

Precision Teaching Applied to the University Setting

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Probably it's going to take each speaker encouraging this, that you  
↑ should feel completely free to get up at any point and go sample something  
else. And believe me, I do hope you'll do that, because if I'm not talking  
about, or it doesn't look like I'm going to talk about anything of interest to  
you, I don't, I certainly will feel worse if you stay here and listen to what  
we're talking about than if you go find something perhaps potentially  
useful. So, you know, just because you're here doesn't mean you have to  
stay here. And please believe me when I'm saying that very sincerely. You  
can go out. You can come back. You can do anything, as long as you don't  
attack me (LL) while I'm trying to pull this off.

Om START

A: ()

SAG: Well that's all right. That's a very nice statement. No. But I want to  
help you a little bit more because you may find out in five more minutes  
↑ that I'm not going to talk about anything you need to hear, and so you can  
really catch a limosine early if that's the case.

Im

The next thing: **Chart parents**. I think it's kind of nice. And we  
could do it for every body here. The idea is, where did you touch or get in  
touch with or start up your precision teaching? That is, who were your  
chart parents? Who was the person, the individual that sort of got you  
going? And then you can kind of trace a little tree back to see how that  
person is connected to somebody else, and somebody else, and so forth. I  
think it helps, sort of helps in listening to a speaker, to find out that  
information. I'm sorry, we probably don't have time, I don't think we

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should take time at this point to go into everybody's own personal tree. 2m  
But I feel very fortunate to have an environmental history which has ↑  
afforded me the opportunity to have as some pretty good genes as far as  
my chart parents. (LL) My chart father is Ogden Lindsley. And I was  
spawned, or whatever, in 1967 when I was a graduate student at Ohio  
State when he came in and talked in sort of a two day session in the  
Department of Psychiatry. I was in graduate school in psychology, and  
pretty much, you know, decided then and there that I was going to get a  
doctorate, but then I was going to go follow Ogden's lead. So Og is my  
father.

And I also just realized, with a little bit of searching--my real  
parents, my mother's a genealogist. And I found out, well I'm just kidding  
there actually, but I'm also related to Hank Pennypacker, on my mothers 3m  
side. (LL) So he's like my uncle. ↑ I first ran into Hank in 1976 as far as  
actually meeting him. But, I've been influenced by alot of his writings  
before then, which had a very direct impact on the way I operate.

Now, several of the things that are sort of focal points for the way  
we're looking at some of the issues I've set up for today are really  
relevant to what these people have told me. So, for example, the things  
like **process** versus **product** is something that I got from Og. And the  
idea also of **strategies** versus **tactics** is something which I got from  
Hank. Okay. So.

Here's kind of the, again, the general outline that I set up months 4m  
↑  
ago as far as the sorts of things that I thought I can talk about. [FIGURE 1]  
And once again, this, the way we're going to deal with it is sort of process.  
But for those of you who may have come in after I mentioned this before, I  
do have data on these things that I'd be glad to share with you if you're

really interested. But it's kind of, kind of, you know, it's tactics. It's applied tactics. The difference between strategies and tactics are, the strategy is sort of the "global idea", sort of the global way you're approaching the problem in this case. And so it's almost kind of, it's a little underneath a philosophy, but it is sort of a wide band approach. Whereas a tactic is part of your strategy, but it's much more specific. And so hopefully what I'm going to do is talk first of all a little bit about some strategies in the university setting. And then share with you some of these tactics. Because these are by and large mostly tactics. 5m

The kind of the strategy issue I think is, first of all, sort of the global question that has to be addressed is, what are the important issues that we face as we operate in the university setting? Well, ideas that anyone has? Who has sort of a burning notion as to what some important issue is? (P 4sec.) Once you come up with an important issue, then, the what ideas deal with those particular issues. And again, this brings in strategies and tactics. I'd like for you to think for just a moment about this and what I'm going to do is sort of take 30 seconds and have you write down the kind of the issues that you're thinking of at this moment, realizing that on short notice like this, you haven't had time to really synchronize your thinking or anything. It's just kind of a little sample. But then, I'm not going to have you share those with us unless you sort of volunteer with a burning issue. And I didn't see any burning issues sprishing up or flaming out. But at the end what I'd like to do is see if you have gotten any new ideas. That way I'll have a sort of a way of measuring my own effect. So let's take a 30 seconds shot here. Get my watch set up. Does everybody have something to write on and have something to write with? 6m

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Claudia: Can I ask a question for more information?

