

# Expected Proficiencies for Undergraduate Economics Majors

W. Lee Hansen

*Abstract:* The case for adopting a proficiencies approach to instruction and learning in the economics major is reiterated. This approach focuses on what graduating majors should be able to do with the knowledge and skills they acquire in the major, that is, their ability to demonstrate their learning in practical ways. The author's list of five proficiencies, advanced in the mid-1980s, is reviewed and revised; one additional proficiency is added and several others are refined. The author discusses the emphasis given to these proficiencies with top economics undergraduates at two major research universities, the author's experience with incorporating these proficiencies into his instruction, and the challenge of assessing the ability of economics majors to demonstrate these proficiencies.

Key words: knowledge, learning, teaching, skills, proficiencies

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How best to enhance the economics major continues to preoccupy the economics profession, economics departments, and individual faculty members, particularly those who teach undergraduates. My contributions to this dialogue are threefold. The first introduces an updated statement of the proficiencies we should expect economics majors to demonstrate by the time they graduate. A second describes the experience of developing and using these proficiencies to guide my teaching and stimulate student learning. A third highlights the challenge of developing an effective means to assess these proficiencies.

The proficiencies approach focuses on what graduating majors can do with the knowledge and skills they acquire in the major. Its goal is enabling students to demonstrate their learning in practical ways after they complete their baccalaureate degrees. Typically, universities presume that students master the subject matter of economics, indicated by requirements they fulfill, courses they complete, content of these courses, and course grades. Yet, completing the major, even with respectable course grades that may suggest content mastery, does not mean that graduates are effectively equipped to use their knowledge and skills. Nor does it mean that graduates with their economics training can provide good value to prospective employers, society, and themselves.

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The motivation for developing this list of proficiencies arose from my long-time concerns that the economics profession gives too little attention to what we expect majors to be able to do with their knowledge after they graduate (Hansen 1986).<sup>1</sup> Economists maintain that students should be educated “to think like economists” (Siegfried et al. 1991). Whether this amorphous objective is achieved depends on how well the examinations measure thinking skills. Requiring students to answer a battery of largely single-dimensional, multiple-choice questions, as occurs in most principles courses and also many advanced courses, neither challenges students to begin thinking like economists nor builds their ability to use what they are learning. In short, we are not preparing economics majors to either “think like economists” or “do like economists.”<sup>2</sup>

Since being unveiled more than a decade ago, the proficiencies approach has received relatively little attention. Two exceptions are Wyrick (1994), whose innovative text describes how to bring a proficiencies approach into classroom teaching, and Salemi and Siegfried (1999), who speculate that a proficiencies approach would enhance student learning in the major. This lack of interest is not surprising.<sup>3</sup> To implement a proficiencies approach would require transforming both our approach to teaching and learning, as well as our method of assessing what students learn. Because change is unsettling, costly, and often of doubtful benefit, and because complaints about the status quo are barely audible, there is little impetus for change.

## PROFICIENCIES: WHAT ARE THEY?

Recently, I revisited the list of proficiencies laid out earlier (Hansen 1986) to assess the need for changes in what should be expected of newly graduated economics majors. Nothing prompts me to make dramatic revisions. This conclusion is based on continually testing the list in discussions with a wide range of employers, students, and colleagues, and with believers in both traditional liberal education and professional-vocational education. This conclusion has been reinforced by using the proficiencies approach in my classes, including introductory courses and advanced courses in the major for juniors and seniors. This process led me to add one proficiency and modify how several of them are demonstrated.<sup>4</sup> The list follows:

1. *Access existing knowledge*: Retrieve information on particular topics and issues in economics. Locate published research in economics and related fields. Track down economic data and data sources. Find information about the generation, construction, and meaning of economic data.

2. *Display command of existing knowledge*: Explain key economic concepts and describe how these concepts can be used. Write a precis of a published journal article. Summarize in a two-minute monologue or in a 500-word written statement what is known about the current condition of the economy and its outlook. Summarize the principal ideas of an eminent economist. Elaborate a recent controversy in the economics literature. State the dimensions of a current economic policy issue.

