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# Classroom Climate and Achievement Motivation as Predictors of Academic Achievement in Higher Secondary School Students

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## ABSTRACT

This study examines the influence of classroom climate and achievement motivation together on academic achievement. Sample of the study comprises of 98 higher secondary school students of Sultan-Ul-Uloom Junior College, Banjara Hills, Hyderabad, Telangana, India. Classroom climate construct is measured using classroom climate inventory (Muthee 2009) and achievement motivation is measured using achievement motivation inventory (Muthee, & Thomas, 2009). Students percentage in latest formative test is used to measure their academic achievement. SPSS Ver.23 is used to measure the regression coefficient and squared regression coefficient. The study found that classroom climate and achievement motivation together highly significantly (using F-test) influence academic achievement, with $R = 0.444$ and $R^2 = 0.197$. Also, girls are found to be more influenced ($r = 0.34$) by the classroom climate construct than boys, for the level of significance $\alpha = 0.01$. No role of gender is found on the constructs achievement motivation and academic achievement. The education implications are discussed.

***Keywords:*** Academic Achievement, Achievement Motivation, Classroom Climate, Higher Secondary School Students.

## 1. INTRODUCTION

One of the important and intimately related construct which determines the learning outcomes of students in a social organization called school, is its classroom climate. The term was introduced for the first time by Walberg and et. al., while they were developing a tool to measure student's perception of their instructional experiences (Walberg and Anderson, 1968). The construct was made popular by Moos

(Tricket & Moos, 1973).The construct's relation with another vital construct of schooling, academic achievement, was established way back in 1976 by Walberg (Walberg, 1976). Several studies in recent times have only confirmed the relationship of classroom climate with academic achievement (Wang & Holcombe, 2010).

The association of the dimensions of classroom climate (cohesiveness, material environment, formality, and satisfaction) with learning outcomes was established in past too (Fraser, Anderson, & Walberg, 1982). One of its recent definition is "a broad term intended to assess the perceptions that students have about different aspects of environment" (Rowe, Kim, Baker, Kamphaus & Horne, 2010).

Closely related to academic achievement of a student is another construct achievement motivation (Harris, 1940 & Boggiano (1992), Tella, 2007 & (Sikwari 2014). It was originally defined in 1964 as "the comparison of performances with others and against certain standard activities" (Atkinson, 1964). Helmreich & Spence (1978) conducted factor analysis on this construct and found that it comprised of four dimensions namely, mastery of needs, work orientation, competition and personal unconcern.

One of its definitions in recent times is "self determination to succeed in whatever activities one engages in, be it academic work, professional work, or sporting event, among others", (Tella, 2007). Moreover, scholars in the field of research on achievement motivation from goal orientation perspective, maintain that social context, like schools, plays a prominent role in fixing goals pertaining to achievement (Wilkins, 2006).

The present study intends to find the combined relationship of classroom climate and achievement motivation on academic achievement. The interplay of these constructs between themselves will also be studied along with the role of an important demographic variable gender on each of them. No such study in the Indian context is found in the literature, especially on higher secondary school students and hence the need for the present study arises.

## 2. RESEARCH OBJECTIVES

1. To study the role of classroom climate on academic achievement of higher secondary school students.
2. To study the role of achievement motivation on academic achievement of higher secondary school students.
3. To study the role of classroom climate on achievement motivation on higher secondary school students.
4. To study the role of classroom climate and achievement motivation together on academic achievement of higher secondary school students.
5. To study the role of gender on classroom climate of higher secondary school students.
6. To study the role of gender on achievement motivation of higher secondary school students.
7. To study the role of gender on academic achievement of higher secondary school students.

## 3. RESEARCH HYPOTHESES

1. **$H_0$:** There is no role of classroom climate on academic achievement of higher secondary school students.

2. **$H_0$:** There is no role of achievement motivation on academic achievement of higher secondary school students.
3. **$H_0$:** There is no role of classroom climate on achievement motivation on higher secondary school students.
4. **$H_0$:** There is no role of classroom climate and achievement motivation together on academic achievement of higher secondary school students.
5. **$H_0$:** There is no role of gender on classroom climate of higher secondary school students.
6. **$H_0$:** There is no role of gender on achievement motivation of higher secondary school students.
7. **$H_0$:** There is no role of gender on academic achievement of higher secondary school students.

## 4. METHOD

### Sample

The sample selected for this study, using simple random sampling, consisted of 98 higher secondary school students (62 girls and 36 boys) from XI and XII classes of Sultan-ul-Uloom Junior College, Banjara Hills, Hyderabad, Telangana. Prior permission to administer the tools of the study was taken from the Principal of the Higher Secondary School or the junior college.

### Measures – Psychometric Instruments

*Classroom Climate Inventory (Muthee, 2009a):* There are 36 items in this scale which measure student's outlook of the psychological atmosphere present in the class room. 19 items in the scale (1, 4, 6, 8, 9, 10, 12, 15, 16, 17, 18, 20, 25, 28, 31, 32, 34, and 36) are positive statements. 17 items (2, 3, 7, 11, 13, 14, 19, 21, 22, 23, 24, 26, 27, 28, 30, 33, and 35) are negatively worded.

