

It is about time

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ABSTRACT: A student's life at a university is not only preparing for a future career, it is all about time. Perhaps that statement appears to exaggerate the situation, but it is suggested that it is close to the truth, even though the typical, average student (who may be so hard to find as to be nearly a fiction – is typical the same as average?) is not continuously aware that time presses, and only feels that when time is strictly short, such as during the lead-up to examinations, or, more frequently, when assignments are due in the near future. Accepting that there is a measure of truth in that outline, one would also accept it that would be reasonable to provide students with some information on how to overcome this pressure. Is that done in an engineering faculty? At this stage, we do not know. But there is plenty of information available on how to personally-manage one's time resource. The article presents some answers to the above question and reviews what could be given to students to help them control their use of time. The stimulating thought could be that, as pointed out by Franklin, time is money.

TIME: THE TYRANT

The idea of this section's title was taken from Blayney's book, which related tyranny to distance. He was referring, of course, to the distance between Australia and England, which a century ago was still termed *home* by many born here. Yet a century ago, that distance also had a time-factor of equally tyrannical nature; travel from there to here required a month or more by ship. With that in mind, it is amusing to reflect that, although we can now get to England in less than a day of elapsed time, the voyage time affects us paradoxically: we complain about the effects of the rapid shift from one time zone to another, as well as the lack of time to sleep adequately on the way.

So time presents problems. What about the issues involving students?

A GENERAL THOUGHT ABOUT TIME

Time, it is said, marches on. An army may, as Napoleon put it, march on its stomach, but time marches on our very existence, affecting how we live, what we do, when we do what has to be done. As an example of the constraints time dumps on us, about one-third of our lives is spent sleeping, and we learn at an early age the result of not putting aside that necessary time.

THE MARCH OF TIME AND THE STUDENT

For a university student, time's ticking may begin with the choice to go straight into tertiary education or to defer for a year or two; if the latter choice is made, then there is a later time-related choice: whether to cut into free-time by picking up studies or to stay out longer, maybe forever. If the person becomes a student by taking the immediate enrolment choice, then there are the time constraints of getting enrolment completed within a specified period.

After enrolment, the calendar and the clock take hold of the student remorselessly. Classes have strict times and durations. Assignments are due on specific dates. Quizzes come with random regularity, but the timing of end-of-semester examinations is reasonably predictable, and the timetables for end-of-subject examinations are published well ahead of their occurring. Over all that day-by-day and month-by-month pressure, there is the awful thought that somewhere in the seemingly long-distant future, there is a time limit allowed for subjects (some universities have an exclusion-after-three-failures rule) and the course as a whole (one university has been known to have a nine-year limit on a five-year programme).

Assignments are a particular bane; the author recalls two examples with an ironic, amusing-in-retrospect flavour. As an MBA student at Macquarie University, he had a sequence of assignments in one semester, but randomly spread through the weeks so that they could be fitted comfortably into a personal programme of work. Then a date came when the class realised we had four assignments all due in the one week. We did not exactly appeal against that, but we did enquire how it came to happen. The professor's reply was unusually shifty, so one student asked whether the coincidence was a lecturer conspiracy, and the professor said, *something like that*.

The other example goes much further into the past, when the author was a student at Sydney Technical College. A large and detailed structural design drawing was required in one subject to be delivered on a Thursday afternoon. It was not ready, so more time was requested and the lecturer gave an extension of *one day*, insisting it had to be in on the Friday. However, the class, altogether, knew that lecturer was not in on a Friday, so the author worked through two nights (with heavily reduced sleep-time, with the inevitable unpleasant result) and the drawing was stealthily delivered on the Saturday morning. It was accepted and graded satisfactorily without question.

These two examples show that, on the one hand, academic staff have ways of getting around students (perhaps with diabolic intent), and on the other hand, students (perhaps out of sheer shortage of time) have ways of beating the time constraints set by their lecturers.

THE LITERATURE OF TIME

There are two branches of *time literature*: one is fiction about what is generally termed *time travel*; the other is about what has become known as *time management*. It will be shown how they relate to each other.

Stories about time travel are, in essence, about ways of beating the inexorable march of time, generally by some technologic device (as yet neither invented nor commercialised) that allows movement back and forth from the present. As far as it can be determined, these began a little over a century ago with H.G. Wells' *The Time Machine* (first published 1895).

