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Identification of Problems Faced by Science Group Students at Secondary Level in District Gujranwala

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Abstract

Science education has now been a most important and crucial realm for the states to play their part in. Every state is striving its best to provide all possible support to educational institutions so that they can provide state-of-the-art science education. All other stake holders including curriculum developers, teachers and parents have their own significance in the process. Research studies have shown that science group students face problems especially in developing states. The current study also focuses on the problems that science group students face at secondary level. This research focused on academic and pedagogical problems, along with problems related to lack of physical resources that may hinder the educational development of secondary school students. A survey of the government and private secondary schools of district Gujranwala was conducted using questionnaire developed on five-point Likert scale. Based on the data results, it was concluded that science group pupils feel the content as overloaded, difficult, while the labs are not fully functional. The student-teacher interaction, and number of assigned lectures are also not sufficient. It was recommended that right blending of theory and practice is essential, while funds should be allocated to make the science labs fully functional.

Keywords: Science Education, Academic Problems, Pedagogical Problems, Physical Resources, Science Students, Secondary Level

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Introduction

Science education is essential for an economy's advancement strategy. It takes on a pivotal role in the organisation of human resources. The level of education distinguishes developed countries from less developed ones. It has been discovered that trained human resources contribute significantly and consistently to a country's economic growth and profitability. It considers the substantial impact of social consistency on a country. Any educational framework's success depends on excellent and carefully chosen educators. There is no substitute for educators in the form of instructional materials of any other kind. It is a fact that teachers make the educational process as a whole so great. A teacher is more than what is typically discussed because he has many distinct responsibilities Learning that is both viable and fruitful depends on the nature of instruction, which calls for well-learned individuals who are concerned with the development of children and youth. Education was deemed to be very likely the most important and revolutionary profession in society (Alexander, Schallert, & Reynolds,2009).

Learning is defined as the process of training people in the ethical realm through which their potential is produced, their maker's traits and qualities are blended into them, and their way of life is transmitted to the generations after them (Khalid, 1998). Likewise, different discoveries revealed huge effect of educator self-adequacy and inspiration on scholarly accomplishment in science training. Suggestions, proposals and suggestions for understudies, educators, school executives, guardians, government, instruction guides, and so forth were examined and introduced (Bal-Taştan et a., 2018). There has been an expanding interest for more powerful scholastic encounters and viable learning at all degrees of instruction, especially at the optional and advanced study levels in Pakistan (Iqbal et al, 2009).

Parental efforts to ensure the prosperity of their children can occasionally become sexual orientation biased. Although parents are considerate of the sexual orientation of their children, they do not invest equally in everyone's education. As a result, there are compelling written arguments (Sui-Chu et al., 1996) in favor of the theory that parental interest in children is sex-predisposed or favors masculine propensity. Additionally, discovered that parents' propensity for having kids encourages a bigger proportion of them to invest in their children's future success in order to deal with parents. In fact, parental sex predisposition theory is true, especially when parents have limited/lower wages and assets that cause girls to drop out of school earlier than boys.

Pakistan's educational system is facing many problems, but the problems with scientific students stand out as being particularly significant. Understudies are the method into the fulfilment of any instructing framework. However, studies reveal that rather than being resolved, the challenges facing teachers in Pakistan have grown worse over time. It seems as though none is attending to these issues, and resources and abilities are wasted on the advancement of frameworks or simple structural improvements (Government of Pakistan, 1998). Since encouraging calling is perceived as the most underutilized, worthless, and ugly professional support in Pakistan, there is a sense of unusual estrangement among the showing networks. Education professionals detest the social respect that other nation's aid men value (Oliver & Bonito, 2025).

Literature Review

The factors affecting science student's performance at secondary level are as following:

Household Work: There has been a lot written on how a child's employment affects educational outcomes, regardless of the kids' sexual orientation. Numerous studies show that young women occasionally begin working earlier than young men, especially in rural areas, and that young girls also typically complete more household chores than young boys. Studies show that girls will typically drop out of school to care for their younger relatives Another study discovered that senior sisters are forced to be nonconformist if children under the age of six are present at home (Naparan et al., 2023). Another study shows that if mothers work and receive compensation outside the house, girls' shoulder fewer jobs, which leads to their nonconformity (Fuller & Liang, 1999). In general, young women do more household chores than young men, and rural young women also tend to do more household chores than urban young women.

