Bilingualism is a world wide phenomenon. The paedagogy of second language learning is complex. It has drawn the attention of various social scientists to investigate the repercussions of learning two languages, rather than a single language. It is important for studying the interaction of language and behaviour.

Multiple factors interact in learning a second language. As Cummins (1976) opines, the problem of research is not what effects bilingualism per se has on cognitive process; rather than in identification of those conditions under which bilingual experiences are likely to retard or accelerate growth. According to Cummins the level of bilingual competency is emphasized as an intervening variable in mediating the effects of their bilingual experiences on cognition. But the attainment of threshold level itself, is determined by various environmental factors. He assumes that a high level of threshold in the second language is essential for positive influences while a failure to attain a minimum threshold level competency in that language will have a negative effect.

The social environment plays an important role in the development of language. Lambert (1975) attributes the positive influence of bilingualism to additive context in which second language is socially relevant and is learned by supplementing the first language, that is, without replacing the first language. The negative consequences are due to subtractive bilingualism where the first language is replaced by the second language. According to Lambert, it culminates in the lack of competence in either of these languages resulting in a retarding effect on cognition.

Cummins' concept of threshold level of bilingual competency and Lambert's notion of additive and subtractive bilingualism have been
investigated in different bilingual environments (Cummins, 1976; Skutnabb-Kangas, 1975). There is need for verification in a multilingual country like India, which is devoid of bicultural influence. The bilingual environment for children in the west is markedly different from India. The difference need mentioning, as it constrain generalization of western study results in Indian conditions.

**Salient Features of Indian and Western Bilingualism:**

There is diversity in the linguistic background of India. India, with a monocultural background has 1,652 languages as listed by the census (Pattanyak, 1977). However, only 16 languages are recognised as national languages. The various states have different languages and sociological factors like employment and migration between the states leads to bilingualism. In general, children from minority linguistic groups are surmounted with parental pressure to preserve the inherited language and confront social pressure to become fluent in the regional language. Learning in school, either through the regional language or English and maintaining a different language, exclusively at home, by the bilingual children, is a common feature in India.

In India, individuals with proficiency in more than one language are considered as superior persons with capacity to draw wisdom and culture from various resources (Sharma, 1977). In the west, immigrants of different cultures strive to assimilate into the local culture by learning the language of the environment. Thus, the effect of bilingualism and biculture are intertwined in the process of becoming a bilingual individual.

As for the linguistic policy in education, the Indian government follows the three language formula in all the states excluding Tamilnadu. The Central government cognisant of the linguistic diversity, emphasises the mothertongue as medium of instructions in schools and English as a second language. In addition, a third language is taught and the choice of the language is optional. In Tamilnadu, where the present
The regional language, Tamil, is the medium of instruction and English is taught as a second language from I standard to XII standard in the government schools. In addition, schools with English as medium of instruction are also available throughout the country. In such schools a second language is taught, but the choice of the language is optional in nature. The majority of the courses at undergraduate and postgraduate levels are in the English medium but a few are available in the regional language. Most of the research works are carried out in English language. The foregoing analysis of linguistic medium of education reveals that the majority of Indian students in their educational career may undergo a psycholinguistic conflict of code switching and code maintenance (Sharma, 1977). In general, bilingual children from a minority linguistic group maintain their first language or mothertongue exclusively at home and are educated either through the regional language or English. If they choose, they might learn the mothertongue as a second language at school.

The environment for the bilingual children in the west is markedly different. A wide variety of bilingual educational curriculum like total immersion, partial immersion and mixed programme are available to them where both first and second languages are taught with variation in the exposure to the languages. The special programmes emerged as a result of social pressure and awareness of the immigrant parents of different cultures to educate their children bilingually and to maintain their culture and heritage. The programmes are periodically evaluated and the results throw light on the repercussions of bilingualism. Such demarcation in the environments limit the application of findings of the western research in India.

Even though voluminous studies have been done on varied dimensions of bilingualism, nonetheless, a great deal remains to be discovered about the effect of second language instruction on the developmental milestones of bilingual children.
Concept of Bilingualism:

The concept of bilingualism, which means, possession of two languages, in Latin has been viewed divergently by different researchers. The term multilingualism is reserved for individuals with ability to use more than two languages (McLaughlin, 1978). The different perceptions of the researchers have led to the inconsistent results.