3. *Interpret existing knowledge*: Explain and evaluate what economic concepts and principles are used in economic analyses published in daily newspapers and weekly news magazines. Describe how these concepts aid in understanding these analyses. Do the same for nontechnical analyses written by economists for general purpose publications (e.g., *Challenge*, *Brookings Review*, *The Public Interest*).

4. *Interpret and manipulate economic data*: Explain how to understand and interpret numerical data found in published tables such as those in the annual *Economic Report of the President*. Be able to identify patterns and trends in published data such as those found in the *Statistical Abstract of the United States*. Construct tables from already available data to illustrate an economic issue. Describe the relationship among three different variables (e.g., unemployment, prices, and GDP). Explain how to perform and interpret a regression analysis that uses economic data.

5. *Apply existing knowledge*: Prepare an organized, clearly written five-page analysis of a current economic problem. Assess in a four-page paper the costs and benefits of an economic policy issue. Prepare a two-page memorandum that recommends action on an economic policy issue.

6. *Create new knowledge*: Formulate questions that illuminate a new economic issue that needs to be researched. Prepare a five-page proposal for a research project. Conduct a research study, presenting the results in a polished 20-page paper. Conduct a group research project that prepares a detailed research proposal and/or a finished research paper.

This revised proficiency list continues the attempt to capture the different cognitive levels employed in using economics. In a sense, the sequence of proficiencies loosely parallels Bloom's (1956) taxonomy of cognitive objectives but in a form that makes them appropriate and meaningful in economics. The first two proficiencies involve relatively low levels of cognitive activity, basically finding and presenting existing knowledge. The next two proficiencies are more demanding, calling for interpreting and evaluating existing knowledge, including quantitative data. The fifth is still more demanding, because it involves applying existing knowledge to deal with economic problems, issues, and policies. The sixth is the most demanding, with its call for creating new knowledge that builds on the previous five proficiencies. Thus, introductory courses would emphasize the lower level proficiencies (1–3), with some attention to 4 and 5. Junior-senior level courses in the major, by contrast, would extend the reach of students to embrace proficiencies 4 and 5, with some attention to 6. A capstone course for senior majors would concentrate on proficiency 6.

### **PROFICIENCIES: ARE THEY EMPHASIZED?**

How much are these proficiencies currently emphasized in the undergraduate economics major? This question is not easily answered. What evidence there is indicates that little or no emphasis is given to these proficiencies. For example, a survey of U. S. instructional practices in economics (Becker and Watts 1995, 1998) indicates that the typical instructional approach in introductory courses

and in junior-senior courses in the major can be described as oriented to “chalk and talk” (Becker and Watts 1996), with 83 percent of faculty, regardless of institutional type (research, doctoral, masters, liberal arts, or other postsecondary institutions), using class time to lecture. A similar percentage of faculty rely exclusively on textbooks, with about half using problem sets. Even fewer faculty employ current news items in their instruction; and workbooks are used principally at two-year institutions. Although the survey inquired about eight other teaching approaches, none are widely used, and the proficiencies approach is not even mentioned.

Most efforts to assess student learning are more narrowly based than the proficiencies approach (Siegfried and Raymond 1984; Siegfried et al. 1991; Becker and Watts 1996). In U.S. principles courses, examinations are typically composed of multiple-choice and true-false questions, with considerably less emphasis on short-answer and essay questions; the objective questions typically test for recognition and understanding rather than higher levels of cognitive knowledge. Junior-senior courses do rely more heavily on short-answer and essay questions, but relatively little is known about the cognitive levels these questions tap. Other forms of writing are neither emphasized nor given substantial weight in grading; the evidence indicates that economics undergraduates write relatively few papers, whether labeled term papers, shorter papers, or research papers.

