

## THINKING LIKE AN ECONOMIST: AN ESSAY

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### *Abstract*

*A well-trained economics graduate is one that thinks like an economist. As such, a primary purpose of economics education is to train the economics student to think like an economist. A key question is: How does an economist think? Following from this question, what should a university economics student, especially an economics major, learn in preparation for a career as an economics? What ought a university economics department teach its students? Good answers to these questions acknowledge specialization and recognize that the economist is primarily an analyst of what goes on in the economy and the society, especially as related to resource allocation and distribution. Specialization dictates a particular focus of the curriculum. The present essay reviews an in-depth study of the economics major by the Association of American Colleges. The results of the study are compared with the Nigerian Universities Commission economics curriculum benchmark (NUC BMAS, 2007) in terms of the best way to train economists. This essay can be viewed as a criticism of NUC whose stated purpose is to help graduates secure employment rather than train students to think like economists.*

### *Introduction*

Sustained periods of economic development require substantial investments in the labour force, with special attention to human capital investments, especially education (see, for example, Becker 1993 p.12). The question

addressed in this essay concerns the specific nature or character of the education, or what Becker (1993 p.4) calls "a distinction between specific and general training." Should economics education focus on general education with breadth or wide bases, or on the depth and focus that the undergraduate major provides? What types of skills training are necessary to prepare students to become good economists? In short, what ought a university economics department teach its students, especially its majors? Correct answers to such curriculum questions depend on the chosen objective(s) of economics education, in addition to an acknowledgement of the importance of specialization. For example, an American study found that, for a majority of economics educators and curriculum designers, the objective of economic education is to get the student 'to think like an economist' (Siegfried et al. 1991 p.198). The reasoning is that, in the modern economy, specialized "knowledge is the currency of value as prosperity increasingly derives more from knowledge than from possessions" (Georgia Tech 2008); and "earnings are much more closely geared to knowledge than to strength" (Becker 1993 p.54). The American study concludes that, given specialization, specific knowledge, 'depth and focus' offered by the major, is the more effective vehicle for enhancing student learning. In contrast, the stated policy objective of the Nigerian Universities Commission (NUC) requires curriculums to be 'reconstituted' to suit job markets (NUC 2007, p.5). Presumably to accomplish this objective, NUC mandates compulsory, rather than elective, business courses for Nigerian university economics curriculums. This essay argues that, notwithstanding any good intentions of

NUC to help graduates secure employment, the compulsory business courses are an adulteration of economics curriculums.

In the remainder of the paper, section 2 reviews the relevant literature. Section 3 asks what it means to think like an economist. Section 4 discusses a curriculum suggesting the best way to train economic analysts and compared with NUC economics curriculum benchmark (NUC BMAS, 2007). The conclusion is in section 5.

#### *THE RELEVANT LITERATURE*

Experts believe that, in general, a good curriculum reflects the objective(s) the curriculum is intended to serve and, as such, curriculums tend to differ according to objectives (Ornstein and Hunkins 1998, Onwuka 1996, Udeinya 1996). In the context of specialization, the objective of the education is to produce experts and the best curriculums exhibit 'specific training'. In general, economists analyze and articulate what economic agents do. Friedman (1953) suggests that, in carrying out such analyses, economists should treat the economic agents as if the agents actually understand and apply the relevant economic principles governing what they (the agents) do. To accentuate this point, Friedman (p.12-13) gives his famous billiards (or snookers) metaphor: the responses of billiard balls to expert players' shots are representable using mathematical physics. Subsequently, The London Daily Telegraph (of 21 May 2002) carried a story of a physicist who worked out a set of equations that compute the trajectory of a free-kick by David Beckham during a Greece-England match. The point of these metaphors is an implied distinction, division of labour and specialization between analysts and

performers. In economics, the distinction is between economist and economic agent, with the economist specializing as analyst.

In general, specialization introduces inevitable 'mutual' ignorance and incompetence such that doers are not the best analysts and analysts are not the best doers. For example, a good player may know next to nothing about analysis, nor is he expected to, but can shoot balls as if he is indeed applying the relevant laws. An analyst (or a coach) could articulate what the player is doing more effectively than the player. Yet, even analysts who can use mathematical physics to trace the trajectory of balls may not be good players, may not be able to make the ball follow the trajectory specified in his own equations. But that is all because of specialization. Franz (2005) interprets this phenomenon in terms of distinctions between analysis and intuition.

