CHAPTER II

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Theoretical views have been given in this chapter so as to have a conceptual understanding of the predictor and criterion variables (and their relationship with each other) alongwith the variable of socio-economic status (the basis of classification of the sample into high, average and low SES groups), as also to present operational definitions of the variables under consideration in a meaningful context.

SCHOLASTIC ACHIEVEMENT:

Achievement is generally used in the sense of "ability to do, capacity to do or tendency to do." (Monore and Engelhart, 1952). But a person's performance is conditioned by the attending circumstances and abilities, capacities and tendencies may change. Thus, a complete definition of achievement would include specifications relative to the circumstances, under which the designated "ability to do, capacity to do, or tendency to do" is to be thought of as functioning.

Trow (1960) defines scholastic achievement as "the attained ability or degree of competence in school tasks usually measured by standardized tests and expressed in age or grade units based on the norms derived from the
wide sampling of pupils' performance." Scholastic achievement is a complex phenomenon. "It is an abstraction formed from the observation of certain behaviours of children. These behaviours are associated with the mastery or learning of school tasks — reading words, doing arithmetical problems, drawing pictures, and so on. The various observed behaviours are put together and expressed in a word-achievement." (Kerlinger, 1966). There is considerable similarity in the view-point of Biswas and Aggarwal (1971) and Good (1973) regarding scholastic achievement as they place emphasis on knowledge attained or skills developed in the academic subjects. Academic or educational age, accomplishment quotient or achievement quotient or test scores are the most commonly used means to interpret the level of scholastic achievement of pupils in general or in a specific subject.

Basic to the scholastic achievement in languages, there are four essential skills: listening, speaking, reading and writing. Among the languages, differences occur in the achievement in mother-tongue and foreign or second language. Hartmann and Stork (1972) observe that "in the acquisition of the mother-tongue, various factors such as trial and error learning, imitation and analogy are at work; the acquisition of a second language may be made more difficult by age, lack of contact with the foreign speech community, interference between the two languages, insufficient motivation etc."
Klafki (1977) found the idea of achievement at school to be defective and desired it to be revised on the basis of some principles. First, the idea of achievement requires the pupil's efforts to produce and examiner's to mark, objectified or directly examinable results — written essays, demonstrable knowledge (e.g. historical, geographical or scientific facts) and mastery of standardized skills (e.g. in the application of arithmetical techniques or calculations). The change must be made by bringing in the concept of achievement which is production oriented and directed towards results into relationship and reference to achievement in a dynamic sense: there is need to develop achievement criteria which are concerned with intellectual processes e.g. successful and thorough communication in classes, to develop a criticism (e.g. of a fellow pupil's or teacher's line of argument), and to explain the process of problem solving. Secondly, the idea of achievement is individualistic and based upon rivalry or competition. This, undoubtedly, favours those capable of high performance and those already motivated to strive for achievement; but those who put up a poor performance find out soon that in the competition system of the school, they are the inferior ones. Such an idea of achievement needs to be replaced by one which is directed to the solution of joint tasks and to the solidarity principle of a learning group: there must be more emphasis than before on learning and achievement in groups; individual achievement requires to be measured
in the first place by the contribution it makes to dealing with joint tasks and, at the same time, by its contribution to the learning process made by all the members of a group. Thirdly, schematic and generalised assessments of achievement need to be replaced by differentiated, reasoned, structured learning aims, by tests devised with these learning aims in mind and by appropriate assessment criteria. In the field of language assessment, to achieve any improvement, there would have to be, on the one hand, a weighted system of the various aspects of teaching language and literature — such as education in spoken language, analysis of texts, oral and written use of development of language etc. — and, on the other hand, a systematic structuring of each separate aspect through the functioning of the constituent parts and their connections with each other. Fourthly, pedagogic principle of achievement has to be worked out afresh. The achievement assessment should give the learners feedback about the learning process in order to enable them to find out their own special weaknesses and mistakes so that they can work out how to correct themselves. It would require a new meaning for the teacher also who learns where in the learning process he must offer help, intervene with guidance or give additional stimulus and where in his teaching plan or its execution false assumptions have been made, where he has made too few or too many demands on his pupils etc.
In Kohli's (1984) view, the justification of measuring scholastic achievement is based upon two fundamental assumptions of psychology. First, there are differences within the individual from time to time, known as behaviour oscillations, that is, the scholastic achievement of the same individual differs from time to time and from one educational level to another. Secondly, individuals of the same age group, same grade and of the same potential ability usually differ in the scholastic achievement, whether measured by standardized or teacher-made tests of achievement.

