 CHAPTER VI  

DISCUSSION OF RESULTS 

The present investigation empirically tested the predictions of Spielberger's (1966, 1972, 1975) Trait-State Anxiety theory under conditions of ego-threat as contrasted with the conditions of reassurance on high school girls and boys in India. Additionally, the study has been directed towards testing the generalizability of the theory to the high school students in India who differ in their cognitive capacity. An attempt has been made to test the predictions of Spielberger's (1966, 1972) extension of Drive theory to include individual differences in intelligence. Specifically, the possible interactive effects of trait anxiety, intelligence and stressor conditions have been investigated on three learning tasks of moderate difficulty (paired-associates, anagrams and problem solving). 

The chapter has been divided into two parts. The first part deals with the effects of trait anxiety, intelligence and stressor conditions on state anxiety. The second part relates to the effects of trait anxiety, intelligence and stressor conditions on performance on three learning tasks of moderate difficulty (paired-associates, anagrams and problem solving). 

On the basis of Spielberger's Trait-State Anxiety theory (1966, 1972, 1975), it was hypothesized, that
regardless of intelligence levels, high school boys and girls with high trait anxiety (HA) will experience greater state anxiety than their low trait anxiety (LA) counterparts under ego-stress instructions and not under reassuring instructions. In addition, it was also hypothesized, on the basis of Spielberger's (1966, 1972) extension of Drive theory, that under ego-stress instructions, high trait anxiety (HA) will facilitate the performance of the high intelligent (HI) and impair the performance of the low intelligent (LI) high school boys and girls relative to their low anxiety counterparts.

6-1 EFFECTS OF TRAIT ANXIETY, INTELLIGENCE AND STRESSOR CONDITIONS ON STATE ANXIETY

The main findings regarding the effects of trait anxiety, intelligence and stressor conditions on state anxiety as illustrated in Table 5.11 and Figure 5.2 are as under:

Under ego-stress instructions, high trait anxiety boys and girls, with either high or low in intelligence, experience greater state anxiety than their low trait anxiety counterparts. With reassuring instructions, high trait anxiety girls with low intelligence report significantly higher state anxiety than their boy counterparts. But with reassuring instructions, at high intelligent level, these gender differences in state anxiety have been obliterated.
This differential A-State elevations under ego-stress, for high and low A-Trait high school boys and girls are in line with the Trait-State Anxiety theory. This theory assumed that for all situations that are appraised by an individual as ego-threatening, an A-State reaction will be proportional to the amount of threat the situation poses for the individual, and high levels of A-State will be experienced as unpleasant sensory and cognitive feed-back, mechanism (Gaudry & Spielberger, 1971, p.69). The findings of the present study are consistent with the earlier research related to the major postulate of Spielberger's theory (1972) that the A-Trait individuals will perceive situations or circumstances that involve failure or threat to self-esteem as more threatening than will persons who are low in A-Trait. Additionally, the significance of the findings of this study lies in the observation that such a hypothesis holds good at high as well as low intelligent levels.

Earlier studies in the West that support the findings of present study and also the Spielberger's Trait-State Anxiety theory are by Hodges (1968), Spielberger et al. (1972), Fappaport and Katkin (1972), Lamb (1973), Meyers and Martin (1974), Glover and Cravens (1974), Bauermeister and Colon (1974), Lamb (1976), King et al. (1976), Thompson (1977), Joesting and White (1977), Worley (1977), Grinnell and Kyte (1979).
Leherissey, O'Neil, Heinrich and Hansen (1971) also reported that high A-Trait is associated with higher level of state anxiety under conditions of ego-stress. Morris (1971) investigated the state anxiety reactions of subjects differing in levels of A-Trait to two kinds of threat on a digit performance task. A-State scores were higher for high A-Trait subjects than for low A-Trait subjects in all the experimental conditions (failure and non-threat). In the present study, too the reassurance instructions did not completely obliterate differential A-State arousals of the high and the low trait anxiety groups, although the levels of A-State arousal were relatively less than those in ego-stress conditions. Results supporting the Trait-State Anxiety theory have also been reported by Morris and Liebert (1973).

