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Published in:
Journal of Educational Media, Memory, and Society

DOI:
[10.3167/jemms.2016.080205](https://doi.org/10.3167/jemms.2016.080205)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2016

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Gorter, G. F., Amsing, H. T. A., & Dekker, J. J. H. (2016). Dutch Economic Textbooks in the 1970s: Raising the Status of a New Secondary School Type by Means of Mathematical Abstraction. *Journal of Educational Media, Memory, and Society*, 8(2), 83-106. <https://doi.org/10.3167/jemms.2016.080205>

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Dutch Economic Textbooks in the 1970s

Raising the Status of a New Secondary School Type by Means of Mathematical Abstraction

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Abstract • *Essential Economics*, the influential economics education textbook written by Arnold Heertje for use in Dutch secondary schools in the 1970s, was characterized by a previously unknown and internationally exceptional degree of abstraction. Its users justified this degree of abstraction by arguing that it fulfilled the needs of mental schooling (in line with the formal education argument upheld by defenders of humanism) and that it would enhance the rigorous status of the new type of school known as athenaeum A. In the 1970s, this economics education design was criticized by Herman Hartkamp, who strove to ground economics education on pupil-centered and social meliorist principles. By explaining this struggle and its outcome, this article exposes the various educational ideologies found in textbooks in the segmented Dutch school system.

Keywords • economics education, educational ideals, secondary education, teaching methodology, textbooks

Introduction

Textbook analysis is an excellent way of studying how a school subject can be influenced by the dynamics between various educational ideologies¹ and its mother science.² This article focuses on economics education as an example of these dynamics. Economics education is taught to senior Dutch secondary school pupils as a separate school subject in order to deepen their understanding of economic phenomena, and is therefore

defined as a social science. Economics education in the Netherlands underwent a partial revolution in the 1970s. In particular, sixteen- to seventeen-year-old pupils in the upper years of pre-university education (VWO in the Netherlands) were confronted with an unprecedented degree of abstraction. That abstraction derived not only from the subject matter presented in the form of economic models, but from the fact that mathematics, especially algebra, had begun to play a more dominant role. The new role ascribed to mathematics was especially evident in the textbook developed by the economics professor Arnold Heertje of the University of Amsterdam, as set out in Heertje's textbook *De Kern van de Economie* (Essential economics).³ This almost legendary textbook almost monopolized the Dutch market during the 1970s, and shaped the face of economics education in the Netherlands for close to a quarter of a century. In order to give an impression of the way mathematics is applied in this textbook, figure 1 presents a passage from part two of the Dutch version of *Essential Economics*, in which the so-called indifference curve is proven to be convex.⁴ "Convex" means that the indifference curve is bowed outwards like the outside of a bowl.

We see in figure 1 the treatment of the indifference curve, which is an analytical tool borrowed from microeconomics. An indifference curve represents the consumer's choice between two products, x and y , shown in figure 1. Although it is notable that a rather abstract tool like the indifference curve is dealt with in this textbook, even more striking is the level of algebra used in doing so, which extends to and includes partial derivatives. This abstract model-based approach formed a radical break with the way in which economics had been taught in the Netherlands previously, which was primarily by verbal means.⁵ The first question addressed in this article explores whether Dutch economics education in the 1970s differed in this regard from economics teaching in other countries. And if that was indeed the case, the second question we ask relates to the way such differences may be explained. The third question raised in this article inquires whether the abstract model-based approach continued to be used in Dutch economics education after the 1970s, and if not, what approach was implemented in its place.

This article begins by explaining the methodology we applied, then addresses two factors that typically play a central role in the design of economics education in general, without regard to the country in which it might be adopted. The first factor is the development of economics as a science, particularly since the emergence of Keynesian theory in the 1930s. It is well known that the theory of John Maynard Keynes represented a revolution in economics by paving the way for macroeconomics. It can be assumed that economics education has kept in step with the evolution of economics as a science in one way or another. What is important here is how great a distance economics education maintained

in relation to its “mother science,” especially in relation to the use of mathematics. A second factor relates to the educational ideology pursued. Those who see education as, for example, a means of preparing pupils for future participation in society will pursue a different type of economics education than those who wish to offer pupils mainly an introduction to economics.

With these two factors serving as the backdrop, we will examine economics education in the United States, Great Britain, and West Germany

Figure 1. A passage from *De Kern van de Economie* (Essential economics).

Wij noemen de helling dy/dx nu h . Het feit dat in dit geval h minder negatief wordt bij toenemende x , kan worden uitgedrukt als $dh/dx > 0$. Omgekeerd geredeneerd: dit laatste is voldoende voor de convexiteit van de kromme. De helling van een indifferentiekromme in een punt kan worden gevonden door na te gaan wat ‘ $U(x, y) = \text{constant}$ ’ wil zeggen. Dit kan worden weergegeven door:

$$dU(x, y) = 0 \quad \text{ofwel} \quad \frac{\partial U}{\partial x} dx + \frac{\partial U}{\partial y} dy = 0$$

Dit kan worden herschreven als:

$$\frac{dy}{dx} = - \frac{\frac{\partial U}{\partial x}}{\frac{\partial U}{\partial y}} \quad (6.6)$$

De economische interpretatie hiervan is: de helling van een indifferentiekromme, ook wel de marginale substitutieverhouding van x en y genoemd, is gelijk aan het quotiënt van de grensnutten van x en y . Voor onze specifieke nutfunctie is dit laatste quotiënt gelijk aan

$$- \frac{\frac{1}{2}(x+1)^{-1/2} \cdot (y+1)^{1/2}}{\frac{1}{2}(x+1)^{1/2} \cdot (y+1)^{-1/2}} = - \frac{(y+1)}{(x+1)} = \frac{dy}{dx} \quad (6.7)$$

De voorwaarde voor convexiteit $dh/dx > 0$ is in dit geval

$$\frac{d}{dx} \left[- \frac{(y+1)}{(x+1)} \right] > 0 \quad (6.8)$$

De uitkomst van (6.8) luidt:

$$\frac{(x+1) \cdot -\frac{dy}{dx} + (y+1) \cdot 1}{(x+1)^2} > 0, \quad \text{ofwel} \quad \frac{2(y+1)}{(x+1)^2} > 0$$

Aan de eis voor convexiteit is voldaan.

in the 1970s, followed by closer examination of the specific situation in the Netherlands. Differences between economics education in the Netherlands and these other countries will be explained by looking at the features of the Dutch educational system, and then by referring to the way in which discussions about educational ideologies regarding economics education advanced in the Netherlands. Finally, we will look at the way in which economics education developed in the Netherlands after the 1970s.