The terms 'scholastic achievement' and 'academic achievement' have quite often been used interchangeably in the research studies. In the present study, the term 'scholastic achievement' has been used primarily because of the connotation of word 'scholastic' "in denoting relationship to school" (Good, 1973); and scholastic achievement in mother-tongue and foreign language refers to the percentage score obtained by the students in Panjabi and English respectively in the Matriculation Examination conducted by the Panjab School Education Board.

INTELLIGENCE:

The concept of intelligence has captivated and confounded educators, philosophers, psychologists, theologians and neurophysiologists alike throughout the ages (Shute, 1985). Numerous definitions of intelligence have been proposed by psychologists in which, in Halsey and Friedman's (1979) view,
three concepts occur most often: (a) the ability to deal with abstract symbols, concepts and relationships, (b) learning or the ability to profit from experience, and (c) the ability to adapt to new situations, or problem solving in the broadest sense. A common weakness of such definitions, however, stems from the lack of generality of the functions needed. The same individual may, for example, deal effectively with verbal concepts and be deficient in handling quantitative aspects, and vice versa. Similarly, available research work indicates that learning is not a unitary capacity. For these reasons, the term 'intelligence' has been largely replaced in scientific usage by such terms as 'scholastic aptitude', 'verbal comprehension', 'arithmetic reasoning' and 'maze learning'.

Anastasi (1979) believes that the identification of component traits of intelligence is based upon a study of the inter-relationship of behaviour. For example, if each person performs equally well (or equally poorly) on all sorts of verbal tests, such as vocabulary, verbal analogies and reading comprehension, a single score could be substituted for the separate scores on all these tests. If performance on these verbal tests shows little or no relation to scores on numerical, mechanical and other types of tests, one can speak of a verbal trait as one of the categories or dimensions in terms of which the individual's intellectual functioning can be described. Viewed in this context, intelligence is an aggregate of relatively independent aptitudes, such as...
verbal comprehension, word fluency, skill in numerical computation, perceptual speed and accuracy, associative memory, spatial visualization and mechanical reasoning. In our culture, intelligence is often associated with ability to succeed in school, which depends largely upon verbal comprehension and retentiveness.

Thorndike (1927) believed that provided the amount of intelligence is measured on a scale of 'truly equal units', the distribution of intelligence should be exactly normal. However, research of the later years disproved Thorndike's contention. A detailed analysis of test results obtained by Burt (1963) from a large sample of English children (N=4665), supplemented by a study of the meagre data already available, demonstrated beyond reasonable doubt that the distribution of individual differences in general intelligence by no means conformed with strict exactitude to the so called normal curve.

Different models of structure of abilities based upon factor analysis have been suggested by different researchers. In Gustafsson's (1984) view, one line of demarcation goes between models which postulate a general factor of intelligence (e.g. Spearman, 1904; Burt, 1949; Vernon, 1950) and models which do not allow a general intellectual factor (e.g. Thurstone, 1938; Horn and Cattell, 1966; Guilford, 1967; Cattell, 1971); and another line of demarcation goes between hierarchical models (Burt, 1949; Vernon, 1950; Horn and Cattell, 1966) and
models which treat all the dimensions as being of equal generality (e.g. Thurstone, 1938; Guilford, 1967).

It has proven difficult to secure conclusive evidence in favour of any particular model. Thus, Sternberg (1981) asked, "Almost eighty years after the first presentation of Spearman's (1904) two factor theory, has anyone answered through factorial means the question of whether a general factor exists?" The answer was given in the negative. Sternberg argued further that factor analysis has "failed because it has been too successful in supporting, or at least in failing to disconfirm, too many alternative models of intelligence". Since the characteristics of the different models of intelligence, to a large extent, derive from the factor analytic technique relied upon, it may be argued that the "success" of factor analysis in supporting many alternative models of intelligence is, above all, a methodological problem.

The conflict among the various factor descriptions of intelligence has led some investigators to propose variables of a somewhat different kind. An example is the crystallized intelligence-fluid intelligence distinction of Horn and Cattell (1966), the former referring to learned, that is, "cultural" strategies and information used in cognitive tasks, and the latter to a more biological capacity for resourcefulness and innovation in problem solving. Yet Horn (1976) himself characterized the crystallized component as a swollen verbal factor and the fluid component
as a swollen reasoning factor. Jensen (1969) has distinguished level I intelligence (simple associative learning) from level II intelligence (conceptual ability). Level I is best measured by memory span and rote learning, whereas level II involves cognitive transformation and is close to IQ.