To learn more about how much proficiencies are emphasized, I recently visited with small groups of top economics undergraduate students at two major research universities. At one institution, I met seven students writing senior theses in a capstone course; except for this particular course, they said faculty gave little or no emphasis to any of the proficiencies. At the other institution, I met eight student members of the economics student association, all of them top students. They reported that except for a research topics course several were currently taking, proficiencies received relatively little emphasis.

Responses by the second student group to a subsequent mail survey, to which all eight replied, reveal that in only a few of their economics courses was any emphasis given to these proficiencies. The average level of emphasis in all courses was midway between slight and moderate (the choices ranged from heavy, moderate, and slight to not at all). In those courses that did give some emphasize to proficiencies, students rated the level of emphasis as moderate.

These students were also asked to rate themselves on their ability to demonstrate these proficiencies. What weight should be given to student self-assessments is open to debate. Some faculty would argue that students are incapable of making accurate assessments; on the other hand, most faculty would not be sufficiently well informed to make such assessments of their individual students. The average level of self-rated performance, based on the response categories (advanced, proficient, basic, and minimal), was midway between basic and proficient.<sup>5</sup> Not surprisingly, students viewed themselves as weakest in demonstrating higher-level proficiencies, namely, apply and create. In open-ended comments, three of the eight respondents lamented their inability to demonstrate the whole array of proficiencies. It should be remembered that the responses report-

ed here are for top economics majors; other economics majors would probably rate their own performance even lower.

What is known about the usefulness of a proficiencies approach to the instruction-learning process? Again, no systematic information is available. However, since the mid-1980s these proficiencies have been an integral part of my instruction in all types and levels of courses. My commitment to this approach took concrete shape in the mid-1980s when the university instituted a campus-wide Writing Across the Curriculum (WAC) program. Its Writing Intensive (WI) courses, in addition to imparting a discipline's content knowledge, seek explicitly to improve student writing skills. The assumptions underlying this approach are that writing assignments enhance subject-matter learning, and students improve their writing by being required to write about topics from their disciplinary major. The purpose of these WI courses is neither to displace content knowledge nor to necessarily affect what content knowledge is taught, because teaching faculty retain autonomy over content. Their challenge is to integrate writing assignments into content. In so doing, faculty members must necessarily change how they teach.

Joining the WAC program pushed me to think more carefully about what I wanted students to learn. I realized that my assignments already emphasized what came to be the proficiencies in the major (Hansen 1993a; Hansen and Salemi 1998). Subsequently, I developed a team-based project designed to foster creativity (Hansen 1993b) among economics majors in their senior year.

My most interesting and fully developed attempt to incorporate proficiencies occurred in two WI courses. The first was a one-semester introductory economics course that regularly enrolled 50–100 students, most of them freshmen (Hansen 1996). The second was a junior-senior advanced course in labor economics enrolling 30–80 students. Students were informed at the outset about the proficiencies orientation and how writing assignments could enhance these proficiencies.

A grid linking the writing assignments in these courses to the six proficiencies is shown in Table 1. For the introductory course, the writing assignments, numbered 1–8 in the table, give explicit attention to the first three proficiencies (accessing, displaying, and interpreting), with less attention to the fourth (interpreting quantitative data) and the fifth (applying). The junior-senior course, through assignments numbered 9–16, gives more attention to the higher-level proficiencies (interpreting quantitative data, applying, and creating). The number of proficiencies emphasized in each assignment varies, ranging from one to as many as six.

## THE EFFECTS

The impact of adopting this approach became apparent quickly. Students in the introductory course readily accepted its broader goals and the emphasis it gave to proficiencies; they recognized the value of being pushed to go beyond the customary passive learning environment prevalent in many of their other courses. In turn, this approach stimulated my interest in new ways of incorporating the proficiencies into my teaching. It also heightened my consciousness about what stu-

TABLE 1  
Importance of Writing Assignments to Proficiency Development in Economics

