

Article

Why powerful economic content and scientific language in social studies textbooks matters

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Keywords: Economics; economic terms; textbooks; powerful knowledge; semantic profiles; social studies

- The use of scientific economic terms is insufficient in Swedish social studies textbooks.
- Analysed textbooks do not offer optimal preconditions to develop in-depth economic knowledge.
- Insufficient use of economic terms may have negative impact on cumulative knowledge building.
- The insufficient use of economic terms may also lead to unequal economic education.

Purpose: This article examines the prevalence of six economic terms in 17 Swedish upper-secondary school textbooks and how the language shifts between everyday and scientific language. Variations regarding content in the textbooks used in vocational programmes and preparatory programmes for higher education are also investigated.

Design: Powerful knowledge (important knowledge within a subject) and semantic waves (variations between everyday and scientific language) are essential to cumulative knowledge building. These theories are used for quantitative and qualitative analyses of the textbooks.

Findings: There are variations in the extent to which powerful economic terms appear and how the language shifts between everyday and scientific discourses in the textbooks analysed. Coverage and shifts are generally insufficient in textbooks used in vocational programmes.

Practical implications: The importance of using powerful economic knowledge and shifting between everyday and scientific language in textbooks and teaching should be highlighted for policymakers, textbook authors and teacher educators.

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1 INTRODUCTION

Individuals need the ability to make well-informed decisions for their own good and for the public good. As almost every decision in life has some sort of economic dimension, one part of being well-informed is to understand and master fundamental economic principles (e.g. Jappelli, 2010; Miller & VanFossen, 2008; Lusardi et al., 2017). Earle et al, (2017) describes that many western democracies have developed into econocracies meaning that 'the goals politics seeks to achieve are defined in narrow economic terms' (p.3) and that economy often is seen as an area for experts. Thus, if economics and economic systems become something that ordinary citizens do not understand or are able to discuss there is a risk that democratic influence will diminish. Therefore, it is a cause of concern that research from around the world shows that people generally seem to know little about economics (e.g. Erner et al., 2016; Lusardi & Mitchell, 2011; Wobker et al., 2014) and that social studies teachers, often responsible for providing basic economics education, have limited economic education and show low levels of economic understanding (e.g. Akhan, 2015; Anthony et al., 2015; Asano et al., 2013; Ayers, 2016; Grimes et al., 2010; Kristiansson, 2014; Löfström & van den Berg, 2013; Modig, 2017).

Considering that economic illiteracy seems widespread and that social studies teachers seem to be inadequately prepared for teaching economics, it could be expected that social studies teachers turn to economics sections in social studies textbooks for guidance, and research has shown that students and teachers frequently use textbooks as important sources for teaching and learning the content (Chingos & Whitehurst, 2012; Hirsh, 2019). Therefore, it is important that the economic content in social studies textbooks be adequate and of high quality as textbooks could be expected to have great influence on the content being taught and serve as a base for social studies teachers' economic understanding.

What constitutes adequate, important, discipline-based, subject-specific economic knowledge can, of course, be debated. According to Young's (2008, 2009) notion of powerful knowledge, experts within epistemic communities could be expected to have profound knowledge of the specific kinds of knowledge that people need. The economic terms opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth have been suggested by such communities as particularly important economic terms for people to understand and master (e.g. Davies & Mangan, 2007; Modig, 2020; Siegfried & Krueger, 2010). Young (2014) argues that specialised knowledge is essential to be able to understand the world in in-depth and qualified ways, and Maton (2013) put forward that shifting between everyday language and subject-specific language in teaching is essential to create cumulative knowledge building. Therefore, the present study investigates the representation of these six economics terms in social studies textbooks used in Swedish upper-secondary schools (ages 16–19 yrs).

Mainstream economic terms and economics based on neoclassic theoretical assumptions have been criticised for being unrealistic and impersonal, for promoting uncritical thinking and for being unable to predict financial crises. Consequentially,

further pluralistic perspectives have been suggested to be incorporated in economics education (e.g. Admas, 2019; Brant, 2015; Bäuerle, 2020; Graupe & Steffestun, 2018; Pühringer & Bäuerle, 2018; Shanks, 2018; Ötsch & Kapeller, 2015). Maton (2014) describes this struggle as 'an epistemic relation clash between insights that offer competing visions of the nature of the field' (p. 178). Neoclassical economics is based on the fundamental assumptions of the importance of marginalism; that humans are fully informed, act independently and rationally maximise utility; and that companies act to maximise profit (Adams, 2019; Lawson, 2013). Incorporating new perspectives does not necessarily mean that classic economics is to be ignored. As economics affects everyone, people need to develop in-depth knowledge about classic and neoclassic economics, as such knowledge likely has the potential to lead to balanced discussions about traditional economics as well as about alternative perspectives.

The purpose of this article is threefold.

1. To study the prevalence of six economic terms – opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth – in Swedish social studies textbooks used in upper-secondary school.
2. To investigate whether the language regarding the chosen terms shifts between everyday and specialised language in the textbooks.
3. To compare the coverage of the studied terms and shifts between everyday and specialised language in textbooks used in vocational programmes and in preparatory programmes for higher education.

Data from 17 Swedish social studies textbooks for learners in upper-secondary school are used. Together, the textbooks represent the overwhelming bulk of social studies textbooks intended for upper-secondary school. The study reveals that there are great variations in the extent to which the investigated terms appear and how the language shifts between everyday and scientific language and that the coverage of the studied terms is generally briefer in textbooks used in vocational programmes. Consequently, this insufficient use of adequate economic terms could mean that not all learners are offered the same preconditions to develop in-depth economic knowledge.

