INTRODUCTION

Anxiety is timeless. The capacity to experience fear and anxiety is an inheritance from our infrahuman ancestors. These emotions are as old as human existence and belong to no particular era or culture. It is not only today that fear and anxiety have become fundamental human emotions, the universality of these emotions was recognized by many renowned philosophers and thinkers of ancient times. According to Cohen (1969) it is clearly represented in ancient Egyptian hieroglyphics and there are frequent references to fear in the Bible. Perhaps the earliest recorded recognition of the importance of anxiety as a determinant of behaviour is an 11th century treatise of the Arab philosopher, Ala Iba Hazm of Cordova, in which he proposes the universality of anxiety as a basic condition of human existence and a prime motivator of what we do.

In recent years with the growth of sophistication in the mental health professions and the behavioral Sciences, man has begun to realize the enormous impact of anxiety on human life. Theorists consider anxiety to the an important factor in producing discrepancy between performance and potential. It has been observed (Spielberger, 1966. Sarason, 1960) that anxiety prevents children from taking initiative
and learning new materials.

This is a test conscious age, in which the lives of many people are greatly influenced by their test performance. It is, therefore, not altogether surprising that test anxiety is a pervasive problem among secondary school and university students. Indeed, the anxiety that some students experience during examination is so disturbing, that they are compelled to seek professional assistance to help them cope with its effects. Spielberger (1962) also observed that students who approached clinics for counselling reported some kind of "emotional blocking" experience during examination, leading to performance much below their potential.

Although, before the turn of this century, the problem of anxiety was never approached methodically, yet with the passage of time it has gained unbelievably widespread importance. Numerous researches have been conducted worldwide to study this construct. Theoretical statements have been followed by extensive researches and now literature on anxiety is so vast that it is practically not possible to present various viewpoints expressed by various psychologists and investigators. It continues to prove an area of wide interest in present times.
Systematic study of anxiety began with Freud's conceptualization of it as a purely physiological reaction to the chronic inability to reach an orgasm in sexual relations. Not until much later did Freud recognize the crucial importance of anxiety for a theory of personality development. The change in his viewpoint was announced in a little book called, 'The Problem of Anxiety' (1936) According to him now, anxiety consists of three main attributes, a specific unpleasurable quality, efferent or discharge phenomena: and perception of these.

Freud (1924) regarded anxiety as "something felt" a specific unpleasant emotional states or condition of the human organism. Anxiety states were broadly defined as 'all that is covered by the word, "nervousness". They can be distinguished from other unpleasant, emotions such as anger, sorrow or grief, by their unique combination of 'experiential, physiological and behavioural components'. It is the subjective, experiential qualities- the 'feelings' of apprehension, tension and dread that give anxiety reactions, a special 'character of unpleasure'.

In his early formulations, Freud (1933) theorized that anxiety resulted from the discharge of repressed sexual energy, which when blocked from normal expression,
is automatically transformed into 'free-floating' anxiety.

In his later conceptions of anxiety, Freud (1936) called attention to two potential sources of danger the external world and a person's own internal impulses. If the danger was in the external world, it resulted in an 'objective anxiety reaction'. Anxiety that was evoked by forbidden or unacceptable internal impulses were called "neurotic" anxiety. An important characteristic of objective anxiety is that the intensity of the unpleasant emotional state is proportional to the magnitude of the 'external danger' that causes it.

He considered that understanding anxiety was 'the most difficult task that has been set us', (Freud, 1936) a task whose solution required the 'introduction of the right abstract ideas'. The complexity of this task, and Freud's personal commitment to it, were reflected in the fact that his theoretical views on the subject evolved over a period of nearly 50 years, are still continually being modified, and were never considered by his as complete.

