

9-2009

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ARE INTRODUCTORY COURSES A PROPER VENUE FOR DEEP THOUGHT ABOUT THE DISCIPLINE?

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Source: College Student Journal Sep2009, Vol. 43 Issue 3

ISSN:01463934

Document Information: Publication Type: Article Update Code: 20090831

An introductory course is the discipline's handshake; it is the greeting that either seals the deal or in varying degrees convinces the learner that this discipline has little usefulness. Given the huge stakes in forming a strategy for the introductory course, how should we structure the course? The argument in this paper is that we should encourage students to think deeply about the discipline. In other words, we should encourage an appreciation for the complexity of the vocabulary, the underlying assumptions, and the kinds of evidence relied on in the discipline in question.

For some students, introductory courses are the first step in the long process of studying a field intensely. This initial course prepares this group of students for future courses in the same discipline by laying a general foundation of knowledge. Without a proper grounding during an introductory course, students may flounder in future courses.

But for most students in an introductory course, this educational experience will be their first and lonely formal contact with this discipline. Those who teach the introductory course get one and only one opportunity to encourage continued interest in the discipline itself. Consequently, forming an introductory course strategy is one of the most important decisions a group of colleagues can make.

These introductory courses are doubly significant in that other students will probably use these courses to explore possible areas of interest or find a major or concentration. Many learners take these courses because they are required to do so, but an effective introductory course can serve as an efficient way to test and construct interest in the subject matter. This function for introductory courses is probably the most significant because its potential is numerically larger. The introductory class is in a sense a potential marketing endeavor, and whether the student "buys" the subject matter determines in many cases on whether he or she will ever again study this area of knowledge.

Because all types of students sit side by side in a single class, the introductory course faces the question of what should be taught and to what extent. Make the course overly simplified, and the student experiences a caricature of the subject matter; overly complex courses are likely to frighten away students who would profit from later courses in the discipline, but who never would consider such courses because they have been terrified by the arcane intricacies of their particular introductory course.

Often the conversation about introductory courses is phrased in terms of simplicity versus complexity. For example, Robert Frank urges colleagues in economics to teach a smaller, select group of key concepts, but very thoroughly.

Cramming as much information as possible into one term, he claims, only confuses students as to what topics are the key elements to the field. (Frank. 2006)

Recent research by Bill Thornton is consistent with Frank's counsel. One might guess that extending the introductory course from one to two courses would have a large positive effect on what students learn. In other words, more input will lead to greater knowledge output. However, Bill Thornton compared what students learned when a one-semester introductory course was extended into two semesters and found that the material learned in the two courses did not differ significantly from what students had learned by taking a single semester course. (Thornton, 2006)

While there is little evidence to justify cramming content into introductory courses, it is unclear what should happen to course design in terms of how to structure the simplicity itself. How to take advantage of a pedagogy based on a few key concepts is still unsettled. Just how much about the underpinnings of a discipline should be shared with beginners? Should they learn a version of the discipline that shows them the beautiful cut flowers of the discipline, or should they be permitted to encounter the complexities associated with the planting, fertilizing, pruning, and selective harvesting of the flowers?

If students learn to ask critical questions about the concepts and perspectives in a discipline, will they be prematurely skeptical of the discipline? Or will their awareness of the excitement of the elements of controversy in the discipline stimulate their desire to be part of the ongoing intellectual life of the discipline? One of the strongest reasons for taking the latter view is the honesty associated with transparency. Few of us can take pride in presenting our discipline in a form more akin to a sales presentation than a scientific search.

A second argument for encouraging deep thought in introductory courses is that such an approach takes advantage of the learning stimulus associated with developmental cognitive dissonance. The mind does not come to attention in a state of comfort. "The dumbing down of economics to the dogmatic preaching of a few basic axioms in freshman and sophomore-level classes misses the excitement of the discipline." (Becker, 2001) Deep thinking is challenging thinking, pushing the student to the edge of her comfort zone, and by doing so agitating the mind so it is ripe for moving beyond where it is currently. (Law-son, Banks, Logvin, 2004)

Evidence from encouragement of deep thinking in history courses is especially revealing. (Bolinger, Memory, Warren, 2004; Kibler, 2004) Surely history teachers could teach history in a compact framework emphasizing a few concepts that students are asked to apply in the variety of historical experiences they will encounter in the course. Part of any useful introductory course will take exactly that approach. But to stop at the level of cognitive application is to shortchange the learner AND the thrill of active engagement with a discipline.

Bolinger, et.al and Kibler lead students to think critically about historical concepts and the methods of verification used in history. They find that as students' ability to evaluate historical arguments grows, so does the depth of their curiosity. As student practice posing fundamental questions that are not easily answered, these historians see their students being less and less intimidated by the foreboding intricacies of the discipline.

