CHAPTER II

THEORETICAL ORIENTATION: CONCEPTS OF INTELLIGENCE, PARENTAL INVOLVEMENT, AND CHILDREN’S MOTIVATIONAL RESOURCES - CONTROL UNDERSTANDING, PERCEIVED COMPETENCE, AND SELF-REGULATION
In the previous chapter, it has already been discussed as to what is the phenomenon of academic achievement, how it is influenced by various factors, and especially by the variables which are of interest to the present investigator. Before presenting a review of literature pertaining to the study of academic achievement in relation to these variables, it would be worthwhile to present a conceptual framework of these variables - their meanings, definitions, and how they have emerged in the realm of psychology. The present chapter, therefore, puts forth a theoretical explanation of the concepts involved in the present study, viz., intelligence, parental involvement, and children's motivational resources - control understanding, perceived competence, and self-regulation.

INTELLIGENCE

No two individuals are exactly alike. They differ from one another in several ways such as attitudes, aptitudes, interests, hobbies, personality, knowledge, etc. Some people are able to solve their problems quickly and efficiently, while others take too much time and find it extremely difficult to tackle the problems with which they are confronted. Some quickly catch the idea, while others take a considerable amount of time to grasp it. These are differences of intelligence which make people understand, learn, or adjust to new situations at varying rates and with varying degrees of efficiency. In a
layman's language, intelligence means the power of understanding or the ability to do a thing mentally.

Intelligence constitutes the basic characteristic of human beings. The degree of intelligence is reflected by the clarity of purpose, thought and action in an individual's behaviour. It involves understanding the specific situation in which the individual finds himself, and appropriately responding to it. It includes assimilation of information, processing of information, judicious selection of an alternative out of the multitude of alternatives presented, and rational decision-making.

Thus, intelligence consists in acting in a given situation with use of past experience, with due regard to what is novel in the situation, and to the whole situation rather than to some striking part of it. It denotes having insight into the key to the whole situation or problem.

From the above discussion, it is clear that intelligence is a complex phenomenon. It involves so many issues that it is extremely difficult to define it appropriately while covering all its distinct features. However, different researchers have attempted to define it in different ways.

Stern (1914) opined that "Intelligence is the general capacity of an individual to consciously adjust his thinking to new requirements. It is general mental adaptability to new problems and conditions of life."

Burt (1955) defined intelligence as innate, general, cognitive ability.

Gates et al. (1963, p. 225) have defined intelligence as "a composite of organization of abilities to learn, to grasp broad and subtle facts, especially abstract facts, with alertness and accuracy, to exercise mental control, and to display flexibility and ingenuity in seeking the solution of problems."
According to Guilford (1967), intelligence is a systematic collection of abilities or functions for processing information of different kinds in different forms.

Das (1971) views intelligence as the ability to plan and structure behaviour effectively for goal attainment. An effective use of information or of reasoning and memory abilities rather than abilities per se, would thus indicate intelligence.

According to Jensen (1980), intelligence can be thought of psychologically as that aspect of mental ability which consolidates learning and experience in an integrated, organized way, relating it to past learning, and encoding it in ways that permit its retrieval in relevant new situations. The products of learning become an aspect of intelligence (or are correlates of intelligence) only when they are organized and retrievable, generalizable and transferable to new problem situations.

Luria (1980) conceptualizes intelligence as a particularly complex form of mental activity taking place only when the problem demands preliminary analysis and synthesis of the situation, and auxiliary operations by means of which it can be solved.

Gerow et al. (1989) view intelligence as the capacity to understand the world and the resourcefulness to cope with its challenges.

It is obvious from the views of the psychologists described above that there is no agreement as regards the exact definition and nature of intelligence. Freeman (1942) has in fact, summarized that the various definitions of intelligence can be divided into three groups:- (i) intelligence as the adaptation or adjustment of the individual to his total environment, (ii) intelligence as the ability to carry on abstract thinking, and (iii) intelligence as the ability to learn.
In brief, it may be said that intelligence is a general ability possessed by each individual which influences and directs his/her general orientation in life. It is more than a composite whole of specific abilities which are inter-related, yet different from each other.

In order to have a better understanding of the meaning and nature of intelligence, it is necessary to know how the concept originated, and what were the developments which followed in the realm of mental testing.

The mental testing movement began with the development of the first intelligence test by Alfred Binet and Théodore Simon in 1905. They developed this test at the request of the French government that had become alarmed by the number of children in French schools who were apparently unable to perform normal schoolwork. The test consisted of a list of 30 problems, but it was not standardized. A revision of the test was made in 1908, in which items were arranged according to the age levels, with a group of items representing average intelligence for each age. The highest age level at which a person could perform adequately was called his "mental age". Later on, in 1916, William Stern introduced the concept of intelligence quotient.

Due to all these developments from time-to-time, the Binet-Simon test was frequently revised. The scene soon shifted to America, where there were numerous translations and modifications of this scale. The thought that intelligence could be measured, evoked the interest of many investigators and stimulated them to develop different tests to measure it. Subsequently, various theories of intelligence came up with psychologists differing in their ways of defining and measuring this concept. It is necessary to have an overview of these theories in order to have a comprehensive understanding of this phenomenon of intelligence.
The theories of intelligence can be divided into two categories depending on the views and approaches of two groups of theorists towards the study of intelligence. One group of theorists have been concerned with the study of the organization of mental ability, i.e., their primary interest is in identifying the factor or factors which constitute intelligence. The theories that have emerged from these efforts are called factor theories. The second group of theorists have focused not on the component parts of intellect, but on the processes involved in intellectual activity, i.e., the processes involved in solving problems or planning how to remember something. The result of their efforts has been a group of process-oriented theories of intelligence.

A) FACTOR THEORIES OF INTELLIGENCE

The main question which has become a topic of debate and discussion among the factor theorists for many years is that - whether intelligence is a single, general characteristic, or whether it is a collection of separate, specific, detectable abilities. It is difficult to answer this question because it involves identifying the underlying intellectual capacities that we cannot directly see. We can infer these capacities only from an individual's observable behaviour, for instance, on intelligence tests.

Various theories have been put forth by several theorists, who have identified different factors of intelligence. The investigator shall, however, brief upon only some of the well-known theories. They are as follows.

1) Spearman's Two-Factor Theory

The two-factor theory of intelligence has been put forth by the British psychologist Charles Spearman in 1904. His basic assumption is that all mental tasks require two types of abilities - a general ability ‘G’
and a specific ability 's'. The general ability 'G' is common to all intellectual tasks, whereas the specific ability 's' is always specific to a particular task. As a result, there is always one general ability which is common to all tasks, but many specific abilities which are appropriate for different intellectual tasks. For instance, verbal reasoning would require a sufficient amount of specific ability 's' in addition to general ability 'G'.

Later on, Spearman discovered that tests of mental ability that are highly similar, correlate to a greater extent than can be accounted for on the basis of their common overlap with 'G'. As a result, he admitted the possibility of group factors such as verbal and spatial ability. These new group factors were conceived by him to be intermediate in scope, while 'G' remained the overall factor of maximum significance. Finally, he proposed the existence of additional general factors 'p', 'o', and 'w', which denoted perseveration, oscillation, and will respectively. According to Spearman, perseveration referred to the inertia of the individual's supply of mental energy; oscillation depicted the extent to which it fluctuated from time-to-time; while will was a motivational-personality factor that came into operation while taking the intelligence tests.

2) Thurstone's Group Factor Theory

One of the most influential of the multifactor theories grew out of the work of the factor analyst L.L. Thurstone (1938). He began with a set of 56 tests. From the patterns of correlation which emerged among these tests, he identified factors (1935) which he called primary mental abilities. These included the following abilities - verbal, number, spatial, perceptual, memory, reasoning and word fluency.
Thurstone denied the existence of ‘G’ and ‘s’ factors, as postulated by Spearman. Rather, he thought of mental organization in terms of group factors. He believed that certain mental operations have a primary factor in common that gives them psychological and functional unity, and also differentiates them from other mental operations. These mental operations constitute a group, and each group will have its own primary factor. In all, there are seven such groups which cover the entire range of mental abilities, the names of which have been mentioned above. Each of these factors is independent of the others, i.e., a person proficient in one ability may not be necessarily so in another. For example, a person may possess verbal ability but may not be efficient as far as spatial ability is concerned.

3) **Cattell's Theory of Intelligence**

Raymond B. Cattell is one of the leading American exponents of the factor analytic approach to the study of individual differences in intelligence and personality. Modifying the Spearman-Thurstone techniques, Cattell provides evidence for two main types of intelligence, both of which fall under the category of general order factors. These are crystallized intelligence and fluid intelligence (Cattell, 1941, 1963, 1971).

