Faculty Working Papers

THE PRINCIPLES OF ECONOMICS COURSE AND THE COURSE OF ECONOMICS

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#493

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Summary:

This essay reflects two approaches to a consideration of the principles of economics course. One is a historical survey of much earlier discussions of the course and its problems. The second approach views some important problems with today's course as resulting from the analytical confusion in the discipline itself. Particular attention is paid to the problem of unemployment and inflation. A brief examination of Paul Samuelson's textbook, *Economics*, is also made.
When I sat down to prepare this paper I came quickly to the realization that I faced a dilemma similar to that which faced Elizabeth Taylor's bridegroom on the night of her seventh wedding: I knew what I intended to do, but I didn't know how to make it seem new and interesting. For surely it must be the case that everything that can be said about the principles of economics course has not only been said, but has been said more than once.

For example, "We are confronted with three questions: What should be the aim or aims of a college course in elementary economics? What is the proper content or subject-matter through which to attain these aims? How should this subject-matter be handled?" [11, p. 673] The quotation is not from a recent issue of this journal—or at least, that is not where I found it. Rather, the questions were posed by A. B. Wolfe, then a professor at Oberlin College, at a Conference on the Teaching of Elementary Economics which was held at the University of Chicago in 1909—nearly 70 years ago.

Indeed, I toyed briefly with the idea of simply copying Wolfe's paper as though it were my own. I was afraid, however, that it would have seemed so up-to-date that when I finished copying, I
would succumb to temptation and not reveal the true author. Let me quote a bit more from Wolfe's paper so that the reader can see why I ever entertained such an outrageous idea:

"By what content now can we most effectively bring about these desirable results [Wolfe's aims for the course]? This question of content is not so simple as it looks. It is not simply a question of adopting out of an abundance of material that which in itself is clearly suited to accomplish definite pedagogical purposes. The field of economic phenomena and of economic knowledge is so vast, that we must pick and choose. And in our picking and choosing we must constantly have regard for the actual conditions and difficulties which confront both teacher and student. We must consider in the first place the character of our students; secondly, some of the external conditions, such as size of classes, number and experience of instructors, etc.; and, thirdly, the unsettled condition of economics itself, especially of economic theory."

[11, p. 676-77]

Or: "...inasmuch as the average [elementary economics] student cannot and will not specialize [sic] in economics, it is far better that he be somewhat deficient in the refinements of economic logic than that he should remain a practical stranger to the important economic conditions, forces, and processes within the nexus of which he will later have to [function]." [11, p. 684] Or:

"...suppose that with academic catholicity you endeavor to initiate
your sophomore into the mysteries of all the important theories of interest. It is then a question whether this knowledge of interest more resembles a well-scrambled egg, or a whirling dervish."

[11, p. 680]

It would not be quite correct to say that nothing has changed since 1909. Let me give one final quote from Wolfe's paper. "One freshman girl this year sought admission to the course because, as she said, she was anxious to become a good conversationalist, and knew that economics would be a good course to that end. Somewhat to my own surprise I admitted her, for was she not the first messenger bearing evidence that economics is about to gain admission to that aristocratic and favored circle—the humanities?"

[11, p. 678]

On page 1 of the tenth (1976) edition of his text, Paul Samuelson speaks proudly of "political economy: the oldest of the arts, the newest of the sciences—indeed the queen of the social sciences." [10] If we accept this latter judgment, then our models for the introductory course should be the introductory courses in the natural sciences. For a variety of reasons—some with deep philosophical implications—those are not really our models. Consequently, it would not appear profitable to compare the typical elementary economics course with its counterpart in, say, physics or astronomy. And if Samuelson is correct there seems little point in a comparison with introductory courses in the other, less-than-queenly, social sciences.
It did seem to me that it might be useful, and, perhaps, interesting to examine the principles course in a context both wider and deeper than today's course itself. I shall be looking at the course both from an historical point of view and in the larger setting of the current state of the discipline of economics. I believe that the principles course—its problems, its faults, its achievements and its promise—is inescapably tied up with developments in the content of our discipline, in our professional stature as economists, and in the real world economy "out there." My thesis is that what has happened to the principles of economics course is intimately related to the course of developments in economics. Hence, the title of this essay which I hope to show is not just a play on words.

I have one other, personal, explanation to make by way of introduction. I have now retired from the field of principles textbook authorship after four modestly successful ventures published over a period of thirteen years. Therefore, I am again free to criticize principles texts without opening myself to the charge of personal aggrandizement. I shall avail myself of that freedom.