2 THE SUBJECT SOCIAL STUDIES AND THEORETICAL OUTSET

2.1 Social studies

The Swedish term of social studies is 'samhällskunskap' which directly translated into English becomes 'society knowledge'. International scholars use different terms, such as social studies, social science, civics and political science, to describe subjects similar to 'samhällskunskap'. In this text I use the term social studies.

Social studies in Sweden is an interdisciplinary subject based on political science, economics and sociology, however not having a single explicit corresponding discipline at

the universities. Social studies also includes democratic values and means and is supposed to prepare learners for societal participation and thereby has a dimension of citizenship education (Børhaug, 2011; Kristiansson, 2014; Olsson, 2016; Sandahl, 2018). Internationally, there is no equivalent subject to the Swedish subject social studies. For instance, in Anglo-Saxon educational systems social studies functions as a field of study often including history, geography, civics and government, economics, sociology, anthropology and psychology (Thornton, 2008). Thus, subjects included in the Swedish definition of social studies (political science, economics and sociology) are also included in the broader international definition.

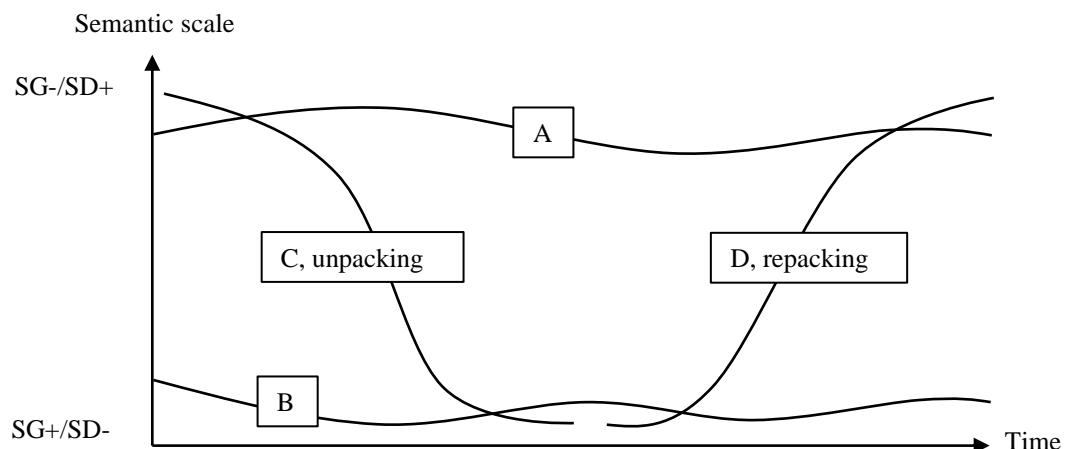
2.2 The importance of everyday knowledge and specialised knowledge

Learners acquire informal everyday knowledge in many areas in their daily environments. Schooling can, alternatively, provide access to more specialised subject-specific knowledge. Young (2008, 2009, 2014) calls such knowledge 'powerful knowledge' and puts forward that it is crucial for social justice that powerful knowledge is available for all people regardless of social background. Young (2008, 2009, 2014) builds on Bernstein (1999) and argues that specialised, subject-specific knowledge is essential to understand the world in in-depth and qualified ways as it takes learners 'beyond their experience in the most reliable ways we have' (Young, 2014, p. 67). Hence, specialised knowledge needs to be at the centre of the curriculum, Young (2008, 2009, 2014) argues. This knowledge needs to be transformed by well-educated teachers and adequate textbooks for students to learn. In this context Oates (2014) emphasizes the importance of including such knowledge in high qualitative textbooks. Further, Oates (2011) argues that a coherent education system is associated with high performing systems and stresses that it is required that the entire education system be coherent in terms of 'national curriculum content, textbooks, teaching content, pedagogy, assessment and drivers and incentives' (Oates, 2011, pp. 138–139). Thus, in such a coherent system, high qualitative textbooks is one important piece. Maton (2013, 2014), founder of Legitimation Code Theory (LCT), approaches this aim by stressing the need for cumulative knowledge building through a continuous shift between specialised and everyday knowledge. Also, he suggests a semantic method to analyse the occurrence of such shifts in different educational settings (Maton, 2103).

A language can shift on a semantic scale, and Maton (2013, 2014) distinguishes between semantic gravity (SG) and semantic density (SD), which can be relatively weaker (-) or stronger (+) (see the vertical axis in Figure 1). A language with strong SG is concrete and dependent on context, while an abstract language is less dependent on context and has a lower degree of SG. Strong SD refers to a language with high condensed meaning, while weaker SD refers to a language with low condensed meaning. A subject-specific language is often characterised by low SG (SG-) and high SD (SD+) and forms 'high semantic flatlines' (marked with letter A in Figure 1), and an everyday language generally has high SG (SG+)

and low SD (SD-) and forms 'low semantic flatlines' (marked with letter B in Figure 1) (Maton, 2013, p. 12). If an educational setting does not offer a connection between these languages, no cumulative knowledge building is possible for the learner. Hence, a language for learning needs to shift between these different semantic profiles. In this process, specialised knowledge with SG- and SD+ can be unpacked when it is linked to everyday knowledge, and the language thereby gets a 'downward escalator profile' (marked with letter C in Figure 1) (Maton, 2013, p. 14). Such language becomes less complex and less theoretical and more contextually relevant over time. If learning instead starts with experiential described knowledge (SG+) and with a language with low condensed meaning (SD-), the language gets an upward escalator profile (marked with letter D in Figure 1) as the knowledge is being repacked when linked back to specialised knowledge. Based on this, four different forms of semantic profiles crystallise – a downward escalator profile, an upward escalator profile, a semantic wave starting at SG-/SD+ and shifting down to SG+/SD-, and then shifting up again and vice versa (illustrated in Figure 1). This is how cumulative knowledge building is created, and a semantic analysis aims at capturing whether this is the case. According to Maton (2013) it is common in education that scientific terms (within different areas) are unpacked, however repacking occurs less frequently.