Bloomfield (1933) defined the concept of bilingualism as native like control over the two languages.

Leopold (1939) observed that the term is applicable when one language is spoken better than the other as long as both are regularly used as media of discourse.

Tan (1947) considered monolingualism and bilingualism as opposite extremes of a continuum for each aspect of the language. He opines that most people do not attain perfect achievement in all aspects of the vernacular language and that it is rare for bilinguals to attain this goal in two languages.

Weinreich (1953) holds a more neutral position in defining it as "the practice of using two languages alternatively".

Haugen (1956) characterizes bilingualism with minimum rather than with maximum proficiency. Macnamara (1967), supporting this concept, considers a person 'bilingual' if he is a native speaker of his first language and is able to read fairly well the second language.

O'Doherty (1958) distinguishes the bilingual who had mastered two languages as media of social intercourse from the pseudo bilingual who has some knowledge of the second language, but who, in practice may not have mastered either language.
Lambert, Havelka and Gardner (1959) introduced the concept of balanced bilinguals, referring to individuals equally competent, high or low, in both languages.

Refering to bilinguals in the Indian context, Rao (1963) referred to bilingualism when the two languages are learnt in two different domains, the home and the school.

Taylor (1976) defines a bilingual as a person who speaks two or more languages or dialects or styles of speech that involve differences in sound, vocabulary and syntax. By this concept of bilingualism, most of the adult speakers would be considered as bilinguals.

Apparently, a businessman may be conversant in five or six languages but he may not be fluent in the grammatical rules of the languages. but this is quite different for bilingual children who learn the languages in the school. They are trained to express and articulate their ideas coherently according to the rules of the languages (Srivastava, 1977).

Studying the semantic system underlying the languages, Weinreich (1953) draws the attention to a major distinct types, namely coordinate and compound bilingualism. The compound bilinguals attribute identical meanings to corresponding words and expressions in the two languages. The fusion of the system is the result of learning both the languages in the same context as in a bilingual home. The coordinate bilinguals associate two linguistic signs with the same mediative meaning and with two sets of linguistic responses. The compound bilinguals have a shared memory while coordinate bilinguals have independent memory systems for the two languages.

The various definitions and concepts clearly reveal the complexity of the phenomenon. A wide range of proficiency from minimum to maximum degree in the two languages have been emphasized by different researchers. The nature of bilingualism depends explicitly on the social and cultural context which are extensively divergent with unique features in a specific environment. Rao (1963) studied Indian bilingual
children who had first language as Telugu or Kannada and learnt through the Tamil language at school.

In the present investigation children are considered as bilingual when proficiency in the skills of reading and speaking in the first language is average. Telugu or Kannada is maintained as first language exclusively at home. The proficiency of the first language at home is indicated by the rating of the parents. Speech and reading are considered as criteria, mainly, due to the availability of adequate subjects who have maintained their first language in such skills. This is taken as criteria to consider that first language is maintained and is not lost at the expense of the second language. Monolinguals learn through Tamil at school which is also the media of discourse at home. It is the first language of the monolinguals. With such an orientation to bilingualism and monolingualism, this study is designed to unravel information on the effect of bilingual environment.

The present investigation:

The present investigation is designed to relate the theoretical framework of Lambert's additive bilingualism and Cummins' threshold hypothesis of second language to the bilingual environment and compare the repercussions with monolingual children in the dimensions of cognitive and personality variables. This would throw light on the repercussions of Indian bilingualism facilitating educational innovators to handle the linguistic policy within a scientific framework.

Components of the study:

An attempt is made in the present investigation to study the effect of bilingualism on various aspects of the cognitive and personality variables namely intelligence, creativity, academic achievement, adjustment problems, cheating tendency, extraversion and neuroticism.

Monolingual and bilingual boys and girls of ten years of age, from middle socioeconomic status with different levels of Tamil proficiency,
are compared on the above mentioned dependent variables. Information on the bilingual and environmental factors like age, sex and socioeconomic status was collected, because they constitute an important source of variations on language development.

Age:

Maturation and biological disposition of cerebral plasticity during the critical periods of language development favour early bilingualism. Lenneberg (1967) sets the critical periods of language development between two years and puberty. Thus, age and number of years of exposure to language introduce heterogeneity among the linguistic groups. To control age factor, the linguistic groups are compared at the end of the elementary school year, that is in the V standard.