When we look at the principles course from an historical perspective, we are struck by the aptness of the epigram: "The more things change, the more they remain the same." In 1920, a Roundtable on "The Teaching of Elementary Economics" was held at the American Economic Association meetings. Professor Burbank of Harvard
said that "...the teaching in general is pretty poor because we have not defined our aims. Too frequently we undertake to give a course in economics by choosing a textbook, and perhaps a book of selected readings, and by then simply attempting to cover the book and the readings, with no aim beyond that." [2, p. 171] Burbank also commented that, "We do not need to be concerned particularly to stimulate the interest [of students] at the present time; the very increase in numbers of students is a sufficient index of the interest taken." [2, p. 172]

On the other hand, Professor Agger of Columbia thought "...that too many people teach economics who do not get any fun out of teaching," [2, p. 173] while Professor Doten of M.I.T. sounded terribly modern when he complained that "We are adopting a general policy...to amuse our students rather than insist on their getting anything." [2, p. 175]

In one respect at least things have changed in the elementary course, namely, in who teaches the course. Back in 1897, Fredrick R. Clow reported on the results of a questionnaire regarding the course which he had sent out. Parenthetically, I should say that I think Clow should be memorialized in some way by the American Economic Association, for he appears to be the first (but, surely, not the last) economist to send out a questionnaire regarding the principles course. I have imagined a Fredrick R. Clow award which would join the Francis A. Walker medal and the John Bates Clark
award already offered by the A.E.A. It might be in the form of a

gold (or, better, lead) computer punch card and perhaps would be-
come as famous among economists as the Oscars and Emmies among a
larger audience. We could call it, informally, "the Freddie," and
award it to the economist who sent out the most complex and baf-
fling questionnaire on the principles course during the preceding
year. Or, it might be given to the questionnaire maker who via
modern statistical techniques built the most elaborate structure
of conclusions on the least foundation of data.

But enough of such daydreaming. Clow sent his questionnaire
to 91 colleges including "many so-called universities," but "ex-
cluding those solely for women." [3, p. 73] Clow, obviously, was
not one for waiting until his survey was completed to come to his
own conclusions about some key matters. The more we learn about
him, the more we see him as the patron saint of principles course
questionnaire makers.

Of his 91 questionnaires, 39 were returned--about par for the
course, I suppose. Thirty of the 39 used a textbook as the basis
of the course which should disabuse us of the notion that the
principles text is an affliction of modern times. Seven schools
reported they used as the basis of the course the "topical method"
something which was apparently clear to Clow since he did not bother
to explain what this was. We can only hope that it was clear to
the seven schools who used it. The other two schools apparently
used neither textbook nor topical method as the basis of the course, but what they did use is now lost in the mists of time. [3, p. 75]

Another bit of information garnered by Clow was that in 12 schools the course was taught by the president of the school [3, p. 75]. The difference in the "so-called universities" (as Clow described them) has been the replacement of the president by graduate students. This is, perhaps, the first sign of progress I have been able to report from this historical look at the principles course.

In a more serious vein, one of the most perceptive statements ever regarding the principles course was made by J. Lawrence Laughlin at that 1909 conference referred to earlier. Laughlin was then speaking from the viewpoint of thirty years experience in teaching economics, going back to 1878—now exactly one century ago. He was much encouraged by one development in the elementary course—the improvement in the training of those who taught the course. Laughlin regretted his own poor introduction to economics which he received at Harvard from Charles F. Dunbar (the second President of the American Economic Association). Dunbar, according to Laughlin, was a journalist and editor of the Boston Daily Advertiser when he came out to Harvard in 1870 virtually to inaugurate what Laughlin referred to as "modern economic teaching in the United States."

[7, p. 705]

In referring to his own student experience in the 1870's, Laughlin comments that it was "...quite natural that the teaching
of economics at that time should have depended so much on the text-
books. That, it seems, must be attributed in the main to the lack of training and preparation of the instructors." [7, p. 705] However, according to Laughlin, "There was...another element in the situation at that time which had its advantages. The classes were small, relatively speaking. The instructor, no matter what his textbook, was able to keep in close personal contact with the men." [7, p. 705] Laughlin's time-frame for this period of small classes is 1878-1888.