The debate, as to what intelligence is, continues. However, for the purpose of the present study, intelligence is the ability to deal with numbers, analogies, opposites and synonyms; to make categories; to follow directions; and to draw inferences. Its measure (verbal) is the total score on Jalota and Singh’s (1982) Group Test of General Mental Ability (Panjabi version).

The elements of intelligence, as given in the operational definition in the preceding paragraph, are also needed in scholastic achievement. Thus, it seems likely that there should be a significant positive correlation between intelligence and scholastic achievement. However, languages have also certain unique elements (aestheticity of expression, synthesis, style of writing etc.) which are not found in other subjects. These elements are not the elements of conventional ability but of divergent ability or creativity. So the issue arises whether the scholastic achievement in languages finds its significant correlate in creativity, along with intelligence. Thus, the conceptual discussion of creativity, in order to visualize the relationship between creativity and scholastic achievement
in languages, is needed and is presented in the following section.

CREATIVITY:

Creative thinking is the highest of mental functions and creative production, the peak of human achievement. There is no universally accepted definition of creativity any more than there is of intelligence (Getzels and Dillon, 1973; Barron and Harrington, 1981). Hallman (1963) gives two reasons for this: (a) the tendency to emphasize interests by a wider area of disciplines to investigate the creative process and (b) the complex nature of the creative experience. The first view of the tendency to assign different meanings to creativity has been reported by Vinacke (1960), Ghiselin (1963), Zimmerman (1964) and Yamamoto (1964). The second view, regarding the complexity of creative experience, is manifested by numerous definitions which Rhodes (1961) condensed into four roughly discriminating categories: person, process, press and product. Kneller (1965) observed that (a) creativity through the approach of person may be considered in terms of physiology, temperament, personal attitudes, habits and values of the person who creates, (b) explaining it by way of mental processes involving motivation, perception, learning, thinking and communicating the way the act of creativity calls into play, (c) press implies understanding of creativity by focussing attention
on environmental and cultural influences, and (d) products of creativity include elements such as theories, inventions, paintings, carvings, poems and the like.

Numerous references occur in research literature which are in support of one or the other category mentioned above. A detailed description of these has been systematically organized by Gakhar (1975). Personalogical approach considers creativity as related to unique cognitive factors (Guilford, 1950, 1956, 1957, 1959; De Haan and Havighurst, 1961) and also dependent upon certain non-cognitive factors (Barron, 1955; Drevdahl and Cattell, 1958; McGuire et al, 1961; Hammer, 1961; Getzels and Jackson, 1962; MacKinnon, 1962; Taylor and Holland, 1964; Cropley, 1965; Wallach and Kogan, 1965; Raina, 1968; Cronbach, 1968; Burke, 1969; Leith, 1972; Gakhar, 1973, 1975; Gupta, 1979).

Creativity as a process has been considered by Spearman (1930), Ghiselin (1952), Taylor (1955), Kubie (1958), Bartlet (1958), Vinacke (1960), MacKinnon (1960), Barchillon (1961), Mednick (1962), Yamanoto (1964), Torrance (1965), Rogers (1976), Kant (1976), Brown (1977) and Gordon (1982). The analysis of creative process that is most widely quoted is still by Wallas (1926). He suggested that the creative process can be divided into four stages: preparation, incubation, illumination and verification. According to Taylor (1975), the Wallas steps towards creative accomplishment are valid, but it is also necessary to recognize the hierarchical levels
of creativity and from the lowest to the highest, they are: expressive creativity, technical creativity, inventive creativity, innovative creativity and emergentive creativity. Mansfield and Busse's (1981) model of creative process in scientific fields involves five steps: (a) selection of the problem that is important and potentially soluble, (b) extended effort to solve the problem, (c) setting constraints to the solution of the problem, (d) changing the constraints through a restructuring process, and (e) verification and elaboration of results.

Creative products essentially involve elements of uniqueness or novelty. In some definitions of creativity (Stein, 1953; Piers, Daniel and Quackenbush, 1960; Rogers, 1962; Simon, 1964), novelty has been viewed in tangible products, but certain others (Stewart, 1950; Guilford, 1964) hold that it can also be present in the intangible products. Thurstone (1952) argued that it does not make any difference whether the society regards an idea as novel.

Creative potential may be best actualized within favourable environment. Environmental conditions conducive to creative behaviour may be referred to as psychological safety and psychological freedom, socio-cultural influences and increased creativity through education. Rogers (1961), Torrance (1965), Hasan and Butcher (1966), Snyder (1967), Goyal (1973) and Nograndy (1976) opined that conditions of psychological safety and psychological freedom should be

However, in spite of these broadly discriminating categories of definitions, it is not always possible to include a particular definition within one particular category. This is mainly on account of overlapping of one category of definitions with the other. Further, creative process without reference to person, press and product is equally ambiguous. Torrance (1965), while accepting the 'process' definition of creativity, has rightly raised the question: What kind of person one must be in order to engage most successfully in the process and what kind of product results from the process?