Methodology

This research—based on an analysis of textbooks from the Netherlands, the United States, Great Britain, and West Germany; on reports about economics education; and on articles from economics magazines for teachers—began by comparing two representative Dutch textbooks with a number of corresponding examples from abroad. In this comparison we looked in particular at the use of mathematics, and especially algebra, in order to understand whether Dutch economics education constituted an exception in the international context. In order to understand the design of Dutch economics textbooks, we also examined the discourse about economics education leading up to the exam syllabus of 2010 by analyzing reports and teacher magazines about (economics) education.

The selection of representative Dutch textbooks was based on market shares for both the 1970s and the 1980s. *De Kern van de Economie* by Heertje held a market share of about 80 percent in the 1970s. Alongside it, a minor role was played by *Economie voor het Voortgezet Onderwijs* (Economics for secondary education) by Jacob Hollebrand and Christiaan Stassen, which captured about 8 percent of the market.⁶ These two Dutch textbooks were compared with economics textbooks that appeared around 1970 in the three countries mentioned above, the United States, Great Britain, and West Germany. Because market shares were not available for American, British, and German textbooks, another method of selection was applied in these countries. For this selection of representative textbooks contact was sought with national associations of economics educators, namely the US *Council of Economic Education*, the British *Economics Business and Enterprise Association*, and the German association *Ökonomie im Unterricht* (Economics in the classroom). We asked each of these associations which textbooks were the most popular and provided a representative picture of economics education in the respective countries over the period being studied. This helped us to choose a sample of textbooks, including the American textbook *Economics in Action* (first edited in 1968) by James Calderwood and George Ferish, which was used in American high schools,⁷ the British textbook *Introductory Economics* by George Stanlake (third edition, 1976), which was used in pre-university

training for pupils generally aged from sixteen to nineteen, and the German textbook designed for the upper classes of German grammar schools called *Gesellschaft und Wirtschaft* (Society and economy) (sixth edition, 1975) by Manfred Wimmer and Klaus Hartwig.

The science of economics after the Second World War developed, as will be seen below, in such a way that it relied heavily on mathematics and abstract models. This article therefore inquires whether secondary school economics textbooks also followed the same pattern by focusing on the use of mathematics and abstract models in textbooks.

Science and Educational Ideologies

In general, two factors seemed to be of potential importance in the design of economics education, namely the development of the underlying academic discipline and the significance ascribed to particular ideologies of education.

Development of the Academic Discipline

Even before the Second World War, the foundation had been laid for two new developments in economics: macroeconomics and econometrics. After the war these two new approaches blossomed, giving the academic discipline of economics an entirely new appearance.⁸

"The year 1932 was the trough of the Great Depression, and from its rotten soil was belatedly begot the new subject that today we call macroeconomics," wrote Paul Samuelson in 1999.⁹ The 1936 publication of *The General Theory of Employment, Interest and Money* by John Maynard Keynes marked the start of the macroeconomic revolution in economics. Before this revolution, the neoclassical paradigm had been almost exclusively microeconomic, concerned with the price mechanism, that is, the interaction between supply and demand and the determination of prices. From the time of Keynes' publication, interest in macroeconomic variables grew rapidly, including the national product, investment, savings, and employment. Although Keynes himself had paid a great deal of attention to the role of expectations and uncertainties, his theory was later encased in algebraic equations and graphical diagrams, tools that Keynes himself had made little or no use of.¹⁰

Parallel to the rising interest in macro-concepts was the emergence of econometrics, which entails a combination of economics theory, mathematics, and statistics. *Econometrica*, the journal of The Econometric Society, first appeared in 1933. In 1936, a professor from Rotterdam and later Nobel Prize laureate Jan Tinbergen developed the first model, which

represented the Dutch economy. This twenty-four-equation model was the forerunner of the much more complex econometric models in use today. Since the 1920s, early efforts had been undertaken to gain a statistical grip on macroeconomic variables by designing national accounting systems, a kind of bookkeeping on a national scale. Pioneering work in this field was done, among others, by Simon Kuznets, a US economist of Russian origin, who also received a Nobel Prize for his work.¹¹

These developments largely caused economics to take on an entirely new appearance after the Second World War. While economics traditionally focused on the allocation of resources via the market mechanism, the macroeconomic perspective now came to the fore. Academic textbooks were organized according to the twin concepts of macro and micro, first in the renowned book *Economics* by Samuelson, which was first published in 1948. Another important textbook was *Economics*, by Richard Lipsey and Peter Steiner, first published in 1966. Furthermore, economics became highly mathematical and increasingly based on models. This applied not only to the new macroeconomics, for microeconomics was also rewritten in the language of mathematicians. A good example of this new style of economics is Samuelson's *Foundations of Economic Analysis*, which appeared in 1945. Those trying to read this book will not get far if they do not have thorough training in mathematics. The more or less literary style that had long characterized economics publications, and which was still in use by Keynes, was replaced here by an abstract model-based approach.

Given the fact that the underlying academic discipline developed in this way, one must ask to what extent economics education followed the same path. To what extent did the mathematical model-based approach gain a foothold in economics education in secondary schools? What type of learning did educators strive for in general, and in economics education in particular?

Educational Ideologies

The concept of educational ideologies signifies the education envisaged for the pupil.¹² Here we follow American authors such as Philip Jackson, Herbert Kliebard, and Elliot Eisner and Elizabeth Vallance, who define educational ideologies as “orientation,” “perspective,” “outlook,” or “point of view.”¹³ These “orientations” are, as Jackson puts it, means “of thinking about what the schools are for and what their curricular content should be.”¹⁴ The outcome of this exploration is a triptych of educational ideologies, which relates to the many attempts to classify ideologies undertaken by scholars from different countries.¹⁵ Although the origins of this triptych stem from the United States, these ideologies can be recognized in modern state educational systems all over the world. In these systems,

however, a curriculum normally does not fit within a clearly defined paradigm, but rather is “a complex amalgam of different ideologies.”¹⁶

First, a curriculum can determine general education. In fact, this is the ideology espoused by the humanistic movement, which can be distinguished within existing academic disciplines. An important goal of this ideology may be termed “formal education,” the pursuit of mental discipline.¹⁷ Formal education is typically evoked in contrast to material education.¹⁸ Material education is about the object of education, the subject matter to be transferred; it relates to concrete skills and forms of knowledge. Formal education, by contrast, focuses on the attitude with which the object is approached. In our further discussion we understand formal education to mean mental schooling, an approach that is characteristic of the humanistic ideology of education. “Just as the muscles of the body could be strengthened through vigorous exercise, so the mental muscles . . . could be trained through properly conceived mental gymnastics.”¹⁹ The idea here is that skills acquired via the study of one school subject can be “transferred” to other fields such as the study of other school subjects.

