

An Approach to balance Learning and Procrastination through a Strategic Model in the context of Higher Education

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Abstract— My own behaviour baffles me. For I find myself doing what I really hate, and not doing what I really want to do! ST PAUL

The statement given by St. Paul regarding the frequently changing mindset of Humans is a perfect fit. Sometimes we as Humans face a lot of confusion in our minds about what to do and what not to do. Due to some reasons, we try to postpone things related to our work often which is known as Procrastination. There are Procrastination Models having dimensions Psychologic, Personal and Pedagogic in the academic scenario. The study in this paper focuses on two research questions which analyze the cause of academic procrastination and proposes a strategic model, along with the concept of Deadline, to overcome it. This work also focuses on the pedagogic dimension considering both student and teacher perspectives of learning and avoiding procrastination.

Keywords— Procrastination; Pedagogic Strategic Model; Learning; Deadline

JEET Category—Research

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I. INTRODUCTION

The Procrastination is not simply delaying the completion of a task but contains an element of irrationality. Procrastinators put off tasks despite the belief that doing so is not in their best interest (Blake, 2019). Procrastination has cognitive, affective, and behavioral components which altogether form a complex system in itself (Watson, 2001). In (Watson, 2001) there is a five-factor model based on procrastination which clearly shows the low conscientiousness. Procrastination happens in different areas of academics. There are many domains in assessing procrastination, apart from those many domains submission of various kinds of assignments are taken into consideration. A strategic model is proposed to optimize learning. The model is designed by considering the reasons for the demotivation and disengagement of students which ultimately produce Procrastinated performance in Academics (Lathigara, Gupta, et al., 2021).

The content of the paper is divided into sections so that the concept can be sequentially coordinated properly. This is a novel approach of study in academic based on human behaviour. The section 2 includes some of the related works, section 3 identifies two research question on which we focus. In section 4, the complete methodology of adaptation is narrated. A strategic model on both the research question is described in section 5 and 6. The analysis of the various surveys are done in section 7 which includes both faculty and student perspective. Section 8 represents the discussions on applicability of the model which subsequently followed by conclusion.

II. RELATED WORK

There are so many reasons behind Procrastination in academics. One of the factors is Motivation. Williams, R. L., & Stockdale, S. L. given a classification of the motivation level of students inside the classroom as Extrinsic and Intrinsic. It is based on the driving force generated from outside and inside respectively (Williams & Stockdale, 2004). Based on the classification of the motivation level of students, a case study was done measuring the various factors when it comes to the cognitive psychology of students from a teacher's perspective (Patel & Chauhan, n.d.). Another important factor for procrastination is a lack of knowledge of the system where the students cope with many things by themselves. All institutes or Universities have a set of rules which should be communicated to the students so that they won't get confused. Sometimes they opt for a person who is not responsible for a particular aspect. For example, if an assistant professor is responsible for solving the assessment queries and if any student has any query he/she should not approach to main faculty. There are certain aspects in their environment of which they should be aware hence so forth avoiding the chance of unconsciousness. Due to such a misunderstanding, they got stuck in between and hence forth affecting the time frame as a consequence. (Biswal et al., 2022)

Procrastination measurements may differ if it is analyzed quantitatively with metadata as demographic diversity and environment impact the nature of academic performance (Ryung & Hee, 2015).

III. RESEARCH QUESTIONS

1. For decades many of the professors have been using active learning and pedagogy in their teaching. When students in a class get accustomed to your techniques, then you have to think beyond that to address progressive effectiveness. How to break this situation?
2. Whether setting a deadline solves the purpose of learning.

IV. METHODOLOGY

At the outset of the commencement of the semester, there were lot many questions arose in mind in terms of engaging 139 students for the whole semester. In this strategic model, we divided the types of assignments, activities, and experiments based on a procrastination

measurement model. There are so many models available which are used to measure the procrastination level of a student. One of the models is PASS (Procrastination Assessment Scale: Students) (Academic_Procrastination_Frequency.Pdf, n.d.) which is a kind of self-assessment of students based on 6 aspects that mainly involves writing term exams, studying for exams, weekly reading exercises, performing activities, tasks, attending meetings etc. Our methodology was "BREAK THE MONOTONY". We observed the behaviour of students and according to our observation, when we try to engage them as per the same methodology or the same type of assignments or activities, they feel bored. There are more than 167 active learning strategies, generally applied in the classroom. Before a decade the active learning techniques were new and not known to all. Now they are very common due to awareness regarding these. Then after, the next phase challenge is waiting for us. However, we cannot conclude or stop at one point. We apply various strategies to find the optimum learning, and then every time the question will come, what is next? Aren't they(students) so much used to these methods and will not pay attention? The reason behind such type of situation includes a psychological part which is Procrastination.

