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A TALE OUT OF SCHOOL—A CASE STUDY

by

Mark Feldman

## Introduction

Robert Maynard Hutchins was a towering figure of American higher education. From his experience as the President of the University of Chicago (1929-1945), he knew the dangers inherent in a university’s need for money. He wrote that

“…when an institution determines to do something…to get money it must lose its soul [emphasis added]…I do not mean…that universities do not need money…I mean only that they should have an educational policy and then try to finance it…”.

Yet making policy just to get money is exactly what many American Universities do today. In the process, they are burying the “education” in “higher education”. In the following story, I will show administrators and professors actually digging the grave.

I will do that by describing some of my experiences teaching at Washington University in St Louis (ranked number 14 in the nation by US NEWS). This single, detailed, and documented story will provide students, parents, and policymakers, with insight into how the selling of a university’s “soul” works in practice. It will show why these academics keep digging the grave, how easy they think it is to get away with, and why it is true that the deeper they bury education, the higher they rise in today’s perverted system of academic rewards.

Before I start my own tale, let’s look at how Washington University (I’m not picking on them; I just know them best.) even markets the particulars of how they have sold their souls. They don’t think that is what they are doing; but to the experienced observer, it is exactly what they are doing.

Meet Professor Alan Stein (I have changed his name and the names of all of the individuals in this story except for mine.). He is a professor of physics at Washington University. He teaches a course that the university describes as “An advanced introduction to central concepts in physics…” Students majoring in physics and engineering are required to take a course like his. The University touts his teaching methods in the lead article of their 2012 School of Arts and Sciences (A & S) Magazine. The article is about “…How Arts and Sciences faculty encourage new science students to stay the course…”– a task that the magazine points out is important to the nation.

They write that Professor Stein,

“…brought a new way of teaching to campus…. To create a deeper level of understanding, not an easier course. …Stein scrapped the traditional lecture format… students are required to actively prepare for class... In a typical class, they hear one or more 10-minute lectures … talk about two-minute problems in groups… go home and rework the original set of homework problems…

Students… were clamoring to get in…”

Were “…students…clamoring to get in…” because they were learning so much? Or, was it because Prof. Stein makes hard material easy through the time honored trick of just not covering it? Here are some indicative quotes from Prof. Stein’s students:

“His tests are extremely easy, and are untimed.”

“His 197 exams have unlimited time and are so easy! The daily homework assignments are short…”

“If you ask him questions during exams, he'll answer them for you in full detail. really easy to do well in this class”

“he wrote the exams and they were pretty easy! I wish there were more profs like him. A+”

And then there was this,

“It was touted as the best at WU, but … I feel like I did not learn much during the semester. I am a Physics major and am worried about the voids in my background. Please give more fundamentals”.

About ninety percent of Prof. Steins’ students usually expect some kind of A near the end of the course.

This course is not just grade inflation; it is content deflation--something much more pernicious than grade inflation. It deprives students of even the opportunity to learn what they need to compete in a global marketplace.

I believe that this physics course is a perfect illustration of what the famous sociologist David Riesman warned us of:

“…advantage can…be taken of [students] by unscrupulous instructors and institutions…the “wants” of students to which competing institutions, departments, and individual faculty members cater are quite different from the “needs” of students…” David Riesman in On Higher Education: The Academic Enterprise in an Era of Rising Student Consumerism (1980)

## Beginnings

I have taught at Washington University for many years. In the spring of 2011, I was asked by the Chair of the Math Department, Don Getty, to teach a course in differential equations. This course is required for engineering and science majors. It covers material that MIT describes as “...fundamental to much of contemporary science and engineering…”

The students at Wash. U. (as it is commonly called) are some of the brightest in the country. According to the Dean of Engineering, the Engineering School’s freshman class’ average math SAT score was 740. That is not much lower than MIT, so I decided to see how MIT presented the material.

MIT puts many of its courses online for anyone to utilize. They have developed a large amount of material for this course--computer graphics, extra notes, problem sets with solutions, practice exams. Some textbooks have this kind of material, but I have seen nothing that compares to the MIT materials. Furthermore, their approach to teaching is the same as mine.

[The following is an explanation of how I teach. It can be skipped without changing the flow of the story.