Second, a curriculum can be designed for society. The social efficiency orientation emphasized bringing about “a coolly efficient, smoothly running society.”²⁰ Eisner and Vallance speak of bringing about “a better ‘fit’ between individual and society.”²¹ In the Netherlands, the social efficiency orientation was invoked mainly when preparing pupils for their subsequent participation in society. In the United States, great emphasis has also been placed on education’s role in the formation of human capital.²² Another ideology that also considers the curriculum in relation to society views the curriculum as a means of bringing about a better, more just, society and thus as an instrument for social change based on “an inordinate faith in the power of education to correct social evils and promote social justice.”²³ Kliebard defines proponents of this movement as social meliorists.

Third, a curriculum can be geared toward the pupil, that is, derived from the pupil’s own questions and experiences with respect to his or her developmental stage. The background of this pupil-centered approach derives from the social reconstructionist movement, which in many countries in the first three decades of the twentieth century was outspoken in its rejection of what it termed the “old school,” involving a too child-unfriendly, too forced, too intellectual, too subject-matter centered form of education.²⁴ It was John Dewey, one of the foremost thinkers of the social reconstructionist movement, who as early as 1897 downplayed the importance of a formal theoretical curriculum, considering it less important than the child’s social activities. In his *My Pedagogic Creed*, Dewey declares that, “I believe that the social life of the child is the basis of concentration, or correlation, in all his training or growth. . . . I

believe, therefore, that the true centre or correlation on the school subjects is not science, nor literature, nor history, nor geography, but the child's own social activities."²⁵

The three orientations sketched above are certainly not mutually exclusive. It is possible that the prevailing outlook on education, in economics or in any other subject at any particular point in time will involve a combination of the approaches mentioned. However, it is also conceivable that friction might arise between pedagogical ideologies at a certain point in time. For example, it is conceivable that disciplinary-oriented education might conflict with a social or a pupil-centered approach.

After this sketch of the development of economics as an academic discipline and overview of possible pedagogical ideologies, we now take a closer look at the way in which economics education evolved in the 1970s in several countries, particularly in the United States, Great Britain, and West Germany.

Economics Education in the United States, Great Britain, and West Germany

In order to determine whether economics education in the Netherlands was an exception in certain respects, we compared it with economics education in the United States, Great Britain, and West Germany. As mentioned, in each of these countries we selected a representative economics textbook intended for use at the secondary school level. We paid particular attention to the extent to which mathematical modeling elements appear in these textbooks, given that these elements were a central feature of Dutch textbooks from the 1970s.

In the American textbook *Economics in Action*, published in 1968, Calderwood and Fersh compare their textbook with Samuelson's scholarly work *Economics*, and conclude that both books "cover approximately the same topics," though in Samuelson "with a greater emphasis on the theoretical tools of analysis."²⁶ This is striking because there is not one analytically tinted graph in *Economics in Action*, and algebra is entirely absent. There are descriptive graphical representations, for example, showing inflation figures and the national debt, but the treatment of market equilibrium and Keynesian theory is almost entirely textual, with the exception of a few tables. Even topics such as elasticity, which practically demand a formula and/or a corresponding numerical example, are treated only textually.²⁷ Growth theory and business cycle theory are presented without the use of even a single analytical element, and are confined instead to a description of economic growth or the fluctuations of the business cycle respectively, and to a summary of possible causes. All in all, the approach of *Economics in Action* is highly descriptive, comparable to the approach found in older Dutch textbooks from the

period before the Second World War.²⁸ This conclusion complies with the conclusions found by Herbert Voege, who studied the diffusion of Keynesian macroeconomics in American high school methods. According to Voege, the treatment of Keynesian macroeconomics in the 1960s was mainly verbal. “Graphic, numeric, and algebraic presentations tended to be avoided; models were not used in a technical sense.”²⁹

The British textbook *Introductory Economics* by Stanlake of 1976 is comparable to its American counterpart in terms of the methodology used, but it goes somewhat further in its analyses. Ample use is made of graphical analysis, particularly in its treatment of microeconomics. We find diagrams concerning the cost structure of a company (about the relation between costs and production) and equilibrium in various market structures. But algebra and calculations are absent in this textbook. However, we do find tables and descriptive diagrams with references to real world situations.

The German textbook *Gesellschaft und Wirtschaft* (Society and the economy) by Wimmer and Hartwig (first edition, 1969) is a textbook that combines sociology and economics elements in terms of, for example, social studies (*Sozialwissenschaften*). The second part of this textbook is devoted to economics (*Wirtschaft*). It contains the by now familiar combination of microeconomics and macroeconomics. The analytical level of this textbook is comparable to the British example, and thus uses more modeling than the textbook from the United States. Many topics are presented with plenty of diagrams. The market mechanism and Keynesian theory are accompanied by graphs, and macroeconomics is placed within the framework of the economic cycle showing the constant ups and downs of an economy. Furthermore, numerical examples are used to illustrate multipliers. However, this textbook also contains little algebraic notation. The treatment is almost entirely textual, supplemented by graphs, complemented by several macroeconomic equations, such as those of the type $Y = C + I + X - M$, although the algebra does not go much further than this.³⁰

We conclude that, from as early as the 1930s, but especially after the Second World War, economics became more abstract, in particular following the application of mathematical techniques. Unlike Heertje’s *Essential Economics* and Hollebrand and Stassen’s *Economics for Secondary Education*, the American, British, and German textbooks from the period around 1970 contain mathematical modeling that differ notably from academic standards. While the new scientific practice of categorization in terms of micro- and macroeconomics was adopted, the mathematical modeling approach, and in particular the use of algebra, was not.

These differences might be related to the degree to which economics education is connected to social studies education in secondary schools. In Germany, economics education is often narrowly related to social

studies education. According to Sebastian Brückner and colleagues, in most German schools “economic content and concepts are taught, if at all, only occasionally and unsystematically as part of other subjects such as social studies.”³¹ Comparative research into the training of British and American economics teachers by David Whitehead shows that the “typical American economics teacher at the secondary level is often a social studies teacher, whereas his British counterpart is a trained economist.”³² Given the relatively high level of abstraction of Dutch economics education, we assume that economics education in the Netherlands in this period resembles the British one.

The Situation in the Netherlands

In this section we look in detail at and try to explain the shift in Dutch economics education toward an abstract model-based approach. This is preceded by a short sketch of the specific features of the Dutch educational system, which is necessary in order to contextualize the subject of economics within the educational system.

The Dutch Educational System since 1968

In 1963, the Dutch parliament passed the Secondary Education Act (*Mammoetwet*) and thereby ushered in large-scale reform of, in particular, secondary education in the Netherlands. The act, which came into force in 1968, aimed to bind the educational system as a more cohesive whole, so that pupils might receive an education most suited to their individual capacities.³³ For our purposes here, two new categories of schools are of primary importance.

