A framework proposal to set the 'Ground Rule Book' effectively and enhance mutual understanding in the context of engineering education for India

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Abstract—**Previously, we were aware of the fact that a Ground rule book is a set of articulated points which induce the expected behaviour of a student inside the classroom. In the earlier decade of the 21st century, the ground rules were set generally by the faculties instead of involving the students themselves in setting the rules. The survey shows, that the students' try to adhere to the rules increases as they play a role in creating or designing the framework for it. This study shows an analysis report on qualitative research on setting the ground rule book practice for the last three years in the teaching-learning process. In this paper, the various parameters of ground rules and their outcomes are discussed. The parameters are identified by discussing and interviewing the student leaders of each year and the applicability of the ground rules is also verified by the teaching faculty to prepare the analysis report.**

Keywords— **Effective teaching-learning; ground rules; mutual understanding; student behaviour; teacher expectation**

I. INTRODUCTION

Ground rule setting is not a very easy task as it influences the behaviour of the students greatly inside the classroom. As now a day, some analysis in higher education shows that students can be considered as customers to achieve the best quality showing universities, academics and students, now the ground rules have changed (Sappey & Bamber, 1981). According to the changing scenario, we could not just ask for a set of rules to follow blindly rather we offer or include the students to decide what they want. The ground rules do not only affect the inside classroom environment but also affect the long-term behaviour of the learners when they enter into their work field. We worked as a team of TQM specialists whose role is to identify the leggings from both the teachers' and students' perspectives. Though the reference paper shows the study of an Australian university, the changing nature of academic work in our country like India is also very much prominent for a decade. (Sappey &

Bamber, 1981). The students are also of generation Z. An ideal framework can be proposed which includes all the parameters. On the whole, these are like unofficial mutual contract agreements (Rules & Rules, n.d.).

II. DESCRIPTION OF THE PARAMETERS OF GROUND RULES

For the last three years, we are practising to achieve teaching excellence in our institute. The implementation of the ground rule is one of them. The parameters we include in our research are decided after the brainstorming discussion of the TQM team with the faculties and students. We identified certain parameters which should be included in the ground rule book. It includes attendance, assignment, communication, office hours, resource person details, plagiarism, and the use of digital gadgets.

    a.   Attendance
    b.   Assignment
    c.   Communication
    d.   Office hours
    e.   Resource person details
    f.   Plagiarism
    g.   Use of digital gadgets

A. Attendance

This parameter plays a vital role in student performance. One of the studies shows that the student's attendance is above 85%, having higher grades as compared to attendance less. Whereas certain cases scored failing grades despite higher attendance percentages (Guleker, 2014). Though the study was based on the European higher education system, the facts and conclusive remarks on emphasizing attendance cannot be denied in India as well. Because there are many other factors associated with this. A proper set of rules if described before the commencement of the course would be good practice for an instructor. The absenteeism of students is a reason for time concern from the faculty perspective as the previous topics taught require repetitions. However, in a higher education course, we do not feel like making attendance a compulsory criterion. Most of the universities in India removed the attendance criteria as an evaluation criterion taking into consideration of student maturity. But we practice a ground-rule set on attendance and due to this, we achieve a greater benefit in terms of student engagement with faculty in various ways. We have defined some basic rules with some outcomes for example as follows.

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1. Be very punctual. Be at the right time. Because the first 10 minutes of a lecture are crucial to increase learning motivation.
2. Every three consecutive late arrivals will be considered absent.
3. If in case the student is engaged in any other activities such as culture, sports, or any from college, then he/she will inform the subject faculty of the proper date and days of his/her engagement.
4. In case of more than 2 days of sick leave, the student should inform the respective faculty after recovery with a proper discussion on how to cover the left-out topics.
5. Apart from these reasons, if absenteeism is due to any personal reason, the student should make a prior plan to complete the tasks and inform the faculty well in advance.
6. The faculty should cooperate well in all cases and should try to help the student with proper guidance.
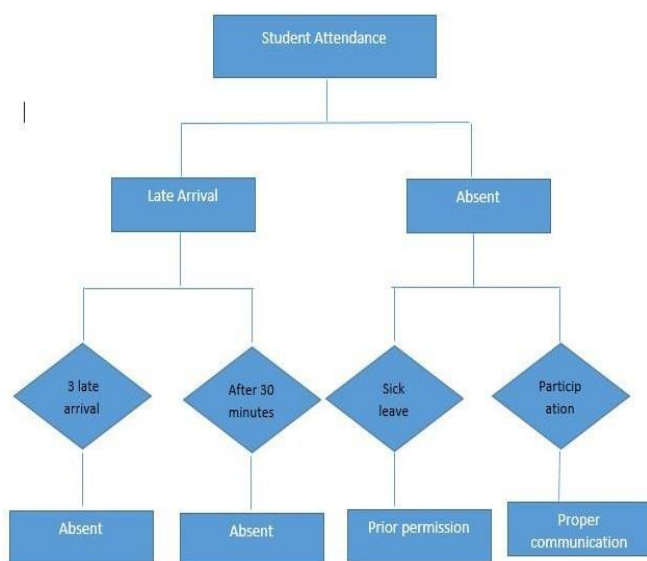
Figure 1: Attendance Ground rule Example

