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RESEARCH ARTICLE

PASSIVE ATTITUDE OF STUDENTS IN A CLASS ROOM SETTING – ARE TEACHERS THE REAL CULPRITS?

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Abstract

Many high school and university teachers complain about the non-responsive, passive behavior of students in class. Students don't appear to take interest in class room activities that not only negatively affects their own learning process (and ultimately grades) but also tends to decrease the confidence of a teacher regarding his/her teaching abilities. The current study was carried out in order to assess the potential causes of lack of interest among undergraduate (UG) and graduate (grad) students with chemistry as major subject. The study involved survey and / or interviews of 200 university UG and grad students; no distinction was made regarding the gender, origin /locality (rural/urban) and age of students. The same were however recorded to establish any quantitative relationships for future studies. The results of survey and/or interviews are presented here as qualitative study, purely based on self-reporting of issues by students regarding the problems in the education system and their own understanding of the possible causes.

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Introduction:-

Chemistry has always been considered as a dry and boring subject but still a large number of students tend to take up chemistry as major. The universities and colleges are producing a large number of UG and grad students who, although have high grades, lack the basic subject knowledge they should have in order to pursue a career in chemistry or to compete for higher education.

Science and technology, esp in the field of chemical sciences, has shown tremendous growth in the last few decades and a great amount of research is being done and published everyday, mile stones being achieved in development and discovery of novel technologies, new drugs are introduced in markets for the cure of deadly diseases but in spite of all this advancement, the students of this current era are seen unable to grab the knowledge being taught no matter how simple it may be. The teachers and instructors are often seen complaining that students don't participate in class and have little awareness of what is being taught.

When observed, these UG and grad students appear to be bored, are found watching out of the class room window, looking at their watches/ cell phones, teasing each other, yawning; waiting for the teacher to go out after the class time finishes; a few a not even present mentally in the class. The majority of these students are involved in all sorts of activities other than participating in class (Goodlad, 1984; Larson & Richard, 1991).

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According to the teachers, large majority of students of current era are highly irresponsible, when they are asked any question they fail to respond and if given any home assignment, they simply do the copy paste thing and if asked anything about the content of submitted assignment, they don't know anything. The trend of students to visit libraries is rapidly and tremendously decreasing or better said, diminishing Battin et al, **2000**; Jonassen&Blondal, **2005**; Allen et al, **2007**). The culprits for such unconcerned behaviour of students being the internet, social networking, highly advanced cell phones and other digital devices, etc. This is what teachers and parents think about their students and children.

Since these problems were felt by majority of teachers but not all of them, that hints that the problem lies inside the class room and has to do something with student-teacher relationship. As there are always three sides of a story: your side, my side and the right side; the author decided to investigate the students' side of story in an attempt to highlight the real causes that has resulted in the consequences stated above.

Methodology:-

The current pilot study was designed to explore the reasons why students don't perform well or appear to be alienated from the class room /educational setup. The study is solely based on interviews/ descriptive surveys of 200 chemistry UG and grad students from different public sector universities of Punjab province in Pakistan. The descriptive surveys were used in order to give the students the liberty to give a frank and detailed account of what they had to say about a given question. The opinions of teachers (also in descriptive/open-ended form) were also recorded however these are only indicated where felt necessary.

The survey comprised of simple questions that revolved around teacher-student interactions, what qualities students want to see in their teachers, how students want to be taught for better and clear understanding of the subject. Questions regarding the effect of class room environment on learning process, effect of teachers' age, gender, punctuality, language usage and teaching style were also part of survey. No limit was set on the word/page count for the response. The students were asked to mention their age, origin (rural/urban), gender, program (UG/Grad) and semester which would be helpful in quantitative studies in future.

Sampling:-

Data was collected using open ended surveys and interviews of students of UG and grad level. The purpose of open ended survey was to evaluate the creative writing and reasoning abilities of students as well as to get a clear insight in to their problems/issues. Prior to being asked to volunteer to participate, students were informed of the aim of the study and were informed that all participation was voluntary and anonymous.