Wankal (1977) investigated as to how a personal disposition factor of trait anxiety and a situational factor (number of observers) effect state anxiety. The findings supported the Spielberger's prediction and also those of the present study. Glanzmann and Laux (1978) found that low and high A-Trait school subjects in the pain conditions responded with nearly the same A-State elevation, whereas, high A-Trait subjects showed a greater increase than low A-Trait subjects in the ego-involving situations. In a study by Lewis et al. (1978), the significant findings were: i) high A-Trait subjects respond to the ego-threatening instructions with greater elevation
in A-State; ii) the A-State level of high A-Trait students were reduced with the two minutes interval. Archer (1979) also concluded that under ego-stress situations persons high in A-Trait tend to experience greater increase in A-State than do persons low in A-Trait. Ploeg (1979) also supported Trait-State Anxiety theory by demonstrating that the increase in A-State level was higher for group of college students with high A-Trait than their low A-Trait counterparts. Similarly, Head (1982) concluded that the state anxiety means of the high trait anxiety groups were significantly higher than the corresponding means for the low trait anxiety groups for all three phases of his experiment, i.e., during input processing, output processing and during final processing. Hamann (1982) also found that subjects with high trait anxiety exhibited significantly greater increase in state anxiety. Recently, Head and Lindsey (1983) demonstrated that high and low test anxiety subjects while learning a difficult form of a test, had significantly higher state anxiety than their peers taking a less difficult form of the same test. Hobfall et al. (1983), in a study conducted in Israel, also showed that high A-Trait individuals manifest a significant increase in A-State between conditions of varying ego-threat. This finding also reflects the greater sensitivity of high trait anxiety individuals to situations of varying ego-threat in the environment and as such is an extension of a principle that was implicit in Spielberger's Trait-State Anxiety theory.
While, individual reactions to ego-threat, or even appraisal of what is ego-threatening can be culturally determined, Trait-State Anxiety theory has been shown to be quite robust across Western cultures. It is always of interest in the research on personality to find common results across cultures, in this case from the US to Israel. Israel, for all its Westernization, is still strongly influenced by Eastern-European and Middle-Eastern values. Although this study did not attempt to verify Trait-State Anxiety theory under conditions of physical danger, a recent investigation in Israel replicated the non-differential effects of physical danger (Margalit et al., 1980). In fact, the persons who differ in A-Trait do not experience differential changes in A-State in reaction to physical danger situations (Hodges & Spielberger, 1966; Glover & Gravens, 1974; Spielberger, 1975; Carlile, 1977; Glanzmann & Laux, 1978). Taken together, these studies attest to the generalizability of Trait-State Anxiety theory. Such results also show that trait anxiety is primarily a dispositional measure of fear of failure (see also, Sharma & Dang, 1977). In a study, Sharma (1976) showed that there was a significant increase in A-State in high school students with high A-Trait because of the failure feedback. However, high school students with low A-Trait were not affected significantly (see Sharma, 1978a). Recently in Sud's (1984) study it was observed that high anxiety subjects experience higher levels of pre-treatment.
self-reported worry-state and emotionality-state than their low test anxious counterparts. Sharma and Dang (1977) concluded that although trait anxiety is primarily a dispositional measure of individual differences in responding to situations involving threat to self-esteem it is also related to individual differences in responding to physical danger. Thus, it appears that when university students in India, particularly males, report that they are frequently anxious on the A-Trait scale of the STAI, they not only indicate fears associated with situations involving threat to self-esteem but also, to some extent, their concern with regard to physical danger. There is, however, some evidence that is not supportive of Trait-State Anxiety theory. Millimet and Gardner (1972) found that both high and low anxiety subjects when exposed to the manipulation of psychological stress, exhibited a significant increase in state anxiety under stress conditions. Lamb (1973), Meyers and Martin (1974) also found increase in A-State scores in both the anxiety groups during the ego-threat conditions. In Indian setting, Gupta (1983) also concluded that high anxious school girls, regardless of cognitive capacity, do not exhibit significantly higher state anxiety in comparison to their low A-Trait counterparts under ego-stress as well as under reassuring instructions. In other words, different levels of A-Trait at the high and low intelligent levels, do not lead to differential A-State arousal. Similar results were earlier obtained by Endler and Shedletsky (1973) who showed that high and low A-Trait
subjects did not report differential increases in A-State scores in the ego-threat conditions. For the Swedish college students, A-Trait and A-State have been observed to be highly correlated under neutral conditions (Endler et al., 1976). In examining the relationship between A-Trait and A-State, it is necessary to consider the nature of evaluative situations in the context of possible person by situation interactions (Endler, 1975a).