Figure 1 shows an example of setting the rules in the form of a flow chart. The outcomes expected by setting ground rules for attendance are that the students remain updated throughout the course. Apart from attendance, self-pace is very much essential for a student to keep up with the daily assignments, quizzes, etc.

B. Assignment

The learning outcomes of each course depend highly on the regularity of the students completing the tasks given to them. The timely submission ensures the increase in competence of the student. In higher education, the ground rule for the assignment point of view should be discussed with the students by the faculty at the beginning so that the students have a clear picture in mind to judge themselves where they

are standing. Sometimes it happens due to some personal reasons the students need to decide how they can complete the minimum requirement in the course. The minimum requirement should be a limit fixed by the subject faculty before keeping the course learning outcome in mind.

There are certain assignments which are individual assignments and some group assignments. Individual assignments are the reflections of the student's learning whereas group assignments require collaborative skills and efforts from the student end. In higher education, especially in engineering, collaborative assignments require thinking explorative. It develops the cognitive level, encourages sharing ideas, and improves thinking aloud together to create knowledge and understanding. Certain rules set by us are as follows (Fung, 2014).

1. Each assignment will have a due date. Some assignments may require documentation and some handwritten.
2. Students submitting assignments on time will get marks according to their performance.
3. In case the student missed the deadline 20% of marks will be deducted for late submission, not for his/her performance but to encourage those who have submitted on time.
4. Plan prior discussions with the faculty to complete assignments before the deadline if you are going to be engaged in some personal occasion.
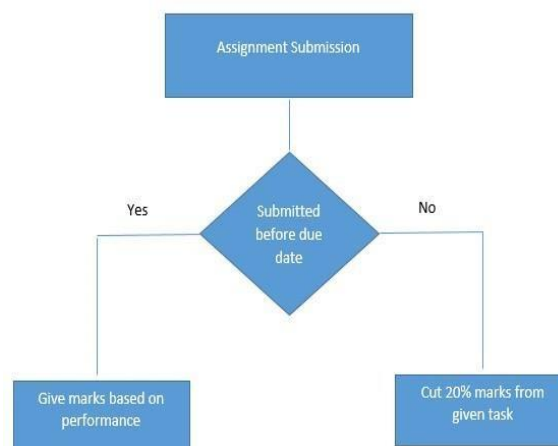
Figure 2: Assignment ground-rule example

Figure 2 shows a flow chart model of the implementation of Assignment ground rules which eradicates the possible confusion among faculty and students. Outcomes expected by setting the rules are indirectly associated with student performance and learning outcomes of the course. The graded assignments can be assessed by the teaching assistant which will be counted as a part of the final internal marks whereas the ungraded assignments will enhance the motivation and keep the classroom dynamic.

C. Communication medium and channel

Language proficiency is an added advantage rather than effective communication depending on the fact that we should not have any kind of misunderstanding between us. Communication is directly related to interpersonal relations between students and faculty. We generally give more importance to verbal communication inside the classroom. Verbal instructions should be very clear. Teachers often complain about discipline inside the class. We are very clear about verbal communication in what should be the talking style, language, and tone of both the teacher and student, but clearance is required in nonverbal communication as well. Eye contact, a gesture of the faculty affects the concentration of the students. Similarly, the puzzled expressions of students indicate the faculty of what is to be repeated (Zeki, 2009). We set some basic rules to avoid misinterpretation of any kind. Sometimes, the appropriate mode of communication can be judged by both sides through mutual understanding, however, the ground rule book contains the below-mentioned points in short.