Other theorists have attempted to elucidate the nature of anxiety, but with little agreement. Neo-Frudians, Karen Horney (1937), Goldstein (1939), May (1950), Rogers (1951), Sullivan (1953), Fromm Reichman (1955), Basowitz,
Persky, Korchin and Crinker (1955), presented views more or less consistent with Freud's formulations of anxiety. They emphasized the apprehensive or signaling properties of anxiety and contended that its origin lies deep-rooted i.e., related to earliest unpleasant experiences of childhood, is internally derived, provoked by threat to the integrity of the individual, is accompanied by feelings of fear of isolation, insecurity, helplessness and perception of the outside world as hostile.

The Neo-freudians regard human development as largely a product of social influence in which biological drives play a relatively minor role. They do not credit the Freudian concept of 'primary anxiety'. Anxiety cannot arise before the ego has reached a minimum stage of development - that is, before the organism has some awareness of its 'environment'. To summarize Neo-freudians in one sentence, it may be said that it changed the orientation of psychoanalysis from the biological and instinctual to the cultural and environmental.

Literature at the verbal and non-operational level over five decades beginning mainly with Freud's distinction between fear and anxiety has produced
hundreds of different interpretations and definitions of anxiety. However, out of the numerous view-points and researches conducted within the context of anxiety, two principal approaches have emerged on the contemporary scene, that of Freudian or Psychoanalytic and Hullian or Drive theory approach (Ravinder, 1977).

**SARASON'S APPROACH:**

A recent theory based on psycho-analytic approach, enunciated by Sarason and colleagues (1952) advanced the view that anxiety is largely determined by the nature of a situation and interacts with personal characteristics of the individual. Exponents of this theory, Mandler and Sarason (1952) started working on anxiety with the assumptions that: (1) Study of anxiety should begin with the examination of particular stressful stimuli, and (2) that test performance bears great significance for the individual as the course of life is determined by it. Further, they contend that it is a 'near universal' experience. They selected the area of 'test anxiety for their researches and developed Test Anxiety Scale (1960) to measure anxiety in classroom and examination situations. Test anxiety primarily refers to classroom evaluation. Sarason and Mandler regarded anxiety as a strong learned
drive, but their concentration has mainly been on studying situation specific anxiety, i.e., test anxiety and not generalized properties of drive.

Most students see examination situations as threatening and experience increases in anxiety during tests. In the early 1950s, Sarason and Mandler reported a series of studies in which they found that college students who were 'high test-anxious' did more poorly on intelligence tests than 'low test anxious' students, especially when the tests were administered under stressful conditions. In contrast, high test anxious students did relatively better under conditions in which stress was minimized, while low test anxious students did much more poorly under such conditions.

Sarason and Mandler (1952) attributed the worsening of performance among test-anxious students to the arousal of 'feelings of inadequacy, helplessness, heightened somatic reactions, anticipation of punishment or loss of status and esteem and implicit attempts at leaving the test situation'. Students with high test-anxiety also tended to blame themselves for their poor performance, while low test-anxious students did not. High test-anxious students apparently respond to examination stress with intense emotional
reactions and 'negative self-centered thoughts' that impair performance, while those low in test anxiety react with increased motivation and concentration.

It seems clear from these findings that high test-anxious people are more prone than low test-anxious people to see examination situations as dangerous or threatening and to become worried and anxious in such situations. Test anxiety may therefore be considered a 'situation-specific' form of trait anxiety (Spielberger, 1978).

Over the years much research on test anxiety has been directed toward the correlations between test anxiety and performance on different types of tasks. There has also been considerable interest in test anxiety as it relates to such topics as verbal and motor learning, stimulus generalization, form discrimination, and size estimation (Sarason, 1960; Sarason & Smith 1971; Wachtel, 1967). Not surprisingly, interest continues to be especially great in how test anxiety manifests itself in the practical world of the classroom and in the assessment of the level of intellectual functioning? (Phillips 1972; Sarason, Davidson, Lighthall & Waite, 1960).
Correlational investigations have shown that high, when compared with low scores on measures of test anxiety tend to perform relatively poorly on various types of ability tests (Sarason, 1960; Phillips, 1972). Knowing that a correlation is statistically significant does not tell us why this is the case or whether it is psychologically significant. Experimental studies in which the degree of evaluative threat for the subject is varied can provide evidence that bears on this question. Those that have been conducted strongly suggest that many highly test anxious persons are not deficit in intellective wherewithal, rather, the problem seems to be that they exaggerate and personalize the threat, of evaluation that may be inherent in a given situation, (Mandler & Sarason, 1952; Sarason, 1956, 1957, Sarason & Minard 1962, Watson & Friend, 1969).

