

“Management Practice of Science Subject in Secondary Level Schools at Mahottari District”

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Introduction

In the Classroom, social environment plays an important role in development for School-aged children. Student gain experiences which helps the classroom environment to develop their behavioral, social and academic skills.

This study explored the classroom management practices used by sampled school in Mahottari district. The objectives of the study were, to investigate the science classroom management practices in school at secondary level school, to find out the existing situation of physical resources in science classroom at secondary level in Mahottari district and to explore how classroom management practices results exert impact on the student's science learning outcome. There were three theories (skinner's Operant Conditioning (1960), Glasser's Choice Theory (198) and Kant's Students directed learning Theory (2006) selected for the study. This study was adopted case study. The design of the study was qualitative research. The population of this study was ten grade student of Mahottari District in the academic year 2024. Shree Janta Secondary, Madai and Shree Mahendra Aadarsh Mahila Secondary, Jaleshwar. School were purposively selected as simple school from which 30 students were randomly selected. Observation and questionnaire were the major tools for data collection students, science teacher, and head teacher of the schools were selected for the respondent.

Background of the Study:

Different educators have defined classroom management in various ways. For example, Doyle (1986) explains it as the methods teachers use to maintain order in the classroom. Martin, Yin, and Baldwin (1998) describe it as a broad set of actions taken by teachers to oversee activities like learning, social interaction, and student behavior.

Behavior-based teaching methods require teachers to have strong control and management skills. In this approach, teachers are expected to lead classroom activities, keep students motivated, and manage misbehavior. On the other hand, student-centered methods focus more on students' personal growth and emotional development. These classrooms are designed to meet students' needs and encourage creativity, listening, and critical thinking.

Why classroom management?

Managing any part of the education system should aim to improve student learning. Effective classroom management helps teachers create a setting where learning is smooth and engaging. Lakes and Smith (2002) stated that effective classroom management is the first step toward better learning. They emphasized that it involves not just teacher skills, but also school-wide behavior standards, well-organized resources, and well-planned lessons.

Who is to take the responsibility?

According to Miller (2012), while there are many classroom strategies available, the key issue is how to keep students engaged. He argues that the best way to handle classroom problems is to create interesting lessons.

How to do it?

Miller (2012) suggests that sharing clear goals with students and focusing on keeping them engaged in their tasks can be just as important as any other well-known classroom rules. To foster engagement, teachers should facilitate self-directed activities and learning models that encourage students to take ownership of their work. This includes providing opportunities for students to direct their own learning, differentiating instruction, and adopting effective practices from colleagues.

The Effects of Classroom Management on Academics

For students to achieve academic success, teachers must first establish an ideal learning environment. An optimal learning environment refers to how teachers organize their classrooms in terms of layout, learning opportunities, and positive social interactions. When examining what makes classroom management effective, it is essential to understand how experts define it. Researchers usually consider two key indicators of effective classroom management. The first is a reduction in disruptive behaviors. The second is whether students stay focused and engaged during lessons (Babkic, 2006; Kounin, 1970; Rischer, 2008; Smart & Igo, 2010).

Kane, Taylor, Tyler, and Wooten (2011) note that what teachers do in the classroom influences how well students perform. A teacher's ability to help students succeed is closely linked to how effective that teacher is. Teachers play the most critical role in determining student success (Ferguson, 1991; Kane et al., 2011). Various factors can lead to a teacher being considered ineffective. One such factor is poor classroom management. When a teacher is ineffective, it can negatively impact a student's academic progress for years. Improving teacher performance can result in the largest gains in student learning (Ferguson, 1991).

Classroom Seating Arrangements

The way a classroom is physically arranged including the placement of chairs, tables, and presentation tools can greatly influence how students learn. According to instructional communication theory, seating arrangements affect how teachers interact with students and how students connect with each other. These factors can shape student engagement and motivation. However, many college and university classrooms are still built with a traditional focus (McCorskey & McVetta, 1978).

