CLASSROOM CLIMATE AND ACADEMIC ACHIEVEMENT OF STUDENTS OF XI STANDARD IN BOTANY IN MADURAI DISTRICT

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Introduction
Classroom Climate

Education is essentially a social process and the effectiveness of educational programmes in schools would depend on a number of things- functioning o classroom as a good learning group, teacher's success in arousing and sustaining pupils' interest in setting goals for themselves and achieving them, developing initiative and sense of responsibility in the pupils, better and more effective and understanding between the teacher and the pupils, adjusting with new ways of learning and so on. All these are related to the group life in the school in which the teacher and the pupils are equally important partners. Education can be made more effective through better understanding of the process underlying group life in the school.

A group is a social unit which consists of a number of individuals who stand in (more or less) definite status and role relationships to one another and which possess a set of values or norms of its own regulating the behaviour of individual members, at least in matters of consequence to the group. According to Getzels and Thelen all working groups have the following factors in common: a goal, participants, leadership and relations to other groups and institutions.

The structure of a class is formed on the basis of the interactions of the various members of the group. In the beginning the individuals meet and have exploratory interactions which help them to find out which individuals are capable of meeting the needs of the group, and to what extent. In other words the exploratory interactions are directed at finding out the "needs-meeting potentiality" of different individuals. This helps in the development of some pattern of relationships among the individuals on the basis of expectations and their capacity to meet those expectations. The structure of the group is then formed. The structure takes better shape, when the relationships are better established.

When a group is formed, the members of the group se t up, knowingly or unknowingly, certain standards of behaviour that are to be followed by them. These are called norms. Norms help an instructional group, as any other group, in its smooth working. They help the various members clarify their respective roles and responsibilities.

The norms may either be imposed on the group through some set of rules, or may develop as a result of the functioning of the group. It is better if the norms evolve and develop in a class-room group as the pupils interact with one another, the teacher helping them with his advice. The norms will differ in their effectiveness to the degree they affect

the scope of the behaviour of the pupils. In some cases the norms may be confined to instructional problem and work, while in other these may include other behaviour dimensions as well.

Norms in a classroom group should be properly integrated. Different norms may exist for different purposes. Sometimes there may be a conflict in norms. There may, for example, be a conflict between norms for scholastic work, for social activities and for productive work. The teacher should help in integrating norms in such cases.

Classroom functions as a group. We have already seen that every group has some structure. Classroom as an instructional group operates and helps its members satisfy their needs and achieve the goals. Structure in a group denotes the pattern of relationships that has achieved some stability. Different classrooms may have different structures. In fact, every classroom has its own unique structure.

Cultural factors and social customs of the community also influence greatly the structuring of the classroom. The authoritarian structure in the classrooms in most of Indian schools takes inspiration from the social norms of the community.

The classroom structure can be understood by understanding its different/aspects or dimensions. The structural dimensions can be seen from different points of view. Flander has suggested three dimensions – authority, goal orientation and social access – and has formulated three postulates to explain the structural characteristics of classroom groups. Various other dimensions have been suggested by some other authorities. These dimensions help in understanding the structure of a given classroom.

The most important factor in a group is the task it sets for itself. This would determine its structural characteristic also. The task structure may include what Flander calls "goal orientation". It is quite important how the various members perceive the task or the goal set by the group. If the pupils in a particular classroom perceive the task the are doing as quite significant, this would give seriousness of purpose to the classroom work and the structure would be determined that way. If the pupils and the teachers do not perceive the task or the goal as significant, the classroom as a group will be quite different.

Another dimension is the authority structure. The pattern of authority exercised may be different from one classroom to the other. Authority may be either completely vested in the teacher or may be distributed among the pupils in different patters. This would determine the amount of responsibility shared by the pupils.

Equally important is communication structure. The communication channel may be one-way, in which case the teacher talks to the pupils who passively listen. Or it may be circular, allowing pupils to participate in the communication process. The communication structure would determine what Flander calls "social access." In a mixed class the communication pattern may be dichotomous- boys communicating with boys and girls with girls.

Relationships with the group. The structure of the classroom group will determine the relationships among the members of the group. These relationships can be seen from the point of view of the functions of the group.