In many subjects, like math, there are some basic ideas. If you understand a subject within the setting of these ideas, it becomes much easier to approach problems. Here is an example from music. Most songs follow a set pattern. Once a musician, or even a listener, realizes this, either by listening to lots of music, or listening and being told, it is much easier to switch from song to song. Only the details matter--and of course they matter a lot. A fun example is “Morning is Broken” by Cat Stevens and “Annie’s Song” by John Denver. They have the same rhythmic pattern but are very different songs. Here is an example from math. A common technique in math is to switch between a geometric view and an algebraic view. For example, the behavior of two linear equations in two unknowns is easier to analyze geometrically than it is by studying the equations directly, that is by using the algebraic (or formulaic) view. Each of the equations represents a straight line. Thus, it becomes a question about the nature of how straight lines can intersect. (They can intersect exactly once in which case the two equations have exactly one solution; they can be parallel and never intersect (no solution); or, the two equations can represent the exact same line. That’s it.) On the other hand, it is easier to find the exact point of intersection of two straight lines by converting the problem into an algebraic one; that is, by just using formulas. These are common themes in mathematics. The higher the level of these ideas that you can learn--along with the technical tools to carry out the ideas--the better you can be at mathematics. When I teach I try to guide the students into seeing and internalizing these ideas (core concepts) and tools.]

The most important criteria that I used in deciding how to teach the differential equations course was that the students needed to learn, as well as they could, the tools and skills that would make them good engineers. That may be an obvious statement--that the instructor would take learning as the aim of the course--but, as we shall see, that is not necessarily the case.

## The Administration Reacts

In the third week of classes, an Engineering Professor (and Associate Department Chair), Harold Kay, sent the following email to the Associate Dean of Engineering, Jay Johnson (who is alsoDean of Engineering Student Academic Integrity*.* This will be important later.), and to members of the Engineering school’s curriculum committee.

All,

An engineering professor alerted me to the following… [that] Adjunct Professor Mark Feldman… is using the Open Course Ware from MIT verbatim. The course ware is available to anyone through the Internet. He projects their slides and read them line by line. His homework problems are directly from the course ware…solutions are available on the Internet... I have not verified this info by talking to some sophomores. If true, this is very regretful and motivates us to teach differential equation ourselves. If you see sophomores, please verify the validity of this info. Assuming this is true, what actions shall we take?

Harold Kay, Ph.D.

Associate Chair and Professor

Dept of Electrical and Systems Engineering

Professor of Engineering and Applied Science

I learned about Professor Kay’s email from Rob Smith. Rob is the math department’s non-tenured “Coordinator of Lower Division Teaching”.

Rob told me that he needed to answer the Dean. I told him what I do. I also told him that I felt that Harold Kay’s accusation was an attack on both my integrity and the department’s integrity. I pointed out that if Professor Kay wanted to know how I taught he could have just looked at my own hand-written lecture notes that I post, for the students’ convenience, on the web. Rob laughed all that off. I asked the Mathematics Chair, Donald, if I could meet with him, but he told me it was nothing and that Rob would take care of it. I was also concerned that if the students’ engineering professors questioned them about how I was teaching--as Harold had asked them to do--then the students would begin to doubt the legitimacy of the course, and their performance would be effected. Rob gave the Dean an answer. He neither copied me nor told me what he wrote, though I asked. I had not yet totally understood what was happening, or what Rob’s, Donald’s or the Engineering School’s real concerns were. I would soon understand.

I decided I should send an email to all the people that Professor Kay had written. Some members of the mathematics department encouraged me to do so. For example, here is what a former Chair of the Math Dept wrote me. (I had co-taught courses with him and he knew me well.)

“Dear Mark,

Oh, my. … Wouldn't be a bad idea for you and/or Donald to have a quiet chat with Jay [the engineering associate dean that Kay had written], volunteering to supply whatever evidence he or [the Engineering Dean] might like to see. There's of course nothing to be gained by an interchange with Kay.”

Here is part of what I wrote to the Engineering School Deans and Faculty.

“…I wanted to let…you … know why I decided to use the MIT OCW material. First… in order to provide you with some information about my teaching in general, I have attached three letters from former adult students... Also, I have … taught several courses to children of some of the faculty here. They all know me personally from that experience… please feel free to inquire about me from them. They are \_\_\_\_\_\_ (Executive Vice Chancellor and General Counsel) and (Professor of Biochemistry and Molecular Biophysics) and (Professor, Department of Medicine Hematology Division Department of Biochemistry &Molecular Biophysics)

Now back to the MIT materials.