The first category of interest is pre-university education (VWO), geared toward preparing pupils for the transition to university. Subsumed within this category was the grammar school or “gymnasium,” which already existed as a higher track of secondary education operating along the lines of the humanistic ideology. In addition to the gymnasium, within the VWO category, the “athenaeum” was introduced. This was the direct successor of another higher level of secondary school (the HBS or *Hogere Burgerschool* [higher civic school]), which had existed since 1863. From its inception, the HBS served the needs of social utility, although from 1917 this type of school was also intended to supply candidates for universities. To what extent was the social efficiency agenda of the HBS retained after its transformation into the athenaeum? Unlike the HBS, the athenaeum was established in order to prepare pupils for further academic education, and was therefore not perceived as an educational

end in itself as the HBS had been. Both gymnasium and athenaeum contained, like the HBS, A and B streams. The emphasis of the A stream was on languages and the humanities, while the B stream was geared toward mathematics and the physical sciences.

The second category of interest is that of the senior general secondary education (HAVO), a new type of school that was established alongside the VWO. This category of school was intended to prepare pupils for higher professional education (HBO) and thus exhibited more social efficiency characteristics than the VWO. The Secondary Education Act or *Mammoetwet* also adhered to pupil-centered principles by, for example, offering pupils greater freedom to choose which combination of subjects to study. Thus, the curriculum of the A and B streams was no longer entirely predetermined within the athenaeum and gymnasium; at the HAVO level, pupils had even greater freedom to assemble their own clusters of study subjects. The gymnasium and athenaeum competed with one another. Within each of these school types, there was also competition between the A and B streams. In sum, the Netherlands sustained a highly fragmented educational system.

The Revolution in Dutch Economics Education

From 1863, economics was taught in the Netherlands in the higher civic schools (HBS, *Hogere Burgerschool*). The economics textbooks prior to the 1960s reveal remarkable continuity in the way in which the subject was presented. The subject matter was virtually always structured according to the categories of production, distribution, and consumption introduced in 1803 by the French economist Jean-Baptiste Say. In addition, the material was highly descriptive, with few analytical features. Although analytical elements were not entirely absent from older textbooks (the price mechanism was illustrated with a graph showing the supply and demand curve since the 1930s, for example), they played a very minor role. And no mathematics was used.³⁴

Several modern economics textbooks appeared on the Dutch market as early as the 1950s.³⁵ “Modern” in this sense means that they applied methodology based on the distinction between microeconomics and macroeconomics and, in addition, presented economics via a mathematical model-based approach, both graphically as well as algebraically. These textbooks, however, did not match the market share commanded by the dominant and almost entirely verbal textbook by Jacobus van Zwijndregt, which held 90 percent of the market. The first edition of *Essential Economics* by Heertje was published in 1962. Although *Essential Economics* was not the first modern economics textbook to reach the Dutch market, it rapidly became the standard in Dutch economics education, and remained so

until the 1980s. Heertje's economics textbook played an important role in the formulation of a new examination syllabus in the early 1970s. Based on this new syllabus, other textbooks appearing with an equally mathematical modeling character, such as those by Hollebrand and Stassen (1970), and later, in the 1980s, by Schöndorff (1980).³⁶

We will now compare the Dutch textbooks by Heertje and by Hollebrand and Stassen, which were dominant in the 1970s, with other major academic textbooks in use at that time, namely *Economics* by Samuelson and *Economics* by Richard Lipsey and Peter Steiner. Both of these academic textbooks make regular use of algebra, but this appears nonetheless to play a complementary role to a primarily textual and graphical approach. In the VWO textbook by Heertje (1969), and in Hollebrand and Stassen (1970), the textual-graphical presentation is supplemented by algebra, especially when dealing with strictly macroeconomic topics (the Keynesian model and extensions thereof) and with microeconomics (cost and revenue functions, market equilibrium). Having been introduced, the algebra of the economic models becomes quite complex. While the presentation in Samuelson's *Economics* is primarily textual and graphical, in Heertje and in Hollebrand and Stassen it shifts toward a graphical-algebraic approach. Illustrative of this is the treatment of the concept of "price elasticity of demand."³⁷ Alongside the relatively straightforward segment elasticity, both VWO textbooks also include the concept of "point elasticity," for which some knowledge of calculus is required.³⁸ Lipsey and Steiner, by contrast, confine themselves to segment elasticity. Samuelson does this in his main text too, though he discusses point elasticity in a footnote.

We will illustrate the approach by Heertje and Hollebrand and Stassen by giving two examples from their textbooks, starting with the approach by Heertje. While striving to explain how changes in a number of macroeconomic variables manifest themselves in the GDP, Heertje develops a mathematic model with the following solution.³⁹

Figure 2. A passage from *De Kern van de Economie* (Essential economics).

$$\Delta Y = \frac{(c_1 - c_2) w_0 a + \Delta A}{1 - c_1 l_0 \lambda + c_2 (l_0 \lambda - 1)}$$

This model immediately manifests itself as a complex mathematical equation. The textbooks by Samuelson and by Lipsey and Steiner contain no comparable level of abstraction. The second example, dealing with the theory of economic growth, is from the textbook by Hollebrand and Stassen.⁴⁰ The treatment of several theories of growth, among them the Harrod-Domar-model and the growth-model by Solow, is even more

technical than in the textbook by Heertje. Readers are confronted with formulas, differential coefficients and conversion tables, while no such technical treatment occurs in the textbooks by Samuelson and by Lipsey and Steiner. Moreover, in the two Dutch textbooks the mathematical models have no relation to the economic reality. While the models given in those books are anonymous and do not refer to any example from economic practice, the two academic American textbooks devote much attention to the historical processes of economic growth in a number of countries, and neglect the mathematical way of mastering economic issues.⁴¹ In sum, economics education in the Netherlands in the 1970s, in particular at the VWO level, closely followed the academic discipline by including mathematical modeling. In fact, in the leading textbooks used at that time, mathematics and particularly algebra are even more accentuated than they are in the most commonly used academic textbooks, such as those by Samuelson and by Lipsey and Steiner.

How may we explain the exceptional methods used in Dutch economics education? Apparently, educators in countries such as the United States, Great Britain, and West Germany considered it unnecessary to encumber pupils in economics classes with economic theories taken virtually verbatim from the academic discipline. In Dutch economics education, especially at the VWO level, there seems to have been less reluctance to introduce the abstract theories of the “mother science” into the classroom. In order to explain this difference, we must look more closely at the discourse surrounding Dutch economics education, which reveals the importance attached to the “formal education” argument.

The Role of the Formal Education Argument

According to Kliebard, the role of mental discipline as an argument for humanistic educational ideology had almost come to an end in the United States by the end of the nineteenth century.⁴² Instead, other educational ideologies had begun to dominate American education, such as the need to respond to the developmental phase of the child, the social efficiency doctrine, and the need to combat social injustice. In the Netherlands, however, formal education geared toward mental schooling continued to play a central role for a large part of the twentieth century, even in economics education. In order to illustrate this, we will now present examples from the discourse in the Netherlands.⁴³

The first example relates to a report published in 1936 by the De Vries Committee, named after Professor Carl de Vries of Rotterdam. This committee was set up by the Association for the Promotion of Education in the Political Sciences, which was established in 1935. It was mandated to clarify a number of points regarding the faltering subject of economics.