Learning Environment

The learning environment encompasses more than just the physical space where education takes place it includes classrooms, science laboratories, open areas, and administrative spaces like offices. It also refers to the broader context in which learning occurs, including the social, emotional, psychological, and instructional conditions that influence student behavior, motivation, and academic achievement. A positive and well-structured learning environment contributes significantly to student engagement and success. It encourages active participation, supports emotional well-being, and helps foster a growth-oriented mindset. An effective learning environment not only motivates students to focus on their studies but also plays a crucial role in developing their academic, social, and personal skills.

According to Fraser (1994) and Kilgour (2006), the learning environment consists of two primary components: the physical and the psychosocial. The physical component includes all material and spatial elements, such as the classroom layout, seating arrangements, teaching tools, lighting, and the availability of resources both inside and outside the classroom. These physical features can either support or hinder learning depending on how they are organized. On the other hand, the psychosocial component relates to the quality of interactions within the educational setting specifically, the relationships between students, their peers, teachers, and the school environment itself. This aspect includes classroom climate, emotional support, communication, and a sense of belonging.

The Physical Environment

While earlier research on classroom settings focused heavily on the physical environment, it remains an important factor in more recent studies due to its continued influence on students' behavior, learning experiences, and academic performance. Modern investigations have explored key aspects such as classroom composition, student groupings, class size, and the role of classroom management in shaping outcomes.

Class composition refers to how students are grouped within a classroom, including factors like

academic ability levels, gender-based arrangements, and participation in cooperative learning groups. Studies have shown that classrooms organized around cooperative learning often experience several positive effects. These include stronger feelings of fairness among students, greater class unity, improved peer support, and even higher academic achievement. For example, research suggests that female students tend to prefer working collaboratively and often respond better to supportive interactions from teachers compared to male students. This tendency is especially noticeable in primary schools, where collaborative methods and teacher involvement are generally more prevalent than in secondary education settings.

The Psychosocial Environment

Beyond the physical design of a classroom, an equally important element in supporting effective teaching and learning is the psychosocial environment. This refers to the emotional and social dynamics created through interactions between teachers and students, as well as among the students themselves. In recent decades - particularly during the early 21st century, there has been growing interest in this area of research, focusing on factors such as classroom participation, perceived teacher support, student motivation, and the communication of learning goals.

One central theme in this research is student engagement, which many teachers identify as a top priority. Participation in classroom activities and staying on-task are seen as essential for meaningful learning. Studies suggest that gender plays a role in participation patterns. Girls are often more engaged because they feel a relational obligation to their teachers, while boys tend to participate when they find the subject matter engaging. If the class is perceived as dull, boys are more likely to withdraw, suggesting that teachers play a vital role in making learning appealing to all students.

The Role of the Teacher in the Classroom Environment

A significant amount of research on classroom environments centers on the behaviors and practices of teachers, particularly in relation to teacher development and the broader school culture. These elements play a vital role in shaping the classroom setting. Some studies argue that creating and maintaining a positive, effective classroom environment is a complex task that may be especially challenging for newly qualified teachers. Because of this, it is often recommended that early-career educators receive structured professional development, including mentoring programs and collaborative teaching arrangements. These supports can help reduce professional isolation and foster meaningful interactions with colleagues, which contribute to building a more cohesive and supportive school environment.

Building on findings from research into both the physical and psychosocial dimensions of learning spaces, various strategies have been proposed to help teachers improve their classroom climate. These include the implementation of structured classroom management plans and proactive efforts to establish strong teacher-student relationships. It is widely recommended that teachers introduce classroom rules and routines early in the academic year. Moreover, consistency in applying expectations and consequences is essential for maintaining order and fairness. Research has shown that when rules are applied equitably, students are more likely to exhibit positive behavior and remain academically engaged.

Statement of the Problem:

“Science Classroom Management Practices at Secondary School in Mahottari District.”

Significance of the Study:

This study aims to explore classroom management practices in secondary schools of the Mahottari district. Its importance arises from recent curriculum reforms initiated in the region's secondary education system. Educational reform is a multifaceted endeavor that demands careful consideration of numerous elements ranging from contemporary instructional theories and student development to motivational strategies, assessment practices, technological integration, and home-school relationships. Among these, classroom

management stands out as a core concern that significantly impacts the effectiveness of teaching and learning. A lack of proper classroom management often becomes a major obstacle in the professional success of teachers, highlighting the need to examine and improve current practices.