Their math department has worked… with their engineering school to come up with a list of skills for the engineers to acquire in the Differential Equations class…After realizing how outstanding the MIT resource is for students with the abilities of those here at WU, I could not imagine myself not utilizing it. Of course, integrating these materials, along with the book and my lectures (which are available on my website), has been much more work than just using a text with my lectures…I spent a good deal of time…determining how best to utilize the MIT resource, integrating it with what I would normally do; and, keeping it manageable for both me and the students. I continue working on this…

Here is part of one of the letters I attached to the above email. It is from a partner in a national investment firm headquartered here in St. Louis. (He was the designer of their corporate computer network architecture.) He had attended one of my evening courses. The letter was sent to the Dean of Arts and Sciences.

“…My purpose in writing this letter is to congratulate you on the quality of the course and on the quality of the instructor, Dr. Mark Feldman….the high level of quality, clarity, and sophistication … [of the course] was a direct result of his leadership and knowledge.

Dr. Feldman taught at a very detailed level. His raw intelligence, detailed knowledge of the subject and pleasant teaching style made the class challenging, yet enjoyable. Dr Feldman was not satisfied to simply teach the mechanics of how to solve the problems presented in class, but spent a great deal of time ensuring the students … understood the details of why the mechanics work…

…these students are going to owe Dr. Feldman an enormous debt of gratitude for the preparation they received. As they progress in their … careers, his mentoring, both in method and in substance, will prove to be invaluable.”

I hoped that my letter to the involved Dean and faculty in engineering would allay any concerns they might have. Again, I really didn’t understand how little their concerns were about education.

A few weeks later, I heard from Rob.

He wrote about “[differential equation] issues” to tell me that one or two had complained that I had asked them to turn in their homework in the math office, rather than directly to me. After I tried to explain to Rob why I did that, he wrote “… I just don't like hearing complaints…”

Two days after I gave my second test, Rob told me that he had “received a couple concerns from students” about my class and would come to my class to observe my teaching. He came to the class. Then he wrote me the following.

“As you know, over the past week I have received quite a few concerns from students and EN [engineering] faculty about your course. This is in addition to the concerns we received near the beginning of the semester...Donald and I would like to meet with you…to talk about these concerns and see if there is a reasonable way to address the issues”

I asked what the concerns were. They wouldn’t tell me. (Only later did I manage to get copies of complaints when I asked for them in contract negotiations. There are excerpts at the end of this story, right before the Epilogue. Some readers might want to read them and then come back here. They give an idea of what must have been on Donald’s mind during this meeting.)

When I met with Donald and Rob, Donald did almost all the talking. (From previous experience, I knew he did not want a dialogue.) Here is a summary of what he said.

“Student’s are frustrated. We always teach this course and don’t have this much trouble with it. They say they are frustrated and can’t do the problems. Differential Equations is a cookbook [emphasis added] course and always will be.

“A place to start would be to make sure these students are prepared to work the problems.”

Donald continued,

“There is a bit of an issue with the university and relationship. Kay’s outburst was a bit intemperate. I would ask you a couple of things. Try to make the lecture more concrete so that the students are absolutely certain how to do the problems...”

I asked if he meant for me to show them exactly how to do the problems so they could just copy what I did and use that to do the problems. He said, yes, and continued,

“These students need to be able to do these techniques and just solve ODE’s. [ordinary differential equations]”

I tried to interject that I used to be an engineer and I try to utilize that experience to determine what the students need to know about differential equations. But Donald laughed heartily and said, loudly,

“I don’t care!”

Donald ended the meeting, saying that “The way we have always taught it, it’s not a problem. If I wanted to impart more mathematical understanding, this would not be the course that I would pick*.*” [emphasis added] Again, he laughed.

Donald was asking me to teach the course in the “normal, cookbook” way – the way that gives A’s to students who can later write, as an advanced undergraduate whom the engineering school had hired as a tutor wrote, “ …[I] cannot do many of the [MIT homework] problems…on almost every problem set. …” (He wrote this as a complaint about my course.)

I politely listened to Donald, but since teachers are supposed to have the academic freedom and duty to teach the way they feel is best for the students, I was not going to dumb the course down. As my wife asked me, “Who do we want building our bridges – engineers who have taken cookbook courses just so they can pass, or engineers who have taken real courses?”