Extra-curricular Activities: There is some evidence that participation in extracurricular activities varies depending on sexual orientation and that girls often participate less than men. For instance, analyzed the role of sexual orientation factors in the evaluation of extracurricular activities, and the study's findings point to a significant difference between male and female undergraduates' levels of interest in these activities. It is noted that while extracurricular offices were available for the boys in 90% of the schools in the study area, they were either inaccessible or provided insignificantly for the girls (Chambers & Schreiber, 2004)

This occurs at schools in the majority of agricultural countries, particularly in the countryside areas. In relation to the effects of early marriage on young women observed that the dropout rate of young women increased in provincial regions because parents saw little benefit in their education once they married and left their own families. He also discovered that the primary cause of young Afghan women leaving school early is early marriage. Numerous studies on the age and education of young women have revealed that when they reach puberty, parents believe it is time for them to be married and would typically plan the wedding rather than continuing with their tutoring (Mashwani, 2017).

According to several studies, dropout rates in particular contexts are associated with young women getting married off early. For instance, young women's dropout rates may be greater in societies where young women depart the paternal family unit following marriage (Ackers, 2005). Shahidul, 2013) also discovered that in Bangladesh, young women from lower socioeconomic backgrounds leave secondary school when receiving tutoring or advanced education causes a boom in the young women's marriage market.

The number of students that leave school or school early, leave a course or other action in school before they have finished it, or otherwise abandon a school is referred to as the dropout rate. The school dropout rate is caused by a variety of factors. The major problem is the one with money. Another issue related to school dropouts is the helpless supplemental school system. Another factor in understudy dropout from school is chronic weakness. In addition, parents' ignorance contributes to dropouts. A contributing factor to dropout, particularly among female students, is societal culture. Child labor is another source of dropouts. absence of school offices, especially in remote areas. Another source of dropout is political pressing issues. Another cause of dropout among students is mental health problems (Saeed, 2007).

Curriculum Issues: There is a movement in Pakistan to improve educational plans. Schools should implement educational plans as they see fit, with no restrictions. Implementation is the role of the instructor. They cannot support the cycle of educational program improvement or assessment on their own (Hoodbhoy, 1998). The educators are now unaware of many aspects of the educational program, which has an impact on both their own presentations and the methods used to teach and learn in classrooms. Generally speaking, instructors are unaware of the components or objectives of the curriculum for a given level. This identifies gaps between the educational plan's understatement and its effective execution. In developed nations, educators are welcome to participate in the development and planning of educational program.

Their information sources are considered essential for the training framework's proper direction (Government of Pakistan, 2001).

Text book issues: Reading is a crucial part of any education or learning process. It is one of the significant resources that offers opportunities for reading growth and new knowledge for children. The advancement of educational programs includes a very particular area called reading material improvement. A course book is an essential part of training because it is one of the sources of content (Zulkiffli et al., 2024). Schools have a culture that values multiple navigational methods. Both the teacher and the student are perplexed by this. In addition, teachers are not well prepared on how to support or elaborate on ideas from various course materials (Hussain, 2001).

"Because of this, teachers often revert to merely reading and lecturing from the text without taking into account the essential components of teaching and learning, such as improving students' various skills (correspondence, examination, impression), and sharpening their understanding in a compelling way". (Khalid, 1998).

Over-burdened classes: The farcical working situation in Pakistani schools, according to Kahlid (1998), have contributed to instructor burnout. In certain schools, there are no systems of work either because the structure of the lanes makes it impossible for teachers to learn the working style. There are places where there are no coaching staff. This causes more problems for the many educators in the schools who must demonstrate a greater number of classes than is typically done on a daily basis. According to Saleem (2002), the current situation has increased the pressure on the instructors, who are more susceptible to practical problems. The teachers currently try to keep up with the timetable at the expense of the quality of teaching and learning. Because of the great mental and social needs of students, teachers cannot provide each student with their undivided attention.