Students are very workaholics and intend to produce quality in their work but they are failing in timely submission. The reason is astonishing and We found, it is true which is also mentioned in a study (Gobbo & Shmulsky, 1999). The reason for their failure in submission is they want to produce quality work and do not want to complete the task just for the sake of completion.

Observing the seriousness of the situation, we fixed it with a strategy for different weeks of the semester. The strategic model is described in the next section.

1. Flip Class (Smith & Westendorf, n.d.) (Brame, C.). with an assignment attached (3rd and 10th week of semester). Flip class has a variety of methods. Maybe some content of the lecture is given in the form of material to go through to the students before the lecture of the actual date. In the lecture, the faculty will act more like a facilitator rather than an instructor in the discussion and analysis of the content. There are some students who are observed idle. Therefore,

- a worksheet or assignment was attached to it to submit immediately after the lecture to enhance the participation. It is a kind of twisted Flip class.
2. Quiz-based Activity In between Lectures on current topics in class (One quiz per Unit; 7 in one semester). A Quiz containing small 10 Multiple Choice Question' is a quick assessment where eye-catching errors can be detected immediately if taken in between a lecture content (Velani & Dave, 2018).
 3. Video Assignments (Sherer & Shea, 2011) in group projects (1 video assignment in Semester). The students have to make a 5-minute video containing all the necessary points of mini-projects or a video of one demonstration of an experiment. In today's era creating content is a new normal so this kind of assignment and assessment is claiming a high level learning experience. It creates an active learning environment that focuses on problem-solving through personal and collaborative experiences (Schultz & Quinn, 2014).
 4. Learning by doing (Goggins, 2012) Activities in groups (One every 3 weeks, 5 in total per semester). These types of activities can be task-based (Tanna et al., 2022), puzzle solving, fixing bugs, troubleshooting and many more activity-based learning techniques (Lathigara, Tanna, et al., 2021). This assignment is the toughest in terms of implementation.
 5. Written Assignments in between whenever it was required. Writing after understanding a concept is required to assimilate the content properly. The importance of writing assignments was initially studied in the era of the 1980's. Writing conceptual content gives clarity to the minds of the students. Braine, G. classified these writing assignments into 5 categories and each category holds its importance by itself (Braine, 1989).
 6. Peer Supported Independent Study (Kumar, 2023) (Including preparing a presentation on a particular topic) in groups. This activity is a fantastic idea for teachers who often face the problem in completion of 100% syllabus. Through this technique, all the students are divided into groups of 4-5 members. Around 20% of the syllabus topics are identified by the faculty

which are easier as compared to core topics and not dependent on any other topics of the syllabus. The students are given tasks to complete those topics in groups(peer-supported) and need to prepare a report on the topic. Each one of the topics will be assigned to more than one group. Per topic, more than one submission report will be received. The faculty will evaluate the best report for each one of the topics and that particular group of students will present that report in front of the whole class. In this way, around 20% of the syllabus will be completed within a short time and is effective because students used to learn the topics by themselves (independent study).

V. STRATEGIC MODEL

First Week: Enthusiasm is at its peak.

Second Week: Medium Procrastination, introduce a learning by doing activity.

Third Week: Introduce a flip class to avoid Procrastination

Fourth Week: Written Assignment as motivation level is at a good level

Fifth Week: Learning by Doing to raise the motivation again

Sixth Week: Revision of whatever is covered to date

Seventh Week: Mid-term Assessment

Eighth Week: Procrastination rates are at peak due to completion of mid-term

Ninth Week: Maximum Procrastination rates observed due to involvement in co-curricular activities.

10th Week: Introduce a flip class with an assignment attached again to boost the motivation level

11th Week: Learning by doing Activity

12th Week: Introduction about Video Assignment (Briefed about how to prepare a 5 min video containing all the information about the mini project they are doing)

13th Week: Written Assignment

14th Week: Learning by doing Activity

15th Week: Peer Supported independent study (PSIS time given) which continued to the next week

Time Duration: One semester

The strategic model for Research Question 1 is shown

in Fig 1.