The main duty of the teacher is to function as a good instructor. He is expected to teach the pupils as effectively as possible. His instructional roles are of many kinds. The teacher helps the pupils in their learning. As a first step he has to see whether the pupils are prepared to learn. He has to make sure of the preparedness; in other words, he has to motivate them. In this role of the motivator the teacher promotes readiness for learning. This is an important role. Many teachers in spite of their genuine enthusiasm, fail to carry home effectively what they want to teach, because they do not pay much attention to this important aspect of their role.

The teacher has to function as a learning agent. In this role he helps the pupils, who are properly motivated, to learn the task set for them. In this role the teacher may have to pay attention to four main ways of the learning agent. The teacher tells i.e., speaks to the pupils; he allows questions and explains; he demonstrates before the pupils what he has been explaining; and he provides practice possibilities for the pupils in that task. The main ways of learning-listening, asking, seeing and doing – are thus adequately followed.

The teacher has the role of evaluator also. After he has gone through the instructional programmes, he tries to find out to what extent the programme has been successful. This he does by testing children, asking them questions, informally discussing with them and using such other devices as he may find useful.

The effectiveness of classroom is contributed by a number of factors. One factor is the setting of goals. Gibb has defined a group goal as "any interdependent need system which arouses, maintains, and directs group behaviour". The group has something to achieve. The classroom group is formed mainly for the purpose of learning. As such, the classroom group can be termed a task-centred group – a group mainly concerned with achieving task.

The way a classroom group functions determines how the members of the group feel about participating in the group. The characteristics of a group that promotes acceptance or refection of the members in a group may be termed the group climate. If a group has permissive climate, the members of the group will be encouraged to participate widely. Permissive climate is chiefly characterized by encouragement and acceptance. Contrasted with this is the defensive climate which is characterized by rejection, aggression and order-giving. The two types of climate have their contrasting effects. While permissive climate helps in the development of the individual, satisfies the needs and promotes involvement and consequent participation of the individual; defensive climate retards growth, increases emotional conflict and defensiveness and causes withdrawal of the members from the group.

The teacher may do whatever he can to build permissive atmosphere in the classroom. This can be done through encouraging pupils to express themselves, ask questions, propose action, share decision-making and discuss matters frankly.

Pacing

Having decided which tasks and activities to introduce in a lesson, teachers need to determine how long each task and activity should last. Once a lesson begins, a teacher will use experience, intuition, and gut feding to decide whether to curtail a task prematurely, either because the learners get through the material more quickly than the teacher had anticipated or because the task simply does not engage the learners. On the other hand, the teacher may decide to prolong an activity because the learn en , become highly involved or because the material takes them longer to work through than initially predicted.

Classroom Monitoring

Monitoring and decision making that go on during the instructional process are important. In order for teachers to improve their effectiveness, they need to know what experienced teachers do in the course of planning, implementing and modifying their instruction. They also need a repertoire of techniques for some of the less visible aspects of on-line monitoring and decision making. Making appropriate decisions on the spot is a skill that develops over time as a result of self monitoring and reflection.

Most of the research on teachers' decision making has focused on preteaching planning decisions. Early research is also product oriented and behavioral in its orientation.

Classroom Management

There are three management tasks that need to be achieved in relation to classroom discourse. These tasks are the management of content, the management of student participation and the management of face. In relation to the management of content, there are four areas of Fundamental concern. First, the content must be relevant to classroom purposes. Second, there must be a basic level of shared knowledge. Third, teachers and students must share the same linguistic interpretation. Finally, they must share the same pragmatic interpretation. In managing participation, students must be able to see, hear, speak, and be heard. In the final area, the management of face, there are four "rights" that might be tested in title classroom and that can lead to loss of face. These rights are:

- The right to contribute
- The right not to contribute
- The right to acceptance of the form of one's contribution
- The right to acceptance of the content of one's contribution

According to Blum (1984:3-6), the following classroom practices are typical of effective teachers:

- Instruction is guided by a preplanned curriculum.
- There are high expectations for student learning.
- Students are carefully oriented to lessons.
- Instruction is clear and focused.
- Learner progress is monitored closely.
- When students do not understand, they are retaught.
- Class time is used for learning.
- There are smooth, e1licient classroom routines.
- Instructional groups formed in the classroom fit instructional needs.
- Standards for classroom behavior are high.
- II. Personal interactions between teachers and students are positive.
- Incentives and rewards for students are used to promote excellence.