HULL AND SPENCE'S APPROACH:

Another approach followed by researchers has been that of Hullian or Drive theory approach. Drive theory proceeds from Hull's (1943) assumption that strength of a given response (R) is a function of level of excitatory potential (E), determined by all habits (H) present, and activated in a given situation which combine multiplicatively with the total affective drive (D) state.
E = D x H
(Respone potential) (Drive) (Habit Strength)

In more than the past two decades, much research on anxiety has been stimulated by the theory of emotionally based drive, formulated by Taylor (1953, 1956) and Spence (1956). The Manifest Anxiety Scale was developed by Taylor (1953). This instrument has had a major impact on the study of anxiety.

No one can be expected to learn something which is beyond his basic comprehension, regardless of drive or anxiety level. It may be said that on the average there is a relationship between task complexity and the effect of anxiety on learning. In the individual case, complexity itself depends upon the person's intelligence.

Spielberger (1966) has suggested that inconsistent findings in studies of anxiety and learning may result from the failure to evaluate the effects of individual differences in intelligence. In his extension of Spence-Taylor Drive theory, Spielberger (1966) hypothesizes that the drive has a pronounced effect only on subjects falling in the middle range of ability. On the basis of Spielberger's extension of the Spence Taylor theory, it is predicted
that anxiety and intelligence have an interactive effect on performance. More specifically, it has been predicted that high anxiety tends to facilitate performance of high I.Q. subjects and impair the performances of Ss with low I.Q. However, after learning progresses to a point where correct responses are presumed to be highly dominant for most Ss, high anxiety would start facilitating performance even for the low anxiety subjects.

Test anxiety is not something entirely different from other anxieties. A high test-anxious person is likely to be anxious in almost all situations that are perceived by him as evaluation. Test anxiety can therefore be considered a situation-specific form of trait anxiety (Spielberger, 1978). On the basis of Cattel and Scheier's (1958, 1961) factor analytic studies of two independent factors of anxiety, Spielberger (1966) proposed a theoretical statement of the relationship between these two different, yet related aspects of anxiety:

1. A-state (State anxiety)

2. A-trait (Trait Anxiety)

A-state anxiety is transitory, exhibits marked variations in intensity, fluctuates over a period of time and is accompanied by tension and fear. A trait anxiety refers to a personality trait, anxiety is latent until an organism is threatened by a stressful event.
ANXIETY AS A MOTIVATOR:

There are many positive aspects of anxiety, but usually the negative aspects are highlighted. A little anxiety from time to time can be beneficial to task performance. This is illustrated by the Yerkes-Dodson Law (1908) which postulates that the relationship between anxiety and learning is curvilinear. Neither low nor high levels of anxiety improve performance. Optimal positive effect is obtained in the middle ranges. There is research evidence which supports it and indicates a curvilinear relationship between test anxiety and performance (Klein, Frederikson and Evans, 1969). Application of Yerkes-Dodson law to human learning seems eminently sensible.

PRESENT STUDY:

Anxiety has become an essential part of modern living and has permeated all spheres of life. The importance of anxiety as a powerful influence in our present day civilization is acknowledged in all quarters, as also the fact that research on this subject has been scant in this country. Since cultural setting is a powerful factor in anxiety, it is of great importance that anxiety be studied in different cultural settings. This project is, therefore, amply justified.
The present study aims at investigating the effects of test-anxiety and intelligence on learning and academic achievement of school children. Test anxiety is a 'universal' experience. It is not restricted to classroom evaluation or examinations but encompasses every situation that the individual perceives as evaluative, and thus ego-threatening. Test performance has great significance for the individual; not infrequently, it may seriously affect the course of his life.