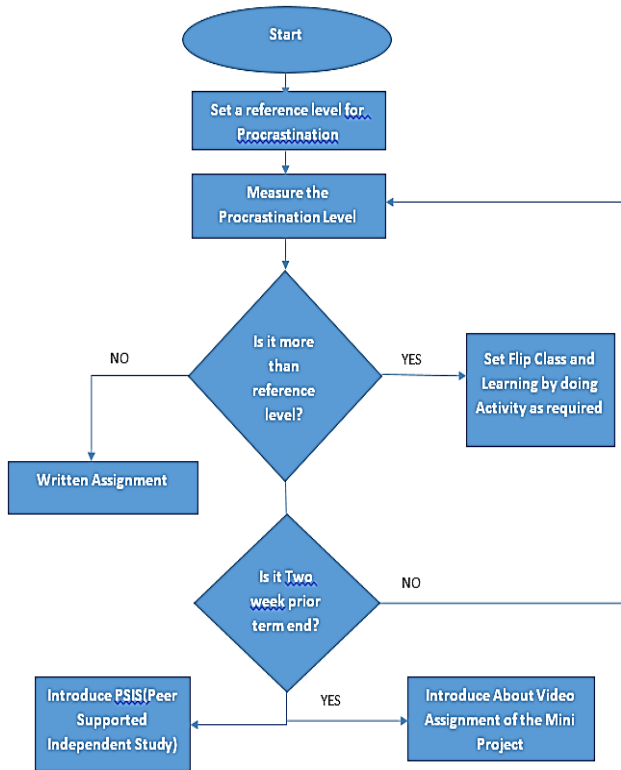


Fig. 1: Strategic Model for Research Question 1

By applying the strategy, we somewhat fulfill the Research question 1. In the research question 1, we clearly mentioned that the students get bored with similar kind of techniques. To keep them engage we applied the strategic model, however, there are many loop hole in the process as well. The challenges and revisions are too large for the scope of this paper, can be considered for future scope.

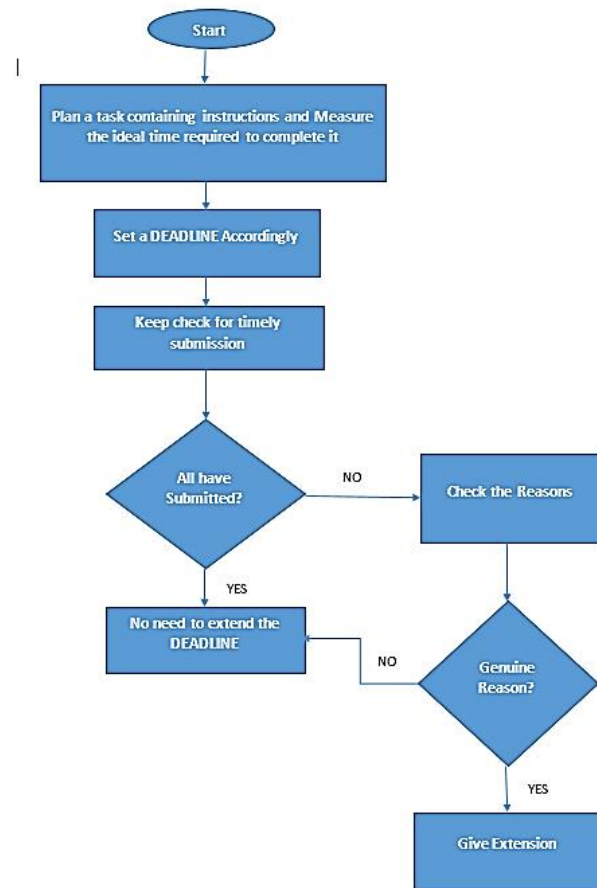


Fig 2: Strategic Model for Setting a DEADLINE with Extension Research Question 2

VI. MEASUREMENT INSTRUMENT FOR PROCRASTINATION

Percentage of Submissions, late submissions and no submissions of various works through the course website. There is a dedicated course website through which one-to-one assessment is possible. It was observed the request for an extension in the due date for every work was increased in the specific weeks, that are the 3rd, 6th, 8th, 9th and 14th weeks of the semester. The strategic model can be applied to various courses.