Furthermore, in order for trait anxiety and a particular stressful situation to have an interactive effect on the arousal of A-State, the component (or dimension) of A-Trait must be congruent with the stressful situations (Endler & Okada, 1975; Endler, 1975a, 1975b). Additionally, in some situations it is possible to arouse one aspect of A-State (e.g., autonomic and physical responses) which suggests that the A-State may also be multidimensional. In fact, Endler et al. (1976) have provided some evidence for the multidimensionality of state anxiety.

In sum, the predictions of Trait-State Anxiety theory, in so far these relate to the ego-threat conditions, have been found to be valid on groups of high school boys and girls in Himachal Pradesh. These predictions also hold good on these school groups with either high or low intelligence.
In Study I, the effects of trait anxiety, intelligence and stressor conditions on the performance of high school girls on paired-associates learning task of moderate difficulty were determined (Table 5.1 and 5.3). In Study II, the corresponding effects of three independent variables on the performance of high school boys as well as girls were studied on moderately difficult problem solving task (Table 5.14) and on an anagrams task (Table 5.19).

The main findings regarding the effects of trait anxiety, intelligence and stressor conditions on performance are as under:

The main effect on paired-associates learning (Table 5.1) of A-Trait shows that high and low anxiety school girls do not differ in their performance. The majority of studies that related anxiety with paired-associates learning have provided evidence contrary to the findings based on the main effect in this study. For example, Mohsin (1972) showed that high anxiety subjects learned paired-associates task at slower rate than their low anxiety counterparts. Rabindradas and Narayanan (1977) concluded that subjects with low drive (low anxiety) performed better than high drive (high anxiety) on paired-associative learning tasks. Glanzmann and Laux (1978) reported that
high anxiety subjects performed more poorly than their low anxiety counterparts on a difficult paired-associates list. Similar results were also reported by Paul (1980). Sripastava et al. (1980) who found that LA subjects were superior to HA subjects on complex paired-associates tasks. Earlier, Nijhawan (1972) showed that high anxiety school groups learned difficult paired-associates task at slower rate than their low anxiety counterparts.

However, the findings of the present study are in line with the results of Bernstein (1963) who found that high and low anxious subjects (on the basis of Taylor MAS) did not differ in making errors when the dominant paired-associates response was correct as well as incorrect. Similarly, Sessenrath et al. (1964) found that anxiety does not affect the learning of paired-associates. Similar results were also obtained by Harleston and Cunningham (1961), Levitt and Gross (1961), Harleston (1963) and Weiner and Schneider (1971) and Verma (1977). Recently, Carrillo and Marine (1984) found that test anxiety did not interfere with performance on paired-associates task.

Similarly, the main effect of anxiety on problem solving task (Table 5.14) clearly shows that high anxiety and low anxiety boys and girls do not differ in their mean performance. This finding is also inconsistent with the findings of various studies dealing with problem solving (e.g., Sinha & Singh, 1959; Ravichandra & Vazir, 1974).
Phillips et al. (1972) also concluded that high anxious school children approach problem solving tasks in a rigid and stereotyped manner, which would indicate that anxiety interferes with adaptation to different problem solving strategies in response to the particular demands of task. Similarly, Bruch (1978, 1981) found that highly test anxious individuals use poorer problem solving strategies. Pishkin et al. (1978) showed that there were fewer errors to the solution of a concept identification problem for high anxiety subjects than those who were low on anxiety. Test anxiety interferes with short-term memory, and memory support reduces the differences between performance of high and low anxiety subjects (Sieber, 1980). However, Sarason (1981) failed to report significant main effect of test anxiety on problem solving.