Figure 1. Semantic profiles



Notes: Based on Maton (2013). SG = semantic gravity, SD = semantic density, + = stronger, - = weaker, A = high semantic flatline (theoretical and abstract), B = low semantic flatline (practical and simple), C = downward escalator profile, D = upward escalator profile, C together with D could form a semantic wave.

2.3 Subject-specific economic knowledge

Based on Young's (2008, 2009) notion of powerful knowledge, discipline-based, subject-specific knowledge can be derived from epistemic communities. Hence, there is reason to assume that academic experts can provide guidance on what should be taught in schools for students to learn important knowledge to cope with economic matters. First, important economic concepts have been suggested within the framework of threshold concepts (e.g. Davies & Mangan, 2007; Löw Beer, 2016; Reimann & Jackson, 2006; Shanahan et al., 2006; Shanahan, 2016). Second, important economic principles are listed in the Voluntary National Content Standards in Economics for American students in kindergarten through the 12th grade (K–12) (Siegfried & Krueger, 2010). Third, important economic concepts that people need to acquire and understand have recently been suggested in a study based on what Swedish scholars of economics consider to be the most important economic concepts (Modig, 2020). There are similarities within these studies, all based on economic experts' assumptions on what constitutes important economic knowledge and thereby might qualify as powerful economic knowledge. Opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth crystallise as particularly significant from a disciplinary perspective. In the present article, these six economic terms are understood as powerful economic knowledge or at least part of what could constitute powerful economic knowledge. It is also assumed that if people do not understand and master these principles, there is a risk that they will be unable to make well-informed decisions when facing economic issues.

2.4 Textbooks as important instructional materials

As argued, social studies teachers could be expected to turn to economics sections in social studies textbooks for guidance on teaching content. Textbooks are here seen as paper-based and digital teaching material provided by official publishing companies. Such materials can function as guides on important content and thereby affect what is being taught in schools (Apple, 2005; Ball & Cohen, 1996). Research has shown that teachers and students frequently use paper-based textbooks even though online material is increasing and that textbooks affect students directly when used and indirectly as guides for teachers (Chingos & Whitehurst, 2012; Hirsh, 2019). This is also the case in economics as 'textbooks are central to the pedagogical and epistemological process' (Richardson, 2004, p. 518). Even though the use of online material has increased, paper-based textbooks are still important material as they are often 'rigorously-designed', underpinned by 'well-grounded learning theory' and have a 'clear delineation of content – a precise focus on key concepts and knowledge' (Oates, 2014, p. 4). Yet, textbooks can serve ideological and pedagogical purposes as school knowledge are social constructions and often represent interests and values of dominant groups in society (Chu, 2017). It has also been argued that the 'social context and political norms of a given community' affect and shape curricular decisions (Westheimer & Kahne, 2004, p. 263).

Textbooks serve different purposes, for instance; support national education policy, contribute to develop critical thinking and as inspiration for classroom activities. Based on Young (2008, 2009, 2014), specific knowledge is essential to understand the world in in-depth and qualified ways. Oates (2014) emphasizes the importance of such knowledge included in textbooks. There is of course a risk, or, if preferred, a possibility that specific knowledge derived from epistemic communities and presented in textbooks represents the dominating narrative. However, and as discussed earlier, this does not necessarily exclude other pluralistic perspectives.

Research on the economic content in social studies textbooks seems to be limited. However, a recent study in Sweden shows that some of the social studies textbooks used in preparatory programmes for higher education have quality defects when it comes to economics. Bergh (2019) studied the economics sections in six textbooks and found that there are unclear definitions of different aspects of the economy, such as regarding the private economy and public economy. The result is interesting as Maton (2013, 2014), highlights the importance of continuous shift between specialised and everyday knowledge to achieve cumulative knowledge building.

Turning to research on actual economics textbooks, there is an extensive body of literature. For instance, Fike and Gwartney (2015) studied the coverage of public choice, market failure, and government failure in 23 principle economics textbooks and found that market failures are emphasised relative to government failures. Eyzaguirre et al. (2014) found the same pattern in 12 undergraduate economics textbooks. Schmidt (2017) argues that it is a problem that introductory economics textbooks in general are normative as they teach the importance of maximising surplus and seldom discuss other normative perspectives. Wang and Yang (2001) and Colander (2004) have discussed that the inconsistent use of models can be one potential reason for students' confusion regarding sunk costs. Johansson and Malm (2017) have studied the prevalence of the term 'entrepreneur' in economics textbooks used in doctoral programs in Sweden and the United States and found that entrepreneurship is often neglected or merely partially covered. Madsen (2013) has analysed whether and how the financial crises of 2007–2009 affected the content in 12 introductory economics textbooks used in the U.S. He found that, in general, small changes have been made, such as a few lines being added to existing theory or the crisis is dealt with in text boxes, not in the main body of the text. Robson (2001) has investigated race- and gender-related content in 12 economics textbooks and compared the results with similar studies from the 1980s and 1990s and found that such content has increased over the years. Green (2012) has analysed the coverage of environment-economy in 14 economics textbooks used in North America and found that little space, on average 3,2% of the text, is given to environmental or sustainability issues.