Different definitions of creativity have been stated by different authors with emphasis on one or more of view points — psychological, environmental, cultural, physical and intellectual. At least five components of creativity have been stressed — the act, the object, the process, the person and the environment. Hallman (1963) explains these elements of creativity when he writes that
(a) it is a whole act, a unitary instance of behaviour; (b) it terminates in the production of objects or forms of living, which are distinctive; (c) it evolves out of certain mental process; (d) it covaries with specific personality transformation; and (e) it occurs within a particular kind of environment.

The major theories attempting to describe the creative process have been reviewed by Busse and Mansfield (1980). Psychoanalytic theories of Kris (1952) and Kubie (1958) emphasize the importance of pre-conscious processes. These processes are believed to occur when the ego, with its emphasis on logical, rational thought, temporarily loosens its control of the thinking processes so that an unorganized, drive-oriented type of thinking can occur. To engage in pre-conscious thinking, one must allow oneself to daydream and fantasize.

Gestalt psychologists (e.g. Wertheimer 1959; Kohler, 1969) use the term "productive thinking" and "problem solving" to refer to what others might call creative thinking. The structural features of the problem itself set up stresses and strains in the thinker. By following up these stresses and strains, the thinker is led to a restructuring of the problem. Successive restructurings occur until a solution emerges. This model of problem solving, however, seems more applicable to convergent problems with only one or more right answers than to divergent problems with many possible solutions.
Associationist theories involve the common assumption that creativity results from novel or unusual associations. Mednick (1962) defined the creative process as "the forming of associative elements into new combinations which either meet specified requirements or are in some way useful."

The degree of creativity depends on the relative remoteness of the elements used to form the new combination. When asked to respond to a stimulus word, highly creative people are likely to give remote or uncommon responses; whereas less creative people tend to give only common, stereotyped responses. Many researchers (Hadamard, 1945; Koestler, 1964, 1978; Haslerud, 1972; Gruber, 1974) have incorporated associationist principles into their theories.

A number of theories have been considered composite by Busse and Mansfield (1980) because they combine principles from psychoanalytic, Gestalt and associationist theories. Hadamard (1945), developed a theory with psychoanalytic as well as associationist ideas. He proposed the same steps of the creative process as proposed by Wallas earlier: preparation, incubation, illumination and verification. The initial preparation period is conscious, systematic and logical but sets in motion some unconscious thinking processes that are essential to the incubation and illumination phases. The unconscious mind produces a vast number of associations among which only the potentially fruitful ideas, selected by the unconscious mind for their beauty or elegance, are allowed to reach consciousness in
the phase of illumination. The last step of the creative process, verification of the value of the idea and establishing its implications, is essentially conscious. Koestler (1964, 1978) developed a "bisociation" theory of creativity. In bisociation, two independent matrices of ideas come into contact, but this occurs only subconsciously through a regression to the pre-conscious thinking processes stressed by psychoanalytic theorists. Rothenberg (1979) has proposed a psychoanalytically based theory that highlights two thinking processes which, like bisociation, facilitate association of independent ideas. Gruber's (1974) theory draws on the associationist and Gestalt positions as well as on Piaget's theory of cognitive development. In his view, creative accomplishments are fueled by conscious, purposeful actions. Creative thought is preceded by a period of persistent search and enquiry. After such a period, idea discovery can occur. Discovery results not from a single association but from a succession of small changes or restructurings.

Mansfield and Busse (1982) have described two fundamentally different approaches to the study of creativity. First, creativity is considered in terms of test performance. The divergent thinking tests developed by Torrance (1966), Guilford (1967), Guilford and Hoepfner (1971) and others to measure divergent thinking abilities have often been used as measures of creativity. Divergent thinking tests use problems that allow many possible solutions. Researchers
who use tests to measure creativity assume that the abilities being tested are essential to real life creativity and persons with high test scores have high potential for creative accomplishments. However, if test performance does not correspond closely to real life achievement, defining creativity in terms of test scores becomes a critical point. Wallach (1971) has persuasively argued that creativity test scores do not vary one-to-one with real life creative attainments and can be influenced by factors that have nothing to do with real life creativity. Secondly, real life creativity may be measured directly in terms of products such as poems, symphonies, books, inventions and scientific theories. Jackson and Messick (1967) have proposed that creative products are characterized by four features: novelty, value, transformation and condensation. A creative product must be novel, possess some value orappropriateness and characterized by properties of transformation and condensation. However, judgements of novelty, value, transformation and condensation must be made with respect to some reference group in a given field at a given time. The early paintings of the impressionists were highly creative in their time, but a painting using the same techniques today would not necessarily be regarded as creative. In studies of real life creativity, it is important to specify the field being studied, e.g. creative engineers and creative poets may show few similarities. Moreover, there may be differences stemming from different levels of
creativity. For example, the antecedents of scientific creativity in high school students may be different from the antecedents of scientific creativity among adult professional scientists. For research on school students, creativity is usually measured in terms of test performance because the real life creativity among them has yet to be crystallized and needs more time to emerge in terms of creative products.