1. Communication as Conversation between students and faculties should be in a proper language.
2. The official mode of any kind related to any issue like extra class, leave, changes in due dates, announcements, etc. should be through email only.

The outcomes targeted in this parameter clearly show that this set of ground rules dissolves many misunderstandings between a teacher and student. This also helped a lot in saving time.

D. Office Hours

How to set a time for office hours has always been a tough task for an instructor. It had been observed that most of the students could not avail the benefit of office hours due to various reasons. Generally, most of the points are related to the issues like the office hours time is not convenient for me or it being difficult to set an office hour time with the faculty apart from the actual lecture timing or my learning time includes evening and night and there is no office hour timing matching with this range and a lot (Pitts, 2008). Despite many such reasons, it was observed that the presence of students during in-office hours enhances the understanding between the students and faculty. Since we are practising the concept for three years and at the same time the pandemic covid 19 occurred, we included office hours in the evening and found a great result in terms of satisfying the needs of students and fulfilling the learning outcomes. Generally, office hours were arranged after dinner hours for an hour and it enhanced the collaborative skills of the students to the next level with the use of virtual office hours (Pitts, 2008).

We observed a significant increase in regularity in the students who attended office hours. They became more familiar with various online platforms as well.

1. During office hours, come up with the points which you find difficult from the last two lectures.
2. It is advisable to keep your notepad handy to quickly note down the points described by the faculty.
3. If in case, you need clarification on the assignment given recently then clear it and you can ask the faculty how you can get good marks.
4. A google doc was shared by the instructor for each office hour where the students were encouraged to write their doubts before the meeting time so that the doubts can be picked one by one without wasting the time.

The outcomes expected from arranging such office hours are basically to improve student learning and to increase the interpersonal rapport of the faculty among the students. It is observed in these years that a new joining faculty in the institute overcame the initial friction with the students in their teaching with this strategy. Another most important goal achieved through these office hours is an increase in collaborative learning in problem and project-based learning.

E. Resource person Contact details

Every course is handled by several persons who have different tasks to play within the course. Sometimes miscommunication was observed from the student's end contacting the wrong person for various issues. The course subject is generally taken by two faculties, one teaching assistant and two laboratory assistants. So, before the course commencement, they should have a handout of the appropriate person's details.

The expected outcome of setting these ground rules is to minimize the assessment and submission-related issues like if you have a technical query you should communicate with the lab assistant rather than the teaching assistant. Whereas in case of any grading marks update issues you should contact the teaching assistant instead of the teaching faculty or anyone else. So, from the first day, the information creates a clear picture in the students' minds to solve their categorical queries.

F. Plagiarism in assigned tasks

It is important to understand that plagiarism is done in our education system knowingly or unknowingly. For the case of the unknown, proper guidance will help whereas the knowing case is very crucial to make them understand what will be the consequences. A survey on academic dishonesty

in North Carolina shows that outside-class cheating is more prominent than examination cheating, showing 76% of the respondents believed that there is no wrong in cheating outside the class (Kumar, 2012). Why is cheating so prominent? One of the reasons is to achieve excellence in a typical examination-based system rather than actual learning. (Issn et al., 2021) In this study, the authors have found exclusively 10 reasons from a student perspective. The reasons are very much thought-provoking that to stop this culture of copying is not only a responsibility of a student but also of the faculty as well. Sometimes, if a student has to do 6 subject assignments at a time and he could not get enough time, he would prefer a copy, which the faculty needs to understand that the submissions of all subjects should be divided in time.

In the case of a large class, it is becoming a critical task for the teacher but it should focus on the learning outcomes overall. We have set a 50% cut in marks if found guilty knowingly inside and outside of classroom activities submissions and in examinations, the student will be detained for a year or so.

The outcome expected from such a strict step is very much required to develop a culture of discipline and hard work. These qualities will help them in the future in many ways.