Lack of physical and learning resources: Teachers in schools must deal with a variety of teaching strategies due to the necessity for instruction and learning support. Some schools even lack the most basic resources, such notebooks and sheets. There are some schools without homerooms and libraries. Jungle gyms are not available for the actual academic growth of students. (Saleem et.al. 2023). The lack of access to digital devices, internet connectivity and technological proficiency are also the hindrance for the teachers to perform professionally well (Gulzar et.al., 2024). The current situation has caused greater problems for educators because they are not able to give students more time for

learning and progress. Teachers must thoroughly cover the material as expected. Under these circumstances, educators stop to create a crucial learning climate in classrooms (Hussain, 2001).

Insufficient Supervision: In Pakistani schools, Rasheed (2004) has observed that there is a powerless notion of management. The management cycle is heavily supported by regulatory frameworks. The purpose of oversight is to improve the presentation of educators and students while also advancing the careers of teachers. As an alternative, the concept of review is used in Pakistan to illustrate the management cycle. During the management cycle, administrators instill fear in educators' minds. The chiefs behave as though they are lords and treat the instructors like they are inferiors and balms. The instructors have become doubtful and weak as a result of this tendency. There is no improvement since the chiefs give requests to the educators rather than constructive criticism (Isa et al., 2025).

Lack of coordination: There is no coordination element to the training arrangement in Pakistan. Due to poor communication between the arrangement producers, personnel, guardians, and network, this issue has suffered. The framework's state of powerless coordination has led to partners' misguided assumptions (Zulkiffli et al., 2024). Whether creating educational programs or using another strategy, educators continue to remain at the less-than-ideal end of the spectrum in all areas. The instructors only participate in the execution process; they do not work on improving it. This results in the development of a culture of blame. There is even a deficiency of collaboration between administrators and educators (Zafar, 2003).

Professional development issues: Being an educator is a calling that requires ongoing renewal. New developments in society and around the world need instructors staying consistently up to date on the updated theories, studies, and other supplements to the body of knowledge. Since the public, country, and world are constantly changing and experiencing difficulties, educators who are not expertly solid and redesigned cannot keep up. Educators who acquire the most recent information, develop their skills sufficiently, and manage the path toward teaching and learning are successful. They are superior teachers and learners (Dogar, 2025). Students should be motivated by effective teachers. In Pakistani schools, there is less of an effort to improve educators' skills.

Teachers are found to be ineffective in addressing the problems of understudies during tutoring sessions due to a lack of the updated knowledge and skills. It has been observed that students leaving school

lack the relational skills, social skills, and even authority skills needed to handle everyday life's problems. Students in Pakistani schools keep the concepts in mind for academic purposes. Like their educators, they require perceptive, clever, or fundamental skills. The current situation has had an impact on the nation's overall level of training (Oliver & Bonito, 2025).

Staff collaborations: The relationship between the principal and the staff, as well as between the instructor and the educator, is crucial for creating a culture of trust. Some of the teachers who hate sycophancy have been de-spurred by this training and have developed doubts. Typically, school administrators are like a lord and the school a realm (Government of Pakistan, 2001).The ability of school administrators to coordinate staff is typically lacking. They require a vision that will make them feel superior to educators. This practice has led to situations where interactions between educators and administrators occasionally occur or verbal conflicts begin. The understudies are directly impacted by the current situation. In fact, there is a meaningful effect on the cycle of training in the schools (Isa et al., 2025).

Community relations: Small-scale networks exist among schools. Teachers are experts in major change. The educators are leaders in public education. The concept of parental assistance is underdeveloped in Pakistani schools. Because every student's display is linked to the instructors' display alone, educators frequently receive critical feedback from parents (Muhammad, 2002). Without realizing that how students portray themselves is tied to the work of the school administration, guardians, and instructors, educators are held accountable for students who perform poorly or demonstrate bad grades in assessments. It is wrong to blame only educators for the poor student performance on assessments and other tasks. There is a lack of perception regarding the fact that the guardians and network are equal partners in the progress of the student (Chakour et al., 2019).