SAG: Yes.

Claudia: When you said "we" did you mean precision teachers specifically, or did you mean students, or the whole university community, or what? 7m

SAG: Yeah, that's a good question, Claudia. I'm really coming from this direction: I'm assuming that you're precision teachers. But I'm not assuming that we're working in a setting where everyone else is a precision teacher. So, it's essentially as I see it, a situation for many of us, at least it is for me, where you're sort of an individual in a hostile environment, where the hostility varies depending on exactly where you are and who you are dealing with. Is that enough information?

Claudia: Thank you very much.

SAG: Okay. Other questions before we take our little timing? Okay, just do the best you can. You can abbreviate, because it's only you that's going to see it. And ready? Please begin. (PAUSE (LL) 31 secs.). And please stop. And what I'd like for you to do, at least very quickly, double the number of the counts, things that you counted for things that you put down. Double that number, because I did a sort of 30 second sample. And then just sort of quickly report out. Just call them out. It doesn't have to be in any order. I'll just write down as I hear them. (18, 10, ...). Okay, thank you. 8m 9m

Here are sort of the issues that I've picked up and focused on as far as strategies, rather broad issues. [FIGURE 2] One is, as far as operation, you know, what do we do when we have something as powerful as precision teaching, that we know about, that we can use, and kind of probably want to share with other people, how can we best operate within the university setting? Again, this is process. This global strategy there's less data on

it, because I haven't been able to measure much about this. As I see it, there are some underlying sorts of things which are involved in this, and that involves things such as reappointment, tenure, promotion, and that sort of thing. And all of these are generally tied up with what's called scholarship and teaching performance, and university service. Okay. So I guess my real question is, what's the best strategy to use in kind of being in that sort of setting? Now, ideas that somebody again wants to share? 10m

A: I just said 'breakthrough'?

SAG: 'Breakthrough'? Okay. Well, that may be the case. There's several different ways you can interpret 'breakthrough.' Here is what my experience has kind of told me is probably the way to operate. As far as university service, try and stay as far away from university service as you can. Things like committees I have yet to see really serve any very useful function when you're talking about how you're helping the students accomplish any sort of an educational aim or goal. They may be necessary machinations of the system, but as long as you can keep them from sucking you in I think that's an appropriate sort of thing to try and stay away from. The catch is, of course, part of all of this [REAPPOINTMENT etc.] is based on your university service. So, what do you do to kind of get your university service in? Well, my suggestion there is, is that you remain a precision teacher, do the quality science that is possible with precision teaching, and then go to a conference such as this representing your institution, the university, or whatever. And then put that down under your university service, because you're spreading the name of your university, and most promotion committees, when I've gotten ahold of people, have not argued against that sort of university service. And so you're going beyond the university per se as far as impact. And also, I 11m 12m

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think it's much more productive for us as individuals because we're getting to meet with a lot of different ideas, and different people at conferences such as this.

As far as scholarship and teaching performance. Here my suggestion is as far as a strategy, *combine the two*. That is, looking at the university situation, and I think that most of you are enough in touch with this to see it from the same vantage point as I, the traditional university situation is lecture, lecture, lecture. Maybe test once every two weeks, maybe every four weeks, maybe once every five weeks, midterm and final. And so I think that the way to kind of combine these two is to do your scholarship on teaching performance. That is, combine the two, and become sort of a specialist in educational technology as a precision teacher. Which is really not doing anything more than you're already doing, because in order to become a precision teacher, that's really what you've done. But if you kind of use that as scholarship, and then write articles for the Journal of Precision Teaching, or whatever, then that sort of has covered both of those facets. Okay. Questions or reactions to those particular ideas?

13m

14m

A: () ( 2 min 17 sec Comments from an audience member).

→ C. Merbitz??