G. Use of Digital Gadgets in classroom/laboratories/during outdoor activities

In the recent era, the use of digital gadgets is becoming an undivided part of classrooms. The students need gadgets to solve and search for higher-degree problems. Now an interactive environment inside a class is also demanding the use of digital gadgets. But we should not forget about the distraction that occurs due to this. The use of technology enhances the knowledge of those who can control self-distraction. Due to immaturity students are not expected to apply self-regulation theory well (le Roux & Parry, 2022).

1. You are not allowed to use your gadgets if it is not instructed by the teacher.
2. If in case you are found guilty then you need to meet the head of the department with the reason. He will decide the seriousness of the offence and take a decision accordingly.
3. You are not allowed to take photos or videos of any subject or person without permission.
4. Posting any irrelevant content related to your course on your social site is not acceptable.

The expected outcome of the rules on digital gadget use controls the unnecessary distraction of the student.

III. RESEARCH METHODOLOGY

We have done a qualitative survey on the applicability of the ground rule book. It consists of a high-level thinking questionnaire set. We found 3 categories of teachers who are involved in this research. Some of the faculties who are involved for more than 4 years in practising active learning in the classroom understand the outcome-based environment of an institution can be achieved and maintained through continuous innovations in teaching and learning strategies. The second set of faculties is not very much exposed to the environment of applying ground rules but is very much keen to implement all the decisions made by the stakeholders. Their learning in this regard is also a continuous process. The third set who are not aware of the process of implementation of the ground rule book. Specifically, new joining faculties come under this. For those who have not had any idea of the process of applying the ground rule book, a group of volunteer student groups has taken responsibility to discuss with them and make them clear about the process. Before setting the ground rule book, students from each class were called to discuss various points from every year. The results show that a rule setter will never break the rule. There are approximately 95 students involved in this survey from each class in brainstorming sessions. The outcomes and the set of rules are decided based on the discussion over the years. In due course, many of the rules need to change and be modified according to the demand of the situation as the use of electronic gadgets was previously banned inside the classroom but now is used extensively. The survey result shows the percentage of applicability or not applicability condition of each parameter through the continuous observation of the faculties which is described and explained.
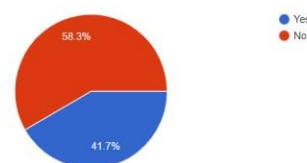
IV. SURVEY RESULTS AND DISCUSSIONS

This amendment proposal is going to be implemented further with all departments of the institute and will observe the effectiveness in subsequent time. We did this set of surveys before the application of the amendments. Based on the survey results we amend the rules which we had practised for three years.

Do you think this ground rule book will increase the mutual understanding between a teacher and students?
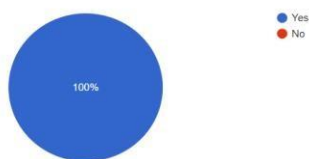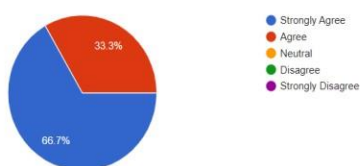
12 responses

Figure 3: Faculty used and willing to apply

As we discussed earlier there are three sets of faculties participating in the survey by discussing with their peer faculties of the same departments. We mentioned in the survey if you have not used the ground rule book then answer the subsequent questions according to their applicability shown in Figure 3.

Everyone realizes the need for mutual understanding between the teacher and students and this is one of the prime factors in the learning process. Another important learning factor is the outcome-based environment. Here 67% results we have obtained means we need to think on this point to achieve 100% further.

'Ground Rule Book' helps in creating outcome based environment in engineering graduates.

12 responses

'Ground Rule Book' helps in coordination when multiple faculties are sharing same subject/(s).
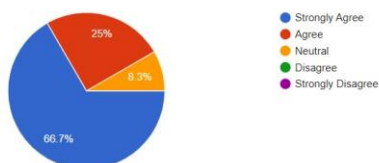
12 responses

Figure 4: Outcome-based Learning Environment

Fields of 'Ground rule book' and mapping with engineering subjects
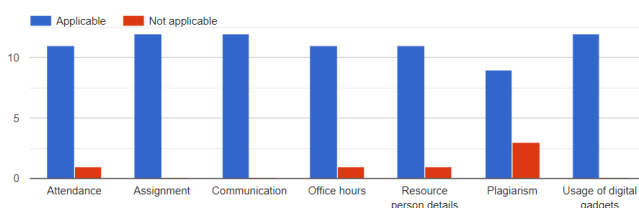
Figure 5: Parameters decided for ground rules

We have included specifically 7 factors and took the survey on whether these factors could be applicable or not Figure 5. Plagiarism avoidance is a thing related to ethics, so about 8% of the faculties still have doubts about plagiarism-free ground rules. Apart from these factors rest of the factors were marked as agreed or strongly agreed Figure 6.