In the present study the significant main effect of anxiety (Table 5.19) on anagrams clearly shows that in contrast to the findings with paired-associates learning and problem solving tasks high anxiety boys and girls attained significantly better performance on anagrams test as compared to their low trait anxiety counterparts. This finding is also in contrast with the findings reported by various studies on an anagram solution. Stinke (1973) and Nottelmann and Hill (1977) showed that high anxiety children had significantly inferior anagrams performance as compared to their low anxiety counterparts. Nottleman and Kennedy (1977) and Sud (1983) also reported that the
performance of the high test anxious is poorer as compared to low test anxious while learning the difficult anagrams task.

Most investigators contend that greater the difficulty level of the task, poorer the performance of high anxious subjects. Tobias (1979), Deffenbacher (1977, 1978) explain that the high test anxious persons perform poorly on difficult task because they lack ability for encoding, organising and for retrieval of information needed for efficient problem solution for difficult task such as anagrams solution than their low anxious counterparts who face no such problems in information processing. This means cognitive capacity of the subjects needs to be considered alongwith high anxiety in such studies. Similar results were also obtained by Carver et al. (1983) on both high as well as moderately difficult anagrams. Carver and Scheier (1984) have also found that the high test anxious perform more poorly on anagrams task of high difficulty value as compared to their low test anxious counterparts. It is stated that the anagrams task used in the present study is of intermediate difficulty level. Moreover, in case of all the three tasks, the main effects of trait anxiety do not provide the clear indications of the trend of the effects since there are significant triple interaction effects that have been observed in this study (Table 5.1, Figure 5.1; Table 5.14, Figure 5.3; Table 5.19, Figure 5.5).
As is evident in the cases of other types of learning tasks, the available evidence is based on bivariate research. This also supports the contention that high anxiety persons perform most tasks less successfully than their low anxiety counterparts in a variety of learning contexts (Dusek et al., 1976; Nottelmann & Hill, 1977; Deffenbacher 1978, 1980; Sarason & Stoops, 1978; Ploeg, 1979; Grinnell & Kyte, 1979; Boor 1980; Sieber 1980; Wine 1980; Deffenbacher et al., 1981; Morris & Engle, 1981; Morris et al., 1981; Deffenbacher & Hazaleus, 1985). In Indian context similar results have been reported by Nijhawan (1972), Sharma and Wangu (1976), Upmanyu et al. (1980), Gupta and Gupta (1980), Contractor (1981) and Sharma and Sud (1982).

There are also studies supporting the contention that high anxiety subjects perform much worse than low anxiety subjects on difficult task but not on easy tasks (Deniels & Hewitt, 1978; Moreno, 1978; Srivastava et al., 1980; Jain, 1981). It has been found by Eysenck (1981) that anxiety interacts with task difficulty on a variety of learning tasks. In fact, the consideration of task difficulty in the studies on anxiety-performance relationship needs to be underscored. In view of the emergence of significant triple interaction effect the findings based on the studies of bivariate nature are not necessarily meaningful.

It is also clear that high intelligent subjects
performed significantly better on paired-associates task than their low intelligent counterparts (Vide Table 5.1). These results are consistent with the findings of Gaudry and Spielberger (1970). Similarly, Carner and Dubois (1967) found learning and intelligence significantly positively related. Stevenson et al. (1968) obtained significant correlations between laboratory tasks of learning with intelligence as well as performance in school settings. Other studies have also reported positive relationship of IQ and performance in paired-associates learning task (e.g., Ring & Palermo, 1961; Iscoe & Semler, 1964; Rapier, 1968; Gallagher, 1969).

