CHAPTER V

TOOL CONSTRUCTION

5.0.0 INTRODUCTION

The methodology followed in carrying out the present study has been given in detail in Chapter IV. In the Methodology chapter, the sample, tools procedure of data collection has been given in detail. In the present study, the variables in respect of which data was collected were Motivational Needs, Self-Concept, School Adjustment and Stress. The variables Self-Concept and School Adjustment were assessed with the help of already available standardized tools. On the other hand, Motivational Needs and Stress were assessed through tools developed and standardized by the investigator. In the present chapter the technical details related to construction and standardization of Student Motivational Needs Scale and Student Stress Scale have been given in detail separately under the captions; Operational Definitions, Planning for Development, Construction of Items, Preliminary Tryout, Item Analysis, Reliability and Validity.

5.1.0 Student Motivational Needs Scale

Students’ Motivation:

Students’ motivation naturally has to do with students desire to participate in the learning process. But it is also concerns the reason or goals that underlie their involvement or non involvement in academic activities. Although students may be equally motivated to perform a task, the sources of their motivation may differ.

Students’ motivation is influenced by both internal and external factors that can start, sustain, intensify or discourage behavior.

5.1.1 Motivational Needs: Operational Definition

Every individual is motivated by needs.
Motivational Needs is defined as an individual’s desire to do something based upon a need. It is the drive to fulfill individual’s needs and goals that may lead to the target of a higher need. It is characterized by a state of drive and direction of behavior towards the achievement of set goals.

In education motivation deals with the problem of setting up conditions so that the learners will perform to the best of their abilities in academic setting. Like behavior and natural intelligences, Motivational Needs are unique to individual and are a combination of their natural motivations and current life situations. For the present scale, Student Motivational Need Scale is the integrated set of statements related to their personal and school life. These needs are based on Abraham Maslow’s 5 levels Hierarchy of Needs theory. The later adaptation of Hierarchy of Needs (1990) included Cognitive, Aesthetic and Transcendence Needs. The original five-stage Hierarchy of Needs model remains a definitive classical representation of human motivation as the later adaptation are already included in the Self – Actualization as they represent self-development and self-fulfillment. Therefore, Abraham Maslow’s 5 levels Hierarchy of Needs are considered in developing the scale.

For the present scale two main Motivational Needs for students were identified. They are as follows:

**Deficiency Needs (D-Needs):**

The needs that arise due to deprivation are known as Deficiency Needs. It includes Physiological, Safety, Belongingness and love, Esteem Needs.

**Physiological Needs** – The needs that refer to the basic requirement for an individual’s survival are called physiological needs. They include essentials as food, water, shelter, oxygen and sleep.

**Safety Needs**- The needs that refer to a sense of security and predictability in the world are called safety needs. Through these needs the individual tries to maintain the conditions that allow him or her to feel safe.
**Belongingness and Love Needs** - The needs that refers to the cordial relationship in the family, affection, working in a group and to feel accepted are called as Belongingness and love Needs.

**Esteem Needs** - The needs that refer to both self-esteem and esteem of others are called as Esteem Needs. It is the feeling that an individual is worthwhile, competent and is independent. The esteem of others includes the feeling to respect other people and appreciate them.

The Deficiency Needs are also termed as lower level needs. Satisfying these lower level needs is important in order to avoid unpleasant feeling or consequences.

**Growth Needs (G-Needs)**

The needs that do not stem from lack of something but rather from a desire to grow as a person are called as Growth Needs. It includes Self-actualization Needs which is called as the highest level need.

**Self-actualization Needs** - The needs that refer to realizing one’s full potential are called as self-actualization needs. As these needs emerge, an individual focuses on developing what he or she is meant to do in life, developing his or her own talents and abilities to their fullest extent.

The Growth Needs also include the following needs: Cognitive Needs, Aesthetic Needs and Transcendence Needs. As these needs are a part of self-fulfillment and growth, the needs were studied along with self-actualization.

**5.1.2 Planning for developing Student Motivational Needs Scale**

The Construction of ‘Student Motivational Needs Scale’ was planned with the purpose of measuring the Motivational Needs of the students. For the identification of tools to assess Motivational Needs, related literature namely – Encyclopedia of Education, Survey of Education and some researches carried out in India and abroad were reviewed. The tests available were based on Intrinsic and Extrinsic Motivation, Achievement Motivation, Personality and Motivation, Social Motives, Motivational Analysis Test, Psychological Well Being etc. The construction of the self-rating scale was undertaken in lieu of
unavailability of psychological scale based on Maslow’s Need Hierarchy for the students. The scale was designed in the light of the operational definition given above in caption 5.1.1.