Intelligence is an important variable that affects performance. Intelligence refers to the global capacity of the individual, "to act purposefully, think rationally and deal effectively with the environment" (Wechsler, 1956). A person with high I.Q. is therefore one who has adequate coping mechanisms and strategies available to 'deal with the demands of the environment effectively'. On the other hand, a low I.Q. individual would have less coping mechanisms and strategies available to deal with his environment properly. Anxiety, that is aroused in a particular situation hence, becomes a function of intellectual level of the subject.

Studying effects of test anxiety and intelligence on learning seems to be quite significant. A number of
researches have been done in this field (Denny, 1966; Katahn, 1966; Sinha, 1968). There are a number of laboratory learning tasks available to the investigator. In most of the earlier studies the variety of tasks that have been used were classical conditioning, human maze-learning, motor learning, serial verbal learning paired associate learning, etc. A laboratory learning task of concept formation has been selected for the present research instead of one of the above mentioned tasks because it is more meaningful and closer to real life learning. A large part of human learning results from the ability to form concepts. It involves the individual's capacity to generalize, to discriminate and to abstract. Anxiety has an inhibiting effect on concept formation. Denny (1966) and Forbes (1969) have shown that stress and anxiety have debilitating effects on concept learning. Denny's study is of particular significance as it shows interactive effect between anxiety and intelligence on concept learning.

When an individual assumes the conceptual approach, the presented articles are not taken as individual things, but as "representative of a category" (Long, 1940). Experiments on concept formation have followed the general pattern of the discrimination learning experiments. A number of experiments on the "attainment of concepts", have
been done by Hull (1920); Heidbreder (1948); Weigl (1941); Goldstein and Scheerer (1941); Grant, Jones and Tallantis (1949), Wenzel and Flurry (1948); and Vinacke (1951).

The concept formation task by Hanfomann and Kasanin (1942), has been selected for the present research to study the process of concept formation in children, and the interactive effects of test anxiety and intelligence on such a learning task. The relevance of laboratory learning task of concept formation can be studied with the help of analysis of academic achievement scores. If there is co-ordination between the two analyses, the potentiality of studies based on laboratory tasks can be determined.

Stress is inherent in all learning situation and more so in academic situations, where the individual, undersocial and psychological pressures tries to achieve more and more. The examination pattern of today's educational system also contributes to the test anxiety suffered by many students. The essay type questions, in which the student has to write a lot in order to secure marks, and the pattern of annual examinations, often referred to as a 'menace' by several students are very anxiety provoking. This is more so in the case of those who are already anxiety prone. The variable of stress has not been
experimentally introduced in the present research. Instead, an attempt has been made to find out whether under normal 'real-life learning conditions' there is any difference in the performance of the two extreme groups of anxiety.

An academic achievement situation constitutes real life stress. Task difficulty is assumed to be at a moderate level in an academic situation. In such a situation, as it is in most of the intelligence tests too, an important aim is that all students should be able to perform to a certain extent and obtain some scores. Young adolescent students suffer from test anxiety more acutely than older students because anxiety is at its peak due to a number of reasons. Rapid physical development and sexual awareness in this age contribute to anxiety. Moreover, social emphasis on achievement is more pronounced in this age. Young adolescent students served as the sample for the present research. In the present study academic achievement is represented by the aggregate marks obtained by the subjects in their last annual exam.

The experimental study of test anxiety has much to recommend it. It is less diffuse than more global concepts of anxiety. It deals with a real problem, one
of wide generality. It is manageable because it is susceptible to manipulation and study in laboratory situation. If one accepts the assumption that the most fruitful approach to the analysis of anxiety should begin with the study of stressful situations, test anxiety appears to be an ideal area of investigation. Even if the assumption is rejected the study of test anxiety is potentially profitable in its own right.