The committee sought to explain, among other things, why the subject of economics was important. The committee's report stated that, alongside subjects that teach "primarily facts," each type of school needed to have a core of subjects that "fulfills the function of developing pupils' thinking capacities."⁴⁴ For gymnasium-level education, the classical languages fulfilled that function while for HBS B, the mathematical subjects did so, and for HBS A and the business colleges this honor fell to the subject of economics.

A second example from the discourse in the Netherlands is a discussion related to the concept of "models" in a contribution by Jan Tinbergen, whose role and influence cannot be underestimated. Thanks to him educators in the Netherlands believed strongly in the use of models. In a speech given in August 1948, Tinbergen distinguished between two aspects of education, and linked the model-based approach to the formal education argument. The value of education in a certain subject, Tinbergen said, lay first of all in the transferred knowledge itself and also in "the formational value, which is not necessarily directly related to the content being taught." Tinbergen said that the formational value of economics as a school subject lies in part in "learning to think." An important element of this value involves learning to make distinctions. "Economics offers a multitude of conceptual distinctions," such as goods and services, which are then broken down further into categories, such as the factors of production, the production process, and the different concepts of income. "Whole complexes of concepts that, if systematically presented, offer a good starting point for learning how to make sharp distinctions." Even more important than learning to make distinctions, according to Tinbergen, was learning to prove propositions, which he described as "a formational element *par excellence* . . . It seems to me that one also finds important examples of this in economics." Here Tinbergen was referring to working with "certain models of society, which offer a degree of stylization, a simplification . . . If one constructs, for example, a model of the concept of price for a certain market, of supply and demand. If handled sharply, this can make an immense contribution to one's scientific training."⁴⁵

A third example of the debate in the Netherlands is the position that Heertje adopted in this discussion. Regarding the purpose of economics education, Heertje appears, like his colleague Tinbergen, to think along two lines. In the first place, he identified the importance of teaching an understanding of "the economic aspects of the real world." Yet, alongside this social efficiency purpose, the mental discipline argument also seemed to play a role in Heertje's thinking. When, during an interview given in 2011, he was asked whether at the time of writing *Essential Economics* he saw the subject of economics as in part a training of the mind, as mental schooling, he responded, "Absolutely. To me, economics has

always been a science, a thinking subject. Whether we are talking about physics or economics, it is important that you learn to think according to a system, a model, of assumptions and conclusions. To me that manner of thinking is also a tool for public debate. You have to be constantly aware that everyone utilizes certain assumptions, which then lead to certain conclusions."⁴⁶

Heertje clearly set out this position in 1966. The starting point of his reasoning was the use of models. "Operating with models has made economics cleaner. The hypotheses are out in the open, and the relationship between conclusions and assumptions is there for all to see." At university a "*way of reasoning*" is transferred, and this influences the mentality of the students. They learn to recognize that economics is not just a friendly talking shop, but rather constitutes a disciplined system of propositions."⁴⁷ Accordingly, the starting point for economics education in secondary schools should be "thinking in terms of assumptions and conclusions, applied to economic phenomena." Thus, according to Heertje, the link with university education could be strengthened and, at the same time, economics should become more similar in methodology to school subjects like physics, which may be important for a harmoniously structured VWO.⁴⁸

The examples above can easily be supplemented by others. They demonstrate the strong tradition in the Netherlands of associating the subject of economics with mental schooling, a "sharpening of the mind" as it was often expressed. The examples of Tinbergen and Heertje show that the formal education argument was linked to a model-based presentation of the subject and, after the Second World War, that economic models were usually mathematical models. It is then possible to argue that emphasis on mental discipline stimulated the use of the mathematical modeling approach in economics education. This was further reinforced by the introduction of the Secondary Education Act or *Mammoetwet*.

We have already discussed the introduction of the athenaeum in 1968. This school type was meant to be the successor to the HBS with its A and B streams. HBS A emphasized languages and business subjects, while HBS B emphasized mathematics and the physical sciences. The subject of economics, of course, best fits the HBS A stream, where it was relatively strongly represented. It should also be noted that HBS A was not infrequently seen as a somewhat inferior form of education chosen by pupils for whom the gymnasium and HBS B proved to be too difficult.⁴⁹

Under the regime introduced by the Secondary Education Act, the Dutch educational system remained segmented, which meant that the different school types each had to legitimize their existence.⁵⁰ When the HBS was replaced by the athenaeum, again with A and B streams, the question also arose of how athenaeum A could ensure the desired level of rigor. In the gymnasium, classical languages served as a means

of selection; in athenaeum B mathematics and physics served that function. However, educators worried that athenaeum A would suffer the same fate as HBS A, that is, that pupils who could not cope with the rigor of gymnasium or athenaeum B studies would opt for athenaeum A, which would then become an amorphous catch-all. The idea of the minister of education Joseph Calss was to use economics as the selection criterion.⁵¹ In the minister's own words, "In order to ensure that the rigor of athenaeum A corresponds to that of the other VWO streams, economics should be taught in the more theoretical scientific sense."⁵² This viewpoint from within the government, combined with the formal education argument, ultimately led to the Netherlands' unique variety of economics education in the 1970s, and also into the 1980s, whereby VWO placed emphasis on an abstract mathematical approach.

A similar debate about the use of mathematics and abstract models in textbooks did not occur in the United States, Great Britain, or West Germany. It seems that the argument for social efficiency dominated the debate in these countries. The US economist George Stigler argued from the 1970s that, in the words of William Walstad, economics serves as "a means of communication among people, incorporating a basic vocabulary or logic that is so frequently encountered that the knowledge should be possessed by everyone." Walstad adds that, "[e]conomic education has found a place in the secondary school curricula of many countries primarily because it contributes to [this] type of knowledge."⁵³

At the start of this article, we raised three questions. First, we asked whether economics education in the Netherlands was different from that in other countries in the 1970s. We have since answered that question affirmatively. In addition, we asked why the Netherlands might have held such an exceptional position. From the discussion above, it appears that the answer to this question should be sought in a combination of factors. First of all, there was a need for athenaeum A to create a strong profile for itself, which it did by offering the subject of economics in a theoretical scientific manner. Second, this response was consistent with and reinforced by the coinciding prevalence of the formal education argument in the Netherlands. Now we are left with only the third question to answer. Did Dutch economics education maintain its exceptional position?

Toward Pupil-Centered Economics Education

From as early as the 1960s, the US economist and later Nobel Prize laureate George Stigler expressed criticism of the centrality given to the mother science in economics education. "The watered-down encyclopedia which constitutes the present course in beginning college economics does not teach the pupil how to think on economic questions . . . The pupil

will memorize a few facts, diagrams, and policy recommendations, and ten years later will be as untutored in economics as the day he entered the class."⁵⁴ What held true for the teaching of economics at the college level, according to Stigler, was also true for the subject as it was taught in secondary schools.