Ex. No.	Writing assignment	Accessing existing knowledge	Displaying existing knowledge	Interpreting existing knowledge	Interpreting quantitative knowledge	Applying existing knowledge	Creating new knowledge
1a.	Writing a precis		XX				
1b.	Writing a summary		XX				
2.	Formulating discussion questions		X	XX			
3.	Preparing exam questions/answers		XX	X			
4.	Identifying economic concepts	X	XX				
5.	Analyzing policy cases	X	X	XX	X	XX	
6.	Evaluating writing assignments	X	XX				
7.	Composing an in-class essay		X	XX		XX	
8.	Identifying excellent writing	X	X	XX			
9.	Analyzing the minimum wage	X	X	XX	XX	XX	XX
10.	Creating a quantitative analysis	X		X	XX	X	X
11.	Understanding wage discrimination		X	XX	XX	XX	XX
12.	Constructing a labor market analysis	X	X	XX	XX	X	
13.	Writing an in-class analysis			X		XX	
14.	Evaluating student papers			XX			
15.	Formulating idea papers	X	X	XX	X	X	XX
16.	Preparing research papers/proposals	X	X	X	XX	X	XX

Source: Adapted from Hansen (1998).

Note: X indicates important and XX indicates highly important.

dents were learning and how I could contribute to their learning. In my view, the course was a success.

Several concrete outcomes can be reported for the introductory course. The dropout rate continued to be low despite the increased workload caused by the writing assignments. Class attendance was high, students came to class better prepared, and classroom discussion became livelier and more intense. Moreover, writing assignment deadlines were met, the quality of student papers rose steadily through the semester, and the final in-class essays were substantially better than previously.

Students conveyed their satisfaction with the course in several ways. As the semester progressed, students, without prompting, offered favorable comments about the course. The department's standard, end-of-semester, course-instructor evaluations produced more highly favorable responses, notwithstanding the greater demands made on students. Similarly favorable responses came from a supplementary course evaluation instrument I developed to determine how the different elements of the course contributed to student learning. In both this evaluation and the department evaluation, I obtained some of my highest-ever ratings in the introductory course.

Particularly gratifying were student ratings of course activities for "their usefulness in improving your ability to use your knowledge." Topping the list of 10 activities rated for helpfulness were "learning how to relate course concepts to current economic events," "understanding key economic data," "learning how to identify economic concepts in newspaper/magazine articles," "learning how to write an analysis of economic concepts in news articles," and "learning how to interpret news articles based on their economic concepts."

Readers of this journal hardly need to be cautioned about personal reports on the success of different teaching approaches. Such reports are invariably viewed as suspect in a discipline that places great store on hard, quantitative evaluations. Instructor claims are dismissed because of suspected instructor bias, instructors self-select the teaching approach they do best, and single examples cannot be generalized. As Fels (1993) remarked, we too often report "This is what I do, and I like it."

Insisting that newly developed teaching approaches when first described must also be rigorously evaluated is asking too much. Without standard assessment instruments that reflect the objectives of new approaches, rigorous evaluation is impossible. Indeed, no existing assessment instrument captures learning in the major, much less that called for by a proficiencies approach. Using the only available, nationally normed, multiple-choice test, the Test of Understanding of College Economics (TUCE), as an assessment instrument for this course would not be appropriate. It would only measure the learning such an instrument is designed to capture, namely, conventionally taught introductory micro and macro economics courses. Thus, Fels' criticism is too harsh. It places on those who advance new teaching approaches the responsibility for developing sophisticated measuring instruments that permit comparing the wider range of outcomes of their courses with the more limited cognitive outcomes of standard "chalk and talk" courses.

## CHALLENGES

If proficiencies are to be integrated into the economics curriculum and if learning outcomes of both this approach and other instructional approaches in economics are to be assessed and contrasted, then several challenges must be confronted.

The first is how to assess student performance. Several possibilities present themselves. The most obvious is developing for graduating seniors paper-and-pencil assessment instruments built on practical demonstrations and/or simulations of various proficiencies. A more direct but time-intensive approach is direct clinical observation that might take place at an "academic field day" event for graduating seniors; during the course of such a day, senior majors would demonstrate these proficiencies before small groups of faculty members. A hybrid approach would combine a pencil-and-paper assessment with class-based assessments reported by, for example, instructors teaching senior-year students. A quite different approach would designate particular courses within the major to develop and assess student proficiencies. Alternatively, every course in the major could be made responsible for developing particular proficiencies. Finally, student portfolios of their academic work offer yet another possibility, one capable of providing more meaningful direct evidence to outsiders (Walstad 2001).

