that the schools would differentially affect students' psychological differentiation.

The present findings corroborated the findings of Mishra and Sinha (1988) who reported in their study of tribals that the quality of schooling did not contribute to this process directly (superior Vs. ordinary schools). However, the results did not support the findings of Sinha (1977), Mishra and Gupta (1978) and Tripathy (1990) who found that schools played a significant role in determining students' psychological differentiation.

There was no gender difference on psychological differentiation indicating that gender did not play a role in determining the students' psychological differentiation. The tribals as well as the non-tribals had a patrilineal system of family in which clear-cut sex role differentiations were made, but those who came to schools (both males and females) demonstrated closely comparable cognitive styles.
Apparently, the schools made compatible demands because of which perhaps, parents did not assign extra restrictive household responsibilities to the female students. Further, the social and economic factors that make parents compulsively assign different roles to the female students were not there in any group. Thus, the results did not support the hypothesis of gender differences in psychological differentiation. However, sex role differentiations were found significant in the sedentary agricultural society by Van Leeuwen (1978). Gender differences in psychological differentiation had been reported by Berry (1976), Sharma and Tripathy (1984), Pandey and Pandey (1984) and Tripathy (1990), who observed high cognitive differentiation in males than the females. No gender difference in cognitive styles were reported by Taylor (1977), Sinha (1980) and Puspa (1981). In a recent study on the Santhal tribe which was close to sedentary agricultural end, sex was not found significant in psychological differentiation (Sinha, 1989). Our finding of no gender difference on psychological differentiation supported the latter findings. Since the Kondh tribe was close to the sedentary agricultural end of eco-cultural dimension, they did not display gender differences in cognitive style.

The educational class had significant effect on students' psychological differentiation. Students in higher class (class V) had higher differentiation scores than the students' in lower class (class IV). Thus, students having
One more year of schooling had higher psychological differentiation than those having one year less of schooling. This in fact, suggested the confounding effect of age and training. As one acquired more training at school, one also matured and thus adopted more field independent cognitive style. Moreover, this appeared to be a universalistic feature of all learners, irrespective of their tribal and non-tribal origin.

The results were in line with earlier findings of Witkin (1954), Goodenough and Karp (1964) and Mitchelmore (1974), who reported significant age/grade effects on cognitive styles. In a similar context, Puspa (1981) reported significant age effects on cognitive styles which could be similar to effects of grade/class as age and grade were usually taken to be equivalent by most researchers.

There were significant interaction effects of school and gender, school and educational class, gender and educational class, matched teacher-students type, gender and educational class on students' psychological differentiation (Refer table 5.10). The mean score analysis revealed that the female students in tribal schools, class V students in non-tribal schools, male students in class V, and class V male students under matched teacher-students dissimilar groups scored higher on psychological differentiation tasks than the students in counterpart groups. The interaction effects could be attributed to the operation of certain psychological
processes like acquisition of complex cognitive skills as well as principles of learning and maturation.

There were no significant interaction effects of matched teacher-students and school type, matched teacher-students type and gender; matched teacher-students type and educational class; matched teacher-students type, school and gender; matched teacher-students type, school and educational class; school type, gender and educational class; matched teacher-students type, school, gender and educational class on students' psychological differentiation.

On the basis of the above findings the hypothesis that there would be significant main as well as interaction effects of matched teacher-students type, school, gender and educational class on psychological differentiation could only be partially accepted.

The effects of matched teacher-students type was significant on academic achievement. The matched teacher-students similar condition facilitated students' academic achievement more than matched teacher-students dissimilar condition. In other words, non-tribal students taught by non-tribal teachers and the tribal students taught by the tribal teachers showed better academic achievement than the non-tribal students taught by the tribal teachers and the tribal students taught by the non-tribal teachers. It may be argued that the socio-cultural congruity or ethnic similarity between the teachers and students made it easy for
the students to benefit from teaching and learning. Conversely, the contrast condition created emotional and cognitive problems. The present findings did not support the results reported by Vierra (1984), that there was no academic advantage or disadvantage of matching teacher-students ethnicity, when ethnicity was broadly defined.