In the Netherlands, Herman Hartkamp began a crusade against the highly mathematical teaching of economics in the 1970s. Hartkamp taught economics at secondary school, and later became a lecturer in economics and taught methodology at the universities of Rotterdam, Utrecht, and Amsterdam. His foremost criticism of economics education as it had taken shape since the implementation of the Secondary Education Act was that its starting point was not the pupil but rather the discipline. "The VWO final exam syllabus was similar in terms of content and mathematical modeling approach to the materials covered in first year general economics courses at university level."⁵⁵ However, Hartkamp's criticism of the mathematical overkill in the economics education of the 1970s was not only based on what he considered to be its lack of pupil-centeredness, but also on its lack of any form of societal criticism.

Hartkamp's critique of the science-centered approach led to two objections to economics education as it was articulated in the 1970s. First of all, Hartkamp was critical of economics itself. Mainstream economics, from his perspective, wrongly adopted the harmony model as its point of departure; an alternative doctrine, Marxism or neo-Marxism, was based on the conflict of interests between workers and capitalists. By embracing mainstream economics, contemporary teaching of the subject reaffirmed the status quo. As a result, problems such as poverty remained in the world, and women's emancipation and the environment continued to evade scrutiny. Hartkamp shows here that he is a social meliorist and does not consider that economic science is a value free science. Most economists at the time, however, including Heertje, were convinced that economics as a science was value neutral. Second, Hartkamp decried the fact that the science-centered approach in no way reflected pupils' daily life experiences. Hartkamp's critique of Heertje's *Essential Economics* illustrates this well. "The pupils—for whom this education was obviously intended—[were] entirely overlooked. They were addressed in a language that was not their own and presented with teaching materials in which nothing of their own world was recognizable."⁵⁶ Moreover, the theories to be taught were so abstract "that they could only be taught to pupils via rote learning (doing calculations, learning tricks, and with frequent repetition) . . . Pupils are thus reduced to apes who perform a trick, or to parrots practiced in repeating the words put in their mouths by their masters."⁵⁷ The pupil-centered and socially critical approach that Hartkamp advocated, furthermore, was perfectly adapted to the Dutch political and cultural climate of the 1960s and 1970s. This was the period

when the “critical teachers” joined forces in their similarly-named union, and when the *Rode boekje voor scholieren* (Red book for school pupils) appeared in 1969, which opposed prevailing norms and authoritarian structures.⁵⁸

Hartkamp’s criticisms were widely shared, with the result that, from the mid-1970s, a clear schism materialized in Dutch economics education. In one camp were those who, in the meantime, could be seen as “the establishment,” including authors such as Heertje and later, after 1980, Schöndorff, who favored an analytical model-based approach. In the other camp we find Hartkamp’s approach, with its greater tendency to take the pupil as its point of departure rather than the academic discipline and, based on a social meliorist-oriented ideology about the purpose of education, its endorsement of a critical attitude of pupils toward prevailing economic structures. Occasionally, this disquiet within the economics community even penetrated through to the outside world, for example in 1999 when Heertje resigned as professor from the faculty of law at the University of Amsterdam. On that occasion, the Dutch national newspaper *de Volkskrant* featured an article about Heertje’s interference with economics education. After sketching the various positions, the article continues, “[i]t was the start of a tough and bitter battle to decide the direction economics teaching would take. Roughly, there were two factions: one believed in Heertje; the other did not. And these two groups were (and still are) at each other’s throats. No other school subject was so hotly debated. History teachers might sometimes bicker about the truth or importance of a certain date. And teachers may sometimes be at odds about the compulsory reading list for Dutch. But nowhere did the emotions run as high as in economics.”⁵⁹

Ultimately, the pupil-centered ideology extended its influence to Dutch economics education. Textbooks that combined an abstract model-based approach with pupil-centered elements became dominant, characterized by context, practical examples and illustrations (the latter had hitherto been rather rare in Dutch economics textbooks). An important role was played by the so-called *Lesbrieven* (Exercise letters) produced by the National Workgroup Economics Education, the LWEO, founded by Hartkamp and others. This LWEO put, with the aid of these exercise letters, a far more pupil-oriented product on the textbook market than had been seen previously. Indeed, the *Exercise Letters* did not start with complex and very abstract models, but with topics that corresponded more closely to the social and cultural world of youngsters (like mobility and clothing) than mathematic models. The economic theory and economic concepts were related to those concrete and pupil-oriented topics.

The central final exams also became less abstract during the 1980s, in the sense that they began to emphasize concrete social problems, whereas in the 1970s they still contained anonymous mathematical models. This

shift toward a more contextually anchored presentation of the subject was not confined to economics education. Carla van Boxtel and colleagues demonstrate that it was part of a broader movement in Dutch education in recent decades.⁶⁰ Based on didactic developments in the teaching of the physical sciences, history, and Dutch, these authors show that a reversal took place away from the transfer of knowledge for the sake of knowledge, toward the transfer of knowledge for the sake of an ability to use knowledge in a variety of real world contexts. This meant that the relationship between school subjects and academic disciplinary developments changed. Van Boxtel and colleagues identify social efficiency considerations at work here. The contextually anchored presentation of subject matter is based on “another vision of education, one that moves away from knowledge transfer towards ‘self-reliance,’ which is to say the ability of pupils, as future citizens, to deal responsibly with social issues that require a subject-specific mode of thinking.”⁶¹

Jumping forward to the present time, we must conclude that the case for the abstract scientific approach inspired by the mental discipline argument was definitively lost.⁶² The exam syllabus introduced in 2010, entirely in keeping with the passage by Dewey cited above, places strong emphasis on the need for teaching materials to be structured according to contexts recognizable to the pupil. In addition, macroeconomic models have almost entirely disappeared from secondary school teaching, while mathematics, especially algebra, has been reduced to a minimum (except for some issues, like elasticity and costs). All this is in keeping with currently prevalent Dutch views on the purpose of economics education. These views are dominated by social efficiency-oriented ideology, which correspond to the belief in the significance of education as an investment in human capital.⁶³ Although writings about economics exam syllabi of the 1960s still regularly contain comments like, “It is all about developing pupils’ capacities to think,” today this formal educational purpose has disappeared from economics education, at least as reflected in the exam syllabus and supporting explanatory notes.