5.1.3 Construction of Items

To develop items for Student Motivational Needs Scale, a group of 30 students from classes 9th to 12th were interviewed. On the basis of their experience, observations and situations faced, they have reported the needs that motivate them. This was the main source of identifying Motivational Needs of students. Thus ninety-eight needs were identified which motivated the students.

The identified needs were than grouped to Motivational Needs (Deficiency Needs and Growth Needs). While writing the items the point kept in mind was whether the item measures the aspect of Motivational Needs or not, avoiding vague statements, use of difficult words etc. Corresponding to each situation five alternatives were given. There were positive as well as negative statements.

5.1.4 Preliminary Draft

This preliminary draft was given to twenty students and were asked to read each item carefully and put tick mark according to given instructions. Each need which worked as a motivation constituted the item. Thus there were 95 items in the scale. After writing the first draft, it was given to experts from the field of education, psychology and testing. The experts were requested to see whether the items could measure the Motivational Needs of student. In the light of experts’ suggestions, 24 items were dropped and some items were restructured. Thus, from the pool of 95 items, the preliminary draft consisted of 71 items.

5.1.5 Preliminary Tryout

The modified ‘Student Motivational Needs Scale’ consisting of 71 items was administered to 180 students of higher secondary classes of different schools in Indore. All these schools were affiliated to Central Board of Secondary Education. There were 122 boys and 58 girls. The students were given clear instructions as to how to answer the scale. They were instructed to read each statement carefully and select the most appropriate alternative from the given
alternatives. Before responding the scale, students read the instructions given in the scale. They were asked to start and take their own time to complete it. On an average, the students took 40 minutes in completing the scale. As soon as the students finished responding, the scale was collected. The scoring was done with the help of scoring key developed by the investigators. The data obtained from this tryout were used for the purpose of item analysis.

5.1.6 Final Draft

Item Analysis:
The purpose of item analysis was to select items from those included in the preliminary draft. The basis of item selection was discrimination index. The obtained scores were arranged in the descending order. From this, the students belonging to the upper 27% and lower 27% were identified. The mean Motivational Need scores of those two groups were compared with the help of t-test. The significant t-values were accepted. On the other hand, the item was rejected if the calculated t-value was not significant. Thus the final draft of Student Motivational Needs Scale consisted of fifty four items.

Preparation of the final test

Based on the calculated ‘t’ value 54 items out of 71 were included in the final test. As per the time taken by the students in the preliminary try out, the time duration was fixed to 40 minutes. Finally, the test was printed with all necessary instructions. A sample of Student Motivational Needs Scale is given in Appendix A.

Reliability
Reliability of the Student Motivational Needs Scale was determined through test-retest and split-half methods. The test-retest reliability refers to the consistency of scores obtained by the same individual when re-examined with the same Scale on different occasion. For establishing the test-retest reliability, the Scale was administered on 200 students of higher secondary classes of different schools. To the same students, the Scale was administered again after a gap of 10 days. At the time of first administration 200 students were present,
while at the second administration out of 200 students 174 students were present. In this way 174 students were common in both the testing. For the test-retest reliability, the correlation coefficient was worked out on the basis of the scores of 174 students on two testing. The correlation coefficient is given in the Table 5.1 The aspect wise split half reliability coefficient was also worked out and is given in Table 5.2. Both the reliability coefficients were found to be considerably high and significant at .01 level of significance (2 tailed). Therefore, the Student Motivational Need Scale was considered to be reliable.

**Table 5.1**

Test-Retest Reliability and Split-half reliability of ‘Student Motivational Needs Scale’

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Test-Retest Reliability</th>
<th>Split-half Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Motivational Need Scale</td>
<td>.734**</td>
<td>.846**</td>
</tr>
<tr>
<td>Deficiency Needs</td>
<td>.716**</td>
<td>.804**</td>
</tr>
<tr>
<td>Growth Needs</td>
<td>.646**</td>
<td>.664**</td>
</tr>
</tbody>
</table>

** Significant at 0.01 level (2 tailed)

**Table 5.2**

Inter aspect reliability of ‘Student Motivational Needs Scale’