It supported the assumptions of Kirknes (1986), who stated that to ensure compatibility of school and natal culture, teachers should come from the students' culture. Also the proposed recommendation of New Policy of Education (1986) that the tribal teachers should be appointed to teach tribal students for the academic success of the students, found support in this study.

School type had significant main effect on students' academic achievement. The students in non-tribal schools had the best performance, though students in tribal schools were better than those in mixed schools. It seemed that the non-tribal schools emphasized academic achievement more than the other two types of schools. It may also be due to the fact that students in non-tribal schools were economically and socially better off, and; comparatively their parents had some education and thus higher aspirations for their children than the parents of children in tribal and mixed schools. Non-tribal schools had better infrastructure, teaching and learning conditions which might have as well fostered students academic achievement. Lowest performance of the students in mixed schools indicated that integrative
education adversely affected students' academic achievement. Thus, mixed schools seemed to interfere in students' learning and achievement, against the agenda and objectives these had.

The differential effect of school type on students' academic achievement had been reported by Coleman (1966), Rutter et al. (1979), Opal and Sen (1979), Schneider (1985), Veeraraghavan and Samal (1988), and found support in this study in that the superior school quality enhanced students academic performance. Thus, the hypothesis that the main effect of school would be significant on students' academic achievement was confirmed.

The main effect of gender was not significant indicating that the male and female students did equally well in school examination and so were comparable on academic achievement. Aruna (1981) found that the academic achievement of boys was superior to girls. Bisht (1984) and Tripathy (1990) reported that male students had better academic achievement than the female students, but present results did not support the findings of gender difference in academic achievement. The hypothesis that there would be significant effect of gender on academic achievement could not be supported.

The main effect of educational class on students' academic achievement was significant. Mean scores revealed that the class IV students were better in academic achievement than the students in class V. Thus, students in
lower class having one year less of schooling showed higher academic performance than students in higher class having one year more of schooling. Such a difference in performance could be explained by three probable reasons like (1) lessons taught in higher class were difficult in nature, (2) the system of examination/evaluation was different for higher and lower classes, and (3) as the students go to higher class their focus on academic contents were diluted and environmental issues exerted some influence on their attention and perception.

Bisht (1984) found no age differences in academic achievement. In a recent study Tripathy (1990) also reported the better academic performance of the lower class children compared to those in higher class. Thus, the hypothesis that students in different educational class would significantly differ on academic achievement was confirmed.

There were significant interaction effects of matched teacher-students type and school type, and matched teacher-students type and gender on students academic achievement. Under matched teacher-students similar condition in non-tribal schools, the non-tribal students taught by non-tribal teachers in non-tribal schools, had higher mean academic achievement than the other counterpart groups. Similarly female students performed better in academic achievement under matched teacher-students similar condition (i.e. tribal female students taught by tribal teachers and non-tribal female students taught by non-tribal teachers) than the other
counterpart groups.

However, there were no significant interaction effects of school type and gender; school type and class; gender and class, matched teacher-students, school type and class; matched teacher-students, gender and class; school type, gender and class; and matched teacher-students, school type, gender and class on students' academic achievement.

Thus, the results of the present study only partially supported the hypothesis of significant interaction effect of matched teacher-students, school type, gender and educational class on students' academic achievement.

Hypothesis 4: There will be positive and significant relationship between students' psychological differentiation and academic achievement in the total group as well as in different subgroups like tribal, non-tribal and matched teacher-students type groups in tribal, non-tribal and mixed schools.

There was significant positive relationship between students' psychological differentiation and academic achievement in the total group as well as in tribal and non-tribal groups. Results varied in different matched teacher-students groups in tribal, non-tribal and mixed schools. On the basis of the present findings, the hypothesis 4 was partially supported.

Results showed that there were significant positive
correlations between students' psychological differentiation and academic achievement in the total group as well as in tribal and non-tribal groups. In matching teacher-students groups, only in two groups i.e. in matching teacher-students similar group in non-tribal schools and matching teacher-students dissimilar group in tribal schools, the students' psychological differentiation was positively and significantly related to their academic achievement (Refer table nos 5.11 and 5.17).