Discussions:-

Based on the survey responses of the students, following are the major issues that is responsible for lack of interest / participation of students in a class:

Behaviour of teacher – Discrimination:-

Teaching has been and still is one of the most respectable professions in both developed and developing nations. Teachers have been considered as role models for students. According to students themselves, the students are influenced by the personality, ideas and even beliefs of their teachers. Teachers should ideally be like parents - impartial, kind, consoling and understanding. Students should feel free to talk to their teachers about their issues and ask questions without hesitation. If unable to answer, the teacher should have the courage to acknowledge his/her lack of knowledge regarding a specific query. These are the ideal properties a teacher is supposed to possess according to majority of students irrespective of their age, gender and locality.

However, majority of students complained that many of the teachers were biased, impartial and favored some students over others. The discrimination was based on:

1. Gender: male teachers favored female students, some male teachers encouraged and appreciated male students and ignored female students; many young female teachers were said to be more friendly towards female students while middle-aged female teachers were more critical towards female students.
2. Good looks: According to a large majority of students, irrespective of their gender, the teachers favored or were said to be inclined towards students who are good looking; while students with darker complexions were subjected to mockery.
3. Family ties: teachers tend to favor students with whom they have family ties.

4. Students' performance, etiquettes, talkative nature of students: students who participate in class actively and get good grades in exams are more appreciated and acknowledged than students who although get good scores but don't participate in class (mostly due to their shyness). Good mannered students are also favored and likewise talkative students are given greater importance by a majority of teachers, irrespective of teachers' gender. A number of students also mentioned that many teachers felt uncomfortable with students with high intellectual abilities.

When asked for opinion about the discrimination issue, a senior and experienced educationalist responded: "I do agree with most of what the majority of students say; but I can only comment on the preference of teachers for students who perform well in class, are talkative and are well mannered. Such students give teacher the confidence that he/she is important and is being heard and responded. It is such students that make a teacher comfortable and therefore, teachers are more inclined towards these students. Regarding the discomfort with students who tend to know many things, I would just say that it doesn't matters, teachers only feel irritated when students bluff rather than share his/her advance knowledge about a certain field".

The discriminating behaviour of teachers towards students, for whatever reason, makes the students distant from teachers and not only creates a lack of trust between the pupil and the mentor but also breeds ill-will among students themselves. This discrimination also negatively effects the progress of students no matter on what side of fence they are. The students who are on favourable side don't study since they know they would get good grades while the other side does not / cannot prepare well knowing that no matter how well they perform, their efforts would not be acknowledged. The latter group often suffers with low self-esteem and it is these students who grow up to be under-confident professionals.

One of the biggest concerns raised by female students was that male students tend to defame them by criticizing the inclination of male students towards them and therefore raise doubts on their credibility. Female students also point out that female teachers are mostly tender towards students however a few are more critical towards female students and cognizant of male students.

Preparation & Teaching Skills:-

According to almost all students, a teacher who understands the subject/ certain topic but does not know/ does not has the skill to effectively deliver it, fails in a class room. A good teacher understands the students' psychology & needs and is therefore able to implement ways to help student understand what is being conveyed to them. The eye contact of teacher with students and his/her confidence on not only him/herself but also on the students is crucial for this purpose. The teachers who don't face students or continue to read from book/notes make a highly negative impression on students.

According to Hammond (2006), *two* components are critically important in teacher preparation: knowledge of the subject to be taught and the knowledge of skill in how to teach that subject.

According to Teacher survey on professional development and training(1998), in order to deliver better in class, a teacher must be able to:

1. Maintain order and discipline in the classroom
2. Implement new methods of teaching
3. Implement curriculum and performance standards
4. Use student performance assessment techniques
5. Address the needs of students with disabilities
6. Integrate educational technology into the grade or subject taught
7. Address the needs of students with limited English proficiency or from diverse cultural backgrounds.