15m

16m

SAG: Exactly. However, what you have to realize is that it's mainly social. I mean the relationships that you need to work on as far as the strategy that I would choose are social relationships among your colleagues. I don't, at least I don't anymore, try to get people to use precision teaching. Acc! Why, I shouldn't say that. I choose the people that I try to influence very carefully, so that I'm very comfortable with them and you know we tell each other stuff all the time back and forth. It's not a one way street. There are probably two individuals out, or three individuals out of 20 in

17m

my Department that I can do that with. For the other individuals, then, it's mainly a social relationship, where I'm simply trying to do to them what I think is appropriate to reward their appropriate behavior, and kind of not say anything about things that they do which I think are inappropriate, except in cases where I am actually called upon for that sort of feedback, and then I try to give it constructively. So that's the sort of the strategy that I've used in at least the last couple of years.

In talking about that, and really it boils down to, then when you go up against a promotion committee, or a tenure committee, or even a reappointment committee, and you have all this data about the way you have brought students along to actually accomplish some learning, where everybody else is just going through the motions of what people have been doing in university settings for the last 50 years, when you do that, and, the first thing you do is say, "Well I've got this chart on it," and all of a sudden it's gone, and in many cases you've got only 10 or 15 minutes. So, I did that, as far as presentations, for several years. And this year, I finally, I think I'm learning. One thing, I have done as sort of a tactic, and that is, apply for promotion every year. Number one, it keeps me off of the promotion committee, (LL) you know, which is staying away from university committees. Number two, it gives me practice as far as keeping me doing the sorts of things that I really need to be doing as far as keeping my own act in shape with respect to what I have done. And I think that's a helpful sort of thing. Thirdly, it gives me plenty of practice to fail and come back and try for improvement. Instead of waiting the six or the eight years that are required before moving up in the rank, you start knocking on the door every year.

18m

19m

Yeah, you make mistakes, such as trying to do data shares in 10

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minutes, because you've been doing them in three minutes with a group such as this, trying to do data shares in 10 minutes and flubbing it completely. So, in this years promotion committee meeting, these were the things that I talked about. [FIGURE 3] This was actually what I showed them. This is the same overhead which I showed them on the board. "Why I'm here?" I told them my wife said, you know, that I was crazy for trying to even think about a promotion. And then I went through the idea of the kings new clothes, where I put myself in the spot of the little kid, who is calling out that the emperor doesn't have anything on. And what I said to them was, in effect, you know, "I realize that you're under political pressure. And that people who have gotten you on this (university or college promotions committee), people that got you on this committee, or voted for you, are expecting something in return. And the people in your Departments are saying 'My gosh! If I don't make it this year with John and Helen from my own Department on the committee, I'll never get through!'" And other pressures like that, entirely political. And another person, let's say, has been in rank for 10 years, and they're only supposed to be there six, you know. All sorts of political pressures like that. So I say, "Just write me off right now. Don't worry about it. I'm just going to take 10 minutes to kind of talk about these things as the little kid is pointing out that the king doesn't have anything on. And also then I spoke about scientific pressure, saying in effect stuff that we know about how nobody's doing any, or that alot of people aren't doing anything about actually measuring teacher performance through student achievement, but are simply looking at whatever is available, which happens to be evaluations. Which is a much different issue than student performance. That is, how I feel about my instructor is a much different issue than what

20m

21m

22m



learning I accomplished in that setting. Okay, well, we could just keep chewing that around all of the whole time.

Now I'd like to get into some specific tactics that I have used within the university setting, has been a couple of situations in courses that hopefully will give you some ideas. That, you know, I'm not going to be specific enough in a lot of situations because it's specific to my situation it's not going to generalize to yours. But it's hopefully some ideas here. And I've put on the left down here, [FIGURE 1] like frequency, continuous measurement, and so forth, are sort of where I'm coming from with respect to us. That is, how I see this with relating into us. And maybe it's kind of where I got the idea, kind of keeping that link back to the product, the data oriented stuff, and yet still be talking here process, and not really showing you any charts. Okay.