What happened then is best told in Laughlin's own words, but I want to emphasize the importance of this testimony by one who lived through, and, in a sense, initiated (however unwillingly) a revolution in the teaching of the principles course. Here is Laughlin's statement: "If I am not mistaken, the difficulties that we have to face now [1909] in the various universities are really due to...[the] fact of the great increase in numbers. When the classes have become as large as four or five hundred it has seemed necessary to resort to some system of one lecture by a professor and two meetings with persons who quiz, or two lectures a week by the professor, and one quiz. I [this is Laughlin speaking] do not believe that system of teaching would ever have been adopted, by those who have given it thought, as the most desirable method, except under the stress of numbers and necessity. It seems to me largely a pis aller—a means of getting along as well as possible
with the unexpectedly large increase of numbers, until a better method can be worked out." [7, p. 705]

Well, here we are ninety years later and, in the universities, I see little sign of a better method being worked out. Instead, we are often given sophistic reasons by budget-minded administrators why this method is the better method. In this connection, it appears to me that the recent rapid growth of junior colleges and the consequently increasing proportion of beginning economics students taught there is a hopeful sign in this regard. Restoring the "close personal contact" of teacher and student in the principles course for many students who, earlier, would have gone to the university for their instruction in economics seems to me to be a very worthwhile turning back of the clock. I confess I see no really viable opportunity for that restoration in the universities which are currently using the large lecture method of instruction.

Some of the reasons for my belief in the importance of small classes (at least, small relative to the large lecture class) are no doubt obvious ones and implicit in Laughlin's remarks of 70 years ago. In any event, I shall not recite them here. But there is a reason which I do want to mention, for it is not usually on the list and it has implications for some of the newer developments in teaching techniques as well as for the long-established lecture method used so frequently in the principles course. This reason is that it is exceedingly difficult to handle the matter of ignorance
and confusion about the subject except in a situation which provides close contact between teacher and student. Let me add quickly that when I speak of ignorance and confusion I refer not to the student, but to economists trying to deal with some critically important matters.

When one stands at a lectern and faces several hundred students, he would be likely to lose their interest more quickly than otherwise if he began by saying, "This class will be devoted to an important subject which neither I nor other economists know much about." In a smaller, more intimate class in which rapport between teacher and students has been established, such a statement might whet the students' interest.

I stress this because most of the new, or nearly new, developments in teaching methods in the principles course tend to pose the same problem as the large lecture—sometimes to an even greater extent. I refer to such techniques as programmed learning, television, and computer-aided instruction. It is not easy to introduce doubt and uncertainty via such impersonal techniques. The temptation is to present the student with material in such a way that doubts, uncertainties, or outright mistakes only occur when the student is wrong, not when we economists are uncertain or just plain wrong. Now, of course, I do not mean to imply that such a we-know-the-answer approach to teaching the principles course cannot or, indeed, often is not used, in a small class. Rather, I believe it is not inevitable
in a small class while it is nearly so in classes in which the other techniques mentioned are used. I will return to this point.

For now, having mentioned television and computers, it is clear that we have left the pages of history (although there were other insights we might have gained there) and reached the present day. I do not think we should feel discouraged when we learn that three or four generations of economists appear to have been wrestling with the same problems in teaching the principles course without coming to any definite or satisfactory solutions. Rather, we should feel reassured that these are important problems and that we (and our students) can benefit by professional discussion of them in our own time even if we, too, fail to solve them in some final fashion.

What I now propose to do is to look at the treatment of a critical, present-day economic problem at the principles course level in order, among other purposes, to demonstrate why we must be careful of any teaching method that encourages conveying to the elementary student the impression of certainty regarding our subject. The problem I select is one we are all familiar with.

Suppose we ask ourselves this question: What current problem in economics would a beginning student most likely expect to learn about? That is, what would even the most casual interest in economic affairs lead a student, before he enters the principles course, to perceive as an important economic problem about which he can expect enlightenment? Surely, the answer is unemployment
and inflation. And, what kind of enlightenment do we offer? My concern here is with the principles course though I would repeat my earlier point that the course cannot be clearly separated from the state of the economics discipline generally.