It is very common to fix a deadline or due date for every work in academics. I have observed the variation in all the criteria as shown in Table 1. As in week 1, the enthusiasm is at its peak and we have not reached a deep dive into the subject matter or the easier content of the subject, got the best performance regarding the work done by the students. So, I compared the most procrastinated weeks with week 1.

The other weeks include higher rates in timely submissions therefore not considered as a procrastinated week.

Table 1: Measurement Instrument for Procrastination

Week No.	Timely Submissions	Late submissions	No submission	Request to extend the Deadline for submission
1	127	10	2	26
3	62	25	52	31
6	67	30	42	35
8	71	20	48	22
9	98	12	29	15
14	112	13	14	24

From the study and behaviour of the students, we observed a factor as request for an extension on the due date. Here comes the Research Question 2.

From Table 1. we calculated the percentage rate of various assignment submissions and request to extend the due dates. This table is used as measurement instrument.

Due dates or deadlines play a vital role in academics. The significance of work in the academic is a key feature of learning.

We have taken various surveys to get the data so that we can analyze upon the facts.

VII. RESULTS OF THE SURVEY

When a facilitator teaches students there are many types of work are assigned to them to enhance learning and good practice. A dedicated website is a platform through which one-to-one observation of students can be possible. The survey was taken from teachers teaching across high school to PhD levels Fig. 3 and found that 45.8% of teachers Fig. 4 do not have a dedicated website for their course. We may think the high school level we do not use course websites, but astonishingly it was found for Ph.D. teaching faculties as well.

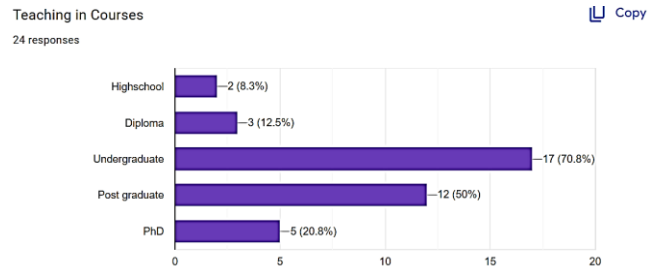


Fig 3: Teaching Faculty Distribution

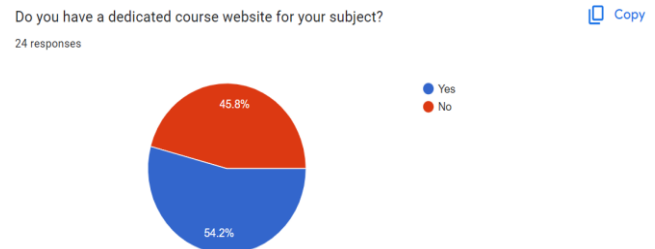


Fig 4: Percentage of faculty showing a Dedicated Website for a course

There are various types of Works given by faculties to students which include as given in Table 2., obtained from the survey.

Table 2: Various Types of Work Given During a Semester

Sr No	Teaching level	Types of work
1	Undergraduate, Postgraduate	Video Assignments, Learning by doing assignments, research paper assignments etc
2	Undergraduate, Postgraduate, PhD	Programming Tasks, Codes, etc.
3	Undergraduate	Mostly questions and practical assignment
4	Undergraduate, Postgraduate	Objective questions
5	Undergraduate	Descriptive
6	PhD	Design-based, Survey, Questions etc
7	Undergraduate, PhD	Subjective and objective, as per the requirements of the university end-semester exam format
8	High school	Video Assignments, Learning by doing assignments, research paper assignments etc
9	Undergraduate	Programming Tasks, Codes, etc.
10	PhD	Mostly questions and practical assignment

11	Diploma, Undergraduate, Postgraduate	Objective questions
12	Undergraduate	LbD (Learning by doing) type of Assignment
13	Postgraduate	Simulator Activity
14	Undergraduate, Postgraduate	Civil engineering drawings (both manual and CAD)
15	Undergraduate, Postgraduate	Charts, written, ppt, report
16	Undergraduate, Postgraduate	Programs
17	High school	Case-based, book-based
18	Postgraduate, PhD	Task-based, online, written
19	Undergraduate	Practical based
20	Undergraduate	Quiz, written assignment, poster making
21	Diploma, Undergraduate, Postgraduate	Question answer handwritten
22	Diploma	Review of literature, quizzes, assignments, creating Bibliography
23	Undergraduate	trick based
24	Undergraduate	Project-based, MCQ, Subjective
25	Diploma, Undergraduate	Theory as well as practical

While completing various tasks the student's perspective is an important aspect to take into consideration to studying the psychological aspects related to procrastination and due dates. About 40.7% of the students shown in Fig. 5 do not feel any kind of stress while completing the tasks, so why are the timely submissions not up to the mark? The reason is procrastination due to the change in the motivational level of the students varying throughout the semester on a weekly basis as described in the strategic model.