Fluid intelligence, in the words of Chaplin & Krawiec (1979, p. 503) 'is the capacity for insight into complex relationships. In other words, it is the capacity for acquiring new concepts and demonstrating general "brightness" and adaptability in novel situations. Consequently, fluid intelligence is relatively independent of education, and tests that measure it minimize scholastic training and cultural factors'.

Crystallized intelligence is a combination of acquired knowledge and developed intellectual skills (Chaplin & Krawiec, 1979, p. 503). In
the words of Cattell, it is the "investment" of fluid intelligence in the higher-level skills of the culture to which the person is exposed.

4) Guilford's Model of the Structure of Intellect

J. P. Guilford (1967) proposes a radically different factor theory of intelligence. He denies the existence of a general mental ability, ‘G’, or even the possibility that intelligence can be reduced to a few factors or groups of abilities. His model of the structure of intellect identifies three dimensions of intelligence - content, operations, and products. According to Guilford, there are four types of content, five categories of operations, and six kinds of products thereby, resulting in 120 unique intellectual abilities (4x5x6=120).

The four basic varieties of content are figural, symbolic, semantic and behavioural. Operations, or what is done with content, can be classified into five categories - cognition, memory, convergent production, divergent production and evaluation. Products, or the result of operations on content, can be categorized into six types - units, classes, relations, systems, transformations and implications.

As is evident from above, Guilford's theory has the advantage that it covers the entire range of abilities, and can better account for creativity or original problem solving as compared to the older, traditional theories. However, the main drawback of this theory is that it appears difficult to measure so many different combinations of contents, operations and products from a practical point of view.

5) Hierarchical Theory

After reviewing the factor theories, one cannot pinpoint as to which theory provides the best explanation of intelligence. Generally, it is observed that certain ability factors are relatively independent of each other. But on the other hand, one often finds some significant
correlations among these factors, indicating that they do share some sort of factor of general intelligence. So, both the general ability theories as well as the multiple factor theories seem to be appropriate and viable. Consequently, some psychologists (such as Vernon, 1950) propose that the elements of the general factor theory and the multifactor theories can be combined to form a hierarchical theory. In such a theory, intelligence is depicted as a sort of pyramid with general intelligence ‘G’ at the top. Underneath it are the several specific ability factors like Thurstone's primary mental abilities. At the bottom of the pyramid are a large number of highly specific abilities similar to Spearman's (1927) ‘s’ factors, i.e., specific abilities that may come into play on one particular task.

Thus, hierarchical theories borrow views from several factor theories and represent a multi-layered view of intelligence which seems to be the most reasonable of all. However, practically speaking, if one proposes a complete hierarchical structure for human intellect, it would result in a very intricate system which would become too complex and difficult for us to judge and testify.

B) PROCESS-ORIENTED THEORIES OF INTELLIGENCE

Each of the theories mentioned above attempts to study intelligence by finding its component parts and then describing how these parts fit together. However, this is not the only approach to unravel intelligence. An alternative approach has been followed by several theorists. Their focus is on the intellectual processes - the patterns of thinking that people adopt when they try to reason out things or solve problems. These theorists are different from the factor theorists described above. These theorists, for instance, speak of "cognition" and "cognitive processes" rather than "intelligence". Also, they are often
more interested in how people go about solving problems and reaching solutions than in how many right answers people get. Moreover, they tend to deal with the developmental aspect of these intellectual processes, i.e., how these processes develop and change as the individual grows up.

Some of the process theories which have attracted the attention of researchers have been described below.

1) Piaget's Cognitive-Developmental Theory

Jean Piaget (1970), a Swiss biologist, philosopher, and psychologist, has developed one of the most detailed and comprehensive theories of cognitive development. According to him, the intellectual development of the individual can be divided into four stages, viz., sensori-motor, pre-operational, concrete operational and formal operational stage. In the first stage, i.e., the sensori-motor stage (which starts right from the birth of the individual and continues upto the age of about two years), the child "understands" the world in terms of what he can do with objects and his sensory information. During the pre-operational stage (which ranges from the age of two to six years approximately), children learn to think, i.e., to use symbols and internal images, but their thinking is unsystematic and illogical. The next stage, i.e., concrete operational stage commences from the age of six years and extends upto twelve years approximately. In this phase, children develop the capacity to think systematically, but only as far as concrete objects and activities are concerned. The last and most advanced stage of thought begins almost by the age of twelve years. By this time, young children develop the capacity to think systematically on a purely abstract and hypothetical level. In other words, they start thinking just as adults do.
In this way, Piaget skillfully describes the changes in the cognitive processes of the individual as he grows and develops. To summarize, it may be said that Piaget views intelligence as an adaptive process that involves an active interplay of biological maturation and interaction with the environment.

2) Bruner’s Theory

Jerome Bruner (1973), a process theorist, views intellectual development partly as a growing reliance on internal representation. According to him, the intelligence of a baby is highly action-oriented. In other words, the baby knows an object to the extent that he can act upon it. A young child starts knowing things by means of perception. As a result, he is strongly influenced by the perceptual characteristics of objects or events. As the child grows older, he starts knowing things "internally" and "symbolically". This means that he is able to devise internal symbols for objects and events, and is able to hold these mental images and representations in his mind.

3) Information Processing Theories

These theories break down intelligence into various basic skills that people utilize to register information, process it, and then use it for reasoning and solving problems. Several theories following this approach have been propounded, with different theorists focusing on different aspects of processing. For instance, Siegler (1983) focuses on the rules involved in intelligent behaviour, while Fischer (1980) emphasizes the skills required for various tasks. Despite their differences, all these approaches break up intelligence into componential processes, and explore how these processes change in due course of the individual’s development.
A review of all these factor and process theories clearly reveals the nature of intelligence, with different theories emphasizing its different aspects. It also highlights how the intellectual processes of an individual develop from simple, straightforward thought to form a complex, interwoven and integrated mental make-up of a person.

An important fact to be taken into account is that intelligence is not an "out-of-date" phenomenon. Although this concept has been fervently researched upon for more than a century, the relevance of its study even currently cannot be ignored, since so much yet remains to be explained in this field. The theories proposed by Cattell, Guilford and other hierarchical theorists highlight the significance of exploring this concept even in the current years. The ever-growing emphasis on research in neurology and computer design infact, points out the need to study this intricate process of intelligence, which has significant consequences in an individual's development in the long run.

PARENTAL INVOLVEMENT

Right from birth, the child is much influenced by all those who surround him. Infact, what the child becomes is not solely determined by his genetic endowment, but also by the environmental forces operative around him. One of the major socializing agents which constitutes a potent source of impact on him is his immediate family. Parents, siblings, and all other significant members of the family, their attitudes, values, likes, dislikes, views, inter-personal relationships, etc. all exert a considerable influence on his development. In other words, the child may be conceived to be embedded in an ever-enlarging series of concentric spheres (Bronfenbrenner, 1979), of which the family forms the closest and the most direct source of influence.
A number of investigators have examined the factors and forces in the home which surround and impinge on the child (Dave, 1963; Wolf, 1964; Walberg & Marjoribanks, 1973). Research (e.g., Sears, Maccoby, & Levin, 1957; Schaefer & Bell, 1958; Frankiel, 1959; Becker & Krug, 1965) reveals the associations between family variables and child-related outcomes. Nihira, Mink, & Meyers (1986) have illustrated that harmony and quality of parenting, and educational expectation and aspiration are the two most important environmental variables associated with children's development. Ninio (1990) confirms the view that child rearing practices determine the course of children's cognitive and social development. Akande (1995) too, has emphasized that mother and father factors have important effects on the growth of children. Bradley et al. (1995) have reported that both responsive nurturant care, and cognitively stimulating experiences and materials (indicative of home environment) are related to children's adaptive social behaviour.

While various studies have examined the links of the home with child-related variables, its relation with the latter's academic or cognitive outcomes in particular, has also found support from a number of studies (e.g., Hess, Shipman, Brophy, & Bear, 1969; Elardo, Bradley, & Caldwell, 1977; Clarke-Stewart & Apfel, 1979; Marjoribanks, 1979; Carew, 1980; Bee, Barnard, Eyres, Gray, Hammond, Spietz, Snyder, & Clark, 1982; Parsons, Adler, & Kaczala, 1982; Sigel, 1982; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Stevenson & Baker, 1987; Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991).