Now, of course, each principles class will offer something different by way of enlightenment not only because the instructors are different persons, but also because students are different. It is also true that principles textbooks are different although I suspect that they exhibit less difference than either instructors or students. If I were to survey all the available textbooks, I would have a book rather than an article, so what I shall do is take a brief look at Samuelson's principles text on this subject. I select his for a number of, perhaps obvious, reasons: First, longevity—his first edition appeared in 1948; his most recent, the tenth edition, in 1976. Second, popularity—Samuelson, himself, (in modest fashion) speaks of "...millions of readers--literally millions...". [10, p. VII] Third, professional standing—however much one may differ with him on this fine point of theory or that policy recommendation, surely all will admit his status as one of the leaders of the profession. And we do not have to accept Samuelson's own implied ranking of his volume with those of John Stuart Mill and Alfred Marshall [10, p. IX] to acknowledge its leading position among principles texts in the post-World-War-II period. I trust that I have said enough to justify my selection of Samuelson's text
for illustrative purposes. I wished to criticize the strongest, not the weakest or the average, text. I believe this critical examination will reveal the close connection between conditions in the discipline and conditions in the principles course. We cannot expect confusion and inconsistency at our level and clarity and consistency at the beginning student's level.

What might the student learn from Samuelson's work about unemployment and inflation? In the first (1948) edition he was told: "Suppose that the Saving and Investment schedules will intersect only to the right of the full-employment dotted line...Instead of having a deflationary gap, we have what is called an 'inflationary gap.'" In the tenth (1976) edition the student was told: "Instead of a deflationary gap, we may have an inflationary gap. If scheduled investment tends to be greater than full-employment saving, then more goods will be demanded of business than it can produce, and prices will begin to rise." [10, p. 241]

Those two quotations might lead one to believe that economics had for at least 28 years provided beginning students with an understanding of the relationship between the level of employment and inflation, and that this understanding had not changed materially over that period.

However, even in 1948, Samuelson hedged a little on the matter. In another chapter of the book he said, "In mild inflation the wheels of industry are well lubricated and total output goes up." [8, p. 282]
And he found "ominous...the possibility that prices may begin to shoot up long before full employment is reached" [8, p. 283] citing the 1936-37 "boom" as evidence that this could happen. I might say here that if one wants a measure of how things have changed we might take a look at that 1936-37 "boom" that worried Samuelson. Between 1935 and 1937 unemployment fell from 20% of the labor force to 14% while the Consumer Price Index rose 2.3% per year for two years. Even so, in 1937 consumer prices were still only 84% of what they had been in 1929. But note that this episode was a case in which unemployment fell while the price index rose. What do we say to students who seek an explanation when unemployment and the price index both rise together?

By 1976, matters had become hopelessly snarled, and one can sympathize with the perceptive student looking for a reasonably straightforward answer to the most important economic question of the day. For, despite the clear-cut theoretical explanation repeated in 1976 in slightly different words from that given in 1948, we now are given a veritable smorgasbord of reasons for the current economic situation. In one section entitled "Exogenous inflation factors," Samuelson says, "Harvests were intermittently bad throughout the 1970's. Corn fungus hit the Mississippi Valley...The Russians experienced a lack of snow cover for their wheat crop... A drought in China and elsewhere in Asia cut down on rice and grain
there. The monsoons of India...were disappointing. The Sub-Sahara wilted from lack of rain.

"As a result of these exogenous supply factors, inflationary pressure resulted at the same time in most parts of the world. This tends to raise P in the equation MV = PQ." [10, p. 828] Not all economists understood this. As Samuelson says on page 827: "Fossil classical economists...completely misunderstood what was happening around them. To them, P inflation is always and simply a question of what is happening to M." [10, p. 827] But other prices don't fall according to Samuelson (especially the money-wage rate doesn't fall) when some prices rise. [10, p. 827] Why not? Because, he says on page 828, a central bank like the Federal Reserve is "not immune from the pressures of populist democracy...," and "The result is that M is deliberately engineered to rise at rates not compatible with long-run price stability!" [10, p. 828] Apparently, what happens to M is unrelated to P on the odd-numbered pages and is directly responsible for P on the even-numbered pages.

Again, let me remind you that I have not picked the worst principles text to examine, but rather the one that many would consider the best. And if any of my readers are currently using Samuelson's tenth edition let me remind you of Hamlet's remark about it being better to bear "...those ills we have / Than fly to others that we know not of [.]" Yet, there is more before this story is told. Remember the fungus in the upper Mississippi Valley
which led to inflation via a reduction in supply. That was in a macroeconomic chapter. In a microeconomic chapter on "Supply and Demand as Applied to Agriculture" we learn that an increase in productivity (the opposite of the bad weather case) will cause a rightward shift in the supply curve for an agricultural product which "...must lead to a downward trend of market prices (relative, of course, to the general price level, so that effects of overall inflation are disregarded)." [10, p. 411, his emphasis]