Many teachers often come in class without preparation – says a majority of students. The reason may be many fold: great amount of workload, personal problems and/or non-serious attitude of teachers:-

A teacher, who goes unprepared in class, lacks the confidence to face his/her students, cannot deliver the lecturer and in order to compensate this, such teachers tend to become more frank with students. Some of such unprepared or underprepared teachers often face problems of class management/control and are found blaming or scolding students to hide their own embarrassment/ lack of skill. As lame excuse, such teachers often blame parents for the ill-disciplined and crack-head wards.

Students like to be asked to participate in class; all of them despite a number of them may appear to be passive, once asked, they do participate. Participation helps students to understand better and also helps them to conquer their fear of facing teacher/ class fellows which ultimately helps them to gain self-confidence; says an undergraduate student. Another student says that good and skillful teachers know when to appreciate and when to be a hardliner. Students are not comfortable with teachers who are too frank or too harsh.

A graduate student pointed out an important aspect according to which the job stability of a teacher is a parameter of prime importance as well. The visiting teachers (aka the emergency permit teachers) tend to be less concerned with students progress and don't take their duty seriously whereas the teachers on contractual-basis are hard working since they have to make sure that they get the next contract as well. The permanent faculty don't have the fear of job security therefore, a majority of such teachers don't care much about the students progress as well. Another student is of the opinion that an under-qualified teachers also contribute negatively towards student growth; although that teacher may have the skill to teach, the students always think the teacher as inappropriate source of learning. The opinion of these students is somehow consistent with the independent findings of Betts (2000) & Goe (2002), according to whom, a greater percentage of emergency permit teachers and/or under-qualified teachers in an institute negatively impact the students' achievement.

Lack of inspiration:-

When asked about the reason of their choice to choose chemistry as major, many of the students were unable to give a satisfactory answer; a large majority didn't knew the reason themselves. About 80 per cent of the students (both under-graduate and graduate) responded that they have heard that chemistry has a greater scope, 10% responded their parents forced them; 3% were inspired by the chemical equations or the fascinating colorful reactions displayed in dramas or movies and the remaining 2% of students responded that they were inspired by the universality of the subject as it encompasses everything from living to non-living whether present on earth or wandering into the vast emptiness of space and even the object that so far have not been characterized as living or non-living (i.e., the viruses).

A graduate student, when asked the reason for not knowing the reason for the choice, responded that their teachers themselves didn't appear to know the reason why they chose the subject themselves when the teachers were asked in the class. When parents ask different people or take advice from teachers whether the child should opt chemistry as major, they are encouraged saying that chemistry has a wide scope; the scope is not however defined and majority of student don't even know what scope means. The 2% of students who understood the real importance of subject had either been taught by highly qualified teachers involved in research activities or had family members (or friends) with exposure to advance knowledge/research.

A final year undergrad student commented, (quotes of the student are copied here as such): "The teachers should be trained to teach, inspire and educate before subjecting them to teach students. The majority of teachers are not serious in transferring knowledge; they just come in class, do some chit-chat and go away. Majority of male teachers do the same and the female teachers often lack the confidence to face the class. I as a student feel that the purpose of university education is just to rob our parents of money. We are not taught to understand and learn, we are just given the degrees which our parents have paid for".

According to an undergrad student, an ideal teacher should be highly educated (preferentially PhD), should have a significant age difference between students and teacher (ideal age was stated to be 35-45 years), should be well mannered, diligent, hard-working, loyal in his/her work, should teach in conceptual manner, should be friendly and able to communicated efficiently with the students.

According to another student, "An ideal teacher should have strong grip on his subject. He/she should be able to understand the nature of students and be humble to teach in a good and easy way. Almost each student need an open environment to learn with no complication so extra strictness is somewhat bad for study and decrease understanding of the students. Another research reveals that a common person cannot concentrate on some topic more than 40 – 50 minutes so by keeping it in mind, an ideal teacher can involve the whole class to get attention on the topic in a good way may be by some smiles".