It was not news to me that many administrators wanted no complaints from students, or anyone, under any circumstances. (A previous Chair of the Math Department had asked the Dean (his boss) whether the Dean wanted no complaints even if that meant lowering educational standards. The Dean replied, “I want no complaints.”)

The way many people deal with the conflict between student complaints and class standards is to simply lower standards. Here is what happens. The professor knows that some material is difficult to comprehend without considerable thought. The professor also knows that many students, when they don’t immediately understand something, will complain that the professor isn’t clear. (In my opinion, most students aren’t to blame for this. They have been taught to think the teacher should always be clear.) Most professors avoid bad evaluations by just not covering the material, even if it is fundamental.

I had dealt with this problem for most of my career. I had evaded problems from administrators in various ways. Sometimes I co-taught a course with someone who was in charge of what would be covered and had the final say about what would be tested. (I would still cover more but explaining how I did so would take us too far adrift.) Sometimes my course was “out of sight, out of mind” and I had a free hand. (Again, it is too hard to explain why and how, briefly.).

Now, for the first time, it was clear that there would be little wiggle room. Either the standards went or I went. I had always struggled with the question of whether to document what I was seeing in higher education – and no longer be able to teach – or keep helping the students that I could reach through teaching. I had two hundred bright students, most of which would work hard to learn material that would be important to their careers. I wasn’t going to let them down, whether they all liked it or not.

After the meeting, I wrote Dean Johnson in the Engineering School. He is the person that Professor Kay had written to earlier and is the apparent between Math and Engineering. Specifically, his title is: Associate Dean of Engineering / Applied Sciences and Dean of Student Academic Integrity (Engineering). I thought it was important to let him know how things were going.

|  |
| --- |
| Dear Jay,  I'm concerned about some of the students in Math 217. Hopefully, if I let you know what the problems are and give you some general information about what I'm trying to do in the course, you can pass this on to the Engineering advisors.  On the first test, I gave …two [problems] directly from the MIT homework … [The second problem] would be easy for any student who did [the homework] but, probably, quite difficult for any student who didn't do it … about half of the class got an A for the problem on the test (70 got 100%), and, about a third making less than or equal to 30%.  What concerns me …more …is that (a) almost all the students turned in this HW problem for full credit, which is supposed to mean that it is their own work, no matter where they got their understanding (I tell them to consider the MIT solutions as a friend who helps then when necessary.); (b) one of my graders was distraught when he observed that about half the students were following the spirit of the instructions, but another half wasn't. This seems to be in line with what I saw on the test.  …After the second test, I did a quick…study to see how students who do their HW perform on the test. …those who seem to be doing the HW had a median of an A-- on the second test, and those who appear not to be doing the HW had a median of D--. …  Now, for the good news. In order to encourage some of the students to apply themselves more diligently, I have told them that I will replace the lower of the first two test scores with the average of the final two scores--if it is higher. I then let the class know that my teaching assistant (who is outstanding) would be reviewing the first half of the material. The response seems to be excellent. About 100 students showed up to the review section. In the past, only about 10 have showed up for his reviews …  … I am doing everything I can to make this material as accessible as possible to them, and to give them the background to become outstanding engineers. I'm sure you will be pleased with the final results …  Thanks,  Mark Feldman |

Jay responded,

“ ..The math and science courses are crucial for student retention in engineering. It pains us to see students give up engineering due to lack of confidence in math and science before they get into the meat of engineering coursework.”

He said nothing about the students’ actions. Then, within an hour, he wrote me,

“An engineering faculty advisor just contacted me and said that a number of her students are giving serious consideration to withdrawing from Math 217. This will totally throw their course sequence out of whack if they drop Math 217.”

There seemed to be considerable concern about “retention”. Of course, retention is always important but so is preparation. I wondered why preparation was taking such a huge backseat to retention. At the end of this article, I discuss what I think are some of the motivating reasons. For now, I will continue with the story.

(It turned out that between the first test and the final only 7% of the students withdrew. That is not a particularly large number. The last time I co-taught the course, with someone else assigning the homework and in charge of the testing, the number was closer to 12 %.)

I also received a message from Rob. It read, in part,

“I was able to speak to several more students…about difficulties they are having in your…course. I have a few additional suggestions…We discussed yesterday the suggestion of making sure you model such problems in lecture. I am just suggesting that these sort of problems being most or all of the homework….”

From this and the conversation with Donald (with Rob present), it was clear that Donald wanted the students “trained” to do the homework. Doing examples isimportant. Sometimes it is not easy to understand a new idea without examples. But students at this level, paying this much money, who are just being taught to pass a test, are being robbed of their future.