In Indian context, Vibha (1972) evaluated the relationship of learning with intelligence and found that task involving paired-associates learning correlated positively with intelligence. Ravinder (1977) also found that HI subjects performed consistently better than their LI counterparts at all the stages of paired-associates learning.

The findings regarding the effects of intelligence on the high school boys and girls on problem solving task and anagrams task (Table 5.14, 5.19) also show that high intelligent subjects performed significantly better than their low intelligent counterparts. A review of earlier literature also substantiates that intelligence is positively related to performance on anagrams (Mendelshn, Griswol & Anderson, 1966) on concept-making tasks (Laughlin, 1967)
and on logical reasoning tasks (Klausmeier & Longlinin 1961). Later on, Thompson (1973) found significant positive relationship between the WAIS and anagrams solving. Recently, Jaswinder (1980) concluded that above average and average intelligence groups do differ on the average right scores on anagrams.

The finding regarding the effects of stressor conditions on performance of boys and girls on paired-associates task (Table 5.1, 5.3), on problem solving task (Table 5.14) and on anagram task (Table 5.19) show that students under ego-threat were significantly poorer in performance than their counterparts under reassuring instructions. The findings of Spielberger and Smith (1966) lend support to the results. Dunn (1968) also found that digit span is significantly affected by stress.

Another group of studies with different performance tasks also lend support to the above findings. Naidu and Thapa (1978) found that stressed subjects made more errors in distance judgement, and the errors caused by stress increased on the distance judged increased objectively. Earlier, Ravinder (1977) reported that learning occurred at slower rate under ego stress as compared to the learning under neutral conditions. However, Chatterjee et al. (1978) showed that in perceptual tasks, stress increased performance significantly as compared to that of non-stress conditions. But, in conceptual tasks, stress decreased the performance.
It implies that effect of stress may vary with the nature of the learning task. The effect of stress (failure) on performance has also been shown to be dependent on the nature of learning task by Chatterjee et al. (1978). Recently, supporting the present finding, Srivastava and Naidu (1982) revealed that the perceptual accuracy (based on vigilance task) is the lowest under high stress conditions.

The detrimental main effect of ego-stress on performance on three tasks observed in the study for boys and girls has limited significance since this is qualified by significant A-Trait X intelligent X stress interaction. In fact, this shows that the studies that consider stress conditions disregarding the intelligence or A-Trait of the subjects have limited significance in terms of their quality or generalizability of their findings.

Vide Tables 5.15 and 5.20, it is also clear that under ego-stress instructions, regardless of intelligence, high anxiety groups performed poorly on anagrams and problem solving tasks of moderate difficulty in comparison to their low anxiety counterparts. This finding is in line with the findings of Sarason (1961, 1972a, 1973), Hasheman (1977), Deffenbacher (1978), Sarason and Stoops (1978), who have concluded that high test anxious individuals perform poorly on difficult anagrams under ego-stress as compared to their low anxiety counterparts and not under
controlled conditions. Sarason's (1978, 1980, 1981) findings also indicate that under ego-involving instructions learned with difficult material, high test anxious students tend to perform more poorly than their low anxiety counterparts. Additionally, Sarason and Stoops (1978) have offered evidence that experienced cognitive interferences are pre-occupations that make time pass slowly and this results in poor performance. Deffenbacher (1978) noted that the lower performance of the highly test anxious is not a simple artifact of ability since the highly anxious perform as well or better than the less anxious when the stress is low. Evaluative stress appears to elicit behaviours which interfere with the performance of the highly anxious. Similar findings have been reported in literature by Deffenbacher (1980), Morris et al. (1981), Wine (1980), Tayler and Tayler (1982), Deffenbacher and Hazaleus (1985). In India, Sud (1983) reported that the performance of high test anxious - high stress group was poorer in comparison with the high test anxious-low stress, low test anxious-low stress groups. The evaluative stress aggravated the detrimental effects of high test anxiety on anagrams learning of moderate difficulty. The effects of such stresses along with anxiety on performance have been also documented by Hogan (1971), Glovar and Cravers (1974), Ravinder (1977), Schmolling (1978), Dych et al. (1979), Zarantonello et al. (1979).