<table>
<thead>
<tr>
<th>Aspects</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficiency Needs</td>
<td>-</td>
</tr>
<tr>
<td>Growth Needs</td>
<td>.815**</td>
</tr>
<tr>
<td></td>
<td>Deficiency Needs</td>
</tr>
</tbody>
</table>

** Significant at 0.01 level (2 tailed)

**Validity**

The content validity involves essentially the systematic examination of test contents to determine whether it covers a representative sample of the behavior
to be measured. The content validity of the ‘Student Motivational Needs Scale’ was established by having a discussion with the experts from the field of Testing and Education and Psychology. Thus, the ‘Student Motivational Needs Scale’ was found to be valid because experts found that the items fairly represented the content. Along with the Content validity, Face validity was also established. It refers to know whether ‘Student Motivational Needs Scale’ looks valid to the subjects who take it (Anastasi, 1970). The Face validity for ‘Student Motivational Needs Scale’ was also established by having the reactions of the subjects for whom the test was meant. Thus, the ‘Student Motivational Needs Scale’ was found to possess both Face as well as Content Validity.

5.2.0 Student Stress Scale

In the present scenario education is primarily perceived by a majority of the people in our country as a mechanism that prepares people for jobs. There is always an economic motive when a parent tells his ward to ‘study well’ and to ‘come up in life’. It is hardly ever seen as a holistic process of man making. It is this concept of education that is at the root of the stress that most students are experiencing today. The fear of losing out, the worry about becoming failures, the anxiety about an uncertain future and above all the sickening dread of failing the parents and society have compounded the stress profile of a student today. Stress in general is said to be a natural feeling, designed to help individuals to cope in challenging situations. Moderate level of stress is a normal phenomenon for students, if such students are to excel in their academic work (Busari, 2001). Excessive stress induces physical problems, and it is very common to see students affected with persistent lack of energy, loss of appetite, headaches etc.

5.2.1 Interpretation of stress

The stress is most of the time a matter of perception. The word stress means different things to different people. Some people define stress as events or situations that cause them to feel tension, pressure or negative emotions such as anger and anxiety. Others view stress as the response to these situations.
5.2.2 Student Stress: Operational Definition

Student Stress is a reaction to particular events. It is an unpleasant state of emotional and physiological arousal that students experience in situation that they perceive as dangerous and demanding to their well being.

Students face stress due to examinations, deadlines, returning to study, difficulty in organizing work, poor time management, leaving assignments to the last minute, parental and peer pressure, poor health conditions, status consciousness, appreciation in public, public speaking, for presentations, facing new situations etc. These are also called as causes of stress. Causes of stress on students include both positive and negative stress. The present scale of stress will focus only on the negative causes of stress.

For the present scale ‘Student Stress Scale’ is the integrated whole of problems which the students face in their life. Three main sources of stress for students have been identified namely; Frustration, Conflict and Pressure.

Frustration leads to stress. It is a feeling that occurs when students face problems in achieving their goals due to lack of resources, deprivation, unwillingness to change, uncertainty and lack of skills.

Conflict: Conflict leads to stress. It is a feeling that occurs when students face problems in taking decisions due to two or more incompatible needs or demands.

Pressure: Pressure leads to stress. It is created due to high expectations and demanding situations in life.

The items in ‘Student Stress Scale’ are divided into two sub-scales namely; Academic Stress and Personal Stress.

Academic Stress: It consists of items that are related to stress faced by the students in their academics. Academic Stress is termed as the adverse reaction of
the students, their behavior, thoughts and actions in relation to the types of
demand in academics.

Personal Stress Scale: It consists of items that are related to stress faced by the
students in their personal life. Personal Stress is termed as the adverse reaction
of students to the excessive pressure and demands faced by them in their social,
physiological and psychological environment.

5.2.3 Planning for developing Student Stress Scale
The Construction of ‘Student Stress Scale’ was planned with the purpose of
measuring the Stress of the students. Some tools were available for assessing the
stress, but there was a need to construct a tool on assessing stress of students
based on their attitude in the present scenario. The construction of the self-rating
scale was undertaken in consultation with experts. The scale was designed in the
light of the operational definition given above in caption 5.2.2.

5.2.4 Construction of Items
To develop items for ‘Student Stress Scale’, a group of 30 students from classes
9th to 12th were interviewed. On the basis of their experience, observations and
situations faced, they have reported the causes that create stress in them. This
was the main source of identifying Stress of students. Thus ninety-five situations
were identified which were the cause of stress in the students. Along with this
references were also taken from the study of related literature.