Each possibility offers advantages and disadvantages; all would entail extensive development costs. Briefly, the first would yield a uniform and presumably objective assessment. The second would be time-intensive for faculty and likely suffer from quality control problems. The third would require individual faculty to develop proficiency performance measures for their individual courses. The fourth would be convenient by using existing courses but would concentrate responsibility among the few instructors teaching these courses. The fifth would spread responsibility among all teaching faculty, but it assumes that all faculty would be equally responsible in promoting proficiencies. The last would draw on the accumulation of work (papers, projects, etc.) students have already completed; reaching some overall judgment would be time-consuming for faculty and create problems of consistency in evaluating portfolios. Based on these considerations, most faculty would probably prefer a comprehensive pencil-and-paper assessment instrument.

How feasible might it be to develop such an instrument? The fact that none exists undoubtedly speaks to the difficulty. Might any available instruments serve this purpose or be adapted to do so? There are several possibilities. The Micro and Macro Advanced Placement (AP) tests in economics for high school seniors each employ 60 multiple-choice questions; these questions seek to measure content knowledge but at low cognitive levels. The three free-response essay questions in each exam are limited to testing what might be called textbook knowledge. Whether either part of this exam as now structured could be tailored to assess proficiencies is doubtful.

The Graduate Record Examination (GRE) with its verbal, quantitative, and analytical sections is not helpful either. Its Economics Test, which uses 130 multiple-choice questions, does measure content knowledge. The new GRE writing

assessment is composed of two free-response questions, but these questions are designed to indicate proficiency in critical reasoning and analytical writing without regard to content knowledge in economics.

The format of the Graduate Management Admission Test (GMAT) is more promising. If the verbal and quantitative components are ignored, the GMAT is a blend of the GRE economics test and GRE writing assessment. Its multiple-choice questions test for reading comprehension and critical reading, and they use extended question stems and a richer array of distractors; consequently, the GMAT appears to test higher levels of cognitive knowledge than the AP or GRE economics tests. The two free-response questions in GMAT's analytical writing assessment require analyzing an issue and critiquing an argument, both of which are content-related. Although the data sufficiency questions on mathematical knowledge are not pertinent, that part of the test could be changed to include what are called data-response questions.

Another model comes from assessment systems used in the United Kingdom. Briefly, both the A-Level Economics and the General Certificate of Secondary Education (GCSE) examinations in economics contain a richer variety and more challenging sets of questions than the AP test; their data response questions are aimed particularly at testing for understanding of quantitative relationships (proficiency 4). The same can be said about the Admissions and Entrance Examination Papers required by universities such as Oxford and Cambridge, that rely on free-response questions. In addition, the comprehensive examination papers that some university students must write when they take their degrees also rely on free-response questions.

It appears that combining the best elements of the GRE economics test with the GMAT, with its free-response questions and new data-response questions, is the most promising avenue for developing a comprehensive assessment of both content knowledge and proficiencies. The hard work lies in formulating challenging questions that test higher levels of cognitive knowledge and simulate the proficiencies expected of graduating economics majors. Although many questions are available, few are probably adequate for assessing student proficiencies. More promising may be questions devised by individual instructors. But, a system would have to be established to assemble and identify high quality questions.

What seems to be needed is a design team of economists and testing experts to decide what kind of a content-rich assessment instrument can capture the capacity of graduating economics majors to demonstrate their proficiencies. The process of developing an effective assessment instrument, administering it, and evaluating student responses is formidable. Once such an exam is developed, it must be constantly invigorated with new questions. In addition, an examination program's success depends on recruiting a corps of readers to evaluate the free responses, as well as protocols describing how readers are trained, how the responses are graded, how differences in reader grades are resolved, and how the grades are interpreted. Much can be learned from the experience of economists who helped develop the AP economics exam, the GRE economics test, the GRE writing assessment, and possibly the GMAT.