Reflective Teaching

The concept of reflective teaching makes different assumptions about the nature of teacher development. It assumes that professional growth is a lifelong process, and that obtaining initial certification is only a first step in this process. Reflecting on one's teaching, and, in the process, developing knowledge and theories of teaching is an essential component in this lifelong process. The technological (and, up to a point, the effective) approach to instruction is deficient because it assumes that the ability to teach can be characterized by knowledge and skills that are somehow set. Reflective teaching, on the other hand, assumes that as our conceptions of language and learning evolve, what is considered appropriate in terms of teaching techniques and classroom management will also change. In other words, what is technically sound today may not be technically sound tomorrow.

Behavior Problems

Issues of discipline and student behavior are the most frequently mentioned concerns of novice teachers. There is usually a tension between wanting to be respected and wanting to be liked. Over time, most teachers develop their own strategies and techniques for dealing with inappropriate behavior. A few seem to be able to manage behavior problems effectively from the beginning, while some never seem to develop effective strategies for dealing with unacceptable student behavior. Behavior problems very often emerge as a result of confusion over rules, roles and expectations.

Until relatively recently, it was assumed that classroom discipline problems were caused by a lack of firmness and reluctance to punish on the part of the teacher. However, as we saw in the section on effective teaching, it has been shown that the best classroom

managers are those who prevent problems from occurring in the first place, rather those who deal with behavioral problems after the event by punishing students. Studies have shown that there was no appreciable differences in the ways in which effective and ineffective: teachers dealt with behavioral problems. Rather, the difference lay in the fact that effective teachers created a classroom environment and adopted strategies which minimized opportunities for disruptive behavior. Strategies included:

1. Monitoring what was happening on a moment-by-moment basis
2. Setting up and monitoring multiple activities for different learning groups within the class
3. Being well prepared, and knowing precisely what they planned to do at each point in a lesson
4. Creating an environment in which students were able to work independently of direct teacher supervision on tasks that were at once challenging, yet within the capabilities of the students
5. Telling students what they expected, modeling the required behaviors, and giving them the chance to rehearse the behaviors if necessary

Objectives of the Study

The following objectives are framed for the study:
1. To measure the level of Achievement in Botany of the students.
2. To measure the level of Academic achievement in Botany of the students.

Sample of the Study

The sample for the study consists of 250 Students studying in Higher Secondary Schools run by Government and Management. Belonging to both gender with varied experience.

The sample is random sampling. The students were selected randomly for the sample. The following table furnishes the details

S.No	Type of institutions	No. of Students
1	Government	100
2	Management	100
3	Matriculation	50
	Total	250

Hypothesis-1
Null hypothesis

There exists no significant difference in the mean scores in classroom climate of the students of XI standard belonging to Government schools in terms of gender.

Table 1: Difference in Mean Scores in Classroom Climate - Gender

Gender	N	Mean	SD	"t" value	Significance
Boys	50	273.30	8.37	1.12	NS
Girls	50	275.30	9.49		

df= 98   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.

- The calculated "t" value is less than the table value
- "t" value is not significant at any level.
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists no significant difference in the mean scores in classroom climate of the students of XI standard belonging to Government schools in terms of gender.

Hypothesis-2
Null hypothesis

There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management schools in terms of gender.

Table 2: Difference in Mean Scores in Classroom Climate - Gender

Gender	N	Mean	SD	"t" value	Significance
Boys	50	290.10	10.86	1.17	.NS
Girls	50	292.50	9.70		

df= 98   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.

- The calculated "t" value is greater than the table value
- "t" value is significant at 0.05 level
- Hence the research hypothesis is accepted and null hypothesis is rejected

There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management schools in terms of gender.

Hypothesis-3
Null hypothesis

There exists no significant difference between in the mean scores in classroom climate of the girl's students of XI standard belonging to Government and Matriculation schools.