The other branch of the literature, time management, is also about overcoming time's grasp on one's life by a more efficient and effective use of time, and technology does come into this by using the clock to limit how time is apportioned and utilised. This is much more recent, although recognition and awareness of the concept must go back centuries. Adair has mentioned an Italian merchant of the early 15th Century whose letters show he was a diligent time manager, and he has given a reasonable bibliography in which the earliest reference is dated 1959, with most of the work cited around the 1970s [1]. However, Drucker cited a book, *Executive Behavior* by Sune Carlson and published in 1951 in Sweden, which shows both extended and international interest [2].

TIME TRAVEL

There are exceptions to the use of technology, for example, the American Rip van Winkle tale and the Buck Rogers story, both of which provided *forward* time travel by the key character sleeping for a long time.

Wells is believed to have been the first to explore the idea of travel back and forth through time by technology. He has been followed by an avalanche of writers that includes: Sprague de Camp, with a story of big game hunters who wanted a dinosaur head over the fireplace, Wilson Tucker, who wrote of going back to prevent Lincoln's assassination, Henry Kuttner with a highly humorous tale of a device which allowed the holder to pop back minutes or hours, as necessary, so that he could correct his mistakes, Poul Anderson who overcame the paradox involved in appearing to change the present by varying the past, Robert Heinlein who presented a most involved (but inherently logical) scenario of interaction within and between generations, and Isaac Asimov's short story about a bank robber, named Stein, who evaded the statute of limitations by displacing himself seven years into the future (and thus providing in the judge's decision a typical Asimov verbal twist: *A niche in time saves Stein*).

How does this relate to students? The author used the idea in one time travel story in a subject as a test for the students' entrepreneurship. The course was for postgraduate engineers, and was titled *Technological Change*. The problem given to students was simple: you have the offer of a time machine that will allow any movement through time, whatever you wish to

specify, so to what use can you put it? All the students came up with the conventional time machine that moves rapidly through the days and years. The proposed uses varied from getting next week's results at Randwick (or wherever the local horses run) or parties to collect dinosaur heads for the mantelpiece (all of which suggested students having a commercial orientation and some may have read de Camp's story) and alternatives, such as getting true reports of historical events (perhaps a more scholarly use). Satisfactory, but...

After discussion, they were told of the *reverse time machine* suggested by Farley in 1938, which provided a *longer time inside than outside*. This was so contrary to normal thinking they questioned its use. Farley's application was, actually, for a student who was way behind preparing for final examinations and needed a week to catch up with study. He spent a week in the time machine while overnight passed outside, had a shower and a change of clothes, and went to his examination full of confidence. Of course, he passed *cum laude*. Students were astonished that such a use, with the potential (if they could access that *machine*) to relieve them from studying continuously, had not occurred to them.

The point of the exercise to reveal to students that accepted ways of doing things are not necessarily the only ways; to be really innovative, we have to think of putting what we have to new uses, which is what technological change is all about – not necessarily new technology, but new applications.

TIME MANAGEMENT FOR STUDENTS

Before proceeding with what the experts have had to say about this topic, a brief return to thinking about the hypothetical student and time, as much as anything to justify making the connection between time management and students. As remarked elsewhere, students in tertiary education, like Caesar's Gaul, can be divided into three parts: there are full-time students, part-time students and cooperative students.

Full-time students have no external interference with study (except possible social matters), and neither do the cooperative students who attend full-time for some semesters, then work for some semesters. For these two groups, time management is fairly straightforward, probably more advisable and desirable than necessary. It certainly helps living and probably raises grades.

On the other hand, part-time students work while studying and study while working. If they are lucky, they are in a job doing work that supports at least some of the study, but almost certainly not all of it. Even if they have that advantage, studying while working is hard, not only because the effort-hours of the day are increased but also because there is the need for a mental gearshift when moving from daytime activity to what generally occurs at night, and for them, time management is an essential aid to comfortably staying alive.

WHY TIME MANAGEMENT?

The above argues, perhaps speciously, that students should manage their use of time because they have time horizons ahead of them. While that is true, are there some fundamental reasons for incorporating time management into one's life? There are such reasons, given by Drucker, as well as (and independently) by this author [2][3]. Looking at these reasons from the viewpoint of the working engineer, in the position to

which the student aspires, engineers use five principal resources: labour, materials, machines, money and time. The first four are, at least to some extent, exchangeable, one for the other, in the sense that, although none are inexhaustible in the long run, a shortage of one can be compensated by substitution-use of another. It is even possible to bring in extra workers and machines to compensate for lack of time. But the time resource is strictly limited in both total and point of opportunity.