School politics: Pakistani schools lack political autonomy. Politicians in the public and other professionals employed in various government institutions make the predetermination of instructors. The integrity and quality of the framework have been destroyed by the political impediment in the expert territory (Malik, 2010). Legislative concerns have occasionally been skillfully incorporated into the teaching portions. For instance, there are small ideological groups operating in colleges and higher education institutions. This has had a significant effect on the cycle of efficient education (Isa et al., 2025). Their professional

commitments have been impacted by this training. Different outside groups have joined the political organizations in schools. These conditions in schools have created very dangerous learning and teaching environments for students and teachers (Khalid, 1998).

Issues of accommodation: Educators are not provided with any private conveniences by the government. In this way, convenience and asylum issues affect instructors who are stationed in remote areas or outposts. The main reason of this is the lack of public authority agreements with the personal issues of the instructor network. The lack of real convenience prevents educators from carrying out their duties with full care and completion (Hussain, 2001). It has been observed that teachers who are stationed in rural areas are more interested in moving back to their nearby stations after moving to the school. The instructors' presentations are adversely affected by this training, which also causes annoyance and mental anguish. The instructors who are members of their families are incompetent (Government of Punjab, 2004).

Frequent transfers: In Pakistani institutions, instructors are consistently subject to the benevolent whims of the administration and training staff. Usually, favoritism and nepotism are used to determine the swaps. Due to this training, a huge percentage of instructors continue to experience high levels of mental anguish, unpleasant influences, and urgent circumstances (Devi, & Borbara, 2022). The main reason for the ongoing exchanges to distant places and areas is decided based on relationships and favors at home. Teachers who are relocated often don't have much time to settle to their new environment. The act of constant educator turnover has negative effects on teachers, but it also has effects on how students are taught and how they learn in classrooms. This directly affects how understudies present themselves. The degree of training is altered in this way. The instructors' lives are also negatively impacted by this instruction. The public activity of the group of instructors, in particular that of their students, continues to be under pressure (Zulkiffli et al., 2024).

Financial problems: In Pakistan, financial assistance from the government is given to education the least. Less than 2 percent of the Gross Domestic Product is spent by the government on education (GDP). The region has continued to be the most underfunded and lacking in exhibitions in consequence of receiving low financial aid. The training field has become the most despicable profession in the country as a result of this reality. Since teachers are among the poorest financially in society, they frequently have to sacrifice their professional integrity in

order to find other sources of income. In the country, teachers are paid more than those in lower positions (Zafar, 2003). In general, teachers are paid without attending classes. In government-run institutions, the percentage of absent teachers is higher. A large number of instructors carry their own businesses in addition to their professional responsibilities (Shahzadi & Perveen, 2002).

Political interference: Pakistan's educational system is not free from the influence of domestic political problems. Since the country's founding, the organization of education has been completely political. In Pakistan, virtually all foundations are run in accordance with governmental authorities. "The concept of institutional opportunity is not understood. The main reason for the problem of political blockage is that hiring decisions for educators frequently are based on political presumptions" (Shah, 2003). The level of achievement of the teachers' commitments has been severely impacted by their failure to take advantage of professional opportunities. Due to a lack of professional independence, educators are unable to innovate. They engage in their task with inspiration (Saleem, 2002).

Statement of Problem

The study under consideration was specifically created to pinpoint the challenges experienced by Gujranwala secondary school pupils in the science group. The study looked into the impact of scientific classes on secondary school pupils in Gujranwala's classroom participation. One of the biggest problems for teachers is how to get students interested in learning. Due to the fact that science subjects, particularly pure sciences, are still not being studied properly at the secondary level in Gujranwala, the researchers have chosen to conduct a study to identify the challenges faced by science group students. The study will be also beneficial for parents, principal, administration etc.

