

## **Construction and Standardization of Academic Motivation Scale**

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**ABSTRACT:** *Motivation is the key component for academic achievement of a student. Moreover the success and failure of any educational programme depends upon the motivation level of the pupils. So, it is imperative to know the level of motivation of the students. The present paper provided a detailed discussion about the process of construction and standardization of academic motivation scale to measure the academic motivation level of students.*

**KEYWORDS:** *Academic Motivation, Construction & Standardization*

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### **I. INTRODUCTION**

The word motivation has been derived from the Latin word *moveers* which mean to move. It is an internal psychological force that accelerates an individual to respond or behave in a particular manner to achieve desired objective or goal. Motivation compels or energizes an organism to perform certain activity in a certain manner at a particular time. It is always directed toward a certain goal and it can be considered as a basis or determinant of human behaviour. What, why, how and when are some of the basic questions that are related to motivation. The answer of these questions is reflected in the behaviour of the individual. So, it is an internal psychological process that determines the external behaviour of the individual. Thus, it can be said that motivation provides both direction and the intensity to human behaviour to achieve desired goal. If one possesses very high level of motivation then no one can prohibit him/her from achieving success in the desired objective. On the other hand, if one face hindrance in the work then motivation helps to combat that particular problem and provide assistance to achieve desired objective. So it can be considered as driving force of one's behaviour.

Following definitions of academic motivation will be considered suitable for the present study.

**Johnson & Johnson (2003)** motivation may be defined as degree to which individuals commit effort to achieve goals that they perceive as being meaningful and worthwhile.

**Mayer (2011)** motivation is generally considered to be an internal state that initiates and maintains goal directed behavior.

**Gottfried (1990)** defines academic motivation as "enjoyment of school learning characterized by a mastery orientation; curiosity; persistence; task-endogeny; and the learning of challenging, difficult, and novel tasks"

**Turner (1995)** considers motivation to be synonymous with cognitive engagement, which he defines as voluntary uses of high-level self-regulated learning strategies, such as paying attention, connection, planning, and monitoring.

Motivation also plays a significant role in teaching learning process. It accelerates students to participate actively in the academic activities like asking questions to teachers to clear his/her doubts, provide assistance to complete different assigned tasks, increase attention span etc.. Without which no one can achieve his/her desired objective or academic success. In the academic setup it encourages students to participate in different activities. Moreover it creates a healthy teaching learning situation that provides desired result. In such circumstances teachers get satisfaction by their teaching and students became more enthusiastic towards learning. Research findings revealed that there is positive and significant relationship between academic motivation and academic success (**Srivastava, 1974; Desai, 1979; Gosh, 1985; Francis et al. 2004; Lakshmana Rao, 2005**).

In the academic setup teacher must possess the knowledge of motivation and specially its relevance in the teaching. He or she should be equipped with adequate skills to increase the level of motivation among students. Different students have different level of motivation. One may have very high level and other have very low level of motivation towards the academic activities. The role of the teacher is to increase the level of motivation in each student. It increases the participation of the students and removes the boredom in the class. As a result, joyful learning will take place. Now a day, it is observed that teachers are always in a hurry to complete the course within the stipulated time. Where he or she usually forgets the importance of student requirements i.e. a

student required academic motivation before he/she is bound to learn. It means the readiness for learning. So, the teacher should always try to motivate the students by any way. Because if he/she able to arouse motivation than it means that half of the work is already done and fruitful result will certainly occur. Moreover, by intelligence use of academic motivation teacher can remove the various problems which generally occur in the classroom like lack of attention, lack of interest, indiscipline etc. So, it can be said that academic motivation plays a great role in the teaching learning situation and academic success.

## **II. OBJECTIVES**

The main objective of the present study is to construct and standardize an academic motivation scale for measuring academic motivation of class XI and XII students. The major objective can be split into following sub objectives:

- 2.1. To construct draft academic motivation scale.
- 2.2. To make item analysis of the draft academic motivation scale to measure academic motivation of students.
- 2.3. To select the item for final academic motivation scale.
- 2.4. To determine the reliability of the academic motivation scale.
- 2.5. To determine the validity of the academic motivation scale.