More specifically, a number of parenting styles have been identified which may affect achievement, with different psychologists focusing on different parenting styles (e.g., Roe, 1957; Sears, Maccoby, & Levine, 1957; Schaefer, 1959, 1961; Slater, 1962; Roe & Siegelman,
1963; Becker, 1964; Crandall, Dewey, Katkovsky, & Preston, 1964; Baumrind, 1967,1971; Maccoby & Martin, 1983; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Ginsburg & Bronstein, 1993). However, due to differences in theoretical orientations, methods, and focus on different developmental perspectives, no single parenting style can be identified which may be labelled as the most significant parental dimension. Nonetheless, one relatively upcoming and largely unexplored parenting variable that has been linked to school performance outcomes is parental involvement in the child's schooling.

Parental involvement may be described as the degree to which the parent is "committed to his or her role as a parent and to the fostering of optimal child development" (Maccoby & Martin, 1983, p. 48). It is concerned with the amount of effort put into child-oriented versus other activities (Pulkkinen, 1982). Ihinger-Tallman, Pasley, & Beuhler (1995) define it as behaviours that promote interaction with and reflect a commitment to the child, including, among other activities face-to-face contact, phoning or writing, physical caretaking, and providing financial support. Parental involvement has been conceptualized by Grolnick & Ryan (1989, p. 144) as "the extent to which the parent is interested in, knowledgeable about, and takes an active part in the child's life".

Involvement reflects parents' dedication and positive attention to the child rearing process, and is a facilitator of both identification and internalization of social values (Grolnick & Ryan, 1987b; Ryan et al., 1992).

While a number of researchers (e.g., Hawley & Rosenholtz, 1983; Bauer & Shea, 1986; Wolfendale, 1986) have highlighted the significance of this construct, very little attention has been devoted to
explore the various aspects of parents' involvement which actively affect children.

The word "parental involvement" has been used as a general term which may encompass several activities such as tutoring, monitoring effective use of time for study at home, reinforcing behaviours established in school, participating in school-related committees, and the like. Researchers have used this term to refer to substantially different types of activities such as going to school activities and events (e.g., Becker & Epstein, 1982; Stevenson & Baker, 1987), surveillance of homework (Ginsburg & Bronstein, 1993), number of contacts between families and schools (Iverson, Brownlee, & Walberg, 1981), verbal encouragement or interactions regarding school work (Marjoribanks, 1983; Watson, Brown, & Swich, 1983; Epstein, 1984c), expectations of school performance (Parsons, Adler, & Kaczala, 1982; Seginer, 1983; Hess, Holloway, Dickson, & Price, 1984), direct reinforcement of improved academic performance (Karraker, 1972), general academic guidance and support (Bloom, 1984), and students' perceptions of the degree to which their parents influence their after high school plans and monitor their daily activities and school progress (Keith, Reimers, Fehrman, Pottebaum, & Aubey, 1986). Though some theorists have attended to specific dimensions of parent involvement (Baker & Stevenson, 1986; Lareau, 1987; Epstein, 1990), most of them have used global measures, as their main aim was to establish the mediating role of parental involvement rather than to study its specific effects as such.

The theoretical framework put forth later by Grolnick and Slowiaczek (1994) defines parental involvement as the dedication of resources by the parent to the child within a given domain. This definition recognizes the fact that there is a difference between parents'
overall involvement in the child's development, and their involvement in educating the child. Parental involvement, according to this conceptualization, is domain-specific and may vary from one area of development to another, even for the same child. In other words, parents may, by force or by choice, show more concern and interest in one particular aspect of their child's development than for another. They may differentially devote their attention, time, and effort to different domains such as the child's social and religious activities, academics, athletics, etc.

Hence, it is necessary to give a separate definition of parental involvement in the child's schooling. Grolnick & Slowiaczek (1994) define it as the allocation of resources to the child's school endeavours. In other words, it denotes the extent to which as well as the ways in which parents take a keen interest and actively participate in their child's schooling.

Based on the factor analytic study of involvement indices by Grolnick & Slowiaczek (1994), the investigator puts forth a multidimensional representation of parental involvement that focuses on not one specific activity, but on various dimensions. According to this conceptualization, parents may show their involvement in the child's schooling in four different ways, viz., behaviour involvement, personal involvement, cognitive stimulation, and cognitive behaviour.

1) BEHAVIOUR INVOLVEMENT

Parents may manifest their involvement through their "behaviour", i.e., their overt actions may serve as indices of their involvement. This would include engaging in activities such as going to the child's school, meeting his teachers, attending parent-teacher meetings, and the like. Parents are usually interested in knowing if their
child is having any trouble with schoolwork. This can be taken care of by having adequate interaction with the school.

Many research studies provide evidence for this form of involvement. One of the surveys (Chavkin & Williams, 1987) found that the most frequently reported parental involvement activities were:-(i) open house or special programs, (ii) parent/teacher conferences, (iii) parents serving as chaperones, (iv) parents assisting with social activities, and (v) parents observing classroom activities.

Iverson, Brownlee, & Walberg (1981) took into account the number of parent-teacher contacts, and its impact on student learning.

Collins, Moles, & Cross (1982) reported that some of the school systems had developed systemwide individual conferences spread over one-two days. Calendars with daily parent-child activities or computergenerated tips for strengthening weak areas were given to parents. Such conferences were very well-attended, and both parents and teachers expressed strong satisfaction.

Purnell & Gotts (1985) found that the most prevalent techniques of parent-teacher interaction were parents phoning teachers when the child was in trouble, parent-teacher conferences, open houses, and having parents sign different kinds of messages to be returned to the school.

Lopez (1993) too, reported that the most frequent type of involvement in the school, as reported by parents, was conferring with the teachers.

All these types of parental activities represent the ways in which parents can overtly manifest their involvement in children's schooling.
2) PERSONAL INVOLVEMENT

While parents' overt behaviour is one way in which parents may exhibit their involvement in the child's schooling, the child may also have a more profound affective experience that his parents are providing resources to him and are concerned about him. The effect of this affective experience may be different from that described earlier.

The role of affective experiences and emotional climate at home has been worked upon by several researchers. Studies have indicated the beneficial influence of emotionally supportive home situations on children's outcomes (e.g., Nelson, 1985; Bradley et al., 1987; Sauer & Gattringer, 1987; Tamir, 1990).

Related to these emotional experiences is the personal involvement of parents in children's schooling. It is another resource that parents provide to their children. Parents' personal involvement includes the child's affective experience that the parent cares about school, and has and enjoys interactions with them around school (Grolnick & Slowiaczek, 1994). This includes involvement in the academic and social life of the child. This would encompass activities such as knowing about the child's day-to-day activities, his whereabouts, friends, what he usually does at school, how well he gets along with others, how well he is doing in studies, how regular and apt he is in his schoolwork, how well he performs in examinations, and the like.

As is evident from above, this dimension of involvement is different from the one described earlier. Although behaviour involvement is important, it may not be enough, as the child too, must know that his parents are there to support and help him upto their level best. It is sometimes observed that parents may overtly show utmost interest in their child's schooling, but in reality, they may not feel so
strongly for the child or his studies. Hence, it is very essential for the child to perceive that his parents' concern for him is not a farce or mere superficiality, but is, in essence, a reality.

Personal involvement is crucial for parents so that they may guide their child appropriately. On the other hand, from the child's perspective, if the child is aware of his parents' interest in his life, it provides emotional support, assurance and reliance to the child. Even in case of a child who is performing poorly in his studies and whose parents are concerned about him, the child tends to have the feeling that his parents are there to help him. So, parents' personal involvement may provide the child an important resource to rely upon.

Apart from behaviour and personal involvement, another dimension of parental involvement which may be crucial for the child is cognitive/intellectual involvement. Parents may be intellectually involved in the child's development and schooling in two ways. Firstly, they may provide cognitive stimulation to the child, and secondly, they themselves may involve in various intellectual activities.

3) COGNITIVE STIMULATION

Exposing the child to cognitively stimulating activities and materials represents a historically new role for parents in fostering children's cognitive development (Lareau, 1987). Parental stimulation has been defined by Belsky, Goode, & Most (1980, p. 1169) as "efforts to focus the infant's attention on objects and events within the environment. These attempts can be physical or verbal in nature". By directing the child's attention to specific objects and activities, parents try to stimulate the child's thought and expression in ways that may augment his/her academic learning.
The beneficial impact of a stimulating environmental context cannot be doubted. The importance of environmental stimulation and enrichment during childhood has been endorsed by several researchers (e.g., Rohwer, 1970; Ausbel, Sullivan, & Ives, 1980; Scott-Jones, 1984). There is an ever-increasing emphasis on creating such enriched home environments that may be conducive to the development of the individuals. Various researchers have highlighted the fact that the experiences that children bring with them to school affect their future performance. Parents should therefore, ensure that their children are brought up in a stimulating, thought-provoking surrounding that may promote their optimal cognitive development.