Friedman insists that, so long as the analysts' hypotheses give reasonable descriptions of what doers do, the doers' knowledge or ignorance of the laws and principles is redundant. For example, in the story about Isaac Newton observing an apple fall from its tree, said to have motivated Newton's theory of gravitational force, the analyst in the story is Newton, and the performer is the apple tree that yielded its apple as if following Newton's law. Obviously, the tree's knowledge or ignorance of gravity or its laws is redundant. Yet Newton's theory gives a reasonably good approximation to what the apple tree was up to. Friedman (p.11-12) gives several examples, including the examples of falling bodies and of leaves seeking sunlight.

Analogously, economic agents may be novices with respect to economic theories and principles, but with respect to their actions in the economy, they might as well be applying economics. For that reason, Friedman insists that economists analyzing what economic agents do when engaged in economic activities should treat the economic agents AS IF the agents are indeed rational and well-informed, as if they know and observe laws and principles of economics.

The term analyst denotes a person who can conceptualize, operationalize and articulate the laws governing what is going on. The analyst also can predict and forecast. Paraphrasing Chinua Achebe's essay-title

“The Novelist As A Teacher”, the analyst is a 'teacher' and explainer of what is going on. The analyst is an expert because he or she is able to take into account and call by name the relevant forces that affect what is going on. It is a learned ability; an acquired skill. What types of training and skills does a student need in order to become a good economic analyst?

#### *ECONOMIST AS ANALYST*

Being a good economist amounts to thinking like an economist. According to Siegfried et al. (1991 p.199), this includes: (a) deductive reasoning in conjunction with simplified models, (b) recognition of scarcity and opportunity costs, (c) distinguishing positive from normative analysis, (d) focus on particular aspects of reality, (e) identifying equilibrium, (f) recognizing intended and unintended consequences, (g) implications of aggregation and of institutional and policy changes, and (h) considering efficiency, etc.

The economist is a social scientist, using economic science to analyze what is going on in society (positive analysis), and analyzing how best to organize society (normative analysis). An underpinning assumption in economics is that the economic agent is, or acts as if, selfinterested and rational. Taken together, this assures optimization and consistency of behaviour. Samuelson and Nordhaus (2006, p.89) state that there is no supposition in economics that economic agents are mathematical wizards. "What is usually assumed is that [economic agents] are reasonably consistent in their tastes and actions ... If most people act consistently most of the time, ... generally choosing their most preferred bundles, our scientific theory will provide a reasonably good approximation to the facts." Rationality itself can be interpreted to mean that the economic agent has an objective or purpose that can be used to evaluate situations and alternatives. In the case of the consumer, the assumed objective is utility maximization. For a business enterprise, the assumed objective is maximization of profit or expected returns.

According to (Siegfried et al. 1991 p.199), economics requires problem-solving and creative skills on the part of the economist. Problem-solving skills emphasize what Varian (1993 p.xix) calls the 'analytical approach' that uses rigorous, logical reasoning', accomplished by emphasizing the conceptual foundations of economics, with insights derived logically from a set of premises. This often involves abstracting and decomposing problems into parts that can be analyzed separately or sequentially, and isolating important feedbacks and interrelationships (Siegfried et al. 1991, p.200). The approach emphasizes

decisionmaking techniques, and the consideration of consequences of choices. This orients economists toward the examination of tradeoffs among alternatives, with opportunity costs including the presumed big trade-off between efficiency and equity. Economics is universal because the underlying central rationale, coping with scarcity, is pervasive.

According to Pius Okigbo (1993, p.1), the economist needs to be aware of relationships, impacts and forces external and internal to the economic agent's environment even when the economic agent himself may not be aware of the changes occurring around him and, even if he is aware, he may still not be aware of their impacts, such as "the impact of the changes on his own relationships with himself, with others and with his environment." It is this awareness and insight that makes the economist a useful analyst. An example is what happens when the price of a commodity changes. The economist sees the price change through decomposition into substitution and income effects. "This decomposition is only a hypothetical construction – the consumer simply observes a change in price and chooses a new bundle of goods in response. But in analysing how the consumer's choice changes, it is useful (for the analyst) to think of the budget line changing in two stages" (Varian 1993, p.136). Following Friedman's reasoning, an economic model, like a road map, can possibly be too realistic or not realistic enough, and a good road map is not judged by how realistic it is but by whether or not it performs adequately or reasonably well under applicable circumstances. In sum, a good economist must know, understand and appreciate economic science; have access to, command of, ability to summarize and

interpret existing knowledge; as well as create and formulate of questions in analytical styles.