Shortly after Rob’s email, I received an email from Donald that read in part,

“We do have a crisis here, and I'm hopeful that a mid-course correction which brings 217 in line with the way it has always been taught can salvage the situation. We are really depending on you. There is a lot at stake…”

A few weeks went by. I had given the third test and the class had improved. The average grade was 78 (vs. 68 on the previous test). As a check on how well the students were learning, I had taken some of the test problems from tests that had been given in years when the class was taught the usual (cookbook) way. Almost 70% of the students got every one of those problems correct.

This is a good place to digress and say something about how I give out final grades, and the conflict I face. I want the tests and the test grades to reflect what I want the students to learn, and what the standards of learning should be for this material at this level. It is unfair to them to do otherwise. Yet, given most of today’s educational standards, it is unfair to give someone a B, say, when they have learned moreand better than someone who got an A in a “cookbook” course. So, what I do is tell them that if they keep improving and do well, I will take that into consideration. Then, I try to make sure that their final grade makes as fair as possible a comparison to other students in other courses. At the very least, I don’t want them to be penalized for learning more. Now back to the narrative.

Toward the end of the semester, Donald asked me to meet with him, again. Here is what transpired.

He started by saying,

“I have promised the Dean that we would give the same grades as usual…I’m getting enough flack to not want you to teach the course again…The Dean of Engineering came to talk to me.. I have used you in the past and I don’t want to burn that bridge…I am asking you to release us from your contract for next semester…”

I told him I would think about it, but could he tell me what the specific complaints about me were. He said he would email them to me.

(Finally, I was going to see the “complaints” that Donald had withheld for so long; probably because he was hoping he wouldn’t have to honor his contract.)

Donald said he didn’t know what went wrong. He noted that I also teach in the evening school. He said that he didn’t want to say that if I didn’t let him off the hook for paying me, it was “fouling the air”. In other words, he said, please release him from having to pay me for the next semester.

He went on,

“Face it, Engineering is always a problem. We just wrested [a course] from them, which we teach better, and we don’t want to have to give up Dif. Eqns.”

Donald sent me copies of eight emails he had received. A few seemed solicited, and a few were from faculty. In any case, Donald wrote me that the emails would give me an indication of what he was "having to deal with”. Here are a couple of illuminating examples from the emails. (All of the italics are mine, added for emphasis.)

First, here is a letter that was sent to the Dean of Arts and Sciences and the Dean of Engineering. Such a letter would be taken very seriously.

“Dear Dean Mackey [Dean of Arts and Sciences] and Dean Do [Dean of Engineering]:

I am writing …concerning this semester’s offering of Differential Equations… in which my son…, is currently enrolled.

…. I am a licensed Professional Engineer; my degrees are from. [famous engineering school] …I was a member of the faculty at [different famous engineering school] for several years …

…, my son and I have discussed the way in which Differential Equations is being taught and graded…my impression is that the instructor is not doing a very effective job of communicating essential concepts...

…, I am troubled even more by the information I have been given [emphasis added] about the instructor’s grading policy. An exam was administered in the past week, and I have been told [emphasis added] that the average class grade was 47 out of 100. [It was actually 68.] …a class average below 50% indicates a problem with the exam...the instructor has decided that he will not curve … I have never heard of such a grading structure. In the courses I taught, my goal was for class averages (or medians) on exams to be in the range of 60-70%, and class average was around a C+ or a B--. Grades were always curved…

… I am also writing this letter as a “customer.” I pay the tuition bills… I have an expectation that the courses that he takes will be fairly and competently taught…

I encourage you to look into these issues and to determine if my concerns are merited.…

I don’t know if anyone ever looked into the matter, as the parent asked. No one talked to me.

Then, there was this email from the son.

Dr. Getty,

… I would like to discuss with you my concerns about this semester's differential equations class.

I had been discussing this matter with my father … he decided … to send an email to Dean Do of the engineering school…. It was…my father's intention to not share the fact that he had sent an email with me, as I specifically asked him not to do so …He decided… to let me know of his actions after he received a response requesting feedback from the students.