In sum, a great deal of research has been conducted on different content in economics textbooks, and some issues emerge regardless of context, such as ideology biases regarding market failures and government failure. It is also shown that textbooks can serve as authoritative knowledge and that this is the case in economics, too. However, little

is known as to whether the economics sections in social studies textbooks represent the most important aspects of economics. Therefore, this is a reason to analyse the content of social studies textbooks regarding powerful economic knowledge and the extent to which and in what way they make it possible for students to gain this knowledge through cumulative knowledge building.

3 METHOD

If the analysed economic terms – opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth – are accepted as powerful economic knowledge or at least part of powerful economic knowledge, it is interesting to study the prevalence of these terms in social studies textbooks. First, the collected material was examined through a descriptive analysis focusing on the prevalence of the chosen economic terms. Second, Maton's (2013) theory about semantic profiles was used as an analytic tool to identify examples of downward and upward escalators, language with high or low flatlines and semantic waves.

3.1 Textbook selection

A total of 17 textbooks used in upper-secondary education (ages 16–19 yrs) are reviewed regarding coverage of opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth and regarding the appearance of semantic profiles. The textbooks are selected from the Swedish database Libris, which contains around 6,5 million titles held by Swedish universities, research libraries and public libraries (<http://libris.kb.se/>, visited 2019-11-25) using the keyword 'samhällskunskap' (social studies) and 'lärobok' (textbook). This yields a list of 214 titles. All titles not intended for upper-secondary school and older than 2011 are excluded as the present syllabus for upper-secondary school was introduced in 2011. In this study, textbooks intended for the basic courses in preparatory programmes for higher education (course 1b, 100 hours) and for vocational programmes (1a1, 50 hours) (Swedish National Agency for Education [SNAE], 2011a, 2011b) are selected to obtain a picture of the kind of economic knowledge that all Swedish students in upper-secondary schools are exposed to, at the minimum. This gives a list of 24 textbooks – 13 textbooks intended for vocational programmes and 11 textbooks intended for preparatory programmes for higher education. Out of the 24 textbooks, 19 titles are available in both paper and digital versions. Finally, whether it is possible to search for specific words in the digital versions of the paper-based textbooks is controlled for. Versions for which this is not possible are excluded. The procedure yields a final list of 17 textbooks available in both paper and digital versions, eight intended for preparatory programmes for higher education and nine for vocational programmes. The most recent editions are used, and all textbooks were released in the period 2011 to 2019. Together, the 17 textbooks represent the overwhelming bulk of social studies textbooks

intended for two basic courses in upper-secondary school. For a complete list of the analysed textbooks, see Appendix 1.

There are also some important differences between course 1b and course 1a1. Course 1b contains a segment of economics, including various economic structures in Sweden and internationally, growth, entrepreneurship, resource use and resource allocation. The course also includes a segment of personal finance and questions about household income, expenditure, assets and liabilities, consumer law and consumption and how personal finances are affected by socio-economic changes. Course 1a1 only includes the segment of personal finance and the segment regarding economics is left out, meaning that there is a significant difference between the two courses regarding core content related to economic (Swedish National Agency for Education [SNAE], 2011a, 2011b).

3.2 Analytical procedures

This study is inspired by the design of Fike and Gwartney (2015) who examine the coverage of public choice, market failure, and government failure and how the analysed terms are visible in chapters, glossaries, illustrations, table of contents (TOCs) and page coverage. The design ensures a rigorous mapping of the chosen content and is therefore used. Here, the 17 textbooks are analysed by mapping how the economic terms opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth are visible in chapters, glossaries, illustrations, TOCs and page coverage. The search function in the digital versions is used to identify the chosen terms. The economics sections are also read and reviewed to ensure that no appearance of a term is missed. Every page that contains the various terms is counted to map the breadth of the representation of the chosen terms. The prevalence of economic terms is presented in Tables 1 to 5, containing seven columns, five of which are numbered 1-5. The unnumbered columns provide basic information about the textbooks. Column number 1 holds information about whether the mapped terms are presented in text in separate chapters and/or sections. If so, it is marked with a checkmark. Columns numbered 2-5 provide information about whether the mapped term occurs in glossary, in illustration and in table of contents (TOCs). If so, this is also marked with checkmarks. Column number 5 provides information on the total number of pages that contain the mapped terms, not only pages that contain the terms in running text. In some cases there are page numbers in column 5 even if there are no checkmarks in columns 2-4. This means that the mapped term does not have a specific chapter and/or section in the textbook, nor occurs in glossary, in illustration or in TOCs. In these cases the figure in column 5 indicates that the mapped term occurs in the textbook, however not explicitly in relation to used categories in tables. (Also, see the note under each table for further explanations). As there is only one appearance in one textbook regarding the term marginal concept, there is no table presented thereon.

Sections containing the inventoried terms are also analysed using Maton's (2013, 2014) semantic profiles. If an economic subject-specific term is linked to everyday language, it is interpreted as a downward escalator semantic profile. A phenome described by everyday language and then linked to an economic subject-specific term is interpreted as an upward escalator profile. Shifts from a language with SG- and SD+ to a language with SG+ and SD- and then back again, and vice versa, is understood as a semantic wave. The existence of economic scientific subject-specific terms are thereby seen as a prerequisite for being able to identify high semantic flatlines, semantic escalators and semantic waves. Consequently, the absence of economic scientific subject-specific terms makes it impossible to identify semantic escalators, semantic waves and high semantic flatlines. Instead, such language indicates the appearance of low semantic flatlines.