Research Objectives

Following were the objectives of this study:

1. To identify academic problems faced by science group at secondary level.
2. To find out the pedagogical problems faced by science group students at secondary level.
3. To highlight problems faced by science group students due to less/non availability of physical resources.

Research Methodology

The detail of research methodology is as follows:

Research Design

The study was designed to estimate the problems faced by science group students of secondary level in Gujranwala. A descriptive survey design was used to collect data from students. Government and private secondary schools in the district of Gujranwala make up our study's population. In the district of Gujranwala, there are 292 public secondary schools and 1528 private secondary schools. By using a questionnaire to gather information from students regarding identification of problems faced by science group students at secondary level school in district Gujranwala. Ten secondary public schools and ten secondary private schools from District Gujranwala comprised the sample.

Population and Sample

The population of the study was the Government and private secondary schools of district Gujranwala. There are 1528 private secondary schools and 292 government secondary schools in the district of Gujranwala. The study's target population for its survey was male and female students enrolled in government and private secondary schools of district Gujranwala. From total schools of district Gujranwala, 10 government and 10 private secondary schools were taken as the convenient sample. A total of 240 students, 100 in grade IX and 120 in grade X, were chosen at random from the sampled government and private schools of the District Gujranwala.

Table 1

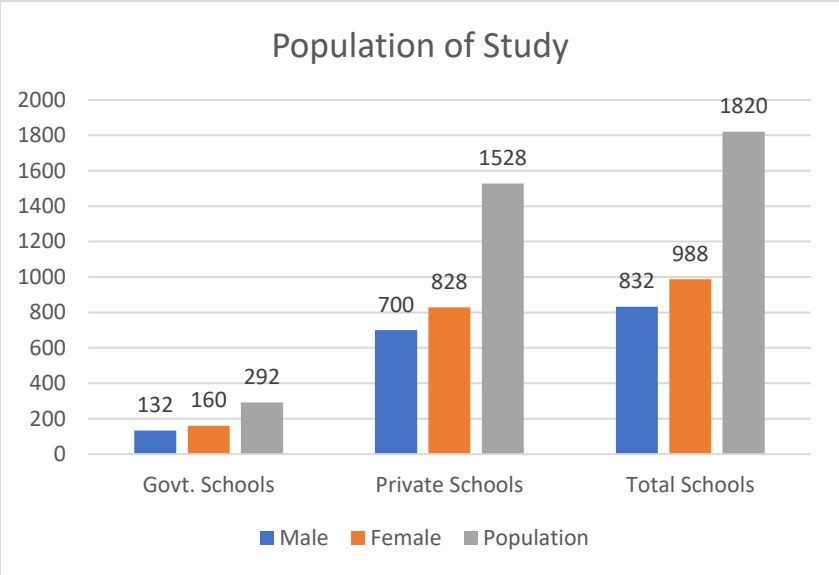
Frequency Distribution of Population

Schools	Male Schools	Female Schools	Total Schools
Govt. Schools	132	160	292
Private Schools	700	828	700
Total Schools	832	988	1820

There were total 832 Male and 988 schools in District Gujranwala.