For students, this study will shed light on the physical learning resources available, prevalent disciplinary issues, and the effectiveness of teachers in managing student behavior. By understanding these factors, students can adapt their behavior more positively, leading to a more constructive classroom climate. For teachers, the research will offer valuable insights into strategies that support effective teaching and learning through improved classroom organization.

Objective of the Study:

The study was concerned to the following objectives.

1. To investigate the science classroom management practices in school at secondary level school.
2. To find out the existing situation of physical resources in science classroom at secondary level in Mahottari district.
3. To explore how classroom management practices results exert impact on students science learning outcome.

Delimitation of the Study:

This study was limited to the government secondary school in the Mahottari district. The population of this study was limited to the secondary school teachers working in Mahottari. So the results of the study cannot be generalized directly to all primary school teachers all over Nepal.

Operational Definition of the Related Term:

There are some terms specific to the present study and may be the operational definitions are provided for the following terms.

(1) Physical Resources: -

Physical resources denote the physical facilities available in the school like as furniture desk. School building and classroom size.

(2) Science Teaching:

Science teaching is the work that a teacher does in helping students to learn in science subject.

(3) Classroom Management:

Classroom management is the process of management the physical resources and classroom discipline.

(4) Secondary School:

Grade 9 and 10 in the school system of Nepal is Secondary level. Public School; Public Schools are those which are conducted by government or local community.

(5) Students:

The term student is restricted by only on those students who are learning science at grade 10 of selected schools of Mahottari.

Research Design

The study was adopted case study as a research design. The methodology will use correspond to the case study research design. Case study is an instant study of a case, which may be individual, a family, a social group or institution. Robsom (1995) has defined case study as “a strategy for doing research which involve and empirical investigation of all particular contemporary phenomenon within a real life content using multiple resource of evidence.

Site Selection:

This study will conduct in a public school situated at MAHOTTARI (in Mahottari District). For the selection of the case study school researcher will select three schools for this purpose.

Selection of the Respondents:

The respondents for this study will select on the basis of random sampling method and the respondents of the study will students, science teacher and head teacher. School teacher will be chosen from each school, 10 students of grade 10 and one science teacher.

Tools of the Study:**Classroom Observation Form:**

For this study researcher use the classroom observation form. Pre-determined frame of the classroom observation form will use to collect information. The researcher will also observe such aspect of classroom which will not include on the observation to collect information about physical environment of classroom, method and materials, teacher's roll, student's roll, teacher-student interaction and students-students interaction, assignment technique will include in the observation form. Opinion are will use for both the students and teacher. In the same way on structured interview take for the teacher to find out the taken for the teacher to find out the current problems of classroom management.

Tools of Data collection:

Interview, observation and opoiniare will be the major tools for the data collection. Questionnaire will design for the teacher for interview purpose whereas observation checklist will design for student and school similar to appendix A, B and C.

Validity and reliability of Tools:

The validity and reliability will be one necessary qualities of research ins trument for the semi-structure interview. Validity will be establish by the subject expert and supervision whereas reliability of the interview will be establish by the taking interview with the same individual after certain duration

Procedure of data collection:

At first,I will visit Mohottari district and I will select three government schools. I will request the authority for permission to carry out my research to the authority. I will request to the teachers observe their classes with help of check list and questionnaire.

Analysis & Interpretation of Data:

This chapter deals with the analysis and interpretation of collected information of the study. The study was mainly concerned with the science classroom management practices at secondary level in Mahottari district. Analysis and interpretation of the collected data were discussed under following heading.

Table – 1 Management of classroom for High and Low Achiever.

| S. N | Name of school | Notation of School |
|------|---|--------------------|
| 1 | Shree L.C.M Secondary, Jaleshwar Mohottari | A |
| 2 | Shree Adarsh Mahila Secondary, Jaleshwar, Mahottari | B |
| 3 | Shree Janta Secondary, Madai, Mohottari | C |

The learning environment encompasses all the spaces and settings where educational activities take place, including classrooms, laboratories, open areas, and administrative offices. It is broadly understood as the combination of physical, social, psychological, and pedagogical factors that shape students' learning experiences, academic outcomes, and attitudes. A well-designed learning environment plays a crucial role in enhancing the quality of education, fostering active student engagement, and influencing both behavior and skill development.