Table 3: Difference in Mean Scores in Classroom Climate - Type of institution

Type of institution	N	Mean	SD	"t" value	Significance
Government	50	274.30	8.94	15.29	S
Matriculation	50	295.10	7.21		

df= 98   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.
- The calculated "t" value is greater than the table value
- "t" value is significant at 0.05 level
- Hence the research hypothesis is accepted and null hypothesis is rejected

There exists significant difference between in the mean scores in classroom climate of the girl's students of XI standard belonging to Government and Matriculation schools.

Hypothesis-4
Null hypothesis

There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Government and Management schools.

Table 4: Difference in Mean Scores in Classroom Climate - Type of institution

Type of institution	N	Mean	SD	"t" value	Significance
Government	100	274.30	8.94	12.50	S
Management	100	291.30	10.30		

df= 198 $t_{(0.05)}$ = 1.96 $t_{(0.01)}$ = 2.58

The table reveals the following facts.
- The calculated "t" value is less than the table value
- "t" value is not significant at any level.
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Government and Management schools.

Hypothesis-5
Null hypothesis

There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management and Matriculation schools.

Table 5: Difference in Mean Scores in Classroom Climate - Type of institution

Type of institution	N	Mean	SD	"t" value	Significance
Management	100	291.30	10.30	2.62	S
Matriculation	50	295.10	7.21		

df= 148 $t_{(0.05)}$ = 1.96 $t_{(0.01)}$ = 2.58

The table reveals the following facts.
- The calculated "t" value is less than the table value
- "t" value is not significant at any level.
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management and Matriculation schools.

Hypothesis-6
Null hypothesis
There exists no significant difference in the mean scores in Classroom climate of the students of XI standard in terms of gender.

Table 6: Difference in Mean Scores of Students of XI standard - Gender

Gender	N	Mean	SD	"t" value	Significance
Boys	100	281.71	12.73	3.63	S
Girls	150	287.63	12.56		

df= 248   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.

- The calculated "t" value is not greater than the table value
- "t" value is not significant at any level
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists no significant difference in the mean scores in Classroom climate of the students of XI standard in terms of gender.

Hypothesis-7
Null hypothesis
There exists no significant difference in the mean scores in Achievement in Botany of the students of XI standard belonging to Government schools in terms of gender.

Table 7: Difference in Mean Scores in Achievement in Botany - Gender

Gender	N	Mean	SD	"t" value	Significance
Boys	50	46.90	11.04	1.25	NS
Girls	50	48.90	11.58		

df= 98   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.

- The calculated "t" value is less than the table value
- "t" value is not significant at any level.
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists no significant difference in the mean scores in Achievement in Botany of the students of XI standard belonging to Government schools in terms of gender.

Hypothesis-8
Null hypothesis
There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management schools in terms of gender.

Table 8: Difference in Mean Scores in Achievement in Botany - Gender

Gender	N	Mean	SD	"t" value	Significance
Boys	50	49.10	8.48	1.75	NS
Girls	50	52.10	8.60		

df= 98 t $_{(0.05)}$ = 1.96　　　　　　　t$_{(0.01)}$ = 2.58

The table reveals the following facts.

- The calculated "t" value is greater than the table value
- "t" value is significant at 0.05 level
- Hence the research hypothesis is accepted and null hypothesis is rejected

There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management schools in terms of gender.

Hypothesis-9

Null hypothesis

There exists no significant difference between in the mean scores in Achievement in Botany of the girl's students of XI standard belonging to Government and Matriculation schools.

Table 9: Difference in Mean Scores in Achievement in Botany - Type of institution

Type of institution	N	Mean	SD	"t" value	Significance
Government	50	49.90	8.60	3.24	S
Matriculation	50	54.30	7.48		

df= 98　t $_{(0.05)}$ = 1.96　　　　　　　t$_{(0.01)}$ = 2.58

The table reveals the following facts.

- The calculated "t" value is greater than the table value
- "t" value is significant at 0.05 level
- Hence the research hypothesis is accepted and null hypothesis is rejected

There exists significant difference between in the mean scores in Achievement in Botany of the girl's students of XI standard belonging to Government and Matriculation schools.

Hypothesis-10

Null hypothesis

There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Government and Management schools.