Evidence supporting the contention that both
intelligence and task difficulty need to be considered on anxiety-learning research is also provided in an excellent study by Verma and Nijhawan (1976) with paired-associates task. They found that at upper levels of intelligence, anxiety effect was not found to be significant. At lower levels of intelligence, anxiety interfered with performance. They also concluded that the most affected group was the middle intelligent-high anxiety group. Although a significant A-Trait X intelligence interaction has been observed (see Tables 5.1, 5.14, 5.19), its pattern is contrary to the expectations of Spielberger's (1966, 1972) extension of Drive theory to incorporate individual differences in intelligence. It is evident in the present study that the performance of low anxiety-high intelligent group was the best on all the three learning tasks. The low anxiety-low intelligent pupils were the worst performers. However, this statement disregards the operation of the stressor conditions.

The major findings of relevance to the Objective II, and the Hypotheses I and III of the present study are illustrated by significant A-Trait X intelligence X stress interactions (Tables 5.1, 5.2; and Figure 5.1) for paired-associates learning, (Tables 5.14, 5.15, and Figure 5.3) for problem solving task and (Tables 5.19, 5.20, and Figure 5.5) for anagrams task of intermediate difficulty. The findings based on the analyses of the performance on
all the three learning tasks are summarized as under:

'Under ego-stress instructions', high anxiety has significant debilitating effect on the performance for high intelligent pupils as compared to their low anxiety counterparts. Thus, the debilitating effects of anxiety and ego-stress are nested at the high intelligent level only.

This finding with high anxiety–high intelligent group under ego-stress conditions is contrary to the predictions of Spielberger's (1966, 1972) Drive theory. The prediction is that under ego-stress instructions, high anxiety facilitates the performance of high intelligent and impair the performance of the low intelligent subjects. These predictions have been supported in the literature by Denny (1966), Katahn (1966), Spielberger and Smith (1966) and Gaudry and Spielberger (1971).

Additional support to the extension of Drive theory is also available (e.g., Gaudry & Fitzgerald 1971; Skaalvik 1977; Limann 1977) showing that anxiety facilitates learning at upper levels of intelligence, whereas, it is associated with poor performance at lower levels of intelligence. In Indian context, Ravinder (1977), Sharma, Dang and Spielberger (1985) have also supported this extension of Drive theory. However, Feehley (1970), and Stutler (1973) did not support the assumption of Spielberger's extension of Drive theory. They concluded that high anxiety facilitates the performance of low ability groups.
Similarly, Bejtelsmit (1978) fails to find significant anxiety X intelligence interaction effect. However, there is some recent empirical evidence with academic performance as dependent variable that supports the present findings that the detrimental effect of high anxiety and ego-stress are nested at the high intelligence level (Sharma & Rao, 1983a, 1983b; Ploeg et al., 1983, 1984). The other studies also provide the evidence of A-Trait X intelligence interaction but the pattern observed is different (Kanekar, 1977; Kanekar et al., 1977) than that observed in the present study.

'Under reassuring instructions', there is a tendency for low trait anxiety groups, at either of the levels of intelligence, to perform poorly than their high anxiety counterparts as compared to performance under ego-stress conditions (Vide Tables 5.1, 5.15 & 5.20 and Figures 5.1, 5.3 & 5.5).

There is some recent empirical evidence in India to support the present finding that under reassuring instructions low anxiety groups at either of the levels of intelligence performed poorly than their high anxiety counterparts (Mijhawan & Cheema, 1971; Nijhawan 1972; Sharma & Wangu 1976; Ravichandra & Vazir 1974). Sarason (1958, 1972b, 1975b) has also shown that reassurance facilitates performance of high test anxious persons but results its performance reduction for the low test anxious persons.
In Geen's (1977) study, the presence of an observer as helpful and information giving was studied against evaluative observers. The helpful conditions facilitate the performance of high test anxious subjects to a level comparable to that of the low anxious (see also, Geen & Gange, 1977).