Sex:

Since there is a consistent report from literature on the superior performance of girls in comparison to boys in language development (McCarthy, 1954; Menyuk, 1963; 1964), a comparison between equal number of boys and girls is made to enrich the information.

Socioeconomic status:

Socioeconomic status is another factor influencing bilingualism (Paulston, 1975; Cummins, 1979). Children from middle socioeconomic status are chosen due to the availability of adequate samples of bilingual children, as perceived in this study.

Intelligence:

The relationship between bilingualism and intelligence is a controversial issue that has stimulated several research studies in the past two decades. The interesting question is whether the bilingual environment accelerates or retards an individual's ability to achieve
the maximum endowed potentials of intelligence and if so, in identification of the affected or influenced component of intelligence.

According to Leopold (1949) and Peal and Lambert (1962), when a word is freed from its referent, the object or the concept becomes the focus of attention. The accessibility of two linguistic codes to a single reference forces early emancipation from linguistic symbols. It facilitates conceptualisation of things and events in terms of their general properties rather than on linguistic symbols. Research studies done prior to the work of Peal and Lambert (1962) have reported negative effect of bilingualism on intellectual development. Peal and Lambert rationalised the superior performance of bilingual children on general reasoning and diversified intellectual structure to their wide range of experiences in the two cultures. The wider experiences facilitates emancipation from the actual word. Liedke and Nelson (1968) found that the availability of two languages exposed the bilingual children to wider social interactions. This influenced them to generalise the events thereby accelerating their concept formation.

Bilingual children develop the habit of switching the languages. According to Balkan (1970), this invoked cognitive flexibility involving the ability to restructure a perceptual situation. The positive transfer of skills across the languages and the habit of comparing and contrasting the languages influence their comprehension of complex linguistic functions. This facilitates verbal intelligence. In his attempt to resolve the contradiction between earlier research revealing a pessimistic outlook on the effect of bilingualism on cognition and recent trend favouring bilingualism, Cummins (1976) postulated threshold levels in second language that affect cognitive development. Although a few studies (Barik and Swain, 1976; Cummins, 1976; Toukoma and Skutnabb-kangas, 1977) evaluating the immersion programmes have confirmed the delination, it needs verification in other bilingual environments.

There are different schools of thought on the definition of intelligence. Among the various concepts of intelligence, Wechsler's
concept (1949) has been used in the present study. He defines intelligence as "the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment." He includes various specific components to yield a global measure of intelligence. Informations on the effect of bilingual environment on various components of intelligence would yield enriched information.

Creativity:

Creativity perceived as a cognitive factor is distinguished from intelligence. It often connotes the ability to generate ideas, solution to problems or twists of words. Dulan and Burt (1977) refers to creativity as the independence of some individuals from the norm set by the majority. According to Guilford (1959), the concept includes sensitivity to problems, fluency, flexibility in thinking, originality, redefinition and elaboration. He differentiates convergent and divergent thinking as different intellective modes. He refers to convergent thinking as synonymous to the traditional concept of intelligence. It involves narrowing down of the logical possibilities and zeroing on the best, single response. On the other hand, divergent thinking or creativity is characterised by generation of a variety of responses to a single stimuli. Following Guilford's inclusion of variety of abilities grouped as divergent production, creativity and divergent thinking have been used interchangeably. Based on the associative conception of creativity, Wallach and Kogan (1965) developed the gradient theory of creativity. According to this theory, generation of associated responses under different circumstances by creative persons is varied and unique. This concept has been employed in the present study.

The relationship between creativity and bilingualism is another dimension considered in the present study. Peal and Lambert (1962) suggests that habitual linguistic switch of bilingual children influenced their flexible thinking. It enables them to pay more attention to the aspects of the environment. Harlow (1949) on the basis of principle of learning supported the contention that confronting more
varied experiences in reality and the experience of alternating from one language to another could have the long term effect of influencing the second language learner to be more flexible in thinking, less rigid and less inclined to remain with one approach in solving problems.