4) COGNITIVE BEHAVIOUR

Till now, the major concern was with the direct parental activities that could influence the child's academic growth. Parents may, however, be involved in a more subtle way too, that may not be directly academic. For instance, parents may themselves engage in various types of cognitive activities such as reading newspapers, books, magazines, or going to the library, and the like. These types of parental activities have been explored by some researchers such as Moos & Moos (1981), Howell & McBroom (1982), Griswold (1986), and Grolnick & Slowiaczek (1994). The investigator contends that this form of intellectual involvement of parents may also be crucial for the child's scholastic development. Parents' cognitive/intellectual behaviour may permit modelling to occur, and children may tend to adopt similar attitudes and values towards intellectual activities as their parents have.

Thus, in the present investigation, two aspects of cognitive/intellectual involvement would be included - firstly, the cognitive stimulation provided to children by parents, and secondly, the
cognitive behaviour of parents, i.e., the involvement of parents themselves in various forms of cognitive activities.

In this way, the investigator puts forth a multidimensional representation of parental involvement that operationally covers parents' behaviour involvement, personal involvement, cognitive stimulation, and cognitive behaviour.

MOTIVATION

The role of motivation in human life cannot be ignored. Motivation provides the purpose and direction to life, energizing individuals to pursue activities which may help them in achieving their cherished goals. A person can, to quite an extent, overcome the limitations set by heredity and by other environmental circumstances provided he/she is motivated to achieve.

Considering the relevance of this phenomenon, various researchers have attempted to study it, and each of them has defined it in a different way. Before arriving at the various definitions of motivation, it would be relevant to consider how this term originated. The term motivation has been derived from the Latin word "movere" which means to move. In the literal sense, it is a process which arouses the energy or drive in the organism to proceed in an activity. The activity aroused, fulfils the need and reduces the drive or tension. Until the need is not fulfilled, the drive is not reduced.

Hilgard (1953, p. 602) defines motivation as a "general term referring to the regulation of need-satisfying and goal-seeking behaviour by states of need and drive within the organism and by incentives in the environment".
Kam & Weitz (1955, p. 76) opine that motivation is "concerned with the various urges or desires or needs or wants that *arouse* and *sustain* behaviour".

According to Moskowitz & Orgel (1969, p. 76), "Motivation is usually defined as the *initiation* and *direction* of behaviour, and the study of motivation is, in effect, the study of the *causes* of behaviour".

Munn, Fernald, & Fernald (1975, p. 329) state that the concept of motivation refers to "activation from within the organism. Though some external stimuli may have important relationships to motivated behavior, they do not inevitably control the organism. *Motivation* and *motive*, therefore, are general terms, usually referring to characteristics of the organism, such as interests, aspirations, and physiological states, which prompt behaviour". Psychologists "sometimes find it convenient to consider motivated behaviour as involving the sequence: need, drive, incentive, and reward". The authors further clarify these terms as follows: A *need* arises within the organism when a biochemical "...necessity is not supplied. This need gives rise to physiological conditions and a state of arousal known as a *drive*. The driven organism is ready to respond to stimuli related to its aroused state, and these stimuli are called incentives. An *incentive* is the object towards which motivated behavior is directed. It can provide satisfaction for the aroused drive.... Once the organism has gained the incentive, consummatory behavior follows.... This response brings about a readjustment; the initiating need is satisfied or partially satisfied. We say that the behavior has resulted in a *reward* or positive reinforcement.... Hence, motivation is referred to as goal-directed behavior."

According to Marx (1976), the term motive is typically used to refer to "the presumed internal condition that organizes and energizes
behaviour in some particular direction, accounting then for both the selection of responses and the vigor with which they are made" (p. 419). In other words, a "motive is defined as a complex construct that includes both directional (associative) and energizing (activating) components. The directional component is usually called habit and the energizing component is often called drive" (p. 418).

Fernald & Fernald (1978, p. 571) define motive as the "urge to attain some goal object, such as food when hungry or some goal, such as becoming an engineer". So, motivation would depict the "inner influence on behaviour as represented by physiological condition, interests, attitudes, and aspirations".

As is evident from the above definitions, motives are important elements of behaviour. Their significance in human life has been recognized since times immemorial. Their study, however, became popular with the works of McDougall and Freud. Later on, with the advent of the theories of learning, they came to occupy a central position in education. It became evident that motivation was crucial for acquiring, integrating and imparting knowledge, and in fact, in performing any activity with any degree of excellence.

Initially, the study of motivation in schools was typically concerned with the assessment of achievement motivation. This concept, identified by McClelland and his associates, was equated to an inner concern with achievement, a disposition to engage in activities in which doing well or comparing performance with some standard of excellence was crucial (McClelland, Atkinson, Clark, & Lowell, 1953). Various investigators (e.g., Parrish & Rethlingshafer, 1954; Ricciuti & Sadacca, 1955; Feld, 1960; Shaw, 1961; Cox, 1962; Khan, 1969; Fedell, 1971) attempted to study it. Most of the research which followed came to be
specifically focused on school (for children) and work (for adults). For instance, McClelland's (1961) focus in "The Achieving Society" was mainly on business and entrepreneurial activities. Problems, however, arose because various motives were assumed to be included under the single, general term "achievement motivation". Theorists (e.g., Spence & Helmreich, 1983; Ryan, Connell, & Deci, 1985) suggested that different motives could arouse or elicit achievement-related activities. For example, a person could be motivated to achieve in order to gain fame and praise, another could be motivated by the need for avoiding disapproval and guilt, and still another could be inherently interested in performing well in an activity. So, there could be different motives energizing individuals to proceed in an activity.

Thus, it has become imperative to differentiate between people on the basis of levels or strength of achievement motivation, as well as in terms of "orientation" of that energy (Ryan & Connell, 1989). In other words, it is necessary to understand not only how strongly people are motivated to achieve, but also 'why' they are motivated to achieve. Thus, the level and orientation of motivation, both serve as significant determinants of achievement-related behaviours. The review of literature reveals that while a lot of attention was focused on the former issue during the earlier years, the recent upsurge in the field is the focus on the latter. Various researches (e.g., Harter, 1981b; Gottfried, 1983; Ryan, Connell, & Deci, 1985; Ryan & Grolnick, 1986; Ryan & Connell, 1989) have attempted to pay attention to these motivational orientations of the individual. It has been recognized that individuals may develop unique motivational patterns or qualities that may affect their learning. For example, one child may himself be interested to learn a task, while another child may feel forced to learn it. These differences in
motivational orientations have been widely explored, and one clear
distinction that has emerged is intrinsic versus extrinsic motivation.

Intrinsically motivated behaviours are "autotelic" (Csikszentmihalyi, 1975), i.e., they are engaged in for their own sake rather than as a means to some end (Lepper, 1980). In other words, they are activities that are performed voluntarily in the absence of external constraints (Sansone, 1986, p. 918). On the other hand, when one pursues some activity for the sake of some external incentive, one is said to be extrinsically motivated. The past three decades show voluminous research on intrinsic and extrinsic motivation (e.g., Lepper & Greene, 1975; McGraw & McCullers, 1979; Lepper, 1980; Lepper, Sagotsky, Dafoe, & Greene, 1981; Boggiano, Pittman, & Ruble, 1982; Pittman, Emery, & Boggiano, 1982; Ryan, Chandler, Connell, & Deci, 1983; Sansone, 1986).

Recently, Grolnick et al. (1991) have identified a set of motivational "inner resources" necessary for academic success. Three resources have been considered to be crucial to intentional behaviour, viz., control understanding, perceived competence, and self-regulation. In case of all the three motivational variables, children's perception of the same is to be considered. This is because there is evidence to show that children's attitudes and beliefs about themselves in school serve as powerful determinants of scholastic success (Grolnick, 1990). Moreover, the emerging literature shows the relative independence of actual ability and the motivational determinants of ability and achievement. For, a child may be capable of excelling academically, but he may not perceive himself in such a manner. It is, however, his self-perceptions of ability rather than ability per se, which may affect his achievement strivings. Such a conception has led to the construction of a cognitive-
developmental model of achievement which emphasizes that a child's perception of reality, rather than reality itself, is a stronger predictor of achievement motivation and behaviour (Bandura, 1977b; Weiner, 1979; Nicholls, 1982; Covington, 1984).