But even if deep thinking in the introductory course is a promising idea, will professors be willing to take the risk associated with presenting the discipline in a full-blooded sense with the underlying assumptions of the discipline visible to beginning students? The remainder of this paper reports the results of a survey to ascertain the attitudes of economists toward deep thinking in the introductory courses they teach. While deep thinking is more than just the examination of underlying assumptions,

that critical thinking activity is perhaps the most threatening of evaluative behaviors to those who wish to present the discipline to beginners in the form of orthodox generalizations and methods.

Economists see themselves as scientists constructing models and then testing the models against data to see whether the models make sense. In the process of model building, economists construct mental pictures of the phenomenon they are attempting to explain. This mental construction necessarily requires assumptions. In economics, certain assumptions are made over and over in different contexts. In a sense this shared set of assumptions defines what economics is and who belongs to the economics tribe.

In the introductory Principles of Economics class, these shared assumptions sometimes make their appearance explicitly, but will surely be responsible for the eventual analysis, at least implicitly. Given that the power of the analysis rests at least to some extent on the assumptions being made, students might be lulled into ascribing more power to the analysis than the analysis warrants.

To see whether economists wish to have introductory students see the workings of both implicit and explicit assumptions in economics principles, this manuscript presents the outcome of a survey we did in which we attempt to ascertain the attitude of economists toward thinking deeply about these assumptions. The work here is based on a survey we sent to 725 faculty members in Ohio, Indiana, and Michigan in November, 2006, who are listed on the school's web site as being in the Economics Department at that institution. A copy of the survey can be found in Appendix A. We received 92 responses without any reminder or follow-up. The response rate seems reasonably strong to us.

The response rate does seem relatively robust given that no follow-up occurred. That response rate may be a sign of interest in the questions asked, and the answers should be interpreted with that particular selection bias in mind.

The questionnaire listed 16 assumptions common to economic analysis. (See Appendix A.) Each respondent was asked to indicate which of these assumptions the faculty would like the students to have examined before leaving their classroom. In addition, we asked each to pick the three assumptions they would like students to think most deeply about.

While the complete survey results are available from the authors, Table 1 provides an accounting of the assumptions that were especially salient in the minds of respondents in terms of wanting their students to think deeply about those particular assumptions. Column 1 refers to the # of the assumption from Appendix 1; Column 2 is the number of respondents who chose that assumption as an assumption that they wanted their students to examine; Column 3 is the percentage of respondents who chose that assumption as important to think about in their principles classes.

It should be noted that it is not clear what the content of the discussion is that these faculty want. For example, faculty could want a discussion whose conclusion is that the assumption is an accurate description of reality. Or they could want a discussion leading to exactly the opposite conclusion. Similarly, it is not clear from the responses what depth of discussion would be desirable.

But what we can say is that a substantial number of economists seem to be eager to address at some level the effect and usefulness of core assumptions underlying the discipline of economics.

What conclusions could we draw from this survey? First, there is some evidence that the profession more generally is changing. The view that markets can, under a wide variety of conditions, provide a desirable economic outcome has come under some attack both from heterodox economists but more recently from mainstream economists. (Cohen, 2007) There seems to be some interest among economists in extending the discussion about economic outcomes into areas where, heretofore, economists have been relatively silent. This requires examining the underlying assumptions of the standard model, as it is on this model that the goodness of the outcome rests. The extent to which this discussion occurs among undergraduates is open to question. The responses to our survey reveal a healthy curiosity and excitement about the way we reveal ourselves to introductory students. Including deep thinking in the introductory course in any discipline is a form of challenging arousal that conforms to ideal portrayals of human learners at their most engaged. (Csikszentmihalyi, 1990)

TABLE 1

ASSUMPTION	RESPONDENTS	PERCENTAGE
8	64	69.6
11	61	66.3
2	58	63
10	58	63
5	57	62
&		
13		

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Appendix A: THE SURVEY: Assumptions in Economics

1. Personal financial gain is the most dependable incentive to encourage personal & national productivity.
2. Profit maximization is the goal of business enterprises.
3. Consumption is the primary purpose of life.
4. Preferences are primarily exogenous to the market.
5. The existing distribution of income is primarily the result of the rational choices by those who earn incomes.
6. Significant externalities are the exception, not the norm.
7. Property is/generally possessed by those who deserve it.
8. Consumers and firms are rational calculators.
9. Social welfare is best understood as the total of the welfare of the various individuals who make up society.
10. The use of government to address economic questions should be reserved for those instances where markets have been demonstrated to have failed.
11. The primary market structure in our economy is close enough to competitive that it is reasonable to reason about market decisions as if they occur in competitive markets.
12. Is consumer sovereignty the proper basis for assessing economic optimality?
13. Is the goal of efficiency value-free?
14. Power is not an important variable when thinking about economic decisions.
15. Income earners can move freely among alternative income levels.
16. Individuals' utility depends primarily on their absolute level of consumption, not their relative level of consumption.

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