The responses of the subjects can range from '**always=4' 'frequently=3' 'sometime=2'** and **'never=1'** during forward scoring of positive items and reversed during backward scoring of negative statements. Higher score of a subject on adding the scores of the individual items, higher is the perceived classroom climate.

The tool's measure of internal consistency reliability was expressed in term of Cronbach's alpha and was found to be **0.826** which indicates good internal consistency**.** The tool possessed content validity as a systematic procedure was followed in its development.

*Achievement Motivation Inventory (Muthee & Thomas, 2009):* The scale contains 32 item which measure the achievement motivation in the school going students. 18 items (3, 4, 6, 11, 13, 14, 16, 17, 20, 23, 24, 26, 28, 29, 30, 31, 32) are positively worded. 14 items (1, 2, 7, 8, 9, 10, 12, 15, 18, 19, 21, 22, 25 and 27) are negatively worded.

The responses of the subjects can range in a five point Likert scale from completely agree = 5 to completely disagree = 1. Forward scoring for positive items involves 5 = completely agree, 4 = mostly agree, 3 = agree to some extent, 2 = mostly disagree and 1 = completely disagree It is reversed during backward scoring of negative statements.

Higher score of a subject on adding the scores of the individual items, higher is the perceived achievement motivation. The measure of internal consistency reliability, found using Cronbach's alpha was reported to be **0.749** which indicates satisfactory internal consistency between the items of the scale when taken in pairs. The tool's validity is based on the claim that it is made from famous and standardized scales meant for measuring this construct.

*Academic Achievement* of the students is measured using the marks obtained by them all subjects, in their latest formative assessment, expressed in percentage.

*Statistical Techniques:* Multiple regression is used to predict the magnitude and strength of the relationship between the independent variables, classroom climate and achievement motivation on the dependent variable, academic achievement in the higher secondary school students.

### Procedure

The data was collected from the students in the classroom while the class was in session. The students were given clear instructions on how to fill the instruments of classroom climate and achievement motivation. The data regarding the academic achievement of the students in the recently concluded formative evaluation was collected from the office records.

## 5. RESULTS AND DISCUSSION

Multiple regression coefficient R provides the quantitative measurement of the nature and strength with which the two independent variables together predict the dependent variable. Squared multiple regression coefficient $R^2$ expresses the extent to which a unit variation in both the variables brings about change in the dependent variable, in terms of a percentage.

**Table 1**
**Mean and Standard Deviation (N = 98)**

| *Variable* | *Statistic* | |
|---|---|---|
| | *Mean* | *S.D.* |
| Classroom Climate | 3.0827 | 0.31164 |
| Achievement Motivation | 3.5204 | 0.42328 |
| Academic Achievement | 59.9827 | 19.38916 |

**Table 2**
**Testing of Hypothesis 1**

| *Pearson Correlation* | *CC* | *AA* | *Hypothesis $H_0$* |
|---|---|---|---|
| CC | 1 | 0.441** | Rejected |
| Sig.(2-tailed) | | 0.000 | |
| N | 98 | 98 | |
| AA | 0.441** | 1 | |
| Sig.(2-tailed) | 0.000 | | |
| N | 98 | 98 | |

**Correlation is significant at the 0.01 level (2-tailed).

**Table 3**
**Testing of Hypothesis 2**

| *Pearson Correlation* | *AM* | *AA* | *Hypothesis $H_0$* |
|---|---|---|---|
| AM | 1 | 0.296** | Rejected |
| Sig.(2-tailed) | | 0.003 | |
| N | 98 | 98 | |
| AA | 0.296** | 1 | |
| Sig.(2-tailed) | 0.003 | | |
| N | 98 | 98 | |

**Correlation is significant at the 0.01 level (2-tailed).

**Table 4**
**Testing of Hypothesis 3**

| *Pearson Correlation* | *CC* | *AM* | *Hypothesis* |
|---|---|---|---|
| CC | 1 | 0.570** | Rejected |
| Sig.(2-tailed) | | 0.000 | |
| N | 98 | 98 | |
| AM | 0.570** | 1 | |
| Sig.(2-tailed) | 0.000 | | |
| N | 98 | 98 | |

**Correlation is significant at the 0.01 level (2-tailed).

**Table 5**
**Testing of Hypothesis 4**

| *R* | *$R^2$* | *Adj. $R^2$* | *Std. Error of Estimate* | *F Cal.* | *df1* | *df2* | *Sig. F* | *Hypothesis $H_0$* |
|---|---|---|---|---|---|---|---|---|
| 0.444 | 0.197 | 0.180 | 17.555 | 11.662 | 2 | 95 | 0.000 | Rejected |

**Table 6**
**Testing of Hypothesis 5**

| *Pearson Correlation* | *CC* | *Gender* | *Hypothesis $H_0$* |
|---|---|---|---|
| CC | 1 | –0.340** | Rejected |
| Sig.(2-tailed) | | 0.000 | |
| N | 98 | 98 | |
| Gender | –0.340** | 1 | |
| Sig.(2-tailed) | 0.000 | | |
| N | 98 | 98 | |

**Correlation is significant at the 0.01 level (2-tailed).

Pearson's correlation coefficient *r* is used to find the interrelationship between the variables and the role of an important demographic variable gender on them. Other descriptive statistics are mean and standard deviation of each variable. All the statistics are computed using SPSS Ver.23.