22m

The "**must credits**." Several years ago, it was in 1979, seeing the one minute drills and so forth and how students could perform very fluently when they got their behavior up to a particular frequency level it occurred to me that what I was doing in my large courses was give completely multiple choice examinations, where the students were reacting fast in some cases, but it was reacting fast by just making a mark. Okay, so they could do that fairly well. But the question I felt had to be dealt with was, what good is a student who can react to a situation where you give them what the question is, and you give them alternatives that they could choose as far as how to solve or how to answer the question, but when everything like that is provided. How often do you meet that in everyday life? I couldn't really see too much application there. So, I said, 'what is the real situation?' Well the real situation in life is, you're not even sure what the question is. Often times it's right behind you

23m

and you never see it. Or it's all around you and it's kind of invisible. The other issue is as far as, when you're looking at student behavior. If you ask for them to do something such as simply write down what you, some facts that you've learned in this particular course, then you find that not only is their frequency very, very low for that after they've been through the course, and even the A students fall prey to this, they can't write very many facts about, you know, Introductory Psychology, or whatever the course is, when they've been exposed to this multiple choice type of situation. So, my idea was, was to kind of attack that directly. In the real world you don't have the question. Also, you don't have the choices there. You've got to kind of pull out something, and try that without having the choices set up for you.

24m

25m

So the "**must credits**," I said, "Golly! This is so important! I better be sure everybody can do at least this, in order to get through the course." And so I set up 25 statements that I felt were my estimate of what the 25 most important things in Psychology were at the particular time. And I said, "Okay." Actually, that was kind of 'the after the data'. The first quarter I tried them I said, "Okay, everybody can build their own list of important things in Psychology, and I'll give you credits towards your course grade, all you have to do is write those, you know, within a specific time period, a short amount of time. But give me your list, and then show me that you can write em out and I'll give you credit." I found that 4 people out of about 180 took me up on it and actually did it. The rest of them, there were alot of tries, sporadic, not even alot of the stuff was accurate that they put into their list, or their statements. Some of the mistakes [WERE] there and people couldn't do it when they tried to and so forth. I had to get rid of that. I set up the statements. And then, I tried to

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put it so that it was important enough that they couldn't ignore it, because, in a credit system, often times every credit is worth the same amount. You know, it's all just adding them up, and then that's what you get. So, what I tried to do is set up two separate things. The 'must credits' is one thing, and it's sort of like this is the 'must credit' room: And unless you get out of this room then you can't get any better than a 'D' in the course." So, that was the way I set it up. And here is a potential idea, hopefully, that by doing this sort of double jeopardy type of thing, that you can get some sort of minimum performances of the things that you think are really important. So, everybody in the course has to write out these 25 or 24 statements within 8 minutes, or say them within 100 seconds with me in a one-on-one situation. If they don't do that then they can't get anything higher than a 'D' in the course. They have seven opportunities. They have to do it twice. And, you know, again, that's a little specific, and kind of work with that. But that's the idea.

27m

Once they accomplish that twice it's like they've gone into the next room, and then their credits determine their grade. So, as many credits they as get determines what grade they get in the course, but only if they get out of this particular room.

Well, the first couple of quarters I did this I had them, I said, "Okay, they can do one a day." So I count off 24 days into the quarter, and then we'll start testing. And, of course, by the time, then spread those opportunities out over the second half of the quarter. And so it wound up the last week of the quarter, people were panicking, ready to jump off the window, or jump onto me. And it was kind of a nasty situation, which it still is in a sense for some other reasons I'll mention in just a minute. But, essentially what I learned from that was is that that's the wrong way

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to do it. You shouldn't try to do it one a day. What you should do is do them, and do them all, and set up the flashcards to do them, and then, try, and try, and try again, until you've got them all down. Also, the instructor should push that stuff right up to the beginning of the course, so those opportunities, so this particular thing has to be done soon enough in the quarter, so that if the student doesn't get out of this room, then at least they have some options. Like they can audit; they can change to audit. Or they can withdraw. Or, they can stay in the course, but realizing what the limitations are on their particular grade.

29m

So, that has kind of done an interesting thing to the course. It's made sort of like a 'Marine Corps' out of the individuals that stay in. Because they've been through it, they've, in most cases they've succeeded, and therefore there's sort of a camaraderie, and they kind of like exhibit behaviors as far as the sorts of things that we would call subjective factors. Like saying they like the course, and how much they liked this and that. Those things increase a great deal. And the students who have sort of dropped out are no longer in your population to complain. Well, okay. So much for that.