A starting point is that using and understanding disciplinary terms is essential for developing an in-depth understanding of economic issues (Maton, 2013, 2014; Young, 2014). Consequently, no credits are given if the investigated term does not exist in the textbook even if there is text that could be linked to the term. Some examples of semantic profiles are given in the results and analysis section, and as the textbooks are written in Swedish, the given examples are translations into English by the author. Quotations inevitably involve interpretations, however, the ambition is to reflect the textbooks' intentions.

4. RESULTS AND ANALYSIS

4.1 Opportunity cost

The term 'opportunity cost' does not appear in any of the analysed textbooks, and thus no credits are given in columns 1–4 in Table 1. However, there are a number of pages within parentheses in column 5 representing content linked to opportunity cost emerging. For instance, there are writings about production possibilities curves, priorities due to limited resources and private and public spending in every textbook used in preparatory programmes for higher education. Almgren et al. (2017) write: 'we have to choose, which also means that we at the same time have to opt-out of something else' (p. 277). This is the most obvious writing about opportunity cost. As the term opportunity cost is not used, the quote can function as an example of a low semantic flatline based on everyday language. Andersson et al. (2011) and West (2017) write about rational choice theory and Göthberg et al. (2016), West (2017) and Rundblom and Berg (2013b) write about conscious choice, however not mentioning that people also have to opt out of something. Rational choice is closely related to opportunity cost, however, the actual term opportunity cost is not mentioned. In the textbooks used in vocational programmes, there are references to priorities due to limited resources, mostly regarding private spending, and Göthberg et al. (2012), West (2018) and Rundblom and Berg (2013a) also write about conscious choice. As

the actual term opportunity cost does not appear in any of the textbooks, it is not possible to identify downward and upward escalators or any semantic waves.

Table 1. Representation of the term *opportunity cost* in the textbooks used in the preparatory programmes for higher education and vocational programmes

Author	Total pages/pages in economics section	(1) Chapter/ section	(2) Glossary	(3) Illustration	(4) TOC	(5) Page coverage
Programmes of higher education						
Almgren et al., 2017	384 / 83	-	-	-	-	(4)
Andersson et al., 2011	384 / 96	-	-	-	-	(9)
Bengtsson, 2014	313 / 65	-	-	-	-	(3)
Eliasson & Nolervik, 2019	270 / 52	-	-	-	-	(2)
Göthberg et al., 2016	280 / 115	-	-	-	-	(12)
Holmstedt & Hydén, 2017	320 / 44	-	-	-	-	(2)
Rundblom & Berg, 2013b	339 / 41	-	-	-	-	(3)
West, 2017	456 / 66	-	-	-	-	(11)
Vocational programmes						
Almgren et al., 2018	192 / 25	-	-	-	-	-
Bengtsson, 2013	200 / 44	-	-	-	-	(3)
Eliasson & Nolervik, 2018	210 / 45	-	-	-	-	(3)
Göthberg et al., 2012	154 / 55	-	-	-	-	(9)
Holmstedt & Hydén, 2019	168 / 34	-	-	-	-	(3)
Karlsson, 2018	174 / 9	-	-	-	-	(2)
Nilzon, Roslund & Öberg, 2011	168 / 21	-	-	-	-	(6)
Rundblom & Berg, 2013a	244 / 44	-	-	-	-	(4)
West, 2018	268 / 26	-	-	-	-	(2)

Note: Description of the columns: (1) texts with a chapter on opportunity cost; (2) texts with opportunity cost in the glossary; (3) illustrations related to opportunity cost; (4) texts with opportunity cost in the TOC; (5) number of pages where anything about opportunity cost appears.

4.2 Marginal concepts

There is only one passage in one textbook about the marginal concept, and therefore no table is presented.

The difference between the interest the banks receive and the interest the banks pay out to borrowers is called the interest margin. It is one of the most important revenues for banks. The interest margin should also cover both salaries and the risk that a borrower will not be able to repay the loan as well as provide profit that the bank can use for dividends to its shareholders and for investments. (Göthberg et al., 2016, p. 196)

This example is understood as a semantic wave that starts with an everyday-based explanation (SG+/SD-), followed by a repacking to the scientific economic term interest margin (SG-/SD+) and then unpacked by everyday-based examples (SG+/SD-) of the importance of interest margins.

4.3 Demand and supply

The textbooks used in the preparatory programmes for higher education generally address demand and supply in complex ways, such as discussing that demand can affect inflation and unemployment and also demand and supply in relation to economic cycles. Göthberg et al. (2016) describe the terms demand and supply in that the interplay between demand and supply controls what is being produced and consumed.

Supply and demand are two key concepts in economics. Supply is the goods and services that different types of companies offer. Demand is the goods and services that consumers want. It is this interplay between what consumers want and what companies produce that governs what is sold in the market. (Göthberg et al., 2016, p. 159)

This is an example of two downward escalators, moving from SG-/SD+ to SG+/SD-, the first one unpacking the term supply and the second one unpacking the term demand. Then follows a sentence with a low semantic flatline profile that explains the relationship between what consumers want and what companies produce. In the next two pages the language shifts between using scientific economic terms and everyday-based explanations, and the text introduces further scientific economic terms related to demand and supply, such as 'equilibrium price', 'excess supply' and 'excess demand' (p. 161). Such passages, when scientific economic terms are linked to everyday-based explanations with downward and upward escalators and when further scientific economic terms are linked, are understood as semantic waves.