In the world outside the university, deadlines exist, work schedules must be met, reports are due in the week after a month's end and so on. Some time limits can be stretched, but Drucker's point, well-expressed in economics language, is that an increased demand for time does not increase supply, unlike the behaviour of market commodities. In the long run, after all, we each have only one life.

The other aspect of the time resource is what has become known as a *window*, a time space or period when an action can occur successfully, and when that passes, one must either give up or wait for the next window to open. One very apt example of this is firing a launch vehicle to intercept a satellite in orbit; there is a brief window when the flight of the launched vehicle will intersect the orbit. This is an example of recurring windows; if weather or some other factor delays the launch, those involved must wait for the next time round; if shares are not bought today at the bottom of the price cycle, tomorrow may see the price rise to an uninviting figure, then one must wait for the price to drop. But some opportunities do not repeat and must be taken when they arrive: *carpe diem*. A remark by a manager under whom the author worked expressed the importance of seizing the day by reference to production: *the ton you don't make today is the ton you'll never make*.

IMPRESSING THAT ON STUDENTS

There will be a further brief delay before discussing time management *per se*, during which the author's experience of impressing students with time management is outlined.

Sixty percent of assessment for a subject, titled *Engineering Management*, was based on answers to 10 weekly assignments, handed out one week and due the next. These were of the *case study* type of assignment, each requiring the making of a management decision, with students told that this rapid sequence was a simulation of what happens in management situations; decisions must be made within the time available for action: within the window of opportunity.

Allocation of part of the remaining 40% was based on how timely the replies arrived, not by reducing the value of each assignment, but by the record through the semester. Students who were late with the first one or two then came back promptly lost nothing, but those who were consistently late lost up to 10%. That time-based grading system provided the students with an incentive for submitting their work on time, and therefore an incentive for them to manage their time in the one subject. However, no other example of teaching time management, inferentially as above or directly, in engineering has been observed.

TIME MANAGEMENT

This section looks at what the concept is all about, what time management is, and how may be performed. Adair, Mackenzie

and Bird are three writers who have focused specifically on time management in the context of the life of those who are *managers*; as might be expected, they agree on many points [1][4][5]. They agree emphatically that planning is an important part of time management. They recommend that each day's activities should be established before the day starts and time should be budgeted for each activity, that is, the person should drive the use of time and not have events coming in randomly and demanding time be spent on them.

This can be applied very readily to a student's life because it seems, in general, that the manner in which students tackle work is on a *what is most urgent?* basis, which means the work is doing the driving, not the student. The right way to proceed with study and assignments is similar to how lectures are set out, by setting out a timetable and working to it.

Keeping a time log is a recommendation common to all three writers, but, with the exception of Adair (who refers to it as *an experiment*), there is little to tell the reader that it is only to establish the pattern of time usage and teach a lesson of how to allocate time. A time log, after all, is not something a person would keep continuously (unless one had a time-fetish, or a relish for statistics), but keeping it for a few weeks is a valuable teaching exercise.

As an example of a time log and its value, two junior engineers and the author kept time logs of the working day for three months some 20 years ago when the author was an engineering manager. The reason was simply that desperate feeling (expressed by the three writers cited above): *where has the day gone?* The result was interesting: we found that the senior engineer was only spending one-third of the day on *engineering* work, the remainder on contacting people for one reason or another, meetings of one sort or another (eg the manager to whom the senior engineer reported regularly dropped in for half an hour at morning teatime), while the juniors spent two-thirds of the day on *engineering* work. The surprising part was they recorded being involved in people-contact for one-third of their time and, although they resolved to do so, found it was extremely difficult to reduce this last aspect.

If they kept a time log through their *working day*, students would probably find a distribution of their study time similar to that of the engineers, with at least one third lost due to interactions with other people. As found in the workplace, much of that would turn out to be inescapable and quite necessary, but looking at it could reveal time that could be saved and put to more productive use.

Each writer refers to timewasters that eat up some non-working time and agree that the telephone (including the now-ubiquitous mobile) is a key timewaster, as are meetings and paperwork: all interruptions to a manager's work-time.