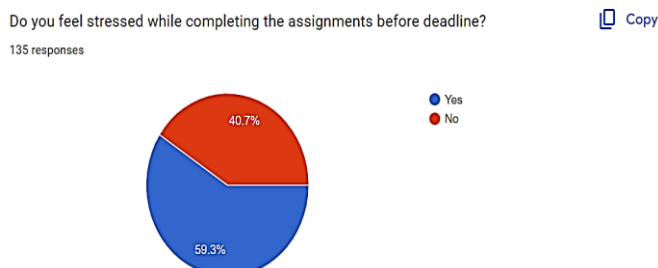


Fig 5: Feeling Stressed in completing an assignment

Though the belief is that giving tasks to students is required to enhance learning, an astonishing result was obtained from varied domain-specific faculties in setting a due date or deadline as shown in Fig. 6. Astonishingly around 33.3% of the faculties set deadlines occasionally and they have a concrete reason for that. When asked they have varied visions like learning is completely based on self-efficacy and esteem, learning enforcement does not serve the purpose of actual implementation etc. However, the student aspect is quite interesting about their confidence in learning if there is no Deadline shown in Fig. 6. Around 35.6% of students were confident enough that they will complete all the tasks even if there is no deadline whereas around 43% of students claim for no deadline shown in Fig 8.

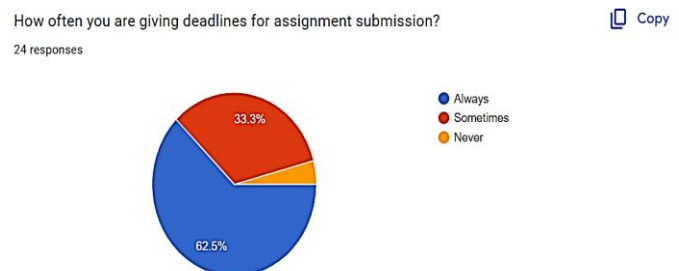


Fig 6: Faculties giving Deadlines how often

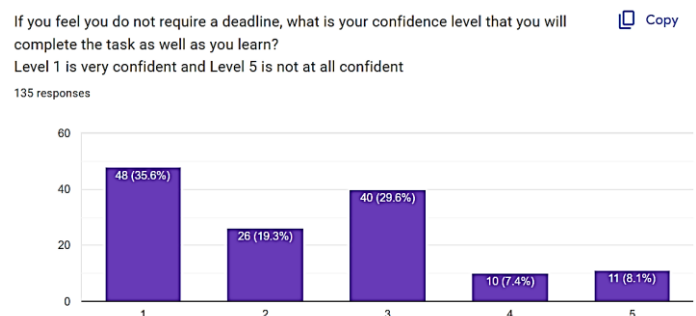


Fig 7: Confidence level of student if there is no deadline

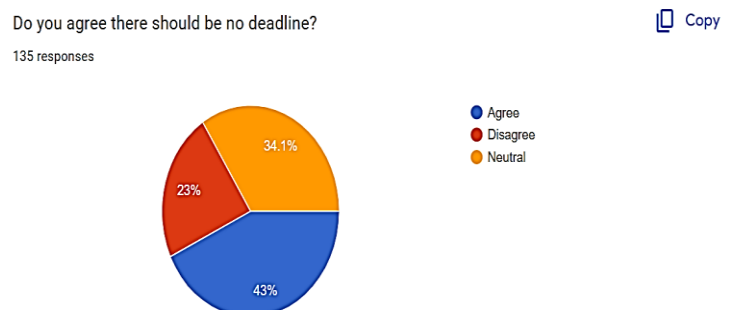


Fig 8: Student's claim on Deadline Setting

When we observe Fig 7. And Fig. 8, we can easily find out that around 8% of students are claiming for no deadline however, they are not very confident about their capability of learning by themselves. So, we cannot make decisions about setting a Deadline based on the student's perspective.