Based on these findings, the investigator proposes to explore the child's perception of his/her own motivational qualities, viz., control understanding, competence, and self-regulation. The conceptual framework of these variables has been presented below.

1) CONTROL UNDERSTANDING

Intentionality is the crux of motivation. It refers to the determination to act towards a goal or engage in specific behaviour (Atkinson, 1964). Cognitive accounts of motivation (e.g., Lewin, 1951; Tolman, 1959; Heider, 1960) emphasize that intention implies personal causation, and is equated with being motivated to act. Intentional behaviour occurs when the individual performs an activity in order to achieve a particular aim or purpose. This shows that intentions are based on an individual's effort to achieve desirable outcomes, and to avoid unpleasant or undesirable outcomes. Research indicates that nonintentionality and maladaptation occur when people perceive that outcomes are independent of their behaviours (Rotter, 1966), or when a situation is structured so that outcomes are unrelated to behaviours (Seligman, 1975).

Therefore, of central importance in the formation of intentions is the belief that outcomes are determined by specific behaviours, i.e., an individual's actions are reliably related to significant outcomes. Investigators (e.g., Rotter, 1975; Seligman, 1975) have demonstrated that intentional behaviour will occur only if people understand how to control outcomes, i.e., they understand the behaviour-outcome linkage.
It is with this element of intentional behaviour, viz., control understanding, that the investigator is concerned.

Connell (1985, p. 1019) defines unknown control as indicating "a lack of knowledge regarding the locus of the sufficient cause" or source of control for a specific outcome. Thus, control understanding would depict just the reverse, i.e., understanding how people's own behaviours are linked with specific outcomes.

Elaborating on this concept, Skinner, Wellborn, & Connell (1990) state that if people have to act intentionally, they must know how outcomes are related to their own behaviour.

Grolnick, Ryan, & Deci (1991, p. 509) believe that control understanding "reflects the degree to which children indicate that they understand who or what is responsible for their important school outcomes".

Since years, researchers from diverse fields have been concerned with the concept of control, i.e., the extent to which people exhibit the ability to control significant events occurring in their life space. Constructs such as mastery (Adler, 1929, 1931), competence and effectance (White, 1959), and learned helplessness (Seligman, 1975), all highlight in one way or another, man's ability to control his personal world.

However, the concept of "perceived control" differs from the above-mentioned constructs (of competence, helplessness, etc.), although it too, stresses the importance of instrumentality, i.e., the strength of contingency between acts and their effects. Connell (1985, p. 1018) defines perceptions of control as "children's understanding of the locus of the sufficient cause for success and failure outcomes".

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According to Ryan & Connell (1989, p. 753), perceived control "pertains to one's beliefs about who or what controls outcomes".

The phenomenon of locus of control has originated from Rotter's (1966) social learning theory. According to this theory, the potential for any given behaviour to occur is determined by the individual's expectancy that the behaviour will be effective in achieving a desired goal or objective. For instance, in a classroom situation, the probability that a child will put in effort to achieve will be directly related to the extent to which he believes that his efforts will be instrumental in obtaining desired objectives or reinforcements such as teachers' approval, praise, rewards, good grades, and so on (Lefcourt, 1966). In other words, the child's efforts would be a function of the degree to which he believes in the contingency between acts and their effects.

This construct has been worked upon by several theorists interested in motivational and cognitive aspects of behaviour (Lefcourt, 1976, 1981; Phares, 1976; and Strickland, 1977). Rotter, as early as 1954, describes locus of control as an expectancy that reinforcement is under one's own control (internal) or not under one's own control (external). Rotter, Seeman, & Liverant (1962), in the first expository paper pertaining to the dimension of control, describe the construct as distributing individuals according to the degree to which they accept personal responsibility for what happens to them. According to Lefcourt (1966, p. 207), "internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control; external control refers to the perception of positive and/or negative events as being unrelated to one's own behaviours in certain situations and therefore beyond personal control".
Such an internal-external control classification has been extensively worked upon, and has been accepted by several psychologists such as Heider (1958), deCharms (1968), and Deci (1975). While Rotter has proposed a unidimensional classification of causality, i.e., causes are either within (internal) or outside (external) the person, Weiner et al. (1972) have propounded a two-dimensional taxonomy of perceived control: internal versus external causes (similar to Rotter's theory), and stable versus unstable causes. According to them, four causes are important for children in achievement situations, viz., ability, effort, task difficulty, and luck. Ability and effort are characteristics internal to the person, while task difficulty and luck are factors external to the person. Moreover, ability and task difficulty are stable factors, while effort and luck are relatively unstable factors that may change across tasks and times.

A third dimension of perceived control that has been delineated by Heider, but integrated into the field of achievement later by Rosenbaum (1972) is intentionality. Intentional factors would include causes such as effort or bias of the teacher, whereas unintentional factors would include causes like ability and task difficulty. Weiner (1979) has however, argued that Rosenbaum has probably mislabelled this dimension. For instance, according to Rosenbaum, the difference between mood and effort would be that of intention, with mood classified as unintentional and effort classified as intentional. On the other hand, Weiner feels that this difference is not of "intentionality" but of "controllability" because failure caused by a lack of effort does not imply that there was an intention to fail. So, effort would differ from mood in the sense that effort may be classified as controllable, while mood may be categorized as uncontrollable (although both the factors
are internal and unstable). Thus, with this dimension being added to the attribution theory, causes have come to be classified along three dimensions, viz., internal versus external, stable versus unstable, and controllable versus uncontrollable causes.

Abramson, Seligman, & Teasdale (1978) have identified still another possible dimension of causal attributions, viz., globality. This dimension is different from stability in the sense that globality refers to stimulus generalization, while stability encompasses temporal generalization. For instance, a person may perceive his ability as a task-specific trait to act (e.g., "I did well because I am good at mathematics") or as a global trait (e.g., "I did well because I am intelligent/smart"). So, according to the theoretical orientation of Abramson et al. (1978), perceived lack of contingency (helplessness) may be explained by internal versus external, stable versus unstable, and global versus specific causes.

Bandura (1977b), proposes that there are two factors which determine change in behaviour. These two factors are: (i) perceiving oneself as controlling whether or not desired outcomes are obtainable, and (ii) being confident about one's ability to achieve these outcomes.

Weisz & Stipek (1982), and Weisz (1983) have put forth a two-dimensional model of perceived control that involves (i) perceived contingency (i.e., the extent to which outcomes are seen to be contingent on one's behaviour), and (ii) perceived competence (i.e., the extent to which one feels competent enough to produce the required behaviour).

Skinner & Chapman (1984) propose a three-component model of control beliefs in which control beliefs (I can produce Y) imply means-ends beliefs (there exists an X that leads to Y) and agency beliefs (I have access to X).
Connell (1985, p.1019), in his recent formulation has assessed three dimensions of children's perceptions of control. According to him, these dimensions determine the "degree to which children say (a) that they don't know why these outcomes occur (unknown control), (b) that their own attributes bring about these outcomes (internal control), and (c) that other people's attributes bring about these outcomes (powerful others control)".

A brief overview of all these theories pertaining to the construct of control shows how different psychologists have highlighted the role of different causal attributions in their theoretical orientations. The role of attributions is very significant since they may become the medium for predicting behaviour and behaviour change. As Autry & Langenbach (1985, p. 77) clarify, "The role of attribution in changing behaviour is of particular interest because it points out the importance of cognitions regarding observed events". They further state that an "important question in understanding behaviour change is the effect of having individuals attribute behaviour change to themselves rather than to extraneous persons or events. There is evidence that whether a behaviour is maintained after reinforcements are withdrawn is related to whether the individuals attribute the change to themselves or to external forces (Davidson & Valins, 1969). Bandura & Perloff (1967) have shown that self-monitored reinforcement does possess considerable behaviour maintenance value. Further, applications of behaviour modification designed to increase self-control have been more effective than methods relying on externally imposed control (McLaughlin, 1976)".

Although the present investigation is not directly related to the issue of causal attributions, i.e., whether factors like ability, effort, etc.
are responsible for success/failure outcomes, it attempts to explore an issue that has emerged from the construct of perceived control, viz., children's control understanding. The investigator proposes to use Connell's measure of unknown control (with the scale reversed) to evaluate children's control understanding. This scale has been used in a similar manner by Grolnick, Ryan, & Deci (1991), and Grolnick & Slowiaczek (1994).