So, which Samuelson does the student believe?: The macroeconomic Samuelson for whom productivity changes cause price level changes or the microeconomic Samuelson for whom productivity changes cause relative price changes rather than price level changes. What should be our solution as instructors? The only solution I can come up with is a rule that a student can take the microeconomic half of the principles course or the macroeconomic half, but not both. But then I realized that would only begin to solve the problem. We would need other rules outside the classroom, such as: the Secretary of Agriculture can see the President only on Mondays, Wednesdays, or Fridays while the Chairman of the President's Council of Economic Advisors can enter the White House only on Tuesdays, Thursdays, or Saturdays. (This would leave the President Sundays to be spent with the Lord although I confess that I am not certain even He could clear up the confusion.)
I submit that what we see here is the result at the level of the principles course of an unsolved problem in our discipline, namely, the relationship between microeconomics and macroeconomics. Keynes, wiser than most in this as in so many other things, was acutely aware of the problem and described it in the *General Theory* with the literary touch we might expect from him. He said, "We have all of us become used to finding ourselves sometimes on the one side of the moon and sometimes on the other, without knowing what route or journey connects them, related, apparently, after the fashion of our waking and our dreaming lives." [5, p. 292] Keynes saw one of his main purposes in the *General Theory* as finding that route that would connect microeconomics to macroeconomics. That he failed in his attempt is not really surprising if, as may be, he was attempting the impossible. What is surprising is that, by and large, most economists today don't know of Keynes's concern and, indeed, may not even be aware that there is a problem.

I could go on mining this vein of confusion—pointing out, for example, how in Samuelson's seventh (1967) edition, the success of the Kennedy-Johnson tax cut of 1964 confirmed the correctness of the "New Economics" [9, pp. 343-43] while in the tenth (1976) edition, the same tax cut succeeded only because the "austerity" of the Eisenhower years [10, p. 364] had prepared the nation psychologically so that we could get an increase in real output from the tax cut instead of inflation. But if I have not made
my point about the confusion in this area by now I shall never make it.

This is serious enough. But there is more to the story. From this foggy plateau of theory what can be seen of appropriate, sense-making policy? In his seventh (1967) edition, Samuelson was not averse to income policies (our professional euphemism for wage-price controls), but assessed such policies as only weak and temporary in effect. "But," he said, "they cannot themselves take the place of stabilizing policies of aggregate demand." [9, p. 775, his emphasis] By 1976 and his tenth edition, he was saying, "To avoid accelerating inflation, one must find new tools of incomes policy to shift Phillips curve tradeoffs, short-run and long-run, and not merely turn on the steam of fiscal and monetary policy to move the system along unchanged Phillips curves that look temporarily appealing." [10, p. 835, his emphasis] I would comment only that in another edition or two we can probably expect the suggestion that only fossil economists bother with fiscal and monetary policy. The New, New Economics will be that of permanent wage-price controls and the "reasons" for inflationary pressure will conform even more closely than they already do to a list presented by Jean Bodin in 1568. I am tempted to present that list, but I will not try the reader's patience with more history. [1, p. 23]

What I do want to mention is the future or what may be the future. I offer no endorsements or guarantees. Consider Nicholas
Kaldor's 1976 presidential address to the Royal Economic Society.

[5] I recommend it not because I think that he, at last, has found a theory to explain our modern dilemma of inflation and unemployment (on that point I have my doubts), but, rather, for what he says about the existing explanations enshrined not only in our principles course, but also in Washington.

One quotation will give the flavor of the address. I should explain that Kaldor is not referring to Britain alone, but to all the major industrialized nations including the U.S.: "On looking back at this period--[1953-1967]--I do not think that either of the two standard theories of a wage-induced inflation, the 'cost-push' due to the collective bargaining process or the 'demand pull' due to excessive tightness in the labour market provides the key to an explanation." [5, p. 708] Kaldor's explanation for the inflation of that period and of the more recent period I leave to your study. It will, no doubt, appear on the smorgasbord of inflation explanations in Samuelson's eleventh edition. As for policy recommendations--Kaldor's are reminiscent of Irving Fisher's Compensated Dollar suggestion of 1911 writ globally large. That, to, we can anticipate turning up (again) on the already groaning table of policy proposals.

All of this may be stimulating for economists to puzzle over, but our concern is what we present to the student in the principles course. I would not want to give the impression that there is only
one problem—that of inflation and unemployment—which leads to confusion or inconsistency at the level of the principles course. That problem is, I believe, the most important one in that category, but I do not believe it to be the only one. The reader's patience will not permit discussion of others, so I will merely mention two of them.