Figure 1

Population Distribution of Secondary Schools in District Gujranwala



Research Tool and Data Collection

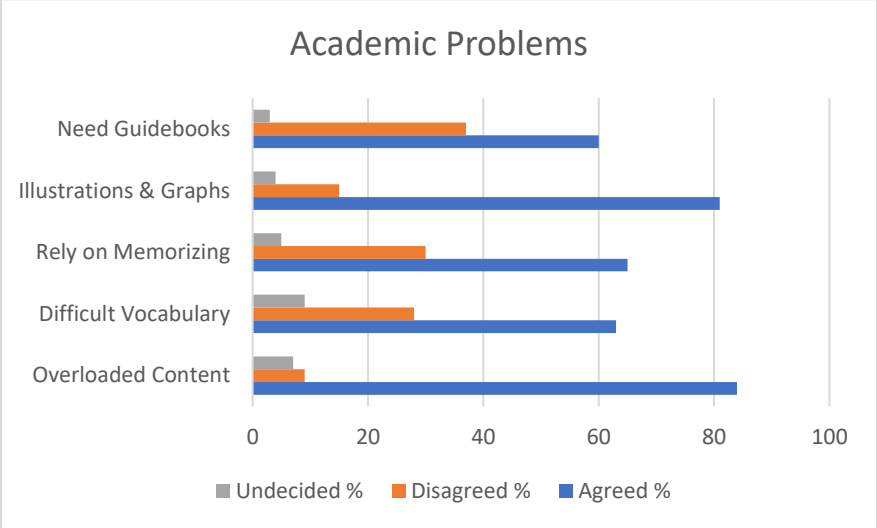
A questionnaire was employed to collect information from the pupils. The questionnaire was created using the findings of the literature review. A questionnaire is a set of various questions designed to collect the information required to complete a research study. The data were obtained through field visits and by filling a questionnaire. The questionnaire was comprised of 30 statements. A respondent chose an answer from a set of possibilities on a five-point Likert scale in the questionnaire. Depending on their own judgement, the respondents choose one of them. Validity of the questionnaire was ensured and reliability of the questionnaire was also calculated using Cronbach alpha as 0.84.

Results

The academic problems of science students are as follows:

Figure 2

Academic Problems of Science Group Students



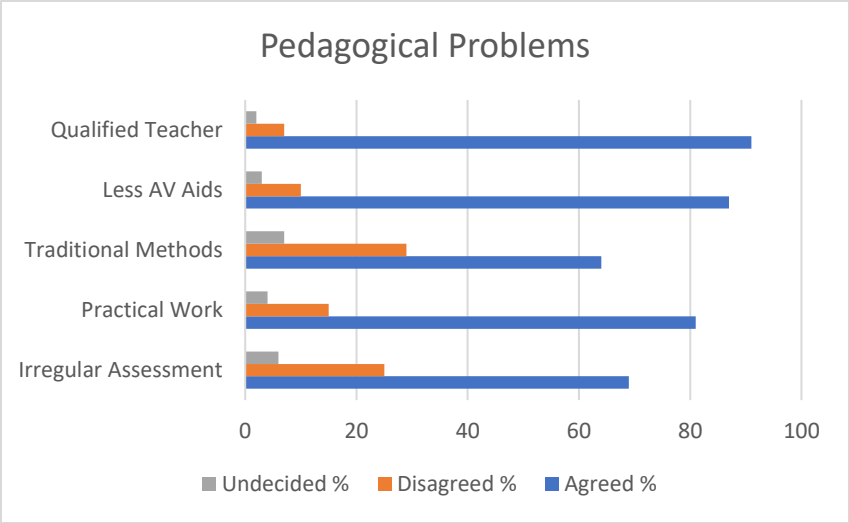
Secondary school students of science group revealed through their opinions that the course content is overloaded. More than 60% of students were of the view that they need helping books to fully understand the concepts because course books have difficult vocabulary and lack illustrations and graphs where needed. Similarly, 64% of the students responded that they rely on memorizing instead of clearing the science concept.

The science course content is overloaded (lengthy) and contains content that are not relevant. The science course content is updated and is suited to the mental level of students. The course content includes vocabulary /terms difficult to understand. English as medium of instruction makes the content difficult. Science students need to buy guide and helping books to understand the topic .text book contain enough illustration and graphs to explain the content. science students rely on memorizing the notes instead of doing concept-based study.

