# Chance and Challenge: Assessing Economic Literacy

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*Abstract*

The article focusses on the possibilities as well as conceptual difficulties of an international comparative study assessing economic literacy of secondary and vocational school students. The importance of such comparisons is illustrated. Some of the major prodecural, contextual and political issues are discussed. It is argued that IEA can provide the technical and administrative support system required, if the important question is to be investigated how economic literacy differs across systems of education.

## 1 Introduction

This article aims to describe what is possible as well as some of the pitfalls when an international survey finally gets under way to analyze the literacy levels of students with respect to economics education and the factors influencing the domain of economic literacy.

This discussion is to be seen in relation to the debate begun within and outside the *International Association for the Evaluation of Educational Achievement (IEA)* as to whether and if so, how, economics education can be evaluated across countries. As will be seen, the authors strongly argue in favour of an IEA-controlled study to measure economic literacy across countries. A brief look at the development of IEA may help to substantiate this argument.

International large-scale comparisons of achievement data began in the late 1950s when the renowned Torsten Husén initiated what later became a multi-lingual and multi-national organisation by the name of IEA (IEA 1994a). Following a preliminary "feasibility study" IEA started off by evaluating achievement in mathematics across various age groups and school forms. The

mathematics curriculum seemed to be suited uniquely for cross-national comparisons between educational systems and allowed for an investigation of why some students in some countries apparently showed higher achievement levels than others.

Whoever has taken part in the planning of such comparative studies or whoever has struggled with the obstacles in the analysis of cross-country data will understand how much effort is required when evaluating educational systems in terms of science achievement, computer usage, language training or in-class behaviour (Walker 1976; Anderson, Ryan & Shapiro 1989; Postlethwaite & Wiley 1992; Keeves 1992). Though not completely verifiable, the repetition of a 'successful' study, as in the case of mathematics, science, and, to some degree, reading achievement, proved comparatively safe against conceptual pitfalls for IEA - provided no major changes of instruments or analytical techniques were required.

As opposed to these replications, it took tremendous efforts to draw up plans for the assessment of computers in education. Here, IEA researchers were confronted with the task of scrutinizing a curriculum that did not even formally exist in most of the IEA member states. Computers were just being introduced into schools. The consequences of this technological revolution could barely be predicted and, yet, IEA took the lead and set forth its study on Computers in Education (Pelgrum, Janssen Reinen & Plomp 1993).

A number of other subject areas, or domains, need to be analyzed in depth if a more comprehensive understanding of educational processes is to be sought. However, IEA has so far limited its activities to comparisons of fairly well-defined subjects that are taught in many countries, in one or several levels of schooling (IEA 1994a).

Though some proposals have been discussed at General Assembly meetings to expand the field of its international comparisons, IEA has rarely ventured beyond limited time-frames. One of the key reasons for this hesitation might be seen in the complexity of the sampling procedures involved, should one wish, for example, to evaluate the long-term success of the 'hidden curriculum' with respect to moral values conveyed by the teacher. Even if the question of how effectively teachers can influence students in their moral values is of interest and importance, IEA is not likely to arrive at an internationally acceptable definition of the target population, suitable sampling procedures.

It has been demonstrated by the success of the *Computers in Education* study (Pelgrum et al. 1993), however, that there are new subject areas which can be investigated cross-nationally and which are worth paying further attention to in the future (IEA 1994b).

It is often assumed that basic knowledge about economics is one of the key qualifications students must acquire in order to succeed in life (Barton 1993). Before moving towards a definition of what economics education and, hence, economic literacy should comprise, it seems appropriate to give some thought to the question: Why is it important for students and young people to familiarize themselves with economics?

## 2 The Importance of Economics education

Today, life throughout the world is widely dominated by economic transactions. While, on the surface, the destruction of the rain forests of this planet appears to be an ecological rather than an economic disaster, there are deeply-rooted economic reasons for it. No agenda of an international conference would be complete without discussing financial matters. Economics are omnipresent. Advertising, commodities trading, cash flow, unemployment figures, or life insurance schemes - all of these are reflections of underlying economic affairs. Economics affect world trading, national budgets, and everybody's purse. To be able to think in terms of economic matters becomes vital for individual and international relationships.

Consequently, school planners and educators alike advocate training students in this important area. Indeed, there is probably no educational system which refrains completely from teaching economics. However, the degree to which economics are being taught and the age of the pupils when instruction takes place vary. Unfortunately, though, there is only limited information available how economics education is conducted in various educational systems around the world. Some information may be retrieved from the International Encyclopedia of Education where the different educational systems are presented in general (Husén & Postlethwaite 1985).

The more national economies interact by increasing trade and global monetary transactions, the more important it becomes to investigate economics education. The same is true as required qualifications in the workforce are increased and school systems find it necessary to produce more economically skilled trainees.