A nationally normed proficiencies assessment instrument holds the promise of

helping individual departments become better informed about effective methods of assessing their students and the costs of developing an assessment system. For departments that may be uneasy about a uniform national assessment instrument, there is no reason why they could not substitute certain types of questions to reflect better the focus of their particular curriculum.

Another major challenge is determining how economics instruction can be redirected to develop proficiencies in the major. The active modes of learning called for by Salemi and Siegfried (1999) offer a start. So also does an integrated program of writing assignments (Hansen 1998), coupled with structured classroom discussion (Hansen and Salemi 1998). Much work remains in translating the proficiencies approach into an effective instructional pedagogy and a set of workable course syllabuses that will assure the cumulative development of proficiencies over the duration of the undergraduate major.

A final challenge is training students to assess their ability to demonstrate these proficiencies and to remedy any gaps they identify in their performance levels. Assembling portfolios of their course work is a step in this direction. So also is a system for periodically monitoring their performance, including self-testing and practical demonstrations before their peers.

## CONCLUSION

The early 1990s downturn in the number of U.S. economics majors prompted new concerns about the attractiveness and efficacy of economics instruction. Because students' numbers have increased recently, these concerns may be lessening. But, what and how we teach should not be determined solely by enrollment cycles. Instead, we must ask ourselves what learning outcomes we seek to cultivate among our undergraduate economics majors and how best to realize those outcomes.

The proficiencies approach outlined here concentrates on what economics majors can "do" with their learning. Shifting the focus of economics instruction to a proficiencies approach is a formidable challenge. Yet, doing so is central to realizing the broad goals of an undergraduate education for the majority of our graduating majors who show little or no interest in becoming Ph.D.-trained professional economists. The question we face is how best to move toward a proficiencies approach to economics teaching and learning.

## NOTES

1. Inspiration for developing these proficiencies came from several other sources in addition to my teaching, among them the Fels and Buckles casebook (1984), my 1984 exposure to problem-based learning at Maastricht University (Boud 1985), and Sternberg's triarchic model of intelligence (1985).
2. Recent studies of adult and labor force literacy take a different approach by emphasizing what people can do with their knowledge. Rather than reproduce the knowledge they acquired in school, those interviewed must demonstrate how effectively they can carry out a wide range of practical tasks that build on their school-based knowledge (Kirsch et al. 1993; Sum 1999). This shift of focus from knowing to doing is also consistent with the goals of a liberal arts education. As Fels (1974) remarked, the purpose of such an education is to free students by helping them think for themselves and to demonstrate their ability to apply what they learn.

3. The author has received a recently completed paper describing how an economics department restructured its economics major around the proficiencies described here (Carlson, Cohn, and Ramsey 2000).
4. Proficiency 3 has been modified to reflect what seems appropriate for the vast majority of students who do not plan on graduate study. Hence, it shifts the focus from interpreting theoretical and quantitative results contained in professional journals to interpreting the more qualitative analyses found in general purpose periodicals that deal with economic issues. Proficiency 4 on economic data is added to fill a gap that became apparent shortly after the original list was published, namely, the importance of quantitative data and empirical analysis in economics. Proficiency 6 (formerly 5) is retained, despite criticism that it expects too much of most undergraduates and is too demanding of faculty time. In addition, the length of some demonstrations has been altered to reflect what I find works best in assessing student proficiencies.
5. The four levels are defined as follows. Advanced demonstrates superior performance; produces in-depth work; able to go beyond what is required; shows originality and flair in demonstrations. Proficient demonstrates ability to perform at solid, satisfactory level. Basic demonstrates some facility in performing this proficiency; needs improvement in capacity to demonstrate proficiency. Minimal demonstrates glaring weakness in performing this proficiency; needs major improvement in capacity to demonstrate proficiency.

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