Is there learning due to the pressure of the Deadline? One of the faculties comments on this that if there is no deadline then automatically all submissions will be accumulated at the end of the semester which will be a complete burden on them. Around 61% of the students Fig. 7(summation of last 3 columns of the bar chart) who need some motivation to do a task. Not exactly motivation, but it can be a kind of spark within themselves.

So, here is the answer to Research Question 2. Setting a deadline is quite obvious, but the post-processing of extension if required, is a good practice indeed. Many of the facilitators believe deadlines are required to generate an enthusiasm inside the student to go through the content and it is also equally essential to be flexible enough to extend the deadline to some extent. There is a study that describes the deadline extension request from a group of employees which shows two aspects behind that. One is an Overestimation of self-presentation costs and the other is the underestimation of the importance of Quality (vs. Speed). In this study, the conceptual idea is given to increase task performance in a corporate office (Whillans et al., 2022). This can be partly applied to the case of Academics to increase task performance. Because it is the question of learning, a nearly equal proportion of students agreed with, disagreed with, and were neutral regarding learning happens due to the pressure of the submission deadline Fig. 9 whereas according to the teacher's perspective, it is around 72% for claiming in support of "learning happens if we set a deadline" Fig. 10.

Is there learning happening due to the pressure of submission deadline?
135 responses

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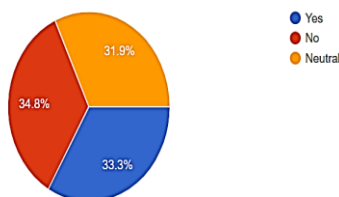


Fig 9: the pressure of submission and learning student perspective

Do you feel the learning happens if you set a deadline?

25 responses

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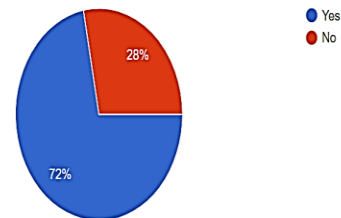


Fig 10: Learning and Deadline Teacher Perspective

Then comes the answer to Research Question 2 that we need a strategic model Fig. 2 as well to set a deadline to ensure learning. From the survey we got about 88% of the faculties accepted that they have changed the Due dates shown in Fig. 11.

Have you ever change the due date?

25 responses

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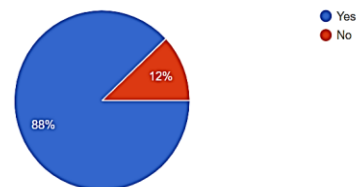


Figure 11: Have you changed the DUE Date/ DEADLINE?

There are a lot of reasons however, to judge the genuineness of the reason given by the student while asking for extension. This judgement comes with experience and practice of the facilitator.

Some of the reasons for extension request stated, are low background knowledge of the subject matter, task difficulty, laziness, fear of failure, postponement of work, low intrinsic motivation, high self-efficacy, and low impact of procrastination on grades (Schraw et al., 2007). We got similar reasons from the survey as well. By understanding the reasons and getting involved somewhat as per the capacity of the person, the facilitator can enhance interpersonal rapport among the students which will improve the teacher's effectiveness and the judgement taking ability.

According to the teachers the reasons for which students request for extension, are mentioned in Table 3 including all the levels of the teacher. The reasons stated by them are thought-provoking.

Table 3: Teacher Perspective On Deadline

Sr. No	Teaching level	Opinion about DEADLINE
1	Undergraduate, Postgraduate	The deadline should be there, but it should be flexible. This should be a part of the Strategy Model
2	Undergraduate, Postgraduate, PhD	By looking at the behaviour of the current generation, everyone has not been interested in your course, but to complete that course successfully is required by looking at academic regulations. If a deadline is set then most of the students have completed the assigned task and try to learn minimum things (those who are not interested), which directly or indirectly helps students to complete the course successfully.
3	Undergraduate	For some students, it works and for some of them it won't
4	Undergraduate, Postgraduate	It's just for our satisfaction... Genuine students will complete their work on time and the rest of the students will always submit their work when several reminders are given.
5	Undergraduate	We should show a learner a timeline.
6	PhD	There should not be any line, learners have to submit it within the timeframe
7	Undergraduate, PhD	Not too strict but the kind of Deadlines allow studies to be completed regularly as well as allow the learners to identify weak points in the beginning. Also, opens up prepared minds for the forthcoming hard concepts.
8	High school	If learning is out of interest and passion, then a deadline is not required at all.
9	Undergraduate	Sometimes it is good.