#### *A M O D E R N E C O N O M I C S CURRICULUM*

What ought an economics department to teach its majors in order that its graduates can become good economic analysts? Or, through what competencies might graduating economics majors be expected to demonstrate the ability to 'do' economics? (Siegfried et al. 1991 p.214). To answer this question, this section summarizes and reviews a report by Siegfried et al. (1991) of a study by the Association of American Colleges (AAC). AAC is an organization of over six hundred universities. The study assesses the abilities, capacities and achievement levels of economics students in the United States by conducting an in-depth study of the economics major. Although the study is American, its findings and insights can aid the present Nigerian debate.

The central logic and findings in the report are: (a) In a world of specialization, the undergraduate major, rather than general education, is the principal vehicle for, and a more effective means of, enhancing the learning of economics. (b) Following from this, the primary objective of economics education is to get the economics student to 'think like an economist' (Siegfried et al. 1991, p.199). (c) The foundation of economics education rests on the i n t r o d u c t o r y a n d i n t e r m e d i a t e microeconomics and macroeconomics, as well as quantitative methods. Economics is like a giant tree with its trunk rooted in the principles courses, analytical methods, and quantitative skills. The branches of the tree are the applications courses that are the "points of interest and research in

economics and that generate the problems to which principles and quantitative approaches can be fruitfully applied" in different institutional contexts and settings (Siegfried et al. 1991, p.202).

Specifically, the typical economics curriculum begins with a two-semester sequence in principles of economics for a total of six credit units in the first academic. This is followed by two-semester sequences of the two intermediate economics theory courses in the second year. The intermediate micro- and macroeconomics theory courses re-examine ideas introduced in the principles courses, using "more powerful (and less restrictive) analytical tools" and show how economists use theory. The intermediate theory courses provide prerequisite tools for economic analyses and offer signals on what skills must be developed. In addition to this is basic quantitative methods (Siegfried et al. 1991, p.202). Finally, applications courses are electives including international trade and finance, economic history, public economics, industrial organization, labour, monetary economics, economic development, etc. (Siegfried et al. 1991, p.203). Climbing the tree of economic knowledge produces graduating majors who can better understand how to think like an economist (Siegfried et al. 1991, p.214). In Nigeria, in contrast, the principles of economics sequence occupies a total of twelve credit units over four semesters in two academic sessions and are variously termed elements of economics and introduction to microeconomics and introduction to macroeconomics.

Hal Varian (1993 pp.xiv-xx) advocates a similar type of economics education. According to Varian, what he terms an 'analytical approach' uses rigorous, logical

reasoning, accomplished by emphasizing the conceptual foundations of economics along with concrete examples of their application that allows students to apply the tools of economics on their own. For Varian, it is perfectly possible to be analytical without being excessively mathematical. But "many arguments are much simpler with a little mathematics, and all economics students should learn that. The language of mathematics certainly helps to ensure a rigorous analysis, and using it is undoubtedly the best way to proceed when possible." In economics, calculus is more than a footnote; it is a "deeper way to examine the same issues that one can also explore verbally and graphically. Graphs can provide insight, but the real power of economic analysis comes in calculating quantitative answers to economic problems. Every economics student should be able to translate an economic story into an equation or a numerical example, but too often the development of this skill is neglected."