Creativity, in the present study, has been operationally defined as "the process of sensing gaps or disturbing, missing elements; forming ideas or hypotheses concerning them; testing these hypotheses; and communicating the results, possibly modifying and retesting the hypotheses" (Torrance, 1969). Its measure is the total of scores on fluency, flexibility and originality as measured by Torrance's Test of Creative Thinking (TTCT), Verbal, Form A (1966). Fluency is the ability to call up relevant ideas where the quantity, and not the quality, is emphasized. It is the total number of relevant responses, i.e. the total number of responses given by the subject minus the number of duplicate and irrelevant responses. Flexibility is the ability to produce diversity of ideas with a number of shifts. Originality is the statistical infrequency of responses or the extent to which the responses deviate from the obvious and the common.

Creativity, thus measured, involves the ability of being sensitive to a problem, giving a large number of
relevant and different types of responses to a particular situation as also originality or uniqueness of the ideas. A language achievement test also requires an abundant use of these abilities. Thus, it seems plausible to visualize that creativity and scholastic achievement in languages should be positively correlated. This, however, needs empirical validation. Further, another issue is: does creativity, free from the influence of intelligence, also correlate positively and significantly with scholastic achievement in languages?

Socio-economic status:

Status indicates the rank within a social system or sub-system and is determined partly by the status of the social class to which an individual belongs and partly by his characteristics in terms of economic and cultured possessions including his contribution to society. This idea is quite similar to Chaplin's description of socio-economic status given as early as 1928.

Good (1973) defines socio-economic status as "the level indicative of both the social and economic position of an individual or group." In general, socio-economic background involves the relationship between the individual student and the social set up from which he springs up. It encompasses the entire social environment that is provided to the children and refers to a cluster of factors including occupation, income, cultural influences, religious beliefs, political set up, family relationship, living standard etc.
In Kuppuswamy's (1981) view, attempts made to estimate the socio-economic status of the individual are based on three assumptions: (a) there is a class structure in society, (b) status positions are determined mainly by a few commonly accepted characteristics, and (c) these characteristics can be scaled and combined using statistical procedures.

Social prestige is attached to the amount of income as well as the source of income. In an office or factory, a man earning two or three hundred rupees more than another feels that his prestige is higher. Also, the man who gets an income from the property he has inherited thinks that he has higher prestige than a person who has acquired his own property. Whether a person is on daily 'wages' or monthly 'salary' is another source of prestige.

Prestige is also associated with occupation. The coolie, the peon and the watchman have very low status in Indian society and even the plumber and the carpenter, who are skilled workmen, are having a low social prestige; on the other hand, advocates, engineers, doctors, bank managers and newspaper editors have high social prestige.

Education of a person also reveals his prestige. The lower the education one has, the lower the prestige. The person who finishes his technical education as a welder does not command as much prestige as a person who possesses a post graduate degree or a high grade professional education.
Besides, in every society, titles, membership of some voluntary organization, type of house in which a person lives, the caste to which he/she belongs, the ownership of refrigerator, television, room cooler, air-conditioner etc., all add to the social prestige.

For the purpose of the present study, socio-economic status is operationally defined as the level indicative of education, income and occupation of the parents of a subject. Its score is the total score on Kuppuswamy's (1981) Socio-economic Status Scale.

Cognitive abilities, such as intelligence and creativity, play their role within a certain framework of environmental forces, among which socio-economic status of the individual is an important one. In a comparatively lower age-group of school students, from which the sample of the present study has been drawn, the role of socio-economic aspects assumes particular importance as the socio-economic environment of children belonging to a particular socio-economic level (high SES) may be more conducive to the realisation of their abilities as compared to that of children belonging to another socio-economic level (low SES). Thus, it gives rise to the inquisitiveness whether the cognitive abilities of children play the same or differential role in predicting scholastic achievement in languages in different socio-economic groups. It is towards this end that the present study is directed.