This has obviously had consequences for economics textbooks. Anyone looking at representative textbooks from West Germany, Great Britain, and the United States published in the 1970s and more recently⁶⁴ will see a remarkably didactic consistency. The methodologies are derived from the academic discipline—the categorization used is invariably one based on the distinction between micro and macroeconomics. Yet their approach is scarcely model-based. Algebra is almost entirely absent; and these approaches can best be described as textual-graphical. By contrast, the economics textbooks used in the Netherlands, especially those for VWO, underwent two developments that radically changed the way in which the subject was taught during the period starting from 1970. First a mathematical modeling revolution occurred around 1970; second,

starting in the 1980s, there was a gradual development toward more pupil-centered approaches, inspired to some extent by social meliorist considerations, in line with Hartkamp's pupil-centered doctrine. The complex algebraic models have, meanwhile, completely disappeared and the teaching approach today is, similar to that found in other countries, primarily textual-graphical.

Conclusion

Economics education in the Netherlands, especially in the 1970s but also extending into the 1980s, displayed a previously unheard of degree of (particularly algebraic) abstraction. This degree of abstraction represented a clear break from the way in which economics had been taught previously, and it also constituted a departure from the approaches typically found in countries like the United States, Great Britain, and West Germany. In its degree of abstraction, Dutch economics secondary education closely followed developments in the underlying mother science, which after the Second World War rapidly became more abstract with prominent mathematical modeling features. By contrast, economics education in the United States, Great Britain, and West Germany maintained greater distance from the academic discipline.

The main explanation for the divergent Dutch position at that time seems to be the need to establish a rigorous profile with the new school type, athenaeum A. This need for a profile was combined with emphasis on the formal education argument. Within the segmented Dutch educational system, in which different school types competed with one another, there was a clear need at the end of the 1960s to give the newly established athenaeum A type a way to demonstrate that its level of rigor corresponded to that of athenaeum B and the gymnasium. The subject of economics was therefore taught in a more academic fashion, which also enabled it to serve as a vehicle for pupil selection. Authors such as Tinbergen and Heertje emphasized the suitability of economics for teaching the subject in this manner, and also pointedly resorted to the formal education argument, an argument that had broad support within the Dutch economics education community.

At the same time, however, during the 1970s, a slow turnaround became evident in the discourse about economics education in the Netherlands—a turnaround that led to much less emphasis being placed on the formal education argument. While the argument of Hartkamp (a representative of this new approach to economics education) drew on a combination of pupil-centered and social meliorist motives, Hartkamp eventually adopted yet another combination by taking both pupil-centeredness and social efficiency into account. This caused the formal

education to recede into the background. Consequently, the exceptional status of the mathematical modeling approach in economics education in the Netherlands came to an end, not as a result of new scholarly insights, but as a result of a shift toward new educational ideologies.

Notes

1. Hilda Amsing, "Textbooks and School Identity: The Content and Use of History Textbooks in Dutch Classical and Modern Education, 1863–1917," *Historical Studies in Education/ Revue d'histoire de l'éducation* 23, no. 2 (2011): 19–34.
2. Michael Marino, "High School World History Textbooks: An Analysis of Content Focus and Chronological Approaches," *The History Teacher* 44, no. 3 (2011): 421–446.
3. Gerrit Gorter, *Anderhalve eeuw economieonderwijs in Nederland, 1863–2013: Biografie van een schoolvak* (Delft: Eburon, 2013), 243–258.
4. Arnold Heertje, *De kern van de economie*, vol. 2 (Leiden: Stenfert Kroese, 1969), 79.
5. Gorter, *Anderhalve eeuw*, 234.
6. *Ibid.*, 245.
7. Also discussed in Herbert Voege, "The Diffusion of Keynesian Macroeconomics through American High School Textbooks, 1936–70" in *Case Studies in Curriculum Change: Great Britain and the United States*, ed. William Reid and Decker Walker (London and Boston: Routledge and Kegan Paul, 1975), 208–239.
8. Marc Blaug, *Economic Theory in Retrospect* (Cambridge: Cambridge University Press, 1988), 654–678; Ray Canterberry, *A Brief History of Economics: Artful Approaches to the Dismal Science* (Singapore: World Scientific Publishing, 2001), 201–272; Robert Ekelund and Robert Hébert, *A History of Economic Theory and Method* (Long Grove, IL: Waveland, 2007), 471–493.
9. Brian Snowdon and Howard Vane, *Conversations with Leading Economists* (Cheltenham: Elgar, 1999), 5.
10. See, for example, John Maynard Keynes, *The General Theory of Employment, Interest and Money* (London: MacMillan, 1936).
11. Ekelund and Hébert, *History of Economic Theory*, 582.
12. Hilda Amsing, *Bakens verzetten in het voortgezet onderwijs 1863–1920* (Delft: Eburon, 2002), 5–7.
13. Philip Jackson, "Conceptions of Curriculum and Curriculum Specialists," in *Handbook of Research on Curriculum* (New York: MacMillan, 1992), 12–13; Herbert Kliebard, *The Struggle for the American Curriculum* (New York: Routledge Falmer, 2004); Elliot Eisner and Elizabeth Vallance, "Five Conceptions of Curriculum: Their Roots and Implications for Curriculum Planning," in *Conflicting Conceptions of Curriculum*, ed. Eisner and Vallance (Berkeley, CA: McCutchan Publishing, 1974), 1–18.
14. Jackson, "Conceptions of Curriculum," 12.
15. See Roland Meighan and Iram Siraj-Blatchford, *A Sociology of Educating* (London: Cassell, 1998); Peter Scrimshaw, *Educational Ideologies* (Milton