**Table 7**
**Testing of Hypothesis 6**

| *Pearson Correlation* | *AM* | *Gender* | *Hypothesis $H_0$* |
|---|---|---|---|
| AM | 1 | –0.041** | Accepted |
| Sig.(2-tailed) | | 0.688 | |
| N | 98 | 98 | |
| Gender | –0.041** | 1 | |
| Sig.(2-tailed) | 0.688 | | |
| N | 98 | 98 | |

**Table 8**
**Testing of Hypothesis 7**

| *Pearson Correlation* | *AA* | *Gender* | *Hypothesis $H_0$* |
|---|---|---|---|
| AA | 1 | –0.189** | Accepted |
| Sig.(2-tailed) | | 0.063 | |
| N | 98 | 98 | |
| Gender | –0.189** | 1 | |
| Sig.(2-tailed) | 0.063 | | |
| N | 98 | 98 | |

The relationship between classroom climate and academic achievement is found to be moderately strong and positive in nature and highly significant at the level of significance 0.01.

This finding is in keeping with the previous works done on these variables especially in India (Thamilselvi, 2014). Achievement motivation is also found to be highly significantly related to academic achievement, as proven by earlier studies (Singh, 2011). Also, achievement motivation and academic achievement are found to be related in a highly significant way at level of significance 0.01, as mentioned in earlier studies (Chamundeswar and Uma, 2008). In all these relationships, the strength of the Pearson's product moment correlation coefficient is moderate and positive in nature.

The reporting of these finding in the present research found consistent with the previous research on the subject, prepare a context for the conducting of this research's major finding and hence its significance.

This major finding is that classroom climate and achievement motivation together in a statistically highly significant manner influence academic achievement of higher secondary school students.

While the multiple regression coefficient R is found to be 0.444 and square regression coefficient R2 is 0.197. It means that together, classroom climate and achievement motivation can cause change in academic achievement up to 20 % in higher secondary school students. The adjusted R2 value which takes into account the factor of chance is also around 18%.

Another major finding from this study is that gender is related to classroom climate in highly significant manner. During data analysis of gender and classroom climate relationship, girls were assigned the value 0 and boys the value 1. The Pearson Product Moment Correlation is $r = -0.34$. It means that girls are more sensitive to classroom climate and its dimensions when compared to boys. No role of gender was found on

the other two variables, achievement motivation and academic achievement, which means that the desire to excel in life and be good in studies is present in both the genders in equal measures.

The standard error of estimate in this study is 17.55, which means that observed points of academic achievement (the dependent variable) are separated from the points of the variable all along the regression model line by 17.55 units on either sides.

## 6. CONCLUSION

The first major finding of this study stresses the role a needs to play teacher in the classroom, both as a creator of a learning environment and that of a motivator. While in the former role, he or she needs to take into account the gender ratio aspect of the class, as obtained in this research, in the latter role, he or she must first identify and then strive to prosper the spirit to excel in life in the child.

Both these activities would require a great deal of professional and personal commitment from the teacher. Considering the present state of affairs with respect to teacher education and teaching profession in our country, the government needs to ensure that only the motivated and the interested join this profession.

It is critical that the teacher as a person and as a professional must have a positive attitude towards this profession. This in turn, would generate in him or her urge to go the extra mile to do the needful in creating a conducive classroom climate and be a constant role model and motivator to the students.

Infrastructure of the classroom also contributes to the perception a student has about the climate of his or her learning. In this regard, the school authorities in tandem with the government must work dedicatedly to improve the physical environment of the classrooms.

In order to promote achievement motivation, the teacher must instill in students an intrinsic desire to achieve and excel in life, without looking for external rewards, which can eventually translate into the desire for self actualization in near future.

The joint promotion of both the variables can result in rise of the academic performance or achievement of the higher secondary school students.

With respect to the significant role of gender on classroom climate, the teacher has to make sure that the girl students feel a sense of security in the classroom primarily. There should be maintaining of strict decorum of the classroom, display of a sense of respect for fellow students, use of decent language, both during instruction and during discussion and observing of cleanliness in the classroom.

Finally, as the results related to the role of gender on achievement motivation and academic achievement are non-significant statistically, it is heartening to find that both girls and boys possess the desire to excel in life and the potential to be good in studies. It implies that teachers need to concentrate on developing a conducive learning environment in the classroom and motivate the students, and the examination results are bound to be good irrespective of the gender of the child.

The study was limited to higher secondary school students of a reputed minority institution located in urban area of the city Hyderabad. The size of the present study is also small due to constraints like stipulated time and money. Further studies can be conducted on a larger sample of higher secondary school students belonging to all communities and from rural areas of the Hyderabad city.

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