30m

**Continuous measurement** is some sort of credit system. The idea, the basic idea here is that *you never reward mediocre performance*. So, in taking the multiple choice tests, and it's a competency sort of system, you never give anybody any credit for getting a middle-of-the-road type of performance. You only reward very high accuracy, and even though there's no frequency in this multiple choice set ups that I have. You don't give anything it's, it's certainly a criterion-referenced system, where everybody can get an 'A' if they get the credits, if they've gotten the 'must credits.' And nobody can slide

through by simply the way you can in a norm-referenced system by just  
 being in the middle of the pack.

31m

**Facts:** Well, 1080 study questions in 10 weeks is sort of the details of what I'm currently using in my 200 seat introductory class. And I don't really want to say anything more about that, because it's kind of specific, and nothing really innovative about it.

The '**Graf All-Stars.**' The people that make it through the 10 weeks of the quarter, and have achieved their, enough credits to get an 'A' by the last day of the class, without having to take the final, are the people that I designate as the 'All-Stars.' They really don't know whether they're going to be on that or not until the last day of class. We have an entrance assessment, and an exit assessment, which is kind of a pre-test, post-test situation. They can't really get enough credits prior to the exit assessment to guarantee their 'A'. So the exit assessment takes place the last week of the quarter. And then the last day they come in and I give information about whether or not they made the 'All-Stars.' Well, these are simply little certificates that I made up. (LL) You can see a reduced, reduced, reduced, reduced version of the chart that I put up there on it. Even though a lot of them don't have any idea what that means to them, it means something to us. It means something to me.

32m

And then, as their name is called I give the, you know, with sometimes music playing in the background, have sort of like a little pre-game introduction: "From Boardman High School, with 62 credits, a junior majoring in English, Nancy Lieberman!!!!" And everybody, of course, gets into it, and applauds. And these people then come up and stand on the stage. And also what I've done is get a person high up in the academic administration to present these little certificates. I thought the first

33m

time I tried it I thought, well, I'll ask. It's frivolous. They won't--they loved it! (LL) I haven't had anybody turn me down yet. And I'm really ready now to go now either to the academic vice president, or the president of the university himself. Because all of the deans, whether it be the dean of the College of Arts and Sciences, the dean of the College of Applied Science and Technology, or even the dean of Engineering, kind of leap at the chance. And I've actually gotten some feedback that they've talked about the Graf All-Stars in a deans meeting. So they're kind of now anticipating being on the list to get to have done that to again. But, enough about that, the Graf All-Stars.

**Class credits.** So, the freedom issue here is, freedom to be wrong, and secondly, the individual conference credit. I'd like to talk about the conference credit again, and this is an idea that I mentioned to Claudia this morning. <sup>↑</sup>What you do is, and it's worked extremely well for me, is to set up the opportunity for the student to get a credit by scheduling a conference with me at some point during the quarter. That's kind of like a five minute conference, sometimes it runs 7,8, or 9, maybe even a little longer on occasion. But they have to sign up for it. And they come in. And in a one-on-one situation I can get sort of their personal reactions to the course, how they're doing in their other courses. Really, it sets up a lot of contact with a student that one ordinarily wouldn't get in a class this size. It takes me, and I've charted these in the case of how many students do it, it's generally about 100 out of maybe 140 that will do that. There are a lot of roster 'F's, and so forth, that never show up, people, you know, the only way you know they're in the class is because they're on the roster. But <sup>↑</sup>this seems to be something that they evaluate very highly. Okay. So that's another idea.

34m

35m

**Class credits:** We test two days out of the four during the week. During the other two days, what we do is very simply as follows. These study questions that I mentioned are all on little 2 X 2 slides. What I do is go through, looking at the Monday performance, trying to pick out the things that gave most people problems, because they're going to get tested over the same questions on Friday, although they're not the same specific questions. And then, on Tuesday and Wednesday, present those slides one at a time. Now, I think the temptation is, is because I know the answer, and you probably would too in a similar situation, the temptation is for the teacher to tell what the answer is. What I have tried to do is to turn that around, and have the students give the answers. So, if once the slide comes up, then the people that want to be in the class credit pool have to actually say they want to be in the pool. What that means is, is that I'll call on them at random as many times as I want during the two middle sessions of the week. And everytime I call on them, what I'm going to do, is, we have a mike on the wall, and a tether, is take that mike to them, hand it to them, and then they've got 10 seconds to answer the question, or to at least to start their answer. As soon as that answer has been given, then I give some sort of feedback. The feedback that I give--now let's say he said "I don't know." Well, that's a 'skip.' Okay, 'skip' means you can't get your class credit this week. You're still in the pool for next week, but you can't get any credit because you've skipped and haven't tried to answer the question. Another one might be a 'close', where you've given me information which isn't really right on the money, but at least it's getting there. And so I say, "Well, that's 'close'." Another one would be a 'bullseye.' Right in the target. And even then there's a little give. The target isn't just a dot. It's a little area. There's some amount of