## 3 The Domain of Economic Literacy

What is to be taught at which age level and in which form of schooling? Which economic principles could be regarded as less relevant and which as more important for students to learn? What teaching strategies should be employed? Who wants to know what about economics? Systematic research on some of these questions was initiated about a decade ago in some of the highly industrialized countries (Hall 1982; Heilbroner 1987; Soper & Walstad 1987; Whitehead & Dyer 1991).

The United States has played a leading role in research activities on economics education. A number of research projects on economic literacy have been carried out there as part of a survey performed by the *National Assessment of Economis Education (NAEE)* (Foeller 1988). The *Developmental Economics Education Program (DEEP)* deserves special mention as an immediate political reaction to the relatively poor performance of college graduates - but of teachers as well - with respect to the knowledge of basic economic facts (see also Buckles & Freeman 1984).

The *Joint Council on Economic Education (JCEE)* was instituted as a result of the widespread discussion about the importance of economic literacy in the United States. Its aim was to assess the performance of various sub-populations (e.g. students, teachers) in economic literacy. In its much acclaimed *Framework for Teaching the Basic Concepts* the JCEE was the dominant force in putting the need for a broader understanding of economic principles and business relationships high on the political and research agenda in the United States (Clow 1982; Hall 1982; Heilbroner 1987). Subsequently, this 'framework' has spun off several other studies dealing with economic literacy.

Basically, economic literacy was perceived as that type of knowledge which is necessary to master a certain set of tasks related to economic matters. Some rudimentary examples of these could be paying a bill, issuing a check, or understanding a balance sheet (Walstad & Robson 1981; Ristau 1985; Soper & Walstad 1987). On a broader scale, economic literacy is viewed to comprise basic ideas in economics that every culturally literate person should know. Clearly, a more concise and operationalized definition of just what these basic ideas are is necessary (Walstad 1987a).

Although the specifications of the JCEE (Soper & Walstad 1987), which finally culminated in the development of the *Test of Economic Literacy (TEL)*, have laid important groundwork for the understanding of economics literary, one can argue that the skills believed to be 'basic' may not be sufficient in order to cope with the economics of today (Beck 1993).

From the perspective of an economist - which may not necessarily be shared by that of an educator or curriculum specialist - Banaszak (1987) has suggested that the following basic concepts be taught in economics education:

- *Scarcity*

Scarcity is the imbalance of demand and resources. We live in a finite world with limited resources, but our demand for products (goods) and services is unlimited. Scarcity requires the choice between alternative uses of productive resources. When making choices, it is important to consider all alternative uses of the resources. The choice is ultimately made between the most desirable and the second most desirable alternative. This can be considered the value of the decision measured as a lost opportunity (the opportunity cost).

- *Productive Resources*

Productive resources, also called factors of production, include everything used to create products and services. Three types are distinguished: human (labour), natural (land), and capital resources.

Human resources are all the workers and their abilities. Efficient use requires workers to specialize in what they do best. Entrepreneurs, people who take risks associated with starting a new business or producing a new product or service, are an important type of human resource.

Natural resources are all the basic gifts of nature whether above, on, or below the surface of the earth. They are either renewable, such as trees, or non-renewable, like petroleum.

Capital resources are the resources that have been created by human effort and savings, and are earmarked for the production of products or services. Capital resources include tools, machines, and factories. The creation of capital resources requires deferring the consumption of some desired products or services to the future.

- *Economic Systems*

Economic systems are the organized ways by which people determine how to allocate scarce productive resources. Traditional, command, and market systems are the three basic types of economic organization. Each economic system answers at least three basic questions: (1) What to produce, (2) how to produce, and (3) how to distribute output? In the traditional system, economic decisions are articulated by the customs of the society. Economic decisions in the command system are made by decision-makers, usually government employees. In the market system economic decisions are made by individuals and institutions, guided by their own self-interest and in a free market process with a minimum of government intervention. The market economy also requires competition among producers, awareness of product

availability and alternatives, and private ownership. In the real world, all economic systems are mixtures of the three.

- *Exchange*

Exchange involves trading resources, products, or services. When exchange is voluntary, both sides believe they have gained. Exchange is fundamental, permitting specialization in production and resulting in more efficient use of resources. Exchange may be direct, as in barter, or involve the use of money. Money facilitates trade by providing a standard medium of exchange. Money also provides a uniform means to measure and compare the value of resources, a store of value, and a standard of deferred payment.

- *Economic Incentives*

Economic incentives influence human behaviour by offering financial rewards that allow a larger demand for products and services. We all attempt to make the best choices to maximize our output and satisfaction, thus promoting our self-interest. Consumers seek to maximize their satisfaction, workers their wages, producers their profits, and investors their return. Understanding and manipulating incentives is a powerful way to influence the economy.