10	PhD	Without a deadline, all assignments will pile up till the end of the semester - which in itself is a deadline.
11	Diploma, Undergraduate, Postgraduate	Deadline is necessary for your current generation because otherwise, they will not do any teaching work. So deadline is necessary but don't stick strictly with that. Extended 2 3 days as per student's convenience so they don't feel stressed or burdened and they can prepare well.
12	Undergraduate	Deadline Depends on the kind of work and importance of that work.
13	Postgraduate	Like assessment drives learning, deadlines motivate assignments
14	Undergraduate, Postgraduate	It must be there
15	Undergraduate, Postgraduate	Deadline makes learning
16	Undergraduate, Postgraduate	It should be 15 to 20 days so they can easily finish the task
17	High school	Deadline is only for those students who are serious about their work or task, and also who are interested in his/her given work
18	Postgraduate, PhD	Deadline helps in better time management I believe. But learning cannot have any deadline.
19	Undergraduate	Because if you give more deadline...students become lazy and ignore it
20	Undergraduate	Students are prone to work under deadline
21	Diploma, Undergraduate, Postgraduate	It purely depends on the type of students. If they are doing it willingly then there is no deadline but if they are not doing it properly, I have to make deadlines.
22	Diploma	Deadline is mostly encouraged to do work in a given timeline,
23	Undergraduate	The deadline is good to some

		extent. extremely low time can make habitant to copy paste type of assignment writings
24	Undergraduate	Deadline sometimes makes students attentive when they are trying to be lazy
25	Diploma, Undergraduate	The importance of deadlines needs to be inculcated in the students to make them future-ready

From the above responses, we can conclude that there should be a strict line between an extension of the Deadline and a crosscheck of the genuineness of the reasons requested for extensions. Still, a concrete solution is needed through extensive data analysis of when and where an extension should be. Also, we cannot completely deny the effect of Deadline on learning.

VIII. DISCUSSION

The discussion is focused on the research questions 1 and 2. From the various surveys we take, we analyze the results that there are so many types of assignments and other activities present today to implement. After the education evolution, we are applying many methodologies to engage, to motivate the students. We apply many techniques to enhance the learning experience as well. However, the proper rotation of the types of work assigned should be done in order to avoid the procrastination and improve the motivation level. We took survey from faculties ranging from high school level to PhD level. We came to know that we are assigning the tasks in various methods. However, based on the result analysis we had implemented the strategic model in our one semester students and analyze that the procrastination mind set can be avoided with proper strategic planning. This satisfies the Research Question 1. When our students get acquainted of the methodology, change the strategy and drag them out of your typical methods. This is the aim of the study.

While considering the research question 2, we took opinion of faculties whether they feel the need of the setting a deadline. Also we have taken the survey of students, what they feel about submitting the work on time. We need to set a deadline for every task. However, the due dates can be modified based on the survey while verifying the genuineness of the case. Finally, we

analyzed both the questions together to understand the various reason behind academic procrastination. There are many direct and indirect causes of procrastination.

IX. CONCLUSION AND FUTURE SCOPE

Overall the study is based on the reasons why the students need extensions while completing a task and how the motivation level will be kept consistent throughout the whole semester. The design of the Strategic Model is part of a case study on 139 students. This is qualitative research based on the study of the behavioral pattern and applying strategy. The behavioral patterns are observed manually. It was the ultimate experience of strategy implementation throughout my career. The future scope of the study will be on the genuineness of the reasons for asking for the extension and modifying the model to enhance the learning. It will also be focused on any tool development to observe the behavioral patterns of students using machine learning algorithms which can be used to measure the reference level for Procrastination automatically unlike the method we used. This case study is completely based on qualitative research and critical thinking though some of the references include quantitative study. Quantitative analysis can be a future scope to extend the measurement instrument for universities as a whole.

The current study focused on developing a model while study on various challenges and remedies of the implementation would be the future scope of the research as well. The phrase stated in the abstract shows the unpredictable state of human mind and we tried to give it a direction to flow and connected it to the minds of students.

X. ACKNOWLEDGEMENT

We would like to thank the faculty members who have contributed their views to the survey. They are from various fields, not confined to only one field. We would appreciate the prompt and truthful participation of the students of 7th semester students of RK University, in a course “Internet of Things”, who have submitted their views on submission deadlines. Due to their honest response we could come to a conclusion. We would like to thank the stakeholders of RK University, Rajkot, Gujrat, who supported us with our study.

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