Students' majority was of the opinion that they should be taught about the recent trends in the research in the field of chemistry in a simple and understandable way. The language used in lectures is an important factor, say a number of

students. The language should be such that an average student is able to understand. A graduate student says, “we cannot understand what is the purpose of reactions or concepts we have been taught. The language and the explanation used are way too complex to be apprehended. We have graduated but still don’t know why we have been taught quantum chemistry, free energy, etc. we don’t know what is the application of the reactions and the complicated reaction mechanisms. We should be taught the reason why are we being taught a particular subject.”

According to an undergrad student, “Most of the times, chemistry curriculum contain such topic that have no practical applications. It should contain all practical applications that a student can apply. For example, it should include examples of things important in our daily lives. These are things that students enjoy and learn more easily.”

A number of students, mainly male students, are of the opinion that teachers tend to be quite harsh towards them. Such teachers are feared but not respected; teachers should maintain some distance, agree a majority of students, but they should be approachable; a student must be able to ask what lies dubious in his mind. An necessarily friendly teacher normally does not has the skill or knowledge or both to answer a query.

The response regarding the gender of teacher was somehow mixed. Some students were of the opinion that female teachers are less biased and to some extent more strict towards female students while male teachers are more friendly towards females than male students.

Another group of students is of the opposite opinion. The quotes of a student are copied here: “Off course, gender matter a lot in teaching. Mostly, male students can suffer from female teacher while they feel free from male teacher. On the other hand, female can learn from both type of gender teacher. Most of the time, concepts of female teacher are not clear and they never appreciate their students to learn other than their book (text book). Females have strong ability to remember lesson word by word that is hard for males. So in this case, teacher should promote open reading and writing and should not depend on one source. In some cases, female teacher support females student while male teacher also support females students and males are neglected and suffer a lot.”

One of the graduate student commented: “No, I don’t think so that gender of teacher has any effect on learning abilities of students. We live in 21st century where men and women have equal rights. They are equally working in every field of our society. So I think it is not a big deal. The girls and boys must have confidence to communicate with male and female teachers efficiently. However, girls feel comfortable in discussing their issues with female teachers. Students understand the topic easily if it is delivered in a conceptual way. There is no importance of gender for students in lecture delivering. So, in short gender has no effect.”

A more liberal point of view was stated by a student: “the teaching skill and knowledge is not dependent on gender but it varies from person to person. There are many male teachers who don’t teach properly and the female teachers in comparison are more dedicated but a defining line cannot be drawn. We can’t generalize which of the two genders is good in teaching”.

Assignments, class presentation and class participation:-

The knowledge of chemistry is very vast, it encompasses everything. It requires greater and deeper insight to have a look and understand the true beauty of the apparently dry subject. Learning chemistry (or any other subject) requires dedication of teacher and the participation and contribution of student. Teaching is a give and take profession, you give care and opportunity to learn to your students and get the respect from your students paid in return for your services.

Teachers often give their students some home assignments; some of these assignment are regarding:

1. The topics students have already studied.
2. The topics that are not included in curriculum and teacher wishes the students to go through some interesting information and learn it themselves and share with their fellows in the form of presentation
3. The topic that are included in curriculum but teacher uses to cover it in form of an assignment.
4. The topics that are supposed help student understand the matter of an upcoming topic.

Previous studies have revealed that type of assignments that allow students to learn a topic beforehand are of significant importance. Such assignments help students to ask questions and have a broader and clearer understanding of a topic under consideration. According to Corno (1996), assignments should reinforce what is

being taught in class and should promote the students to go beyond and extend their learning into new and richer areas.

The subjects of the current study justly claim that the majority of assignments are given in order to complete a syllabus since the short duration of a semester often does not allow the teacher to cover/complete a given course.