Thus, the level of psychological differentiation had been established as a correlate of students' academic achievement. The more minutely the students differentiated the environment, the more field independent they were found in their cognitive style. In other words, students scoring higher on psychological differentiation test (SPEFT) were considered as field independent. Moreover, they were expected to show better academic performance as field independence represented higher cognitive functioning, positively contributing to academic achievement. Frechner (1973) argued that the traits found in the cognitive style were positively related with all aspects of academic achievement. Vaidya and Chunsky (1980), Watkin and Astilla (1980) and Shade (1983) also reported similar results. Verma and Swami (1980) found that field independent cognitive style facilitated the scholastic achievement of economically disadvantaged students. Tripathy (1980) found positive and significant relationship between cognitive styles and academic
achievement of both tribal and non-tribal children.

The results supported the present findings. Thus, the hypothesis that psychological differentiation and academic achievement would be positively correlated in the total group as well as in tribal and non-tribal groups was found confirmed in matched teacher-students similar and dissimilar groups in non-tribal schools, and matched teacher-students dissimilar group in mixed schools.

The insignificant correlation between psychological differentiation and academic achievement in matched teacher-students groups like matched teacher-students dissimilar groups in non-tribal schools, matched teacher-students similar groups in tribal schools and matched teacher-students dissimilar groups in mixed schools, was striking and required further investigation. One plausible explanation for the lack of significant correlation between psychological differentiation and academic achievement could be the small sample size in different matching conditions. The sample size in different groups was reduced to 20 (N=20) in tribal and non-tribal schools and further reduced to 10 (N=10) in mixed schools.

**Hypothesis 5**: Tribal students will differ significantly from the non-tribal students on psychological differentiation and academic achievement.

Results showed that the tribal and non-tribal students
differed significantly on academic achievement but not on psychological differentiation. Thus, hypothesis 5 was partly supported.

An interesting trend was observed in results regarding the psychological differentiation and academic achievement of tribal and non-tribal students. The tribal students did not differ from their non-tribal counterparts on psychological differentiation. Thus, the age old belief/myth that the non-tribals were cognitively superior to the tribals, was disproved. It raised a flag of caution and hope.

In earlier studies on cognitive factors like intelligence, tribals were consistently found to have low I.Q. level (Rath and Misra, 1974; Rath et al., 1979; Sinha, 1980; Ameerjan, 1984, 1987). The present study failed to support these findings as it found no differences in the psychological differentiation of tribal and non-tribal students.

Such a finding could possibly be due to (1) the nature of the tests used to measure the level of cognitive dimension of students. The present measure (SPEFT, Sinha, 1984) was specially constructed with familiar objects and animals to measure children's psychological differentiation in tribal and rural contexts. The appreciably good performance of the tribals on SPEFT highlighted the relevance of culturally appropriate tests and measurements in assessing the strength of the cognitive ability of the individuals from widely varying cultures. (2) Secondly, with the passage of
time and upsurge of science and technology, communication and mobility became inevitable and it led to fast acculturation of the tribals through culture contact with the non-tribals. Many of the tribes in the recent past have been acculturated to quite a good extent. This perhaps contributed to the better performance of the tribals on test of psychological differentiation. Results of the present study showed that the tribal students had equal potentiality as the non-tribal students in their cognitive abilities. Thus, the hypothesis of significant differences between tribal and non-tribal students on psychological differentiation could not be confirmed.

In conformity to many earlier researches (Sinha and Mishra, 1977; Singh and Singh, 1979, Uashashri, 1980; Ameerjan, 1984, 1987), the results of this study revealed that the non-tribal students had superior academic achievement compared to their tribal counterparts. There was no difference between tribal and non-tribal students on psychological differentiation and it logically followed that there should not be a difference between them on academic achievement. But the poor academic performance of the tribals was striking. This could be explained possibly with the help of other personal and social factors. The academic achievement did not prove to be a valid measure of cognitive ability of students. The psychological processes underlying academic achievement were perhaps not the same as those shaping psychological differentiation. Thus, the commonly
offered explanation of the poor academic achievement of the tribal students that they were low in cognitive ability or intelligence has to be ruled out. The poor academic performance of tribals could be because of numerous reasons, as shown in qualitative data like: (1) low emphasis on academics and schooling in tribal culture, (2) widespread illiteracy, (3) poverty, (4) parental apathy, (5) poor school conditions, inadequate reading, writing and teaching materials, and (6) teachers' indifference and non-commitment to students' welfare etc. Results supported the hypothesis of significant differences between the tribal and non-tribal students on academic achievement.