What seems to be the average student, nowadays in Sydney at least, is a young person burdened by a mobile phone, using it while walking from A (perhaps one classroom) to B (another classroom). Mobile phones have been heard to ring (or make other less common noises) *in classrooms* and, even though the conversations may not consume many minutes, they interrupt the recipient's thought processes, as well of those of others around, including the lecturer, when the call has come into a classroom. Students would be advised to turn their mobiles off as soon as they enter the university premises.

Attending classes may be compared with a manager attending meetings: necessary and inescapable. Despite long predictions of a paperless society, students cannot be free of some paperwork, still necessary at examination time.

The advice that can be extracted concerning these points is, again, the concept of limitation: look at what is absolutely necessary, and cut out what can be excised.

One time-waster not mentioned by any of the three writers is what is commonly termed daydreaming, going into a *brown study*, sitting and thinking. This may, of course, be lost time, but just as in some corporate positions, there are people *actually paid* to sit and think, there can be times when a few minutes blankness can help a student to clarify an idea by mixing up a mental mess, then throw it up into the air and see how it comes down. Writers do that quite often, of sheer necessity, and a student can be helped by doing that in the middle of an essay when writer's block hits. Adair has listed the progress through such work as *preparation, incubation, insight* (the *Eureka!* stage) and *validation* [1]. *Incubation* can be sitting and thinking.

A manager can save time by use of a simple, very short, word: *NO*. It is the only suitable answer when someone asks for five minutes (which is obviously going to go to 30), or there is an invitation to attend some function (which can be covered adequately by a subordinate), or when any of the multiple invitations to give away time occurs.

Students face those invitations and interruptions all the time, and need to learn to say *no* as often as possible. Of course, that only applies through the semester, and there are indications of a sliding scale of interruptions; these are more early in a semester than later. However, if a student develops a rigorous negative policy early in a semester, time for completing work at the end will not be as tight.

In management, the workplace affects the efficient use of time. A chaotic workshop/garage/service station leads to inefficient work by mechanics (and certainly discourages the potential customer), and a messy office environment has the same results. Why is it so? Those physical conditions lead to time being lost finding things, such as tools in the workshop and files in the office and not being up-to-date with getting things done.

While all that is true in the management context, which usually involves a group of people working together in a structured organisation, it does not quite apply to a student who, essentially, works alone (just as it does not apply, strictly, to the one-person business). Provided that there is some semblance of order in which the student knows where to find things, such as in which stack *those notes* are buried, and keeps some record of when items are due, then a workplace-situation, which looks like chaos to another, may work very well and not lose time.

All three writers have commented that there is a time when action is appropriate, the moment when the window is open and a management decision must be made. That concept applies to students because deadlines exist and the window closes at a date given, arbitrarily, by the academic. The author's technique for getting around such a deadline did work but is not recommended; it would probably only work once.

Other writers give other ideas. Black reminds us that our perception of time progresses at different rates under different

circumstances, the student-relevant aspect being that stress makes time pass faster, so the frantic stress of being late with work to be delivered *tomorrow* speeds up the clock while slowing down the rate of mental and physical output [6].

Saville and Higgins have made a couple of valuable points, one being that trying to compensate for poor time management by spending more hours on a job creates a no-win situation; it attempts to solve a problem by treating the symptom (once more, refer to the author's working late through a couple of nights to finish a late assignment) [7]. There is also a related point: the error of managing by waiting until a crisis emerges.

Two contributions come from Dearlove [8]. One is that there are hares and tortoises in management, by analogy, the same distinction can be found in students, and each student should identify his/her learning style, whether it is that of a streaking hare or of a plodding tortoise. The other is the distinction between urgency and importance (also expressed in the training movie *The Unorganised Manager*), actions that are vital are not necessarily urgent, and *vice versa*, so one must distinguish between those conditions.

Carlopio et al is one of the big, serious management books with a useful section, making the point that stress can be reduced by effective time management, and providing a series of questions and rules to be used for improvement [9].

The arch-heretic of management writers, Townsend, gave an amusing way to manage the sort of meetings that should be kept brief: hold them without chairs, standing up, so that no-one wants to stay over-long [10]. Not advised for students!

CONCLUSION

Time management is a serious business for students, as well as for managers. While the literature research found nothing directed specifically to students, there is plenty in the management literature that can be applied by students to make their life easier and their grades better.

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