The textbooks used in the vocational programmes generally address the terms in more limited ways. For example, Eliasson and Nolervik's (2019) work is the only textbook that presents a demand, supply and equilibrium figure. Further, most textbooks have greater focus on the demand side than on the supply side, and little is written about the

relationship between demand and supply. For example, Almgren et al. (2018) write, 'If the demand falls on goods and service in Sweden, the companies have to reduce production' (p. 133). Even though reduced production is mentioned, the term supply does not appear. Moreover, both the terms demand and supply appear in Bengtsson (2013), and the relationship between the terms is discussed in a limited way with everyday language: 'In a market, there are those who offer something for sale, supply. There must also be someone asking for what is being offered, demand' (p. 155). This is an example of upward escalators moving from SG+/SD- to SG-/SD+ on the semantic scale as the actual terms appear after the everyday-based language explanations. However, the relation between the terms demand and supply is not discussed further, and therefore this example is understood as two consecutive upward escalators and not as a semantic wave.

Table 2. Representation of the term *demand and supply* in the textbooks used in the preparatory programmes for higher education and vocational programmes

Author	Total pages/pages in economics section	(1)	(2)	(3)	(4)	(5)
		Chapter/ section	Glossary	Illustration	TOC	Page coverage
Programmes of higher education						
Almgren et al., 2017	384 / 83	✓	✓	✓	✓	13
Andersson et al., 2011	384 / 96	-	-	✓	-	16
Bengtsson, 2014	313 / 65	-	✓	✓	-	10
Eliasson & Nolervik, 2019	270 / 52	✓	✓	✓	✓	7
Göthberg et al., 2016	280 / 115	✓	✓	✓	✓	17
Holmstedt & Hydén, 2017	320 / 44	✓	-	✓	-	9
Rundblom & Berg, 2013b	339 / 41	-	-	✓	-	12
West, 2017	456 / 66	-	-	✓	-	24
Vocational programmes						
Almgren et al., 2018	192 / 25	-	-	-	-	5
Bengtsson, 2013	200 / 44	✓	✓	-	-	5
Eliasson & Nolervik, 2018	210 / 45	✓	✓	✓	-	6
Göthberg et al., 2012	154 / 55	✓	✓	-	✓	6
Holmstedt & Hydén, 2019	168 / 34	-	-	-	-	4
Karlsson, 2018	174 / 9	-	-	-	-	5
Nilzon, Roslund & Öberg, 2011	168 / 21	-	-	-	-	2
Rundblom & Berg, 2013a	244 / 44	-	-	-	-	7
West, 2018	268 / 26	-	-	-	-	7

Note: Description of the columns: (1) texts with a chapter on demand and supply; (2) texts with demand and supply in the glossary; (3) illustrations related to demand and supply; (4) texts with demand and supply in the TOC; (5) number of pages where anything about demand and supply appears.

4.4 Interest

Each analysed textbook addresses the term 'interest' from a personal finance perspective by discussing deposit interest rate and loan interest rate, for example:

The most common credit institutions are the banks. They are the link between saved, deposited money and the borrowers who borrow this money, in other words, buy credits for a certain period of time. The price of money is called interest. (Almgren et al., 2017, p. 284)

Almgren et al. (2017) explain that banks are a sort of credit institution and function as a link between saved money and borrowers and that the price for borrowing money is called interest. This is understood as an upward escalator, moving from SG+/SD- to SG-/SD+, where the economic term interest appears after the everyday-based explanation.

Similar writings appear in Holmstedt and Hydén (2017), where a section about loans and debts describes interest as follows: 'If you borrow money from the bank you have to pay a rate, which is a percentage fee' (Holmstedt & Hydén, 2017, p. 174). Holmstedt and Hydén (2017) and Anderson et al. (2011) also describe and differentiate between fixed and variable interest rates. Effective interest, which is closely related to loan interest rate, is described in six out of the eight textbooks for use in the preparatory programmes for higher education and in seven out of the nine textbooks used in the vocational programmes. Further, mortgage rate appears in six out of the eight textbooks used in the preparatory programmes for higher education and in two of the textbooks used in the vocational programmes.

Shifting focus to economics related to society, it is clear that the textbooks used in the preparatory programmes for higher education address the total economy to a larger extent than textbooks used in the vocational programmes. For instance, repo rate, as a tool for central banks to stimulate or slow down the economy, is generally given a greater focus in textbooks used in the preparatory programmes for higher education. Almgren et al. (2017) contains a section of three pages about monetary policy, including passages about repo rate. The role of the central bank (in Sweden called the Riksbank) and that the central bank can affect other interest rates and thereby inflation by using a policy rate called the repo rate is described. There are many scientific economic terms in the section, indicating that the section generally is on a high semantic flatline (SG-/SD+) with some minor shifts with downward and upward escalators, for instance:

Assume that Sweden is in an expansionary phase of an economic cycle and that there is a risk for demand-pulled inflation. The Riksbank can raise the rate to make it more expensive for companies to borrow money for investments, which helps to cool the economy and reduce the risk of inflation. (Almgren et al., 2017, p. 314)

Repo rate is discussed in five out of the nine textbooks used in the vocational programmes, generally more briefly and with a more everyday-based language than in the textbooks used in the preparatory programmes for higher education, for instance:

The Riksbank uses the repo rate to affect the economy. The repo rate is the interest rate that banks have to pay when they borrow from the Riksbank.
(Almgren et al. 2018, p. 135)

This is understood as an example of a downward escalator, moving from SG-/SD+ to SG+/SD- as the term is introduced and then explained with everyday-based language and knowledge.