**Hypothesis 6**: Tribal students studying in tribal and mixed schools, and non-tribal students studying in non-tribal and mixed schools will differ from each other on psychological differentiation and academic achievement.

Results indicated that the tribal students studying in tribal and mixed schools, and the non-tribal students studying in non-tribal and mixed schools did not differ significantly on psychological differentiation. However, on academic achievement, although the tribal students in tribal and mixed schools showed no differences, the non-tribal students in non-tribal schools did significantly better than their counterparts in mixed schools (Refer table 5.13). Results did not support hypothesis 6 in full. It was only partly confirmed.
These findings assumed special significance from the point of view of integrated education. It had been the general belief that the integrated education would be beneficial for the tribals as they would get a chance to mix with the non-tribal students and avail better educational opportunities. Such exposure would enhance tribal students' awareness, arrest inferiority complex, and facilitate their cognitive growth as well as academic output. Tripathy (1990) in a recent study on the Santhal tribe of Orissa reported that the tribal children in integrated schools showed superior cognitive styles than those in tribal schools, but same academic achievement. However, these findings failed to find support in the present research. The mixed school setting providing integrated schooling was neither universally conducive nor productive for the tribals and non-tribal students' psychological differentiation or academic achievement. Of course, the poor functioning of the mixed schools may be attributed to poor teaching facilities, lack of competent teachers, poor classroom management styles and other inconducive school conditions, which ought to be improved. Thus, the hypothesis that the tribal students studying in tribal and mixed schools, and non-tribal students studying in non-tribal and mixed schools would differ on psychological differentiation and academic achievement could only be partially confirmed.

Hypothesis 7 : There will be positive and significant relationships between teacher variables (demographic charac-
and students' psychological differentiation and academic achievement for the total group as well as in different subgroups under matched teacher-students conditions in tribal, non-tribal and mixed schools.

In the total group, teachers' competency and the use of meaning orientation approach had significant positive relationship with students' psychological differentiation. On the other hand, teachers' expectations along with competency and adoption of meaning orientation approach had significant positive relationship with students' academic achievement. In different matched teacher-students groups in tribal, non-tribal and mixed school, the results were different however. Thus, the hypothesis 7 was only partially confirmed.

In the total group, students' psychological differentiation had significant positive relationship with teachers' competency and their use of meaning orientation strategy (Refer table 5.18). The competent teachers adopting meaning orientation strategy contributed substantially to the growth of students' psychological differentiation. The teachers' expectations had positive and significant relationships with students' academic achievement. Thus, the results indicated that the higher the teachers' expectations (total expectation was the sum total of expectations from the school, self and colleagues, parents and students), competency and use of meaning orientation approach, the higher was the academic achievement of the students. Positive
correlations between teachers' expectations and students' achievement had been reported by Rosenthal and Jacobson (1968), Beez (1970), Panda and Dash (1980), Cooper (1983), Dupuis and Badiali (1987) and Cliffton and Bulcock (1987). Results of the present study showing a positive and significant relationship between teachers' expectations and students' achievement confirmed the hypothesis.

Teachers' expectations and the adoption of other three teaching strategies, namely reproducing orientation, achieving orientation and styles and pathologies of teaching did not correlate with students' psychological differentiation. It indicated that the teachers' expectations and their adoption of teaching strategies excepting the meaning orientation strategy, were not at all effective for the cognitive growth and development of students.

Ryans (1969), Flanders and Simon (1969), Goyal and Agarwal (1984) reported positive relationships between teachers' competence and students' academic achievement. Dembo and Sherri (1985) found teachers' efficiency positively influencing students' achievement. Also, Veeraraghavan and Samal (1988) concluded that students taught by highly effective teachers performed significantly better than those taught by low effective teachers, irrespective of the type of schools in which they studied. Bhogoliwal (1988) reported positive relationships between teachers' competency and students' achievement. The present study supported the above
mentioned findings and confirmed the hypothesis that teachers' competency would be positively related to students' academic achievement.