When students were asked which type of assignment they would prefer if given a choice, a variety of responses were received and no generalization can be drawn from it. One thing that can be generalized from their responses is that whatever be the type of assignment, the exams should be from the what the teacher has taught not from what students have learnt from self-study. One of the student commented in interview, “if we have to learn things by our own, then what is the purpose of teachers!”.

When asked about the importance of assignments in learning process, a range of different opinions were observed. According to one of the students, “somewhat it is true that assignment helps in getting knowledge but mostly students are not sincere with their assignments. Similarly, teachers also do not read assignment with full concentration and receive it as a formality. But those students who take it serious, it a good source of acquiring knowledge because when a student search material for assignment, he/she would have to read a lot of information related to topic. In this way, he/she gets more knowledge from assignment preparation.” Another student responded, “No, I don’t think so. I think assignment is wastage of time and energy because in assignments an unknown topics given to us. We don’t know even a single basic information about that topic. Then a viva is taken from us regarding that assignment. So you tell, how can we gave that viva efficiently when we don’t know anything about the particular topic? I think this is wrong with students and their marks.”

When asked about the preference of handwritten versus type written assignments, students acknowledged that it is the handwritten assignment that allows them to learn not the type written assignment. “Handwritten assignments may not be in good arrangements as compared to typed assignments, says an undergraduate student, while typed assignments show good pictures and can be represented in an organized way. If we look at handwritten assignments, students can learn their assignments more easily than typed assignments. If one thing he/she practiced, he/she would able to learn it more easily as compared to typed assignments because typed assignments may be copied & pasted from some place or site.”

A number of students had the reservation that due to their bad handwriting, the teacher would not give them better grades therefore they prefer type written assignments. The majority of students also complained that teachers ask for assignments but they don’t study them and the grades are marked solely on the basis of presentation and formatting. The content of the submitted material is never given its due importance. That’s the reason students don’t work hard on assignments and just do the copy paste thing.

When asked about presentation, majority of the students considered this activity to be positive approach in building their confidence and also as a means to rehearse the teacher they wanted to be taught by or the teacher they want themselves to be.

Teaching style: Inductive versus conclusive:-

The teaching style should be inductive rather conclusive. The students take more interest and tend to participate more effectively when they are induced to reach a conclusion themselves. Students have been observed to participate more enthusiastically in a class where a teacher first narrates a problem, provide some necessary hints and lets the students to solve the puzzle rather than the case in which teacher solves the problem and tells the students to note down what has been told.

The use of analogy has a greater significance in understanding complicated concepts that are otherwise difficult to digest; common examples being the resonance concept of organic chemistry and/or the tunneling effect in physical chemistry. Students take keen interest when a complicated concept is presented to them as a cocktail of analogy and a problem question. “Let the students reach conclusion with bits of provided partial information, let them solve the puzzle themselves and they shall learn and never forget that concept throughout their lives”, says an experienced teacher.

The teaching of spectroscopy and mechanisms in chemistry has been a tough job for the teachers and is equally hard for the students to understand these concepts unless explained thoroughly and with clarity. When asked about the way mechanisms should be taught, one of the students responded, "chemistry mechanism can be best understood by taking it as a mind game. Students should be guided in such a way that they take it as a challenge and practice it as mathematics. The teacher should walk the students through each step and make them understand the reason of use of arrows and the shifts in electronic densities and the driving forces involved in bond breaking and/or forming." The response, although from an undergraduate student, is no doubt a key in teaching the mechanisms. Each step should be explained rationally, reasoning why a certain reagent attacks a specific site not the other; why a group leaves in preference to other, etc.