The findings with high anxiety-high intelligent groups under reassuring instructions is contrary to the prediction of Spielberger's (1966, 1971) theory. It is also concluded in the Deffenbacher and Hazaleus (1985) study that the reassurance manipulation was singularly unsuccessful. It neither affected performance or reported anxiety directly nor interacted with some studies (Holroyd, Westbrook, Wolf & Badhorn, 1978; Holroyd & Appel, 1980). Paul (1980) also concluded that the recall of paired-associates words was not improved by reassurance instructions given by experimenter. This means not only the ritual of providing reassurance but its quality or strength is also important.

In sum the predictions of Spielberger's (1966, 1972) extension of Drive theory to incorporate individual differences in intelligence has not been proved in the case of Indian high school boys and girls, while studying the effects of trait anxiety, psychological stress and intelligence on performance in moderately difficult tasks of (paired-associates, problem solving and anagrams). In
other words, Spielberger's predictions with reference to anxiety-performance relationship do not hold good for Indian high school boys and girls, because these predictions have been tested in Western countries with entirely different socio-psychological set-up. In fact, evidence supporting this extension of Drive theory is scarce because of traditional reluctance of experimental psychologists to come to grips with individual differences. While such a conclusion needs further validation on different samples and learning tasks, it is clear that a multivariate approach to the study of anxiety-performance relationship is called for before conclusions of present study are considered final. Additional research is also required before reliable generalizations in this respect can be made.

6-3 SUGGESTION FOR FUTURE RESEARCH

i) Studies should examine whether persons who differ in A-Trait experience differential A-State elevations in consecutive ego-threatening conditions which are thought to vary in their 'level' of ego-threat.

ii) Another aspect of Trait-State Anxiety theory dealing with situations characterized by physical danger that usually do not pose any threat to self-esteem and thus, do not produce differential A-State elevation, needs
to be tested since the present study restricted itself to ego-threat situations.

iii) Since Saltz (1971) has questioned the prevailing notion concerning the relationship between trait anxiety, kind of stressor, and learning, studies are needed to evaluate Saltz's interpretation in contrast to Spielberger's Trait-State Anxiety theory. Specifically, Saltz (1971) hypothesized that trait anxiety is an index of differential susceptibility to stressors: high anxious subjects are more susceptible to disruption of learning under failure or anticipation of failure than the low anxious subjects. On the other hand, low anxious subjects are more susceptible to disruption of learning under pain or threat of physical injury than are high anxious subjects. Thus, pain and failure produce completely different interaction with trait anxiety.

iv) In the present study tasks of moderate difficulty were used. The studies can be conducted using tasks varying in complexity, separately for paired-associates, problem solving and anagrams learning tasks as well as with high, moderate and low anxiety groups.

v) Since there is evidence in the literature that A-State predicts performance better than A-Trait, studies with A-State as an independent variable are also needed. In fact, the distinction of groups in terms of state anxiety before the performance is measured will be useful.
vi) Since the Trait-State Anxiety theory and the extension of Drive theory have been developed on the observations of white-male-middle-class urban undergraduates and school children, and subsequently has been empirically tested on similar 'captive' samples across cultures, it is imperative that these theories be tested on samples of ruralites, socially economically and culturally disadvantaged groups that comprise the largest segment of Indian society.

vii) Since the detrimental effects of trait anxiety under ego-stress on the performance in different tasks are nested at the high intelligent level, thus, group calls for a special attention in terms of various behavioural, cognitive and affective interventions designed to reduce this debilitating effect. Studies are also needed to empirically test the relative efficacy of these anxiety-reduction programmes in Indian settings. The STAI has proved to be useful for cross-cultural studies since it has been developed into 38 language systems. In fact, more research across cultures, employing a variety of experimental manipulations, is needed.