Though there was dearth of studies on the relationship between teachers' adoption of meaning orientation approach to teaching and students' academic achievement, it had been reported by many researchers that students' use of meaning orientation approach to learning facilitated their academic achievement. Thus, by extrapolation, it should be true of teaching strategy.

Learning approaches like Deep approach (Pask, 1976; Marton and Saljo, 1976), Holistic approach (Svensson, 1975), Meaning orientation approach (Entwistle and Ramsden, 1983), enhanced students' understanding and helped them in integrating the main parts into a structured whole. These in turn, facilitated students' academic achievement than when they adopted either a 'Surface approach' or 'Atomistic approach' or 'Reproducing orientation approach to learning.'

Different teaching strategies had been found to vary in effectiveness to accelerate the academic achievement of students. Long (1979) found that the students taught inductively scored higher on the knowledge of generalization and reported a higher mean score on motivation than those taught deductively. Kilker (1982) argued that both individualization and group teaching have a place in the learning center, and the choice between them was largely a
function of the learning task, the skills and interests of the students and overall programme objective. The distribution of lessons, variety and challenge in the environment resulted in greater efficiency of instruction and increased students' performance (Smith and Ernst, 1984). Brophy (1986), Guskey (1987), George (1987) and McKeachie (1987) reported on the effectiveness of different teaching methods in students' learning. Sen (1989) also reported that the adoption of deep approach to learning enhanced students' academic performance in higher secondary schools. The present finding that the meaning orientation approach of teaching was found effective can be supported by above studies.

Overall, the hypothesis of positive relationship between teaching strategies and students' academic achievement was only partially supported as there were no significant correlations between the three teaching strategies namely reproducing orientation, achieving orientation, and styles and pathologies of teaching strategy and students' academic achievement. Results thus, revealed that in the total group teachers competency and their use of meaning orientation approach were directly facilitative of the growth of students' cognitive functioning as well as academic achievement. Teachers' expectations enhanced students' academic achievement but not psychological differentiation, confirming that the role of self-fulfilling prophecy was limited to acquired learning.
In tribal as well as in non-tribal schools, both in matched teacher-students similar and dissimilar groups, teachers' attributes (like expectations, competency and teaching strategies) did not correlate significantly with students' psychological differentiation (Refer table nos. 5.19, 5.20 and 5.21). Results, thus showed that the psychological differentiation of students was independent of teachers' attributes, irrespective of whether the teachers and students came from similar or dissimilar socio-cultural background. However, a different picture emerged in mixed school setting. In matched teacher-students similar groups when the non-tribal teachers taught non-tribal students, teachers' adoption of reproducing approach as well as styles and pathologies of teaching approach negatively correlated with students' psychological differentiation, indicating that being better in psychological differentiation, they desired better understanding. In matched teacher-students dissimilar group, when the non-tribal teacher taught tribal students, teachers' adoption of styles and pathologies of teaching approach was negatively related to students' psychological differentiation. On the other hand, when the tribal teachers taught non-tribal students, teachers' high expectations did not enhance students' psychological differentiation. However, in this group, tribal teachers' use of the meaning orientation approach facilitated non-tribal students psychological differentiation ability. Interestingly, in matched teacher-students' similar group (when the tribal teacher taught tribal students), the competency of tribal
teachers enhanced psychological differentiation in tribal students.

Results on academic achievement also showed variations in different matched teacher-students similar and dissimilar groups across tribal, non-tribal and mixed schools. In tribal schools, teachers' competency enhanced students' academic achievement both in matched teacher-students similar and dissimilar groups (when the tribal and non-tribal teachers taught the tribal students). In the matched teacher-students dissimilar group (when non-tribal teachers taught the tribal students), non-tribal teachers' use of meaning orientation approach facilitated academic achievement among the tribal students. Teachers' attributes like expectations, reproducing orientation, achieving orientation and styles and pathologies of teaching strategies did not correlate with students' academic achievement. In non-tribal schools, both in matched teacher-students similar and dissimilar groups, the non-tribal students' academic achievement also did not significantly correlate with any of the teachers' attributes like expectations, competency and teaching strategies.