The problems of science students due to pedagogy is as follows:

Figure 3

Pedagogical Problems of Science Group Students



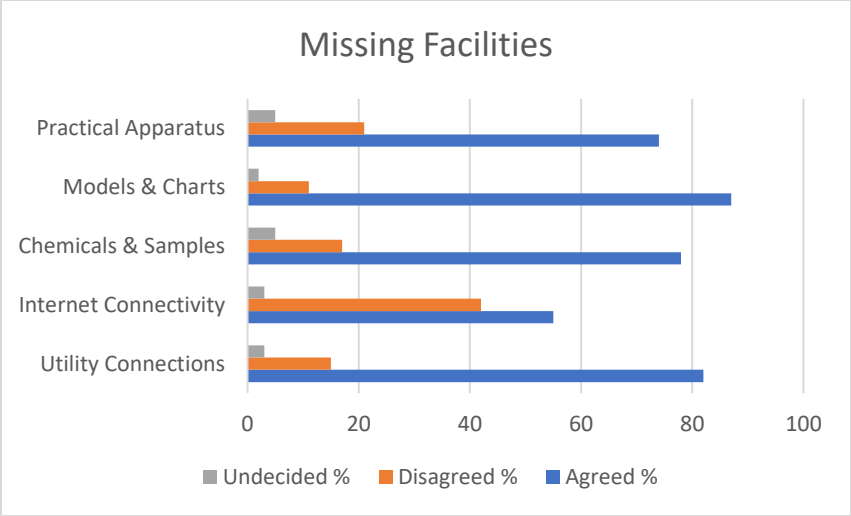
Pedagogical problems of the secondary school science group students were assessed by collecting their responses through questionnaire. It was observed that a large percentage (91%) of the students agreed that the teachers were qualified. But most of the science teachers use traditional methods to teach science or otherwise include less AV aids and practical work. Additionally, 69% were of the view that teachers conducted assessments in the classroom, but off-and-on.

The science teacher is skilled at imparting knowledge of science using the lecture and lecture combined with demonstration methods, but she is not skilled at using activity-based approaches. The science instructors don't use contemporary teaching techniques because due to fewer scientific classes each week, overcrowded classrooms, overloaded science courses, digital divide and a lack of resources. It is recommended to undertake science practical assignments while studying the required theory material rather than near the end of the semester or right before final exams.

The problems of science students due to missing physical facilities are as follows:

Figure 4

Physical Resources Problems of Science Group Students



Availability of the physical resources in the science labs was investigated from the science group students, and it was revealed that science labs contain science tables, cupboards, racks, etc., but 75% of the students informed that labs lack practical apparatus, 78% informed that chemicals and sampled required for practical work are missing. Lack of internet connectivity also causes digital divide among students. It was revealed that most of the science labs were supplied with science apparatus. Most schools had the demonstration table, electricity, water supply, physics related instruments, glassware, charts, models, microscopes. However, science labs were weak in gas supply, chemicals, racks, cupboards, and multimedia projectors. Libraries provide appropriate internet services for learning purposes. Science students generally lack motivation and have low self confidence in learning. School management does not conduct study tours for science students to increase their knowledge. Budget is always short for co-curricular activities e.g., science field trips, science exhibitions etc.

Discussion

This study revealed several problems of science students. Studies reported that science learning can be improved using creative pedagogy (Affandy, Sunarno, & Suryana, 2024). Similarly, there is significance of study tours. Xo and Ho (2024) also supported that field trips enhance the

learning experiences. The lack of finances also enhances the problems of not only teaching but also of learning. Mustafa, Nguyen, & Gao (2024) also reported that due to lack of funds, students face challenges and problems in learning science.

Conclusions

The purpose of this study was to know and identify problems faced by science group students at secondary level in district Gujranwala. The research concluded that science group students faced problems regarding medium of instruction, overloaded science courses, overcrowded classrooms, and lack of physical resources especially in science labs and library.

Recommendations

The following recommendations are made on the basis of findings and conclusions

1. Government and the owners of private schools must provide and facilitate the school's management and teachers with required equipment of science subjects.
2. The right blending of theory and practice is essential. The needed practical work may be completed in conjunction with the relevant theory topic, although it must not be completed near the conclusion of the course or right before the yearly examination.
3. Teachers should also be trained to utilize these scientific tools in classroom so they could use them effectively instead of considering them an extra burden.
4. Students should also be provided with basic knowledge of scientific tools as well as science concepts so they can understand and feel comfortable and convenient while using these scientific tools.

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