The analysis of labor unions seems to me to have advanced little beyond that of thirty years ago. Compare the Samuelson of 1948 with that of 1976 on that score. Key questions such as: Why has the trend to unionization been at a virtual standstill for forty years? or What is the meaning or significance of a union of government workers? are simply ignored. And the inconsistency between what is said about unions and wages in microeconomics and what is said in macroeconomics is all too obvious. In another important area, mathematizing of microeconomic theory has led to the construction of models that in almost every case assume pure competition. The demands of mathematical simplicity easily explain this trend. But one result at the level of the principles course is that the analysis of imperfect and monopolistic competition has advanced very little in three decades. The stagnation in theoretical analysis shows itself also in the presentation of policy matters in these areas.

What might this suggest regarding the principles course? I think it might lead us to reconsider, radically, how we present our
subject. Samuelson, like any honest economist, sprinkles his book with references to economics not being an exact science or to the existence of some problem not yet completely solved or a question not fully answered. Yet, I think the tone of the book is clear. It radiates self-confidence. We economists (except, of course, for a few fossils) know; we understand; we sit (rightly) beside the politically powerful; we even have our own Nobel Prize—not for economics—but for economic science. Our enrollments in the principles course are booming on almost every campus. It is all very heady stuff. If there is at times a feeling of malaise, if we sometimes hear a small voice saying just how do you get from one side of the moon to the other?; how do you get from corn fungus in the Mississippi Valley to inflation?, We can always reread Walter Heller's A.E.A. presidential address [4] and be assured that every day in every way we are getting better and better.

Let me suggest another possibility—that we take a hard look at what we know and what we don't know about economic life and try to present that kind of "balance" to our beginning students. Consider the discipline of philosophy from which our own discipline was spawned. Beginning students in philosophy are not ordinarily taught that the problems are solved. Indeed, I suspect the more usual attitude is that the problems are worth the student's attention because they are not solved and may not be solvable. Perhaps we should design our beginning course on this pattern. We might
say to our students—"here are some economic problems of importance as you can see from the daily paper. We don't understand these problems very well. But you will find it useful to see how far we economists have gotten toward a solution and what seem to be the roadblocks that lie in our way."

If we are willing to take that approach we may well find ourselves in conflict with the development of new techniques in teaching the principles course—techniques that we cannot lightly discard or stop exploring. In a sense we are at another watershed like that of circa 1888 when, according to Laughlin, the pressure of numbers led to the adoption of the lecture-quiz method of instruction in the universities. Now, the dual pressures of expanding numbers of students and shrinking academic budgets make the adoption of lower cost teaching techniques a necessity in many schools. Consequently, experimental work along lines such as Allen Kelley's T.I.P.S. and that of Donald Paden in the application to the principles course of a general system (called Plato) of computer-assisted instruction ought to be encouraged and followed closely by all of us interested in better solutions to the problem of staffing the principles course. I do not mean to imply that the purpose of these and other experiments in teaching the principles course is solely, or even, necessarily, primarily, to reduce the instructional cost per student. But in the present and foreseeable future I don't think we need concern ourselves with the
possibility of widespread adoption of any new teaching technique that does not reduce the per-student cost of instruction. What we do need to be alert to is the danger that we will, by the pressure of budgets and numbers, be led to adopt cost-reducing methods of instruction which worsen rather than improve the instructional job we do. And I would argue that the danger is particularly great that we move in the direction of spurious certainty because that is easier to teach "efficiently" than is realistic doubt. We should never forget that our studies of how much students learn from one technique or another begin with the assumption that what we set out to teach is analytically consistent and clear. One purpose of this essay is to cast doubt on that assumption and to ask: "If what we set out to teach is, at bottom, confused and inconsistent, what is the best method of teaching that to students?"

If we are going to proclaim economics to our principles students as the Queen of the Social Sciences, we should recall what another Queen—Alice's Red Queen—said when Alice complained that calling a hill a valley would be nonsense. The Queen replied, "...I've heard nonsense, compared with which that would be as sensible as a dictionary."
Footnote

Royall Brandis is Professor of Economics in the University of Illinois at Urbana-Champaign. He wishes to thank (and absolve from all responsibility for the views expressed) his colleague, Donald W. Paden, who provided a critical reading of the manuscript.

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Bibliography