Table 3. Representation of the term *interest* in the textbooks used in the preparatory programmes for higher education and vocational programmes

Author	Total pages/pages in economics section	(1) Chapter/ section	(2) Glossary	(3) Illustration	(4) TOC	(5) Page coverage
Programmes of higher education						
Almgren et al., 2017	384 / 83	✓	✓	✓	-	18
Andersson et al., 2011	384 / 96	-	✓	✓	-	16
Bengtsson, 2014	313 / 65	-	✓	✓	-	13
Eliasson & Nolervik, 2019	270 / 52	-	✓	✓	-	11
Göthberg et al., 2016	280 / 115	✓	✓	✓	✓	28
Holmstedt & Hydén, 2017	320 / 44	✓	-	✓	-	13
Rundblom & Berg, 2013b	339 / 41	-	-	✓	-	3
West, 2017	456 / 66	-	-	✓	-	28
Vocational programmes						
Almgren et al., 2018	192 / 25	-	✓	✓	-	9
Bengtsson, 2013	200 / 44	-	✓	✓	-	9
Eliasson & Nolervik, 2018	210 / 45	✓	✓	✓	-	10
Göthberg et al., 2012	154 / 55	✓	✓	✓	✓	12
Holmstedt & Hydén, 2019	168 / 34	✓	-	✓	-	5
Karlsson, 2018	174 / 9	-	✓	✓	-	10
Nilzon, Roslund & Öberg, 2011	168 / 21	✓	✓	✓	-	7
Rundblom & Berg, 2013a	244 / 44	-	-	-	-	2
West, 2018	268 / 26	-	-	✓	-	10

Note: Description of the columns: (1) texts with a chapter on interest; (2) texts with interest in the glossary; (3) illustrations related to interest; (4) texts with interest in the TOC; (5) number of pages where anything about interest appears.

4.5 Inflation

Generally, inflation is described in complex ways in textbooks used in the preparatory programmes for higher education. For instance, Almgren et al. (2017) describe inflation over 11 pages, and the term also appears when the goals of Swedish economic policy are presented. In a section called 'Stable Monetary Value', inflation is defined as follows: 'Inflation thus means that the value of money falls' (p. 304). This is a typical example of a downward escalator, moving from SG-/SD+ to SG+/SD-, where the term is being unpacked with an everyday language explanation. The complexity rises as different causes of inflation are described, such as demand-pull inflation, cost-push inflation, imported inflation and inflation caused by the central bank printing more money. The explanation of each cause of inflation has a downward escalator profile as the definitions start with the term followed by an explanation, such as 'Demand-pull inflation arises when the demand in society is greater than the supply of goods and services' (p. 304). Further, inflation related to economic cycles and to how central banks can stimulate or slow down an economy to affect inflation is described in Almgren et al. (2017), Andersson et al. (2011), Eliasson and Nolervik (2019), Göthberg et al. (2016) and West (2017). The relationship between inflation and unemployment is described in Almgren et al. (2017) and Andersson et al. (2011). Two of the analysed textbooks used in the preparatory programmes for higher education address inflation in only a few lines. Holmstedt and Hydén (2017) write, 'inflation = reduced money value', which is an example of a downward escalator definition, and Rundblom and Berg (2013b) describe inflation in four lines, writing that rising wages lead to increased costs for companies, which therefore have to raise the prices, leading to further demand for pay raise.

Six out of the nine controlled textbooks used in the vocational programmes contain something about inflation, and five out of the nine textbooks also contain text about inflation and economic cycles, often briefly. Karlsson (2018) is one such example:

A boom often leads to wages being pushed upwards when companies compete for labour. This usually leads to higher wages as all salespeople notice that people have more money. When prices rise, you have inflation. (Karlsson, 2018, p. 124)

This is understood as an example of an upward escalator, moving from SG+/SD- to SG-/SD+ as inflation is described with everyday language followed by the actual term.

Table 4. Representation of the term *inflation* in the textbooks used in the preparatory programmes for higher education and vocational programmes

Author	Total pages/pages in economics section	(1)	(2)	(3)	(4)	(5)	
		Chapter/ section	Glossary	Illustration	TOC	Page coverage	
Programmes of higher education							
Almgren et al., 2017	384 / 83	✓	✓	✓	✓	16	
Andersson et al., 2011	384 / 96	-	✓	✓	-	6	
Bengtsson, 2014	313 / 65	✓	✓	-	-	8	
Eliasson & Nolervik, 2019	270 / 52	✓	✓	✓	-	7	
Göthberg et al., 2016	280 / 115	-	✓	✓	-	6	
Holmstedt & Hydén, 2017	320 / 44	-	✓	-	-	1	
Rundblom & Berg, 2013b	339 / 41	-	✓	-	-	2	
West, 2017	456 / 66	-	-	✓	-	18	
Vocational programmes							
Almgren et al., 2018	192 / 25	-	✓	✓	-	3	
Bengtsson, 2013	200 / 44	✓	✓	-	-	2	
Eliasson & Nolervik, 2018	210 / 45	✓	✓	✓	-	3	
Göthberg et al., 2012	154 / 55	-	-	-	-	3	
Holmstedt & Hydén, 2019	168 / 34	-	-	-	-	-	
Karlsson, 2018	174 / 9	-	✓	✓	-	3	
Nilzon, Roslund & Öberg, 2011	168 / 21	✓	✓	✓	-	3	
Rundblom & Berg, 2013a	244 / 44	-	-	-	-	-	
West, 2018	268 / 26	-	-	-	-	-	

Note: Description of the columns: (1) texts with a chapter on inflation; (2) texts with inflation in the glossary; (3) illustrations related to inflation; (4) texts with inflation in the TOC; (5) number of pages where anything about inflation appears.