Even though superior performance on cognitive flexibility is reported, the concept is conceived differently by various researchers. According to Ben-Zeev (1972) bilingual children performed better on auditory reorganisation of verbal material, flexible manipulation of the linguistic codes and on concrete operational thinking. But Ianco-Worrall (1972) referred to a different form of cognitive flexibility implying emancipation of word meaning from the sound. Worrall (1970) found support for bilingual precocity in realising the arbitrary assignments of names to referents. Scott (1973) who was interested in the possible effects of becoming bilingual, worked on a longitudinal project. His study supported the positive relationship between bilingualism and divergent thinking. In sum, these are indications that second language learning augments creativity, but it needs verification from other bilingual environments. The contention that association with different languages and greater social interactions augments generation of ideas is verified in the present study.

Academic achievement:

Medium of school education is a long debated issue in India. There is lack of scientific rationale in following the medium of instruction. The primary problem probed by Educational psychologists, is whether a bilingual environment generates a retarding impact on learning ability of the children. The pervasive nature of the phenomenon provokes research in this dimension for practical implications.

Jensen (1962) cited studies where the child's interest and aptitude are adversely affected by bilingualism. The handicap in reading and studying generally declines the interest and initiative to learn, culminating in premature dropouts. On the other hand, a contradicting view that favour bilingualism holds that the child's sense of accomplishment and prestige
of being a bilingual individual could stimulate and motivate interest in subjects like geography and history. This would influence their social and professional progress (McLaughlin, 1978).

The general unfamiliarity with the language of instruction affects adversely the problem-solving ability of bilingual children. Macnamara (1967) rationalises the difficult experiences of bilingual children in classroom to ignorance of certain words, idioms and syntactic structures. According to Kellaghan and Macnamara (1967), bilingual children experience more difficulties in processing the input in syntactic and semantic levels of second language. In short, the command of the second language is a critical variable influencing the effect of bilingualism on educational progress (Malherbe, 1940; McLaughlin, 1978).

A survey conducted by the Central Institute of Indian Languages at Mysore (1981) revealed no harmful effect on mental ability, creativity and school achievement of bilingual children. Further study conducted by the institute favours bilingual education with reference to school achievement. Studies relating to the effect of threshold level of second language on school achievement has not been investigated in India. An attempt in this direction is worthwhile.

**Adjustment problems of children:**

During the process of becoming a bilingual, the child encounters conflict of linguistic switch in different domains and the interferences between the codes may lead to emotional stress. The ease of code switching involving translation from first to second language is related to the social feedback received by the young learner for the acceptance of his pronunciation and intonation. In order to combat conflicts and failures and also to cope with the external demand of linguistic fluency, the bilingual child may learn ego defense to avoid the stress laden situation of social criticism, antagonism and disapproval by peers. The anxiety of stress may dissuade and thwart the child from confronting the frustrating contexts of social interaction as an anticipatory avoidance response. This inadequacy may lead to emotional
problems and frustrations. According to Rao (1963) loss of confidence could influence maladaptation to the environment.

Bilingual college students have sought guidance for maladjustment especially in areas of intrafamily conflicts. According to Spoerl (1944), lack of identification in the two environments leads to inhibiting factors in the expressive aspects of language. However, he concludes that cultural conflicts intertwined with the effect of bilingualism are at the root of emotional problems. In the monocultural context, Rao (1963) found bilingual children to exhibit withdrawal and antisocial behaviours although the global phenomenon of maladjustment was unrelated to bilingualism. Since language and adjustment are closely interrelated to socialisation in late childhood, the relationship of bilingualism to adaptation to the environment needs investigation to put aside any speculation.

Cheating tendency:

Deception, a symptom of social friction emerges due to conflict between the expected and actual performance of the children. It reflects the early struggle of children with an oppressive environment. Cheating is a means of circumvention of social obstruction and arises as a response to a thwarting social situation. Concealment begins as a break between the child and the society and deficiency within the child may stimulate him to acquire by hook or crook, a satisfactory social status. Cheating is then defined as the disapproval or illegitimate method adopted by the child to reach the goal.

The child learns the moral values and codes from the environment and this later develops his internal standards. A prolonged deficiency or handicap, creates a conflict between the judgement of right and wrong, and each time he wrestles with his conscience to avoid the stressful consequence of failure. Cheating tendency develops as a means to compensate for the handicap.
Research studies have indicated that bilinguals are morally depraved due to ineffective religious instruction in their first language (Cali cited by Weinreich, 1953). They are considered as 'mercenary relatives' who switch over to principles according to the exigencies of the situations, just as they switch over to languages (Sander cited by Weinreich, 1953). According to Rao (1963), monolingual and bilingual children in the Indian context differ in the dimension of antisocial tendency. These few results are only suggestive and need further investigation. Research correlating cheating tendency in the school with bilingualism as well as with linguistic deficiency in the medium of instruction could throw light on the causal factor of the antisocial behaviour of young children. It may be mentioned here that this aspect in terms of 'cheating tendencies' has not been attempted in the field of bilingualism.