Elaborating on this concept, Connell (1985, p. 1019) explains, 'Unknown control indicates a lack of knowledge regarding the locus of the sufficient cause. This formulation captures Weisz's (1983) dimension of "perceived contingency" in that internal perception of control implies a perceived contingency between something about oneself (including but not restricted to one's behavior) and a particular outcome. This view however, does not encompass Weisz's second dimension of perceived control, which he calls "perceived competence," or Skinner and Chapman's (1984) related notion of "agency beliefs". Both of these constructs involve judgments about the actor's capacity to produce the sufficient cause'. As Weisz, Weiss, Wasserman, & Rintoul (1987) explain, outcome contingency denotes the extent to which an outcome depends on the behaviour of the relevant individuals, whereas outcome noncontingency depicts the extent to which an outcome depends on responses that either the individual or relevant others might produce.

The phenomenon of control understanding is not merely theoretical, but is evident even in our daily life experiences. For instance, it has been generally observed that children often report that they do not know how they obtained their respective grades in school. Some believe in fate; some say it was the role of destiny; others state, "I don't know how this miracle happened," while still others say, "It was
beyond my control." All such statements highlight the concept of control understanding and reflect the way in which it operates in our lives.

An essential fact worth mentioning is that the investigator proposes to consider the child's rather than observers' ratings of the former's control understanding. This is because, an observer, be it anybody (such as the child's parents, teachers, friends, etc.), may judge the child in a different way as compared to what a child thinks about himself. Moreover, the child's beliefs about such self-related variables are liable to throw more light on his pattern of achievements and behaviours across situations, rather than the notions held by others concerning the child. So, the study of child's perceptions of his control understanding appears to be more plausible and relevant.

Another aspect of control understanding which has not been mentioned so far is that perceptions of control may be domain-specific, i.e., the child may show more of control understanding in one particular domain as compared to another. For example, he may have a better understanding as to how outcomes are related to his behaviour as far as the physical domain is concerned, but he may have no knowledge of the same in the social domain. Moreover, Connell (1985) provides evidence for domain-specificity of perceptions of control. He differentiates between the 'cognitive', 'social' and 'physical' domains, and also includes a separate global assessment of children's perceived control. As he points out (1985, p. 1020), most existing measures of perceived control (such as Bialer, 1961; Nowicki & Strickland, 1973; Gruen, Korte, & Baum, 1974; Mischel, Ebbeson, & Zeiss, 1974) "assess only generalized expectancies of control and not domain-specific perceptions of control". Paulhus (1983) too, demonstrates that when perceived control is differentiated into domains, and instruments are developed to
measure each of them, specific scales are better in predicting their own areas as compared to scales that evaluate the same construct in other areas.

In the present context, the main interest of the investigator was in the prediction of academic achievement. So, inclusion of variables closely related to academics was thought to be more relevant. On the basis of the facts mentioned above, the investigator planned to explore children's perceptions of control understanding in the "cognitive" domain.

2) PERCEIVED COMPETENCE

Apart from control understanding, another resource which has been considered to be crucial to intentionality is perceived competence. Besides understanding how outcomes are related to one's own behaviour, an individual must also perceive himself to be competent enough to execute the instrumental actions to achieve success. Such beliefs about oneself have been termed perceived competence (Bandura, 1977a).

The concept of perceived competence has emerged from the studies of "self" and "self-related" variables. Psychologists as early as William James pointed out that the way people viewed themselves affected their decisions and activities in life. He elaborated (1902) about the self as an object of knowledge. Thereafter, Charles Cooley and George Mead, the forefathers of American social psychology, described self-concept as it emerged from interactions with others. Cooley (1902) discussed the role of social context in the development of perceptions of oneself. He suggested that a person perceived himself as he might perceive his image in a mirror, and he labelled this concept as the "looking-glass self." Mead (1934), expanding on Cooley's ideas,
proposed that a person managed this reflexive look at oneself by taking on the role of others. In this way, the ideas of Cooley and Mead provided the foundation for the knowledge of self-perceptions. Even Freud, in some of his later writings, explicitly expressed about the relationship between the way the individual handled his motivational impulses and his need for belongingness and participation in his social circle. Many later theorists (e.g., Adler, 1925; Horney, 1945; Fromm, 1947) further highlighted the role of social interactions and inter-personal relationships in the development of healthy and unhealthy personality. It was argued that positive self-perceptions would lead to constructive, socially approved behaviours, while negative and distorted self-perceptions would lead to socially undesirable and inappropriate behaviours. Consequently, more and more emphasis began to be laid on the study of the "self" (Hilgard, 1949) and the "self-system" (Sullivan, 1945). Self-concept was described as developing gradually as a child's perceptual powers increased through his dynamic interaction with his social and physical environment (Erickson, 1950; Bodwin, 1959).

Since then, various theoretical orientations have emerged such as the self-perception theory (Bem, 1972), social learning theory (Bandura, 1977b), social cognition (Lepper & Greene, 1978), and theories of competence and intrinsic motivation (White, 1959, 1963; deCharms, 1968; Deci, 1975; Harter, 1978, 1981a, 1981b). All such theories emphasize constructs such as self-concept, self-perceptions, self-efficacy, self-esteem, perceived competence, and the like.

Thus, the "self-related" variables have attracted a lot of attention, and different psychologists have attempted to define them in different ways. Muller & Leonetti (1973) define self-concept as self-descriptive behaviour. Self-concept has been considered by some investigators
(e.g., Ames, 1975; Nicholls, 1976; Ames, 1978) to denote a set of beliefs and feelings that children have about their capabilities, with children higher in self-concept having higher perceptions of and more confidence in their abilities in school-relevant experiences than children with lower self-concept.

Shavelson, Hubner, & Stanton (1976) propose that self-concept reveals a person's perception of oneself. These perceptions are formed through the individual's experiences with his environment, and are influenced especially by environmental reinforcements and significant others.

According to Bandura (1977b, 1981, 1982), psychological procedures can change behaviour in part by creating and strengthening self-efficacy, or one's perceived performance capabilities in a given activity. The author defines (1977b, 1986) self-efficacy as people's conviction that they are capable of executing the behaviours necessary to produce a desired outcome. In the words of Bandura (1986, p. 391), self-efficacy pertains to "people's judgements of their capabilities to organize and execute courses of action required to attain designated types of performance. It is concerned not with the skills one has but with judgements of what one can do" and "is a significant determinant of performance that operates partially independent of underlying skills". Self-efficacy thus, is believed to apparently influence one's choice of activities, persistence and effort expended in activities, and task accomplishments.

Autry & Langenbach (1985, p. 77) have used the term self-efficacy to denote "one's perceived capacity to meet some challenge or perform a particular response".
Schunk (1985) believes that self-efficacy refers to personal judgements of one's capability to organize and implement behaviours in specific situations.

With all these emerging viewpoints and theoretical constructs, there has been a shift from the "cognitive" to the "humanistic" aspects of education. More and more emphasis has begun to be laid on the non-cognitive determinants of education. It is believed that a child's views about himself constitute a key factor in his ability to achieve in school. In such a milieu has emerged the concept of perceived competence.

The first systematic definition of competence describes it as the individual's motivation to master the environment (White, 1960; Erikson, 1963). However, equating competence with a drive-like state seems objectionable. So, this definition has been subjected to a lot of research and enquiry (Flavell, 1977; Harter, 1977, 1981b; White, 1979; Yarrow et al., 1983), which has given way to defining competence, specifically social competence, as a set of skills that control the environment by eliciting favourable outcomes (Connolly & Bruner, 1974; Foster & Ritchey, 1979; Gresham, 1981; Shure, 1981; Hops, 1983). Since there is inadequate proof about skills that control important life outcomes, another definition of competence has emerged which is in terms of behaviour product. It describes competence as the presence of positive, relevant, developmentally appropriate behavioural outcomes (Foote & Cottrell, 1955; Blechman, 1981; Vaughn & Waters, 1981; Ford, 1982). It emphasizes that the main criteria for childhood competence is successful outcomes at interpersonal and achievement tasks. So, people must believe that they possess the capacity, calibre, or competence to produce the necessary actions to achieve significant
outcomes (Bandura, 1977b; Harter, 1982), and this is the issue of perceived competence.

Several features of perceived competence can be delineated based on the study of Gist & Mitchell (1992). Firstly, it involves a comprehensive (organized) summary or view about one's perceived capacity for doing a particular task. Secondly, it has a mobilizing, energizing or motivational component. In other words, it persuades or motivates the individual into activity. Thirdly, it is a dynamic construct that may change with time, especially as a consequence of new experiences and informations. This feature points out that things like performance feedback may affect future evaluations of competency.