'Ground Rule Book' motivates students to do original work for assigned tasks.
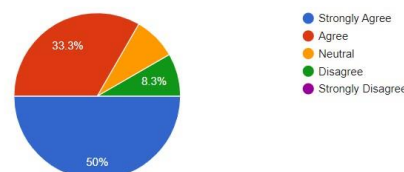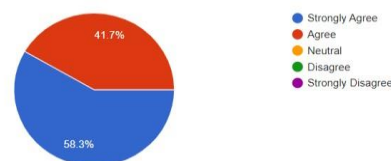
12 responses

Figure 6: Ethics for Assignment

The survey supports the following points the student's understanding and faculty coordination can be increased by the application of the ground rule book to some extent better as compared to the existing scenario. The student up to date performance is key to his/her success. Learning happens at the time of doing. Sometimes, the students put their work aside with the thought that they will do it later and that later may never come. So, the timely submission is having an added advantage to learners and the teachers also agreed upon it Figure 7.

'Ground Rule Book' motivates students to be sincere, punctual and regular for their assigned subject related tasks.

12 responses

'Ground Rule Book' promotes fair evaluation without any bias towards students.
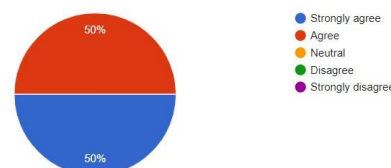
12 responses

Figure 7: Improvement in sincerity and Punctuality

'Ground Rule Book' avoids confusion related to policies for late submissions and grading associated with that.

12 responses

'Ground Rule Book' helps in coordination when multiple faculties are sharing same subject/(s).
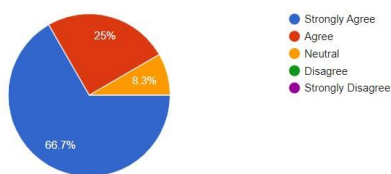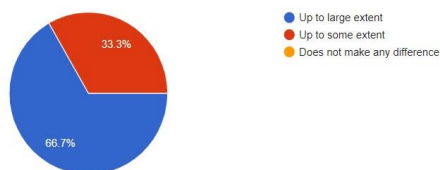
12 responses

Figure 8: Resource person Knowledge

There is a lot of confusion gathered in the tiny minds of the learners and they should find their solutions easily they should know on-campus adult guides who are playing the role of parent cum guides to them in these years. They should have the knowledge to whom to approach for what. The inclusion of resource person contact details solves unnecessary chaos between students as well as resource persons. Generally, in a particular subject, there may be 2 subject teachers, one teaching assistant, and two lab assistants. So the students should have a clear idea that whom they should approach for Figures 8 and 9.

'Ground Rule Book' helps in saving time for faculties and students as general FAQs will be part of 'Ground Rule Book'

12 responses

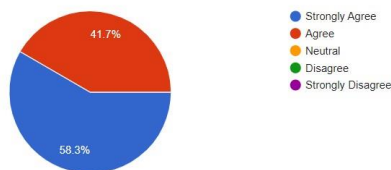'Ground Rule Book' supports smart usage of digital gadgets.

12 responses

Figure 9: Saving Time and Smart gadget

'Ground Rule Book' is more systematic and productive approach in engineering education.

12 responses

Figure 10: Ground Rule Book Approach

This "Ground Rule Book" approach may become a compulsory criterion in academics in the future like the teaching scheme, syllabus, anti-ragging, and other official documents. The ultimate goal of this research is to find out a systematic and productive approach.

V. CONCLUSION AND FUTURE SCOPE

We have given this set of rules a name called "Ground Rule Book". Ground rule book implementation is a kind of obvious thing in our education system. But due to a lack of proper documentation and implementation, we are not able to judge the fragrance of the effect in particular. There are certain points in the given proposal which can be judged after the analysis of the implementation results. The future report will consist of further research on implementation and modifications in ground rules.

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