36m

37m

variability that goes in there as well. Now, those are three. There's also the individual who now says something which is off the wall, completely inappropriate. And we say "Okay, that's a 'try'. That's not it." Okay, so we have, 'bulleyes', 'closes', 'tries', and then 'skips'. And there's also when you call on that person they're not here, so that's a 'no-chance'. And that means they get knocked out of the pool.

Now, the important thing about this particular tactic is, is that the 'tries' get just as much reward as the 'bullseyes'. So, all you have to do to get your class credit every week is to at least 'try' every time I call on you. Now, that doesn't mean we're going to stop right there, because we'll go on to somebody else, and call on somebody else, until we get to the answer to the question. But, just because you aren't able to give the answer doesn't mean that I'm not going to give you your credit for the class credit. Well, essentially, then, that's another sort of tactic which can be used.

38m

Well, the question is, once everybody finds that out, do they suddenly just start 'trying' instead of 'bullseyes'? The 'tries' across quarter, after quarter, after quarter, have been x1.00. There aren't any more 'tries' at the beginning of the quarter than there are at the end of the quarter. And each quarter the 'bullseyes' accelerate, anywhere between X1.1 per week to X1.3 per week.

39m

A: What about 'closes'?

SAG: 'Closes'? As far as what they do?

A: Why don't they apply? They're no better than the ones who don't do it.

SAG: Yeah, but I'm giving them just the same credit as the person who totally missed it and tried.

What I'm saying here is that in this particular situation, I'm



*rewarding errors* Rewarding them just saying anything. One thing it does is to get people kind of moving. It kind of gets them up out of the skip category, out of the zero category, into actual behavior, and then hopefully gets a little bit of incentive for them to go on and find out the correct answer by listening kind of carefully when somebody else helps them out on that.

**Learning student names.** I've found that by using minute a day drills with a roster sheet of everybody's name, that I could learn 200 students names within about six weeks without any problem whatsoever. And I've done that quarter after quarter. That makes you look good because they think you're some sort of a genius, when in fact all you're doing is applying a precision teaching type of tactic. 40m

Also **make decisions**, of course, about changing the course through looking at *celeration*

In the rest of this, we've talked somewhat about **reporting teacher performance**. I keep things like evaluation records on standard celeration charts. The only thing that I would point out there is, is that you've got to realize that what typically happens in the university setting is first of all, they take all the responses, then they apply a number to them, an arbitrary number, no sense whatsoever, 5, 4, 3, 2, 1. Then they collapse that into a single number. They collapse it this way [VERTICALLY]. Then they collapse it this way [HORIZONTALLY] across all of the quarters. So what you end up with is a little ball of, well I don't know what. But it probably doesn't smell very good. (LL) And anyway, what you can do is, with standard celeration charts, use a monthly chart, and just keep each one of those independent. So the number of students who give you an 'outstanding' rating, have a chart for those. That's 41m

'outstandings' across quarters. And I have samples of these here if anybody wants to see that. The 'outstandings' are completely independent of the frequency of the number of people who say 'very good', or whatever the next thing is. And that's completely independent from whatever the next one is. So you're dealing with five categories; you're dealing with five different student responses. And you can map the frequency of those across quarters. You can do the very same thing with grades, A's, B's, C's, and D's. Instead of compressing them into a point average, then I would suggest doing this with a standard celeration chart.

**Classes of 4 to 30 students.** [FIGURE 1] Again, the only thing I want to say there is on the 'daily grades' versus 'goal grades', what you try to do is to set up 'goal grades' in much the same fashion as the 'must credits'. That is, there are things which are really essential in the course. Those become the 'goal grades'. Very simple, very important sorts of things, that are probably the things that you want the students to be doing, able to do later on in other situations. The ones you want to have generality with. There are other things. But that's just the goal grade. The 'daily grade' is all sorts of little trivial things which take place in class, and you're just rewarding them right and left, and right and left, and using **ratio**. So any misses that they get, or you can even reward misses. If they skip or if they don't get any chance then there's a penalty, because what you use is a ratio system.