- *Market*

The market is the principle feature of a market economy. The market is not a place where buyers and producers meet, but a process through which the decisions of individuals and businesses are used to answer the basic economic questions listed above. The forces of supply and demand interact, seeking an equilibrium, and register the decision through the price.

- *Economic Management*

Managing the economy is an attempt to achieve socially determined goals. In some industrialized countries the goals are to promote economic freedom, economic efficiency, economic equity, economic security, full employment, economic growth, and price stability. Managing a modern complex economy is a difficult task. Measurement problems and the changing dynamics of the economy add to the difficulty. Furthermore, the goals are sometimes in conflict, like between full employment and stable prices. Fiscal and monetary policy are used to manage the market economy.

In addition to some of these basic economic concepts, students should, it is argued, also develop the necessary attitudes and perceptions with respect to economic thinking. Again, there is no complete agreement on which attitudes are to be taught in school, at home or at the workplace (Walstad 1987b, 1990; Soper & Walstad 1988). However, it is generally accepted that economics education intended to build up economic literacy has to cover both cognitive and affective aspects.

These requirements meet the typical IEA pattern of measuring and explaining student achievement: Predicting student achievement in whatever content area or subject is, to a certain degree, dependent on or influenced by the set of attitudes accompanying it (Postlethwaite & Wiley 1992; Keeves 1992; Kotte 1994).

Educators and politicians also stress the need for teaching particular learning strategies in economics education. These strategies, it is argued, specifically foster the development of economic thinking, but they are also believed to lead to some special kind of knowledge which could be paraphrased as knowledge about knowledge, or 'meta-knowledge', in the sense of knowledge about the structure and validity of economic knowledge, as well as knowledge about the ways to use this knowledge (Witt 1990).

It is understood that, even after additional content areas for economics education have been identified, ample opportunities exist for discussion on how important each concept is. Extracting suitable indicators or developing a test for economic literacy will be even harder.

## 4 Testing Economic Literacy

As could be seen, it is not an easy task to define a set of adequate measures for economic literacy. In spite of all the conceptual and methodological difficulties (e.g., Malicky 1991), the TEL designed by Soper and Walsted has turned out to be a useful instrument to assess student achievement with respect to economic abilities (Walstad & Soper 1988; Lillydahl 1990).

Attempts have been made to cross-validate the TEL in other countries. As a result, it seems justified to compare student achievement across countries or educational systems (Whitehead & Halil 1989; Krumm & Beck 1990; Shen 1993).

Likewise, research has shown that the TEL can be applied successfully to various target populations, although some minimum requirements with respect to age and level of schooling are to be observed (Whitehead 1990; Beck & Krumm 1991).

From what has been described above, it appears indisputable that economic literacy - however it is eventually defined - can and should be assessed routinely as in the case of the United States and some other countries. Generally in line with IEA policies, testing economic literacy across educational systems and different school levels presents a unique challenge in many ways.

First and foremost, a significant research gap is being closed by gaining insight into how students develop a way of thinking which enables them to cope with manifold economic challenges in their later lives. Economics education deserves its due position in formal schooling, as does mathematics, science, or language education. Much more information is needed to develop teaching strategies that lead to a high level of economic literacy. The respective instructional processes including their cognitive and affective outcomes are to be further investigated.

Such international research on economic literacy will produce valuable and urgently needed information for educators and policy planners in most educational systems. Countries whose students possess a lower level of achievement with respect to economic literacy may learn to develop strategies to improve the training of their students. In the long run, this should lead to an increase in their human capital resources. The more developed countries, on the other hand, could gain insights from a cross-national comparison that would allow them to further improve instruction in economics or to identify suggestions on how to build adequate or desired attitudes of economic thinking in their young workforce.

Thus, IEA can add to its reputation of being at the forefront of educational development.

Indeed, the problems of investigating cross-nationally this subject area are plentiful. But they represent both a chance and challenge for IEA and its member states. Once a common definition is arrived at, much effort will have to be spent on how to devise a set of items measuring economic literacy. Consensus will have to be reached about which school level or age group should be the target population. Much in contrast to other subject areas, economics education happens inside and outside formal of schooling. Sampling issues may therefore pose some difficulties when assessing economic literacy on a cross-national basis. Certainly conceptual problems will arise, given the diversity of economic systems among the IEA members.

However, Neville Postlethwaite, in his many contributions to the work of IEA, has rendered outstanding examples of what can be achieved in a world-wide network of distinguished researchers. Others should follow his lead. Then we will be able to gain insight into one of the most challenging subject areas of tomorrow: economics education.

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