Results were however, different in mixed schools. In matched teacher-students similar group (when non-tribal teachers taught non-tribal students), teachers' adoption of styles and pathologies of teaching strategy facilitated students' academic achievement but in matched teacher-
students dissimilar group (when non-tribal teachers taught tribal students), teachers' adoption of achieving orientation approach enhanced academic achievement of students. Teachers' attributes like expectations, competency, adoption of meaning orientation and reproducing orientation approaches did not facilitate students' academic achievement either in matched teacher-students similar (tribal teachers teaching tribal students and non-tribal teachers teaching non-tribal students) or dissimilar groups (tribal teachers teaching non-tribal students and non-tribal teachers teaching tribal students).

Results thus, did not show a definite trend when students' psychological differentiation and academic achievement scores were correlated with teachers' attributes (expectations, competency and teaching strategies), in matched teacher-students' similar and dissimilar groups across tribal, non-tribal and mixed schools. In certain groups, there were positive correlations and in some other groups there were negative correlations or no correlations at all, indicating the need of detailed investigation in future.

Hypothesis 8: There will be significant differences in the perceptions and attributions of backwardness in tribal education among teachers, officers-in-charge and parents.

An answer to this hypothesis was sought on the basis of qualitative data. Analysis of the data revealed that there was a high degree of agreement among the teachers, officers-
in-charge and parents about the causes of backwardness in tribal education. Thus, the hypothesis could not be confirmed.

A high percentage of both tribal and non-tribal teachers in tribal, non-tribal and mixed schools showed that they were highly dissatisfied with the state of education in Phulbani district. The tribal teachers in tribal schools were however, most dissatisfied and the non-tribal teachers in non-tribal schools were least dissatisfied (Refer table 5.25).

The tribal as well as non-tribal teachers attributed the educational backwardness in Phulbani to fifteen factors namely; 1. poverty, 2. lack of teaching aids in schools, 3. inadequate number of classrooms 4. inadequate number of teachers, 5. household work done by the children, 6. parental illiteracy, 7. parental apathy, 8. language problem as the medium of instruction, 9. inappropriate curriculum, 10. blind belief, 11. low intelligence level of the tribal students, 12. poor official supervision, 13. students' lack of interest in studies, 14. teachers' indifference and 15. inadequate supply of food in schools.

Rank-order corelations revealed high consistency between the tribal and non-tribal teachers in tribal and mixed schools. Thus, the tribal and non-tribal teachers in tribal and mixed schools were equally aware of the problems in tribal areas. In non-tribal schools, there was no such
congruity between the perceptions of tribal and non-tribal teachers, however. Non-tribal teachers in non-tribal schools showed lower awareness of the plight and problems of the tribal students as these schools had few tribal students. The non-tribal schools were mostly situated in block headquarters and were quite developed compared to those in the interior tribal villages. Thus, the non-tribal teachers in non-tribal schools failed to observe the limitations and problems students faced in interior areas. Moreover, coming from different socio-cultural background, they perceived the problems differently than the tribal teachers (Refer table 5.22, 5.23 and 5.24).

Teachers' absenteeism and loss of interest in job were attributed to their personal problems, like lack of accommodation, provision of no good schools for the education of their children, difficulty in transportation, lack of health care facilities, need for hike in salary and its regular and timely disbursement and need for extra allowance in tribal areas etc. Some of these have also been supported by officers-in-charge and parents of students.

Officers-in-charge of educational development focussed on the malfunctioning of the bureaucratic machinery in the district. They too considered the illiteracy among parents, lack of promotional facilities for teachers, domestic and agricultural work done by the children, teachers' apathy, insufficient number of teachers and classrooms, lack of enrolment drive, teachers' ignorance of the tribal
language, unfair means adopted during the selection and recruitment of the teachers etc. responsible for the educational backwardness among the tribals. Parents felt that the teachers' apathy and aloofness in the teaching profession, the inferior quality and inadequate amount of food served in schools and their poverty prevented them from buying reading, writing materials and clothes etc. for their children.

An overview of the responses led to the conclusion that a multitude of factors work in tandem and affect the educational development of the tribals.