Some teachers have been observed to make use of colored board markers; in their opinion, the use of different colors makes students more attentive in the lecture. When students were questioned regarding the use of colored board makers, two types of responses were observed. One of the group favored use of colored markers by saying "Use of colored marker is more fascinating and a best way to teach a particular topic. A student can understand the differences between different parts of the topic that cannot be explained by using simple one marker. For example, attack and reaction can be best explained with colored marker by showing their direction. It also shows the difference between reactants and products from reagents and catalyst that are involve in a reaction." This group of students was exclusively males. The opposing group was of female students who preferred use of colored markers only for explaining mechanism. According to one of the female students, "the use of different board marker inks tends to deviate the attention from the topic in question. The use of different colors is only helpful in understanding the site of attack on a substrate by a reagent. This practice should only be limited to teaching of reaction mechanism."

When asked about the use of multimedia in teaching practices, different responses were observed. The responses were dependent on the seniority of students. A majority of undergraduate students felt excited to be taught by means of multi-media saying that visualizing an animated concept would help them to understand a topic more clearly than by merely imagining in their head. However, the graduate students were of some different opinions. According to an undergraduate student, "*if lecture consist of some real pictures or some video, then the use of multimedia is the best option for teaching. Graphics attract the concentration of each student that is a good way of teaching*".

Communication Gap –A necessary evil?:-

Some students complain teachers are way to friendly / frank that they don't teach. Such teachers are not taken seriously by the students and that ultimately results in their losing of their respect amongst students. Some other teachers tend to be too much serious and harsh towards students that students find it difficult to ask questions from them directly.

The teachers with harsh attitude are rightfully of the opinion that there should be difference and distance between students and teachers. Otherwise, they say, teachers will fall prey to students flattery, and will ultimately loose their respect as a teacher.

The two extremes exists in majority of the teaching faculty and unfortunately, neither of the two are successful. The successful teachers who maintain a safe distance, and enjoy the respect and confidence of students at the same time are those who know how to balance the distance and the intimacy. One thing for sure, the communication should only be related to studies and nothing else.

Students when asked about the importance of communication with teachers and lack thereof responded that communication with teachers is necessary since often they find it hard to fully understand a concept that has been taught in the class and if teacher is not willing to / appears to be willing to communicate, the concepts remain unclear. A few students were of a bit different opinion, according to their school of thought, the teachers who taught with full dedication in class and maintain a significant distance from students gain more respect than other teachers. Such teachers don't ask for favors from students and if they ask for anything, student feel very much obliged to serve them.

Difference of opinion aside, majority of students were of the opinion that a communication via electronic media is an important means to stay in contact with teachers since a large number of students are shy enough to talk directly

to a teacher. The communication via email and/social media help the students to stay connected to teachers even after the student(s) has graduated.

Rating of Teachers Performance:-

There has been a trend of rating of almost everything: TV programs, commercial products, universities, research journals and now even teachers are rated for their performance. The rating is a possible reason due to which teachers tend to be friendly with students so that students grade them to be a good teacher. This has resulted in a lowered self-esteem of teachers. A growing trend is that teachers have started to focus more on their friendly relationship with students rather than improving their teaching skills.

When asked from students regarding their opinion on teachers' rating policy, students considered it their right. According to the students, they pay to be taught and this rating is the only way the students can convey the concerned higher authorities if they are satisfied by a certain teachers' performance. Although students highly approve the rating system, a number of students do have a concern that this rating system is often misused for personal advantages.

A few students further proposed that teacher(s) should ask students to give feedback of the teaching practice (s)he is following on monthly or bimonthly basis. When asked about the nature of feedback, more than half of the students favored feedback on a pre-printed form indicating options to be selected while less than half favored a descriptive feedback pattern.

Class room environment:-

Teaching is hard work and some teachers never grow to be anything better than mediocre. They do the bare minimum required and very little more. The great teachers, however, work tirelessly to create a challenging, nurturing environment for their students. Great teaching seems to have less to do with our knowledge and skills than with our attitude toward our students, our subject, and our work. In general, majority of the students agree that following should be characteristics of an ideal class room for optimum learning.