## **III. KEY TERMS**

- 3.1. **Construction:** Construction refers to the procedure of preparing the set of statements or questions that prompt for the purpose of gathering information from respondents regarding a particular issue under study. In the process of construction of Academic Motivation scale the researcher used the Likert type scale as suggestion provided by the expert. In the process of preparation of academic motivation scale the researcher prepared a set of statements to know the opinion or feeling from the respondent regarding the issue of the study.
- 3.2. **Standardization:** Standardization refers to the process of maintaining accuracy, consistency and truthfulness of the score. In this study, standardization refers to the process of finding out reliability and validity of the scale.
- 3.3. **Academic Motivation:** Academic motivation is used to mean the pupils need and drive towards the achievement of success in academic work. In the present study academic motivation refers to students' motivation towards the academic activities and it will be interpreted as the score obtained in the academic motivation scale which consists of six dimensions: knowledge, accomplishment, stimulation, reward expectation, self involvement and self directed behavior.

## **IV. CONSTRUCTION OF THE ACADEMIC MOTIVATION SCALE**

A draft academic motivation scale was constructed by the investigator for the purpose of preparing the final academic motivation scale. The procedure followed in constructing the academic motivation scale is briefly written below:

### **4.1. Construction of draft academic motivation scale:**

The steps followed in the construction of draft academic motivation scale has been given below:

- 4.1.1. The researcher at first thoroughly studied the research literature related to the construction of academic motivation and various dimensions of academic motivation.
- 4.1.2. Secondly, the investigator critically studied some scale constructed by different investigator which used Likert's method.
- 4.1.3. From the research literature, the researcher included following dimensions of academic motivation for the present academic motivation scale.

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- 4.1.3.1. *Knowledge*: Engagement in an activity for learning, exploring, trying to understand something new.
- 4.1.3.2. *Accomplishment*: Engagement in an activity for the pleasure and satisfaction derived when trying to excel, to reach a new standard or to create something.
- 4.1.3.3. *Stimulation*: Involvement with an activity for the experience of fun, excitement and satisfaction.
- 4.1.3.4. *Reward Expectation*: Involvement with activity for praise, appreciation, fulfillment of one's need and achievement of desired objective.
- 4.1.3.5. *Self involvement*: Involvement with an activity according to the relevance and importance of it.
- 4.1.3.6. *Self determined behavior*: It refers to one's engagement as chosen by the individual self.
- 4.1.4. On the basis of the above mentioned dimensions, the researcher prepared statements in both favourable and unfavourable form. There were five response for each individual item- Strongly Agree, Agree, undecided, Disagree and Strongly Disagree. The respondent ticks the particular responds with which he/she agrees.
- 4.1.5. The statements were properly checked and edited by the supervisor of the work as well as other supervisors of the Department and necessary modifications were made in the light of the suggestion provided. Some statements were also dropped out.
- 4.1.6. A total of 78 statements were selected, out of which 40 (fourty) statements were favorable and 38 (thirty eight) statements were unfavorable related to academic motivation as shown in the table no. 1.
- 4.1.7. All the statements (both favourable and unfavourable) of six dimensions were arranged in a random manner in a single format. In this way the draft academic motivation scale was constructed by the investigator.