Another feature of perceived competence that is evident from above is that it is evaluative. These evaluations can be made against absolute standards, or they can be drawn relatively by comparing oneself with peers or significant others.

Still another aspect of this concept is that it is developmental. Infants do not make differentiations between themselves and their environment. As they grow older, they start distinguishing between the two, and in due course of time, they develop beliefs about their own competence. These beliefs are, however, global and undifferentiated when children are small, but they become more and more differentiated as they grow up.

Apart from this, perceived competence is hierarchical. That is, the various facets of competency form a hierarchy with general perceived competence at the top and more specific self-perceptions of competence, such as academic and non-academic competence below it. Academic competence can further be differentiated into subject-specific competence, while non-academic perceptions of competence would
include feelings about social competence, physical competence, and the like. This characteristic of perceived competence points out its domain-specificity. People may not feel equally competent in every skill domain, and a person who feels competent in one area may not feel similarly in another field. For example, a person may believe that he is very competent academically, but he may perceive himself as a misfit in his social circle. So, self-perceptions of competence are domain-specific (Harter, 1982; Harter & Pike, 1984; Miller & Schouten, 1990; Berry & West, 1993) and may vary from one domain to another. It is therefore, imperative to delineate the domain or area when speaking of perceived competence.

Items in the "popular scales as the Coopersmith Self-Esteem Inventory (1967) and the Piers-Harris Self-Concept Scale (Piers & Harris, 1964; Piers, 1969) tap a range of diverse content including cognitive competencies, physical skills, popularity, acceptance by parent, morality, personality traits, physical characteristics, and affective reactions. Responses to these heterogeneous items are then summed, and the total score is interpreted as an index of global self-regard" (cf. Harter, 1982, p. 87). Harter questions such an assumption and points out that it is imperative to make distinctions between the various skill domains when speaking of perceived competence. Keeping this into account, the investigator planned to study perceived "cognitive" competence in particular, since the main interest in the present context was in the prediction of academic achievement.

In brief, it may be safely said that perceived competence denotes the individual's personal notions about his capacity to elicit behaviours or actions that may lead to the successful accomplishment of a goal or task. It is thus, concerned with the phenomenological conceptions of
ability that are organized, mobilizing, dynamic, evaluative, and domain-specific. Such self-perceptions of ability may differ from true ability per se, and both of them may be crucial in determining achievement. Therefore, it was contemplated by the present investigator to study the same.

3) SELF-REGULATION

While intentionality is based on people's beliefs that desired outcomes are reliably related to certain behaviours, and that they are competent enough to execute those behaviours, such beliefs do not ensure the autonomous initiation and regulation of those behaviours. Deci & Ryan (1987) point out that it is necessary to delineate intentional behaviours that are autonomously initiated and executed, from those that are controlled by intrapersonal and interpersonal factors. So, they propose a further differentiation within the realm of intentionality, viz., autonomous versus controlled behaviour. For example, a person may understand how significant outcomes are related to his/her own behaviour, and may feel competent enough to produce those instrumental behaviours, but at the same time, he may feel forced or coerced into executing those actions. In such a case, the individual is showing both the elements of intentionality studied so far, viz., control understanding and perceived competence, but he does not have a true sense of autonomy. On the other hand, when the individual initiates or does the specific action on his own without any pressure, agony, or fear, he may be exhibiting true autonomy in his behaviour. It is in this way that self-regulation differs from control understanding and perceived competence, the two pre-requisites of intentional behaviour elaborated so far.
The study of self-regulation is based on the analysis of causes of behaviour, i.e., whether behaviour is self-determined and self-initiated or it arises as a result of interpersonal/intrapersonal forces that include an element of pressure or coercion. This study of the causation of behaviour can be traced back to the associationistic theories which considered execution of behaviour to be a function of associative links between stimulus inputs and behavioural outputs that emerged as a consequence of reinforcements. However, such theories did not recognize the role of information processing, and consequently, during the 1950's and 1960's, another set of theories emerged, viz., cognitive theories. These theorists believed that information processing assumed a crucial part in behaviour determination. They believed that behaviour initiation was a function of beliefs about behaviour-outcome contingency and of the psychological values attached to these outcomes (e.g., Tolman, 1959; Atkinson, 1964; Vroom, 1964). Thereafter, the concept of intentionality (Lewin, 1951) became central to the understanding of behaviour, and elements crucial to intentional behaviour emerged, viz., perception of control and competence (as have already been described in the present chapter when presenting the theoretical framework of control understanding and perceived competence). During these years emerged the concept of "perceived locus of causality" (PLOC), as introduced by Heider (1958) in reference to interpersonal perception. He differentiated personal causation from impersonal causation. Intention was considered to be the determining feature of the former, while in case of the latter, environments, independent of an individual's intentions, were thought to produce outcomes.

Heider's theory was extended by deCharms (1968), who proposed a further distinction within personal causation, viz., internal versus...
external perceived locus of causality. In case of internal PLOC, the individual himself was considered to be the "origin" of his behaviour, while in case of external PLOC, he was perceived as a "pawn" to heteronomous forces.

These theoretical constructs put forth by deCharms have been applied to both processes of interpersonal attribution and self-perception. As he himself points out, knowledge about the causes regulating a person's own behaviour differs from the interpersonal attributions of causality, and these differences lie "at the centre of all motivation theory" (1968, p. 319). According to Ryan & Connell (1989, pp. 749-750), in "...interpersonal perception, PLOC is internal or external with respect to the person, who is a socially definable, visible entity (Strawson, 1959). By contrast, in the realm of self-knowledge PLOC pertains to the self, a phenomenal center of personal experience and agency that is not isomorphic with the person or with physical being (Pfander, 1967; Harre, 1984; Benson, 1987; Deci & Ryan, 1987). It is the degree to which action is initiated and endorsed from this phenomenal center that describes the relative autonomy of an act".

In the words of Deci & Ryan (1985b, pp. 113-114), the term locus of causality '...is not the same as "locus of control" as explicated by Rotter (1966). The term locus of control refers to whether people believe that outcomes are controllable, in other words whether outcomes are believed to be contingent upon behaviour. Locus of causality, on the other hand, refers to the perceived source of initiation and regulation of behaviour. Locus of control is concerned with what controls a person's outcomes; locus of causality is concerned with why a person behaves as he or she does (deCharms, 1981; Ryan & Grolnick, 1986). Although the locus of control of outcomes undoubtedly affects the initiation and
regulation of behaviour, it is but one among many factors that does. Others include such things as people's needs for autonomy, feelings of competence, and personal values and goals'.

Following the work of Heider (1958) and deCharms (1968) is Deci's categorization of causality orientations, viz., internal, external, and impersonal causality orientations. Deci & Ryan (1985b) have however, suggested that since these first two terms of causality orientations can be confused with those for locus of control, these can be renamed as autonomy orientation, control orientation, and impersonal orientation.

Impersonal orientation, according to Deci & Ryan (1985b, p. 112) "involves people's experiencing their behaviour as being beyond their intentional control. They tend to believe they are unable to regulate their behaviour in a way that will lead reliably to desired outcomes. When high on the impersonal orientation, people see themselves as incompetent and unable to master situations. They experience tasks as being too difficult and/or outcomes as being independent of behaviour. They may believe the sources of control to be unknown (Connell, 1985) or to be the whims of some external agent".

The other two causality orientations, viz., autonomy and control orientations are constructs involved in understanding self-regulated behaviour, and have been explained in detail below.

According to Deci & Ryan (1985b, pp. 111-112) autonomy orientation "involves a high degree of experienced choice with respect to the initiation and regulation of one's own behaviour. When autonomy oriented, people seek out opportunities for self-determination and choice, and accordingly they can be described as having a generalized tendency toward what deCharms (1968) described as an internal
perceived locus of causality. Thus, for example, a strong autonomy orientation leads people to select jobs that allow greater initiative, to interpret their existing situations as more autonomy promoting (i.e., as informational) and to organize their actions on the basis of personal goals and interests rather than controls and constraints. With a high level of autonomy orientation, people are more often intrinsically motivated, and they are more likely to be self-determined with respect to extrinsic rewards (Deci & Ryan, 1985c). As such, they will tend to experience them more as affirmations of their competence or effectance”.

Deci & Ryan further clarify this concept (1987, p.1025) as follows: "Autonomy connotes an inner endorsement of one's actions, the sense that they emanate from oneself and are one's own. Autonomous action is thus chosen, but we use the term *choice* not as a cognitive concept, referring to decisions among behavioural options (Brehm & Brehm, 1981), but rather as an organismic concept anchored in the sense of a fuller, more integrated functioning. The more autonomous the behaviour, the more it is endorsed by the whole self and is experienced as action for which one is responsible”.