Modern economics is applied mathematics and applied statistics just like engineering and physics. As such, the economics major needs good mathematical and statistical foundations. Beginning economics, engineering and physics majors should all take the same mathematics and statistics courses taught by mathematicians and statisticians in those departments. Mathematics is important in economics because with mathematics, the economist can perform operations for which not many manageable verbal equivalents exist. For most economic analyses, mathematics is often more powerful than ordinary speech (Henderson and Quandt 1980, p.4). As such, the economics major, alongside engineering and physics majors, should be

required to successfully complete the courses referred to as General Mathematics I, II, and III. Much of that should be completed in the first two years. Concurrent with mathematics courses are mathematical statistics and computer science courses also taught by appropriate departments. By the end of his or her second year, the economics major should have a working knowledge of differential and integral calculus, linear algebra, differential equations, probability theory and basic quantitative analysis. By then he or she has completed intermediate economics theory courses as well as most of non-economics electives. It is only after these foundational preparations is the economics major ready to learn economics proper. That starts in the third year when the student faces econometrics as well as the applications courses. By the end of four years, the economics trainee is equipped with an array of economic theories and intuition in conjunction with empirical methods all intended to help him or her explicate (from what is going on) useful explanations, conclusions, predictions and recommendations. A good economics education presupposes that students "grasp the assumptions, arguments, approaches, and controversies that have shaped particular claims and findings" in economics. Depth "implies that students develop the capacity to discern patterns, coherence, and significance in their individual learning" (Siegfried et al. 1991, p.198). A recurring difficulty in Nigerian universities is that many economics majors, as Varian would put it, are students who should know algebra and calculus, "but don't -- at least, not very well." One suspects that, in Nigeria, students who take economics courses at the secondary school level tend to be ones not very good in mathematics.

In order to achieve the above results, there is a need to conduct rigorous placement tests for incoming students. Any incoming student without adequate preparations should be required to take remedial courses which would not count towards degree credits. In some cases, satisfying the remedial courses may take as much as one year. This means that, for some students, the bachelor's degree is a five-year program (or more). Other structural adjustments may mean that some courses need to be lectured more than once a week. One cannot overemphasize the need for tutorials in the first two years of university education. There might even be a need to influence the way secondary schools prepare their students.

#### *CONCLUSION*

The responsibility of the university economics department is to equip its trainees with analytical and quantitative skills plus intuition, recognizing that economics is liberal arts. The learning of university economics is not aided much by compulsory business courses. Curriculum adulteration is an outdated idea in a world of specialization. Instead of compulsory business courses, according to Siegfried et al. (1991 p.210), the economics curriculum should reflect that "computers are the pencil and graph paper of today's student." Why the focus on business courses instead of technology courses, for example?

Specialization and depth remain the key to the modern economy. Finally, Economics is both positive and normative, more like law and unlike accountancy and many of the business courses imposed on the economics curriculum.

In various activities in life there are performers and there are analysts of the

performances. For example, at a Nigeria-Argentina World Cup game in 2014 in Brazil, Lionel Messi shot a free-kick past Enyema as if he (Messi) had solved physics equations and applied the solutions to his free-kick. But Messi is no analyst, and did not, and probably could not handle mathematical physics. With respect to the economy, the presumed analyst is the economist. But there are a variety of types of analysts offering explanations for what is observed in the economy, or even on a football field. For example, some football analysts understand mathematical physics. But many are ignorant and yet explain what is going on. Some analysts can even explain the drama on a field as dibia's handiwork, with claim that the ballplayer has a special ring on his little toe and it is the power of the ring that makes the ball behave the way it does. Other analysts might explain what is happening as the will of gods, and recommend spiritual realignments. This all justifies an expanded notion of 'analyst,' with the hope that time and circumstance weed out quacks.

In the NUC benchmark, one senses a desire to impose on students a moral responsibility to Nigeria and its economy. As I see it, the responsibility of the economist is only a professional responsibility, which differs from the type of moral responsibility Achebe (1988) demands of the African novelist. If the economist cares for his country of origin, that is good. Patriotism has its place. If the economist has moral responsibilities, that is his or her personal business, because responsibility, obligation or even goodness is a burden unless it is voluntary. Is anyone insisting that Nigerian auto mechanics specialize in Nigerian vehicles or that Nigerian farmers concentrate on indigenous crops? The

Nigerian economist has no higher obligation to Nigeria than other Nigerians. Most of the Nobel-prize-winning economists in the last fifty years made contributions beyond the economies of their home countries. For example, Armatya Sen (India), Oliver Williamson, Joseph Stiglitz (USA), Angus Deaton (UK), etc. have all made contributions with general applicability. In my opinion, being a good 'Nigerian' economist is not as good as being a good economist; and may be license to mediocrity.

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