Table: 1

Dimensions	Item No		No of item		Total
	Favourable	Unfavourable	Favourable	Unfavourable	
KNOWLEDGE	1, 7, 31, 37, 66, 76,	13, 19, 25, 43, 49, 55, 60, 70, 74, 78	6	10	16
ACCOMPLISHMET	8, 20, 26, 32, 38, 44, 50, 61, 71, 77	2, 14, 54, 67, 75.	10	5	15
STIMULATION	3, 9, 15, 33, 39, 45.	21, 27, 51, 56, 62, 68, 72.	6	7	13
REWARD EXPECTATION	4, 10, 16, 28, 34, 40, 63.	22, 46, 52, 57.	7	4	11
SELF INVOLVEMENT	23, 29, 35, 58, 64, 73.	5, 11, 17, 41, 47, 69.	6	6	12
SELF DETERMINED BEHAVIOUR	24, 30, 36, 42, 59.	6, 12, 18, 48, 53, 65.	5	6	11

Total- 78

The distribution of the selected items in the draft attitude is given below:

- 4.1.8. The scoring keys for each statement both favourable and unfavourable against five (5) responses were determined as given below:

TABLE: 2

Nature of item	Strongly Agree (SA)	Agree (A)	Undecided (U)	Disagree (DA)	Strongly Disagree (SD)
Favourable	5	4	3	2	1

Unfavourable	1	2	3	4	5
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4.1.9. **Instruction:** The researcher prepared necessary instruction in both English and Assamese language and put in the beginning of the draft academic motivation scale.

4.1.10. **Time limit:** To determine the time limit, the draft attitude scale was administered upon five students of class XI of Amolapoty Govt. Girls H.S. School. They have taken 40-45 minutes to complete the entire task. So 45 minute time limit was fixed to try out the draft attitude scale.

4.2. **Try out of the Draft Academic Motivation scale to determine the discriminative power of each individual item:**

The next step of construction of the Academic Motivation Scale was to try out the draft scale. This process helped to find out the discriminative power of the each individual item. On the basis of the discriminative power the researcher selected the items for the final scale. The tryout of the Academic Motivation Scale comprised of following points:

4.2.1. **Sample:** The draft academic motivation scale was administered upon 200 students (both class XI and XII) selected from five institutions of +2 level of Dibrugarh District using purposive sampling.

4.2.2. **Instruction:** The researcher prepared necessary instruction in both English and Assamese language and put in the beginning of the draft academic motivation scale. Oral instructions were also given whenever necessary.

4.2.3. **Time Limit:** 45 minute time limit was fixed to try out the draft attitude scale.

4.2.4. **Administration of the draft Academic Motivation Scale:** The following procedure was followed by the researcher to administer the draft academic motivation scale:

Before administering the draft attitude scale the researcher established rapport with the sample because it helps in the creation of tension free environment for the work. So the researcher spent few minutes with the sample for friendly talk in each institution.

- a) After that the researcher made proper sitting arrangement for the students and copying was strictly prohibited by the investigator.
- b) After that the draft attitude scale was distributed among the students. They were told to read the instructions carefully which is given in the front page of the draft attitude scale. The researcher also gave oral instruction to the students whenever necessary. After the completion of the task the researcher collected the forms from the students.

4.3. **Item analysis:** In the present study item analysis was carried out to determine the 't' value of each item which helped to determine the discriminative value of each individual item. With the help of it the researcher selects the item for final academic motivation scale. The procedure followed in the process of item analysis is as follows:

4.3.1. The answer sheets of 200 sample students were scored by using the scoring process mentioned earlier and the scores were arranged from high score to low score.

4.3.2. Then the researcher took 25 percent (i.e. 50 students) of the subject with the highest total scores and 25 percent (i.e. 50 students) of the subject with the lowest total scores. Then two groups high and low group were formed. These two groups provide criterion groups in terms of which to evaluate the individual item.

4.3.3. Then mean score of each individual item for both high scoring group and low scoring group was found out. The difference was considered as discriminating power of that particular item.

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4.3.4. The 't' value of each item was found out to determine the discriminative power of a particular item. According to Edward (1957, p.153) "The value of *t* is a measure of the extent to which a given statement differentiates between the high and low groups. As a crude and approximate rule of thumb, we may regard any *t* value equal to or greater than 1.75 as indicating that the average response of the high and low groups to a statement differs significantly, provided we have 25 or more subjects in the high group and also in the low group".