42m

And the **ratio system** works something like this. If you got a ratio of 40 'hits' to 'skips', then that's an A, 20 is a B, 20 or better is a B, 10 or better is a C, 5 or better is a D, less than 5 is an F. Well, students typically will have 400, 1100, or 1800. Because what you're doing here is setting up all sorts of things for 'hits'. Frequencies, the number of things

43m

## Precision Teaching in the University Setting

they tried in this minute, so they may get 48 a minute. Those all go in their 'hit' column. Many have no 'skip' cards: They tried everything so there's no 'skips'. And you just accumulate all the things in the numerator. And you accumulate all of the things in the denominator. And use a ratio system. The thing about that is, is that it keeps the students on their toes, because you can have 100 'hits' and 1 'miss', and you're up there at 100, and just torquing along, but all it takes is all, you know getting (TAPE RAN OUT, POSSIBLY SWITCHED TO ANOTHER CASSETTE--<sup>↑</sup>, BUT SOME VB LOST, AND REMAINDER OF TALK NOT AVAILABLE AT PRESENT). 43m 47s

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NOTE: USE THE FOLLOWING REFERENCE WHEN REFERRING TO THE ABOVE PAPER:

Graf, S.A. (1982). Precision teaching applied to the university setting. Paper presented at the 2nd annual meeting of the Precision Teaching Winter Conference, Orlando, Florida, (March).

## Precision Teaching in the University Setting

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NOTE: THE FOLLOWING IS A LIST OF TRANSCRIPTION CONVENTIONS USED IN THE PRECEDING PAPER.

- () -- Transcriber could not ascertain what was said; either the audio was too weak or there was competing sound (e.g. coughing), but some verbal behavior by the speaker occurred during this interval.
- (?) -- Best guess as to what was said.
- (LL) -- Audible laughter from one or more members of audience.
- (P 31sec) -- A noticeable pause in the talk; period of time without any speaking; duration of pause noted in seconds.
- (TR) -- Transparency audibly being placed on overhead projector.
- SAG: -- Stephen A. Graf (responds to questions or comments from audience members).
- A: -- An unidentified person in the audience says something; either asks questions or makes comments.
- Claudia: Questions asked by Claudia McDade.
- 1m, 2m, etc. -- Notation in right margin of the beginning of each new minute of the talk.
- ↑ -- Marker placed in body of paper to identify precisely the point at which each new minute began.
- [ WORDS ] -- Wording added by transcriber; either identification of available figures, or extra wording added to make pronoun referents or unclear statements meaningful. (CAVEAT: This convention is used sparingly!).

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## Precision Teaching Applied to the University Setting

### 1. Classes of 80 - 200 students.

Frequency: The "must credits."

Continuous Measurement: A credit system.

Facts: 1080 Study Questions/ 10 weeks.

Fun: "The Graf All-Stars".

Freedom: "Class Credits".

"Individual Conference Credit.

Celeration: Learning Student names.

Making decisions about changing course.

### 2. Classes of 4 - 30 students:

Charts: "Goal Grades".

Continuous Measurement: Minute-a-day practice.

Ratios: "Daily Grades."

### 3. Reporting Teacher Performance:

Standard Celeration Charts:      Grades  
  Evaluations  
  Student Responses to  
  Teacher Actions.

TRANSPARENCY FIGURE #1. Outline of main tactical issues of the paper.

Process

(1) What are the important issues we face as we operate in the university setting?

- |                  |                      |
|------------------|----------------------|
| 1. Reappointment | Scholarship          |
| 2. Promotion     | Teaching Performance |
| 3. Tenure        | University service   |

(2) What ideas (to deal with the important issues) ?

Strategies

Tactics.

TRANSPARENCY FIGURE #2: Main strategic issues of the paper.

Promotion meeting

"Why I'm here . . . "

"Not promotion."

· Kings New Clothes.

Political Pressure

Scientific Pressure

How to measure teaching performance.

TRANSPARENCY FIGURE #3: Promotion tactics.