Table 10: Difference in Mean Scores in Achievement in Botany - Type of institution

Type of institution	N	Mean	SD	"t" value	Significance
Government	100	49.90	8.60	0.55	NS
Management	100	50.60	9.33		

df= 198　t $_{(0.05)}$ = 1.96　　　　　　t$_{(0.01)}$ = 2.58

The table reveals the following facts.
- The calculated "t" value is less than the table value
- "t" value is not significant at any level.
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Government and Management schools.

Hypothesis-11
Null hypothesis

There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management and Matriculation schools.

Table 11: Difference in Mean Scores in Achievement in Botany - Type of institution

Type of institution	N	Mean	SD	"t" value	Significance
Management	100	50.60	9.33	2.62	S
Matriculation	50	54.30	7.48		

df= 148   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.
- The calculated "t" value is less than the table value
- "t" value is not significant at any level.
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management and Matriculation schools.

Hypothesis-12
Null hypothesis

There exists no significant difference in the mean scores in Achievement in Botany of the students of XI standard in terms of gender.

Table 12: Difference in Mean Scores of Students of XI standard - Gender

Gender	N	Mean	SD	"t" value	Significance
Boys	100	49.20	8.31	0.11	NS
Girls	150	49.33	10.32		

df= 248   t $_{(0.05)}$ = 1.96   t$_{(0.01)}$ = 2.58

The table reveals the following facts.
- The calculated "t" value is not greater than the table value
- "t" value is not significant at any level
- Hence the research hypothesis is rejected and null hypothesis is accepted

There exists no significant difference in the mean scores in Achievement in Botany of the students of XI standard in terms of gender.

Hypothesis

1. There exists no significant difference in the mean scores in classroom climate of the students of XI standard belonging to Government schools in terms of gender.
2. There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management schools in terms of gender.
3. There exists no significant difference in the mean scores in classroom climate of the girl's students of XI standard belonging to Government and Matriculation schools.
4. There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Government and Management schools.
5. There exists no significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management and Matriculation schools.
6. There exists no significant difference in the mean scores in Classroom climate of the students of XI standard in terms of gender.
7. There exists no significant difference in the mean scores in Achievement in Botany of the students of XI standard belonging to Government schools in terms of gender.
8. There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management schools in terms of gender.
9. There exists no significant difference in the mean scores in Achievement in Botany of the girls students of XI standard belonging to Government and Matriculation schools.
10. There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Government and Management schools
11. There exists no significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management and Matriculation schools.
12. There exists no significant difference in the mean scores in Achievement in Botany of the students of XI standard in terms of gender.

Tools

Appropriate tools were employed to collect relevant data based upon method. In the present study, the following tools were used.

Class room climate scale

Findings

1. There exists significant difference in the mean scores in classroom climate of the students of XI standard belonging to Government schools in terms of gender.
2. There exists significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management schools in terms of gender.
3. There exists significant difference in the mean scores in classroom climate of the girls students of XI standard belonging to Government and Matriculation schools.
4. There exists significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Government and Management schools.
5. There exists significant difference between in the mean scores in classroom climate of the students of XI standard belonging to Management and Matriculation schools.
6. There exists significant difference in the mean scores in Classroom climate of the students of XI standard in terms of gender.
7. There exists significant difference in the mean scores in Achievement in Botany of the students of XI standard belonging to Government schools in terms of gender.
8. There exists significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management schools in terms of gender.
9. There exists significant difference in the mean scores in Achievement in Botany of the girls students of XI standard belonging to Government and Matriculation schools.
10. There exists significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Government and Management schools
11. There exists significant difference between in the mean scores in Achievement in Botany of the students of XI standard belonging to Management and Matriculation schools.
12. There exists significant difference in the mean scores in Achievement in Botany of the students of XI standard in terms of gender.

Limitation of the Study

The limitation of the study is as follows:

1. The study is limited to the learners studying in XI standard in certain schools of Madurai District.
2. The sample is accessible sampling.
3. The period of study is short owing to paucity of time on the part of the investigators.
4. As Class room Climate covers a wide range of social and psychological phenomena a few factors have been taken into consideration for the study.

Conclusion

The investigator could decipher that the good Achievement in Botany may go a long way in nurturing creativity and enhancing achievement of students in Science, A good Achievement in Botany plays a vital role in imparting education to students at an optimum level.

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