Grolnick, Ryan, & Deci (1991, p. 509) state that autonomy "concerns the degree to which the initiation and regulation of action emanates from one's core sense of self”.

Yanay (1995) considers autonomy as a "self-authoring experience emanating from the struggle to meet one's needs and achieve one's significant goals. The notions of struggle and significant goals are suggested as key concepts that are viable for a motivational theory of autonomy". In order to throw light on this concept, Deci & Ryan (1987, p. 1025) have cited the following examples: "...consider the behaviour of
an anorexic person abstaining from food. Clearly, there is intentionality, yet the person would not appropriately be described as acting autonomously (or through choice), for the experience is one of compulsion (Strauss & Ryan, 1987). In a similar vein, the behaviour of someone who is desperately seeking approval or avoiding guilt is intentional, but it is not autonomous. The person is compelled to engage in the behaviour and could not experience a sense of choice. Finally, a person who follows a therapist's suggestion not out of an integrated understanding but rather out of deference to the therapist's authority is behaving intentionally, but until the action is self-motivated and grasped as one's own solution it would not be characterized as autonomous.

So, when behaviour is initiated and regulated by people themselves, and not due to external restrictions or self-imposed constraints, it is considered to be autonomous. On the other hand, controlled behaviour occurs when actions are not autonomously initiated, i.e., they do not emanate because the individual is genuinely interested in those activities, but they may be executed out of controlling factors such as pressure, need to seek approval of others, or to avoid guilt, and the like.

According to Deci & Ryan (1985b, p. 112), control orientation involves people's behaviour as "...being organized with respect to controls either in the environment or inside themselves. When control oriented, people seek out, select, or interpret events as controlling. A central ingredient in the determination of their behaviours, cognitions, and affect is the pressure of initiating or regulatory events. Thus, when highly control oriented, people tend to do things because they think they "should", and they tend to rely on controlling events such as deadlines, or surveillance to motivate themselves. When people are control
oriented, extrinsic rewards play a more determinative role in their
behaviour..... The control orientation most frequently leads to
compliance with the real or imagined controls (whether they take the
form of threats, inducements, or expectations), but in some instances it
may involve rebellion against the controls and doing just the opposite of
what is demanded. In instances of either compliance or defiance, the
behaviour is said to be controlled rather than chosen because both
compliance and defiance have a quality of being pressured and
conflicted'.

Grolnick, Ryan, & Deci (1991, p. 509) believe that "controlled
activity describes the process of yielding to pressure from some force,
whether it be an external inducement or nonintegrated intrapsychic
demand".

There are thus, two qualitatively different ways in which
intentional behaviour can be initiated and executed. It can be flexibly
and choicefully self-regulated or it can be controlled. Therefore, it is
evident that some intentional actions or behaviours are self-promoted as
a result of choice and inherent interest in those activities, while others
result from an interplay of intrapsychic and environmental forces which
pressurize or force an individual into performing those activities and
hence, are not representative of truly autonomous or choiceful behaviour
(Deci & Ryan, 1985a).

In the words of deCharms (1968), autonomous people are
"origins" in attaining the desired outcomes, whereas in the case of
controlled behaviour, they are mere "pawns" in the process of
achievement. Therefore, presence of flexibility and absence of force and
pressure characterize autonomous behaviour, while the reverse is true in
case of controlled behaviour.
These differences between autonomy and control are not mere theoretical propositions, but there is substantial grounds to prove that such differences really exist in an individual's attempt to achieve desired goals. Firstly, children can and have been found to display autonomy in learning, as is evident by exposing them to material in the absence of external directives. As developmental psychologists (e.g., White, 1963; Piaget, 1971) suggest, children often take spontaneous interest when presented with novel material, and tend to assimilate it (Danner & Lonky, 1981). Thus, external directions or instructions are not necessary for learning, and when learning does occur in their absence, it is said to result from an internal locus of causality (Ryan, Connell, Plant, Robinson, & Evans, 1984).

Secondly, there is empirical basis to support these differentiations between autonomous and controlled behaviour. Deci & Ryan (1985b) found that autonomy orientation was unrelated to control orientation ($r=0.034$, $N=636$). So, these two orientations are independent of each other, with their own features and characteristics as described above.

In sum, it can be said that when causes for behavioural acts are described by statements such as "I am interested in performing this activity", behaviour is relatively more self-determined and self-regulated as compared to behaviours that are prompted by ideas such as "I should...", "I must..." or "I have to...". Thus, there are general orientations as to why people do certain instrumental acts. These orientations can be described along an autonomy-control dimension, with the extremes reflecting opposite ends of this continuum. These personality orientations have been referred to as causality orientations.
(Deci, 1980), implying that these general motivational orientations can be used to understand the causes which regulate people's behaviour.

Autry & Langenbach (1985) define self-regulating procedures as when people assess their own behaviours and give their own reinforcers contingent with learned criteria.

Corno (1994) emphasizes the role of volition in self-regulated learning. The author believes that such learning "reflects students' deliberate use of higher level strategies to direct and control their concentration of academic tasks".

According to Schunk & Zimmerman (1994), self-regulation "refers to the degree that individuals are metacognitively, motivationally, and behaviourally active participants in their own learning process". They further state that self-regulation reveals complex "processes through which students become willing and able to assume responsibility for self-regulating their academic achievement".

Ornstein (1995) believes that "volition refers to a disposition to do something based on one's own resources and efforts without external pressure. Self-regulation applies to students who understand their own thoughts and emotions related to learning and are able to control and focus these thoughts and emotions on the task".

This phenomenon of self-regulation is presumed to describe people on an autonomy-control continuum, with different points on the continuum showing self-regulatory behaviour of different degree and kind. Such gradations in experienced locus of causality are specifically evident in theories of internalization found among different fields of study (e.g., Parsons, 1952; English & English, 1958; Kelman, 1958; Rogers, 1965; Collins, 1977; Meissner, 1981; Lepper, 1983). These theories assume that more the internalization occurs, more the social
value or regulation may be described as autonomous or choiceful. Ryan, Connell, & Deci (1985) have examined as to how external regulations are integrated by children so that they become the basis of self-regulated behaviour. Thus, in due course of development, there is progressive movement from reliance on extrinsic regulations and controls towards more self-determined behaviour (Connell & Ryan, 1986; Ryan, Connell, & Grolnick, 1992). In other words, as the child develops, he seems to be less dependent on external controls and constraints, and tends to become more and more autonomous in his behaviour.

Ryan & Connell (1989) have explained these gradations in self-regulation by means of four subscales (viz., external, introjected, identified, and intrinsic) varying from less to more autonomous behaviour. They have examined different reasons for action, with different reasons depicting the extent of autonomy or control in initiating and regulating those behaviours in a specific skill domain.

The first category of reasons (external) denotes behaviour explained in terms of external authority, fear of punishment, or rule compliance. The second category of reasons, i.e., introjected are reasons in terms of internal, esteem-based pressures to act, such as avoidance of guilt and shame, or to gain approval. Identified reasons refer to actions that are initiated to achieve self-valued goals, while intrinsic ones pertain to behaviour emitted for the inherent enjoyment of the activity itself. For example, a child may do his homework for various reasons like reward (external reason), gaining teacher's approval (introjected reason), understanding the subject better (identified reason), or because he enjoys doing it (intrinsic reason).

The authors have combined the scores on these categories by means of weighted scores, to compute an index of self-determination in

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learning that has been referred to as the "Relative Autonomy Index" (RAI, Connell & Ryan, 1985). Such an index for self-determination and self-regulation has been successfully used by several researchers (Grolnick & Ryan, 1987a; 1989).

In addition to this, Ryan & Connell (1989) have assessed the reasons for action in two domains, viz., academic achievement and prosocial behaviour. This itself shows that perceived locus of causality may vary from one area to another. In other words, the degree of an individual's autonomy may be different in different fields, with the individual showing more autonomy in one field (e.g., interpersonal relations) as compared to another (e.g., scholastic achievement). This suggests that by using domain-specific scales of self-regulation, predictions of behaviour may become more concrete and meaningful. Keeping this in mind, the present investigator plans to assess self-regulation in the achievement domain.

The current chapter thus, presented the theoretical orientation of the variables of interest to the investigator, viz., intelligence, parental involvement, and three motivational resources - control understanding, perceived competence, and self-regulation. It explained as to how these concepts emerged in the realm of psychology, how they have been defined, what do they mean and signify.