All above causes of stress were identified and then grouped to Student’s Stress
(Academic Stress and Personal Stress). While writing the items the point kept in
mind was whether the item measures the aspect of Student’s Stress or not.
Corresponding to each situation some alternatives were given.

This preliminary draft was given to twenty students and were asked to read each
item carefully and alternative given after that. Further they were asked to select
the most appropriate alternative out of given alternatives. Each situation which
worked as a cause of stress constituted the item. Thus there were 92 items in the
scale. After writing the first draft, it was given to experts from the field of
school education, psychology and testing. The experts were requested to see
whether the items could measure the Student’s Stress. In the light of experts’ suggestions, 24 items were dropped and some items were restructured. Thus, from the pool of 92 items, the preliminary draft consisted of 80 items.

5.2.5 Preliminary Tryout

The modified ‘Student Stress Scale’ consisting of 80 items was administered to 200 students of higher secondary classes of different schools. All these schools were affiliated to Central Board of Secondary Education. There were 120 boys and 80 girls. The students were given clear instructions as to how to answer the scale. They were instructed to read each items carefully and select the most appropriate alternative from the given alternatives. Before responding the scale, students read the instructions given in the scale. They were asked to start and take their own time to complete it. On an average, the students took 40 minutes in completing the scale. As soon as the students finished responding, the scale was collected. The scoring was done with the help of scoring key developed by the investigators. The data obtained from this tryout were used for the purpose of item analysis.

5.2.6 Final Draft

Item Analysis:

The purpose of item analysis was to select items from those included in the preliminary draft. The basis of item selection was discrimination index. The obtained scores were arranged in the descending order. From this, the students belonging to the upper 27% and lower 27% were identified. The mean Stress scores of those two groups were compared with the help of t-test. The significant t-values were accepted. On the other hand, the item was rejected if the calculated t-value was not significant. Thus the final draft of ‘Student Stress Scale’ consisted of Sixty six items.

Preparation of the Final Test

Based on the calculated’ value 66 items out of 80 were included in the final test. As per the time taken by the students in the preliminary try out, the time
duration was fixed to 40 minutes. Finally, the test was printed with all necessary instructions. A sample of Student Stress Scale is given in Appendix B.

Reliability
Reliability of the ‘Student Stress Scale’ was determined through test-retest and split-half methods. The test-retest reliability refers to the consistency of scores obtained by the same individual when re-examined with the same Scale on different occasion. For establishing the test-retest reliability, the Scale was administered on 200 students of higher secondary classes of different schools. To the same students, the Scale was administered again after a gap of 10 days. At the time of first administration 200 students were present, while at the second administration out of 200 students 170 students were present. In this way 170 students were common in both the testing. For the test-retest reliability, the correlation coefficient was worked out on the basis of the scores of 170 students on two testing. The correlation coefficient is given in the Table 5.3. The reliability coefficients were found to be considerably high and significant at .01 level of significance (2 tailed). Therefore, the ‘Student Stress Scale’ was considered to be reliable.

Table 5.3

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Test-Retest Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Stress Scale</td>
<td>.801**</td>
</tr>
<tr>
<td>Academic Stress</td>
<td>.741**</td>
</tr>
<tr>
<td>Personal stress</td>
<td>.827**</td>
</tr>
</tbody>
</table>

** Significant at 0.01 level (2 tailed)
Table 5.4
Inter aspect reliability of ‘Student Stress Scale’

<table>
<thead>
<tr>
<th>Aspects</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Stress</td>
<td>-</td>
</tr>
<tr>
<td>Personal Stress</td>
<td>.633**</td>
</tr>
<tr>
<td></td>
<td>Academic Stress</td>
</tr>
</tbody>
</table>

** Significant at 0.01 level (2 tailed)

Validity
The content validity involves essentially the systematic examination of test content to determine whether it covers a representative sample of the behavior to be measured. The content validity of the ‘Student Stress Scale’ was established by having a discussion with the experts from the field of testing and educational psychology. Thus the ‘Student Stress Scale’ was found to be valid because experts found that the items fairly represented the content. Along with the Content validity, Face validity was also established. It refers to know whether ‘Student’s Stress Scale’ looks valid to the subjects who take it (Anastasi, 1970). The Face validity for ‘Student Stress Scale’ was also established by having the reactions of the subjects for whom the test was meant. Thus, the ‘Student’s Stress Scale’ was found to possess both Face as well as Content Validity.