1. Every one, either student or the teacher, should be valued in the class room. The opinion of each individual counts whether he/she is right or wrong. In an ideal classroom, there should be an atmosphere of trust and respect for everyone by everyone. Teachers should try to memorize name of their students; teachers who address each student by their names are more respected and responded to those teachers who don't consider this important.
2. Rules and regulations should be defined and followed in order to avoid conflicts. There should be sense of community in a class with every individual well aware of his responsibilities and rights of fellow individuals.
3. Teacher should be approachable; no doubt there should be difference and distance between teacher and student however, when approached by student, the teacher should possess good listening skills and should have the ability to be patient with students no matter how badly he/she is facing personal problems.
4. The teacher should show students that he/she has high expectations from them. This gives students a sense of importance and makes them strive to achieve high goals.
5. The teacher should keep him/herself abreast of latest development in the subject and should promote the students to share new things they learn. Instead of asking students for lengthy assignments, the students should be asked to answer a critical question for which they are forced to search and go through books in library.
6. Just like a new fashion or a new product attracts people, implementation of newer methods of teaching/demonstration attracts students as well. The teacher should introduce new methods of teaching other than conventional ones to build the students' interest.
7. Students observe their teachers very critically. Not only have they observed how a teacher teaches but also how he/she behaves with students, colleagues, his /her superiors and with administrator. The teacher should maintain professionalism in each aspect of his life whether personal appearance or organizational skills.
8. A teacher should ask for feedback from students on bimonthly basis or as he/she feels convenient. This increases trust of students on teacher and makes them feel that their opinion is important for the teacher.
9. A teacher should try to promote students to think, ask and reason. This is the true spirit of science. Let them think beyond boundaries, encourage them to propose some idea / project and present it in class no matter how irrational it seems.

Mode of Examination:-

The purpose of exams is to evaluate the understanding of students in a given course. The examinations are a means to decide whether a student has enough knowledge to make him/her eligible to be promoted to higher grade/semester. The paper pattern being promoted / encouraged these days involves a higher percentage of objective questions which are multiple choice question (MCQs) based and the subjective section has been reduced. The advantage of this practice is that it allows quick evaluation of a student and makes the paper marking easier for the teacher and also discourages the cramming habit of students. However, if critically evaluated, the decreased subjective section is leading to decreased creative writing abilities of students.

When students were asked to comment on the advantages of MCQs over subjective questions, the students responded that it is easy to prepare for MCQs since they know that answer is one of the 4 or 5 options and if you have read the topic even superficially, you can make a lucky guess, same is not true for subjective questions. A majority of students were of the opinion that teachers don't read the subjective questions thoroughly and the marks are awarded based on paper presentation and the quality of handwriting; MCQs don't have such issues.

When asked from an experienced educationalist, the respondent acknowledged the concerns of the students and agreed with them; however, the respondent proposed that the subjective section should involve critical thinking questions that cannot be answered by material learnt by heart (in other words crammed material) and the required answer should not be that much long that the teacher find it hard to read a lengthy response. The use of reaction mechanisms with missing reagents or intermediate products, reasoning of a certain fact etc are better alternatives to MCQs. "the students must have the ability to think with their own heads and draw a suitable conclusion or provide a plausible reason by using the creative power of their minds", say a chemistry education specialist.

Conclusion:-

The study based on open-ended survey and interviews reflects that the educational system has now become an industry and has lost the true spirit of pupil-mentor relationship. Students want to feel important; they want to learn with reason and respect. The culprits that are leading to failed education system in Pakistan are the biased behaviour of teachers as well as the job insecurity. They responses of survey also reflected the inability of a large majority of students to convey their own thinking. A large number of students copies material from internet to respond to simple questions like the "why chemistry fascinates them?". A number of students were unable to understand the requirement of questions. This points out to the fact that creative abilities of students need to be polished. The students should be introduced to advanced concepts in order to enable them to cope with any international standards. The lab work is an important aspect of chemistry education that is often ignored; a practice that should be eliminated.

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