…I decided I would wait about one week …to allow any changes to take place… Unfortunately, I believe Professor Feldman has made very little improvement…

First … it is my understanding that his teaching methods were too theoretical. …. My suggestion would be to introduce a topic, and do basic, and progressively more difficult examples of the types of problems we would run into on an exam …Almost all of the homework sets assigned are the set posted to the [MIT] website, theyare very dissimilar to the questions we see on exams. [Actually, they are exactly the same in many cases.]

… I…have a 'D' [This would probably put the student in the bottom 5% of the class at that time.]… I feel…that this grade does not reflect my understanding …nor…the time that I have spent working. …I am hoping this will be of some use to you as you continue to try and improve this course. [emphasis added] ”

I find the student’s final comment intriguing. Apparently, he and his father think that the administration is trying to “improve the course”. Have things gotten so out of whack that in a reputedly outstanding school, administrators can “try and improve” a course in response to a student and father, when the father seems to be totally misled, and the student apparently wants to do well without even reading the homework? Maybe the administration is essentially following this student’s advice. In our first meeting, Donald had told me to,

“…make the lecture more concrete so that the students are absolutely certain how to do the problems…”, telling me that, “… If I wanted to impart more mathematical understanding, this would not be the course that I would pick…”,

and the student had written Donald that I was

“…too theoretical… [and should] introduce a topic, and do basic, and progressively more difficult examples of the types of problems we would run into on an exam…”.

I had truly thought (hoped, fooled myself into believing?) that now that Washington University had improved its reputation so much that it now had extremely capable students--most of them potentially a valuable resource for themselves, their families and their country--the university would be pleased if they learned well, even if it required hard work and some dissatisfied young people. But, no, that was not to be the case. We could essentially scam all the students who might learn in order to please the complainers, “customers”, as the father so aptly put it. Maybe, there is even more behind the attitude toward the “customers” than just pleasing them. I discuss this in my conclusions. In any case, I find this attitude disturbing. Many students are eager to learn, and are willing to work hard to do so.

A student (call him Jack.) who took the class wrote me the following.

“…I just wanted to let you know that I have been feeling ill all weekend, and have … gotten worse. I am quite sick. I hope to make it to class tomorrow, but I am not sure how I will feel. I... get sick a lot because I have [a condition] that weakens my body's defenses especially in my respiratory system and digestive track. I also have asthma, which becomes enraged when I get sick from my [condition]. I take medicine everyday for it, but sometimes that is not enough. I do plan to get my rest tonight, so that I will hopefully make it to class tomorrow. I just wanted to let you know.”

Jack did come by my office on Monday to tell me that he would be in class and to ask a few questions. He was almost always in class, sitting in front. He made an A in the class.

I simply am not going to scam students like Jack so that a complaining student can be happy and his parents can be fooled. But apparently Donald, the Dean, and the administration, have no problem doing that.

# Epilogue

On the last day of class, I told the students that the administration had pressured me to make the course a “cookbook” course and that I refused to do so. I told them that they should know this. These are matters that have a serious effect on their education and future. To my surprise, a large majority of them applauded me. I was moved.

After the semester was over and I read my student evaluations (which were written before they learned from me what had been going on behind the scenes.) it seemed to me that the Engineering School had told the students that the course was a problem. In spite of this, the evaluations contained encouraging (anonymous) comments from some students. Here are some excerpts.

“Professor Feldman [had]… respect…for his students… he said that the material was difficult but that as smart students we could handle it and then congratulated us if we did well on an exam or asked why we struggled if we did….”

“I enjoyed the material in this class more than…the material in any of the other math classes I've taken at WUSTL … the …MIT material and readings were far more in depth than the textbook readings. .. the material…was aimed at developing skills needed for engineering… learned a good deal…, but more importantly, I found that my problem-solving and analytical math skills were greatly enhanced by this class. The material was challenging, but… if I put in the time to think it through, I could understand it in great depth. …Professor Feldman… is dedicated to teaching... He is open to people asking questions during lecture and often poses questions to the class during the lectures... something that I found immensely helpful’’. Professor Feldman is also willing to meet with students during office hours to help them understand the material. .he dedicates himself to this class.”

“Professor Feldman is an exceptionally nice man, and it's clear that he really cares about his students and strives to help everyone to understand the material. I would recommend this course simply on the basis of the professor's character, to say nothing of how useful the content is to engineers.”