- Keynes: Open University Press, 1983); Keith Morrison and Ken Ridley, "Ideological Contexts for Curriculum Planning," in *Approaches to Curriculum Management*, ed. Margaret Preedy (Milton Keynes: Open University Press, 1989); John Mc Neil, *Curriculum: A Comprehensive Introduction* (New York: Harper Collins, 1996).
16. Steve Bartlett, Diana Burton, and Nick Peim, *Introduction to Education Studies* (London: Paul Chapman Publishing, 2001), 78, 4–19. See Gorter, *Anderhalve eeuw*, 16–29.
17. Kliebard, *The Struggle*, 4–5.
18. Joseph Wachelder, *Universiteit tussen vorming en opleiding: De modernisering van de Nederlandse universiteiten in de negentiende eeuw* (Hilversum: Verloren, 1992), 205.
19. Kliebard, *The Struggle*, 4.
20. *Ibid.*, 24.
21. Eisner and Vallance, "Five Conceptions," 11.
22. Gorter, *Anderhalve eeuw*, 22; Gary Becker, "Human Capital," *The Concise Encyclopedia of Economics* (Library of Economics and Liberty, 2008), www.econlib.org/library/Enc/HumanCapital.html.
23. Kliebard, *The Struggle*, 23.
24. Jürgen Oelkers, *Reformpädagogik: Eine kritische Dogmengeschichte* (Weinheim: Juventa Verlag, 1992), 61–72.
25. John Dewey, "My Pedagogic Creed," *School Journal* 54 (1897): 77–80. Reprinted in Martin Dworkin, *Dewey on Education* (New York: Teachers College Press, 1959), 19–32.
26. James Calderwood and George Fersh, *Economics in Action* (New York: MacMillan, 1968), 504.
27. Price elasticity measures the responsiveness of the quantity demanded to a change in price. See for a modern textbook: Paul Samuelson and William Nordhaus, *Economics* (New York: McGraw Hill, 2010), 65–73.
28. The market leader before World War II was Isaac Cohen, *Hoofdlijnen der Staatshuishoudkunde* (Groningen-Batavia: Noordhoff, 1903).
29. Herbert Voegelé, "The Diffusion of Keynesian Macroeconomics through American High School Textbooks, 1936–70," in *Case Studies in Curriculum Change, Great Britain and the United States*, ed. William Reid and Decker Walker (London: Routledge, 1975), 208–239.
30. This equation states that the national product (Y) is the sum of consumption (C), investment (I), and the balance of exports (E) and imports (M). Government expenditures are, in this case, included under consumption and investments.
31. Sebastiaan Brückner, "Effects of Prior Economic Education, Native Language, and Gender on Economic Knowledge of First-year Students in Higher Education: A Comparative Study between Germany and the USA," *Studies in Higher Education* 40, no. 3 (2015): 437–453.
32. David Whitehead, "The Training of Economics Teachers in England and Wales," *Journal of Economic Education* (Fall 1985): 254–268.
33. This outline is based on Gorter, *Anderhalve eeuw*, section 2.5.
34. Gorter, *Anderhalve eeuw*, 300.

35. For example, Frits de Jong, *De werking van een volkshuishouding: Een eerste inleiding tot het economisch denken* (Leiden: Stenfert Kroese, 1953); I. B. Mabelis, *Geld en goed: leerboek economie voor de middelbare school* (Amsterdam: Meulenhoff, 1956/1957); W. J. Buijs, *Moderne inleiding tot de economie* (Groningen: Wolters, 1956/1957).
36. Jacob Hollebrand and Christiaan Stassen, *Economie voor het voortgezet onderwijs* (Assen: Born, 1975/1976); Rudolf Schöndorff, Nico Cohen, and Jan Pleus, *Economie bijvoorbeeld* (Leiden: SMD, 1980).
37. Calderwood and Fersh, *Economics in Action*, 504.
38. The “point elasticity” measures the effect on demand of a very small price change, the “segment elasticity” measures the effect of a larger price change.
39. Heertje, *De Kern*, vol. 2, 37. This equation states that the change of the GDP (ΔY) depends on changes in the payment of labor (w) and changes in investments (ΔA).
40. Hollebrand en Stassen, *Economie*, vol. 2, 93–151.
41. Samuelson, *Economics*, 759–780. Lipsey and Steiner, *Economics*, 531–556.
42. Kliebard, *The Struggle*, 6.
43. See also Gorter, *Anderhalve eeuw*, 18–21 and 299.
44. De Vries, *Rapport van de studietoetscommissie ingesteld door de Vereniging tot behartiging van het onderwijs in de Staatswetenschappen* (Rotterdam: VOS Archive, 1936).
45. Jan Tinbergen, “De waarde van het onderwijs in de economie,” *Weekblad voor het gymnasium en middelbaar onderwijs* 42, no. 8 (1948): 140–143.
46. Gerrit Gorter, “Rondom De kern, een gesprek met Arnold Heertje,” *Tijdschrift voor het economisch onderwijs* 111, no. 2 (2011): 6–7.
47. The italics are Heertje’s own.
48. Arnold Heertje, “Enkele opmerkingen over het economisch onderwijs in Nederland,” *Tijdschrift voor het economisch onderwijs* 66, no. 5 (1966): 69–72.
49. Gorter, *Anderhalve eeuw*, 54.
50. For a comparable instance of competition between school types and its influence on the curriculum, see Hilda Amsing, “Modern versus Classical Education, The Dutch Case 1863–1917,” *History of Education Review* 34, no. 1 (2005): 35–50.
51. Saskia Grotenhuis, *Op zoek naar middelbaar onderwijs. hbs, gymnasium, mms en lyceum in discussie tussen 1900 en 1970* (Amsterdam: Boom, 1998), 178.
52. Albert de Jong, “De plaats van de economische vakken en van de maatschappijleer in het wetsontwerp Voortgezet Onderwijs,” *Tijdschrift voor het economisch onderwijs* 62, no. 2 (1961): 107–114.
53. William Walstad, “An Introduction to an International Perspective on Economic Education,” in *An International Perspective on Economic Education*, ed. William Walstad (Boston: Kluwer, 1994), 1–18.
54. George Stigler, “Elementary Economics Education,” *The American Economic Review* 53, no. 2 (1963): 657.
55. LWEO, *Appels en peren* (Amsterdam, 1975). This brochure, titled *Apples and Pears*, makes no mention of the authors, but Hartkamp’s pen seems clearly in evidence. Hartkamp defined this approach as a *theezakjesmodel* (teabag model) because the curriculum of the VWO was extracted from the

- university curriculum and the Havo curriculum was extracted from the VWO curriculum.
56. Herman Hartkamp, "De Landelijke Werkgroep Economie Onderwijs, Van pressiegroep tot alternatieve uitgeverij," *Vernieuwing: Tijdschrift voor onderwijs en opvoeding* 46, nos. 1/2 (1986): 69–73. Also in Herman Hartkamp, *Jullie zijn nog niet van me af!* (Amsterdam: LWEO, 1998), 12–21.
 57. Hartkamp, "De Landelijke Werkgroep," 17.
 58. Claartje Hülsebeck, *Rode boekje voor scholieren* (Utrecht: Bruna, 1970).
 59. Margriet Vermeulen, "De les van Heertje," *De Volkskrant*, 27 November, 1999, 31.
 60. Carla van Boxtel, Albert Pilot, and Piet-Hein van de Ven, "Vakdidactische benaderingen" (2011), <http://www.lerarenopleider.nl/velon/wp-content/uploads/2014/09/vakdidactischebenaderingen06052011.pdf>.
 61. *Ibid.*, section 4.4.
 62. Gorter, *Anderhalve eeuw*, 286–288.
 63. Elvira Nica, "The Increased Significance of Education as an Investment in Human Capital," *Contemporary Readings in Law and Social Justice* 2 (2012): 336–341.
 64. See the American textbook by Arthur O'Sullivan and Steven Sheffrin, *Economics Principles in Action* (Upper Saddle River: Pearson, 2007); the British textbook by Alain Anderton, *Economics* (Edinburgh Gate: Pearson Longman, 2008); or the German textbook by Max Bauer, Andreas Hamm Reinöhl, Stephan Podes, and Hartwig Riedel, eds., *Wirtschaft, Märkte, Akteure und Institutionen* (Bamberg: Buchner, 2008).