4.3.5. Then items having less than and greater than 1.75 values were identified. Out of 78 items only 55 statements have significant *t* value. The distribution of these 55 according to different dimensions is given in table no 3:

TABLE: 3

Dimensions	Item No.		No. of item		Total
	Unfavourable	Favourable	Unfavourable	Favourable	
KNOWLEDGE	1, 7, 31, 66, 76.	19, 25, 43, 49, 55, 60, 74, 78.	5	8	13
ACCOMPLISHMENT	20, 26, 32, 38, 44, 50, 61, 71, 77.	14, 54, 67, 75.	9	4	13
STIMULATION	3, 9, 15,	27, 51, 56, 62, 68	3	5	8
REWARD EXPECTATION	4, 40, 63.	22, 46, 52, 57.	3	4	7
SELF INVOLVEMENT	29, 64	5, 11, 41, 47, 69	2	5	7
SELF DETERMINED BEHAVIOUR	30, 36, 42	6, 12, 18, 48	3	4	7

Total=55

### 4.4. Item selection:

The investigator decided to include only twenty favourable and twenty unfavourable items from the 55 items which covered all dimensions of academic motivation scale. The total 40 items are selected for the final version of the academic motivation scale where twenty items are positively related to academic motivation and another twenty items negatively related to academic motivation.

The distribution of statements according to various dimensions of academic motivation is given below, in the table no:

Table No: 4

Dimensions	No. of Item		No. of Item		Total
	Favourable	Unfavourable	Favourable	Unfavourable	
Knowledge	1,7,31,66,76	19,25,43,55	5	4	9
Accomplishment	20,26,32,61	54,67,75	4	3	7
Stimulation	3,9,15	51,62,68	3	3	6
Reward Expectation	4,40,63	22,46,52,	3	3	6
Self Involvement	29,54	5,11,42,69	2	4	6

Self Determined Behaviour	30,36,42	6,18,48	3	3	6
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Total= 40

### V. Standardization of Academic Motivation Scale

The process of standardization includes the following steps:

5.1. Determining the Reliability of the Academic Motivation scale: this include following steps:

5.1.1. The researcher undertakes split half technique to find out the reliability of the scale.

5.1.2. To find out the reliability the researcher administered the final version of academic motivation scale upon 100 students of class XII.

5.1.3. After collection of the data the item are scored by using the scoring key as mentioned before. The test score of each individual is divided into two equal or nearly equal halves. Odd even method is used to split the test items into two equal parts. In one part odd number are assigned and another part even number are assigned.

5.1.4. Then, the coefficient of correlation was found out by using the formula of product moment coefficient of correlation. The reliability value of the scale is .78

5.1.5. The coefficient of reliability of the whole test was then calculated by using the Spearman- Brown Prophecy Formula and the value of reliability of the full test was found as .87

5.2. Determination of Validity of the Academic Motivation Scale:

To determine the validity the researcher has followed the following procedure:

5.2.1. Content Validity: The investigator sent the final version of the academic motivation scale to a number of experts for seeking opinion whether it covers all aspect or not through its statements.

5.2.2. Concurrent Validity: For estimating the validity, the final form of academic motivation scale prepared by the investigator and the "Academic Achievement Motivation Test" prepared by Dr. T.R. Sharma was again administered on a sample of 50 students on English version. Then the score obtained from this newly administered final form of academic motivation scale was correlated with the academic motivation scale constructed and standardized by Dr. T.R. Sharma. The calculated value = .914 reveals that there is significant relationship (at .01 level) between the two scale.

### VI. CONCLUSION

The scale has been constructed by the investigator to measure the motivation level of the students of class xi and xii studying in different educational institution of Dibrugarh District. The suggestion and procedure given by different expert were also strictly followed. The reliability value of the scale is .87 which can be said quite satisfactory. The scale would be applied to study the academic motivation of students.

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