Personality:

a) Extraversion - Introversion.

The endowed personality traits are moulded by social environment and language as a communicating instrument plays a significant role in harmonising interpersonal relationship. Eysenck (1960) postulated the vital link between learning and conditioning through classical conditioning paradigms for the development of conscience. Based on the famous Pavlovian experimental results, Eysenck explains conscience as conditioned anxiety response to certain type of situations and actions. Children are conditioned by punishment or social criticisms and the associated fear and anxiety may urge them to refrain from or avoid unpleasant experiences.

The linguistically deficient child, when interacting through that language in the environment, is confronted with stress situations of social disapproval by peers and teachers. The bilingual child, with different accent and pronunciation of the language, that is developed during the process of becoming bilingual, may encounter ridicule and criticism from the dominating monolingual environment. In addition, the
bilingual child encounters interlingual interference. To combat conflict and unpleasant situations of disapproval, the child may develop anticipated avoidance response of withdrawal, inconspicuous behaviour, restricted manner of speaking (McLaughlin, 1978). Rao (1963) found bilingual children to exhibit withdrawal behaviour more than the monolingual children.

The Eysenckian concept of Introversion-Extraversion employed in the present study describes a typical introvert as a quiet, retiring sort of person, introspective and he is reserved and distant except to his intimate friends. The typical extrovert is sociable, needs many friends and is fluent in conversation. Eysenck in his studies relating extraversion-introversion to learning find that extraverts and introverts by virtue of their neurophysiological systems learn differently. In comparison to introverts, the extraverts learn slowly. Therefore, accordingly, if we apply Eysenckian theory, extraverted bilingual children will be affected more than the introverted children. This dimension is verified in this study.

b) Neuroticism:

Fear and anxiety, generated by unpleasant experiences if sustained and prolonged may lead to turmoil and emotional disturbances. The persistence of accumulated traumatic experiences may lead to neurotic behaviour. Neuroticism, a global phenomenon refers to emotional instability. According to Eysenck and Rachman (1971), neuroticism is a learned behaviour. Neuroticism may develop due to the persistence of traumatic experiences encountered in the initial stages of learning a second language. There is paucity of research relating bilingualism to neuroticism. This warrants investigation.

Need for the study:

The foregoing brief report has thus shown the importance of bilingualism and the gaps in the field. For example, aspects like intelligence, creativity, school achievement and adjustment problems of bilingual
children have been investigated extensively in western countries and to a limited extent in the Indian context. But aspects like cheating tendencies and personality dimensions of extraversion and introversion and neuroticism which have definite theoretical relations have not been attempted at all. This needs verification through empirical research.

Moreover, in a multilingual country like India, educational policy of language has always been a controversial and explosive issue that needs scientific rationale for formulating the framework. Vigorous and extensive research works could find a solution to the problem.

There is a deep rooted human nature to preserve and maintain one's own identity through the first language and the value orientation of loyalty to the inherited soil catalyses the claim of vernacular theory. But early bilingualism is encouraged by the claim of biological disposition in the critical periods of language development. Moreover, fear of scientific and technological isolation and the need for a common media of communication influence widespread learning of an universal language. Views advocating vernacular education and medium of education through second language, generates emotional steam and calls loyalty in question with myths and personal opinions engulfing the scientific truth. In India, it is an area abundant with speculations that needs scientific research.

Although bilingualism is a universal phenomenon, features of bilingual environment is unique in every country. There is an enormous variety of bilingual situations, in each of which different combinations of cognitive, attitudinal, social and educational factors are operative (Mackey, 1971). Since each bilingual situation is unique, it prevents the application of the results of western research in India. India, being a monocultural country is devoid of bicultural influence and is an ideal bilingual environment for elucidating isolated informations on bilingualism.
There is paucity of Indian research studies investigating the effect of bilingualism on both cognitive and personality variables which would yield a global picture on bilingualism.