“I think a lot of students in the class were struggling, but it was their own fault”

“The professor always came to class with an exciting personality and tried to make the lectures interesting. I like that he often emphasized the importance of what we were learning in class to the outside world. I also appreciated the encouragement he gave us for our grades and the availability he had in helping us reach our personal goals. Professor Feldman is one of the nicest professors I have ever learned from”

“… I learned a great deal even if a lot of it was from self-study. Material from this course started to show up in some of my other courses... Exams were not easy but not too difficult…Many resources… were provided to supplement the lectures… Problem set questions were very difficult but solutions were available... This allowed students…to work on very conceptual questions without sacrificing their course grade... I learn best [by] work[ing] through problems but hav[ing] …solutions available if I need them. Prof. Feldman was absolutely dedicated to his…”

Overall, the students in this class were an outstanding group of young people, who deserve a good education. They studied, worked hard, and learned. In the end, 43% made A’s (a whopping third of those were A+’s.), 34% B’s, and 23% made C’s.

I was particularly pleased with the number of students who responded by applying themselves and improving their grade. From the mid-term grade to the final grade, 59% raised their grade by at least one letter grade and 24% by two or more letter grades.

On a final note, for over twenty years, I have also taught courses in Washington University’s evening school, University College. ( Many of those students have gone on to do well and I have heard back from them.) No more. Again, Donald (or, as he *claims*, the Dean of Arts and Sciences) apparently has shown how small a role the education of the students plays in their decision making. Donald essentially told me that if I did not agree with him that I should not continue teaching Differential Equations (by releasing him from his contract with me.) that the air would be “fouled” and “bridges burned”.

The next semester Washington University’s differential equations course returned to a “cookbook” style course with a vengeance. As Clark Kerr noted, as early as 1980,

“…This shift from academic merit to student consumerism is one of the two greatest reversals of direction in all the history of American higher education...”

# What Happened? And Why?

The Engineering School was clearly upset about their students being challenged. They seemed to have almost panicked--apparently telling students they would improve the course, apparently not caring about cheating but being very concerned about “retention”.

I compared Engineering’s reaction to the reaction of the Business School (and School of Arts and Sciences) when I taught a required course for them; and, of course, taught it with the same attitude that I had in teaching the Differential Equations course. I had no such reaction from them. I heard no complaints at all. Here is what I think the difference is.

The course I taught for business and non--science majors, though required, would not be considered by the students as essential to their major. I don’t think that many students who have to struggle with the material in a calculus course would let that discourage them from majoring in business or, say, history. An engineering student, though, might well worry about continuing in engineering. I think that is one big difference. I believe that the engineering school is quite worried about losing any of their majors. And, from a pure business perspective, I believe they should be worried. Here is what I have been able to piece together, in order to arrive at that conclusion.

Within Washington University, the individual schools, School of Arts and Sciences, School of Engineering, etc.., are on what is referred to as the “reserve system” Each school receives tuition income “proportionate to percentage of teaching.” They also get to carry over their operating surplus from the previous year. The only year I have numbers for is 2008. That year, the School of Arts and Sciences had a surplus of $4.4 million and the School of Engineering had a surplus of only $100,000.

I was also told by a faculty member that the engineering school gets allocated about half of each of their students’ tuition until that student finishes their prerequisites. Then they are allocated 100% of the tuition. Retention pays.

Much of higher education in America is being run almost solely as a business. It’s a wonderful business to be in. When the consumer wants to know how good the product is, the experts (the professors and administrators) tell them, “It’s excellent. Look at your A. And look at how good a professor I am. I made everything easy for you to understand. (Of course, I didn’t tell you about the hard stuff--the stuff you really need to understand--and the material that will probably require hard work from many of you in order to understand it.)”

Many professors see this system as abhorrent and would like to teach like I taught. But many more can never be counted on to even try to change the system. They are too happy with their guaranteed jobs, six figure salaries, low teaching loads, and the time they get to do the research they love. They wouldn’t want to be bothered with the committee work, the risks, or the time that change would take.

Institutions of higher education are fundamental to all education in America. Colleges are supposed to educate K-12 teachers. The more prestigious ones (like Washington University in St. Louis) graduate Ph.D.s who go on to be professors who teach K-12 teachers. Universities can have reasons, financial and otherwise, to deflate the value of certain Ph.D.s so that they can award more of them. These students, not having the appropriate background, then deflate the education of their students, many of whom go on to teach in high schools. I have seen the results of this up close and personal. But that is a story for another day. I will just end by reminding the reader,

Buyer Beware. All of us better beware. It’s our country, our economy, and our progeny. Let’s not cheat them.

END