An effective learning environment not only supports academic achievement but also encourages students to take part in the learning process, think critically, and develop important cognitive and interpersonal skills. It provides the conditions necessary for learners to feel motivated and supported.

Table – 2 Physical Resources of Classroom of Grade Ten in the Sample Schools

| No. | Physical Resources | School-A | School-B | School-C |
|-----|--------------------|----------|----------|----------|
| 1.1 | Desk | 22 | 20 | 17 |

| | | | | |
|-----|---------------------|----|----|----|
| 1.2 | Benches | 22 | 20 | 17 |
| 1.3 | Circular desk | - | - | - |
| 1.4 | Book services | - | - | - |
| 1.5 | Table | 1 | 1 | - |
| 1.6 | Cupboard | - | - | - |
| 1.7 | Rack | - | - | - |
| 1.8 | Demonstration table | - | - | - |

Table – 3 Classroom Condition

| | | | | |
|-----|----------------------------------|----------|----------|----------|
| 2.1 | Window | 4 | 4 | 2 |
| 2.2 | Door | 2 | 2 | 1 |
| 2.3 | Room | 1 | 1 | 1 |
| 2.4 | Roof | Cemented | Cemented | Cemented |
| 2.5 | Ventilation | 8 | 5 | - |
| 2.6 | Space between two row of benches | 3 feet | 2.5 | 2.5 |
| 2.7 | Temperature | 30 | 30 | 30.5 |
| 3.1 | Chalk board/marker board | 1 | 1 | 1 |
| 3.2 | Chart Paper | - | - | - |
| 3.3 | Drawing board | - | - | - |
| 3.4 | Circle board | - | - | - |

Shree L.C.M Secondary school was established in 1951 A.D. (2008 B.S). This is in the Jaleshwor municipality city which is situated near the Budhjivi Chowk in Jaleshwor. This school is the oldest school in the Jaleshwor municipality city. Over all education system and result of this school is good than other school in the public sector due to the highest percentage of SLC result, manpower and infrastructure of the school. School does not conduct the class in the morning and day shift. English medium class is not conducted in morning time and Nepali medium in day time. There are 2200 students in the school. Student's population in this school is more as compared to other schools. Researcher observed the classroom sessions taught by teachers to find out the classroom management practices.

The classroom was size of 240sq. feet. There were 125 students in the classroom. However, studied schools have own building and room built by the government. The buildings were made up of cement and bricks. There were not circular desk, cupboard, books services, and demonstration table. There were four windows and two doors in classroom. Floor of the classroom was cemented. The height of the ceiling was 10 feet. Eight ventilations were adjusted at the top level of wall There are four toilets, 1 room for library, 1 room for account, 1 for store and 1 is there was proper open place for teachers and students.

It was found that mostly all the remaining facilities were managed by the government and local people. All the buildings, toilet, desk, benches and other facilities which were provided by the donation local community and by the government donation.

Finding of the Study:

The main objective of the study was to identify the classroom practice in teaching science at secondary level in Mahottari district the data collected from class observation, questionnaire and interview from the science teacher and students the class room practices in science teaching created by the classroom management in the school A B and C are described below. There was a separate block which was made up of concrete and well polished in the sample school. There were benches, desks and one table in the classroom of the sampled schools. School -C had not sufficient classroom space and seat on the bench. Classroom of school A was more ventilated than other school. School library, laboratory playground, garden, provision of drinking water, toilet etc were in the all Sample school A, B and C. But, laboratory and library were not in good condition to use in the school Arrangement of the available furniture was traditional type in the

sample A, B and C, that is benches and desks were arranged in two rows. All schools were similar in the arrangement of furniture

According to the BPEP classroom space was sufficient in each sample school. The classroom sample school was quiet and peaceful there was not sound pollution of the vehicle found in the classroom it was hot but brightness of the classroom was good. Classroom of school C was slightly dark and hot.

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