4.6 GDP/growth

The analysed textbooks used in the preparatory programmes for higher education cover a wide range of content linked to the terms GDP/growth, such as GDP, GDP/capita, growth, growth in relation to welfare and GDP and the Human Development Index (HDI) as different forms of measuring dimensions of welfare and development, growth and economic cycles, growth and sustainable development, the importance of consumption for growth, the importance of growth for jobs and the relations between growth and different ideologies. Subject-specific economic terms are often used together with everyday-based examples:

The value of all goods and services produced during a year is called the gross domestic product, or GDP. GDP includes what is produced and publicly reported. To avoid double counting, only finished goods are counted, not semi-finished products and raw materials. If, for example, a poultry farm sells eggs to a pastry shop, the value of the eggs and the buns cannot both be included in GDP. (Almgren et al., 2017, p. 291)

This is an example of a semantic wave starting with an upward escalator immediately followed by a downward escalator. The first sentence starts with everyday language (SG+/SD-) and ends with the scientific economic term GDP (SG-/SD+). The following part starts with the scientific economic term GDP and what to include (SG-/SD+), followed by how to avoid double counting, exemplified with a poultry farm and eggs (SG+/SD-). In the following pages (pp. 291–293), Algren et al. (2017) continue with explanations of what is not included in GDP, such as unreported legal as well as illegal business activity. Further, the *Gini coefficient is described as is the Human Development Index (HDI) and the Gender Development Index (GDI). The language in these pages is similar to the cited example, with scientific economic terms interspersed with everyday-based examples.*

GDP/growth is addressed more briefly in the textbooks used in the vocational programmes. In Almgren et al. (2018), for instance, GDP and GDP/capita appear just as terms without further explanation. This, of course, makes it impossible to identify any escalators and/or semantic waves. Göthberg et al. (2012) address GDP/growth in a more complex way than any of the other textbooks used in the vocational programmes by describing that economists and politicians use the term growth when GDP increases and that GPD stands for ‘the value of all goods and services produced in a country’ (p. 86). As the sentence starts with the scientific economic term followed by an everyday-based explanation, this is understood as an example of a downward escalator, moving from SG-/SD+ to SG+/SD-. In following pages (pp. 87–88), the pros and cons of GDP as a measure of welfare are discussed as well as things not included in GDP. The most common types of content in the textbooks used in the vocational programmes are GDP, GDP/capita and GDP and the relation between consumption and growth.

Table 5. Representation of the term *GDP/growth* in the textbooks used in the preparatory programmes for higher education and vocational programmes

Author	Total pages/pages in economics section	(1)	(2)	(3)	(4)	(5)	
		Chapter/ section	Glossary	Illustration	TOC	Page coverage	
Programmes of higher education							
Almgren et al., 2017	384 / 83	✓	✓	✓	✓	28	
Andersson et al., 2011	384 / 96	✓	✓	✓	✓	27	
Bengtsson, 2014	313 / 65	✓	✓	✓	✓	25	
Eliasson & Nolervik, 2019	270 / 52	✓	✓	✓	✓	18	
Göthberg et al., 2016	280 / 115	✓	✓	✓	✓	22	
Holmstedt & Hydén, 2017	320 / 44	✓	✓	-	-	7	
Rundblom & Berg, 2013b	339 / 41	-	✓	-	-	4	
West, 2017	456 / 66	✓	-	✓	✓	24	
Vocational programmes							
Almgren et al., 2018	192 / 25	-	-	✓	-	6	
Bengtsson, 2013	200 / 44	✓	✓	✓	-	8	
Eliasson & Nolervik, 2018	210 / 45	✓	✓	✓	-	6	
Göthberg et al., 2012	154 / 55	✓	✓	✓	-	17	
Holmstedt & Hydén, 2019	168 / 34	-	-	✓	-	1	
Karlsson, 2018	174 / 9	-	✓	✓	-	5	
Nilzon, Roslund & Öberg, 2011	168 / 21	✓	✓	-	✓	8	
Rundblom & Berg, 2013a	244 / 44	-	-	-	-	-	
West, 2018	268 / 26	-	-	-	-	3	

Note: Description of the columns: (1) texts with a chapter on GDP/growth; (2) texts with GDP/growth in the glossary; (3) illustrations related to GDP/growth; (4) texts with GDP/growth in the TOC; (5) number of pages where anything about GDP/growth appears.

4.7 Summary

When findings about the content analysed here are summarised it shows clearly that GDP/growth, interest, demand and supply and inflation are covered in all the investigated textbooks used in the preparatory programmes for higher education and that GDP/growth is given the most space, followed by interest and demand and supply (see Table 6). Almgren et al. (2017) and Andersson et al. (2011) are the textbooks with the most qualitative coverage of the investigated terms, with language shifting between everyday and specialised discourses. Göthberg et al. (2016) has several pages covering the analysed terms, though often with imprecise explanations, such as writing about conscious choice without mentioning that people also have to opt-out of something. Rundblom and Berg (2013b) is the textbook with the least coverage of the investigated terms.

It shows clearly that the analysed economic terms are covered more briefly in the textbooks used in the vocational programmes. Seven out of the nine textbooks used in the vocational programmes cover GDP/growth, eight cover interest and three cover demand and supply. Interest is given the largest space, followed by GDP/growth and demand and supply (see Table 6). Generally, the textbooks used in the vocational programmes do not reach the same levels of coverage as those used in the preparatory programmes for higher education. Holmstedt and Hyden (2019) and Rundblom and Berg (2013a) have the briefest coverage of all the analysed books.

The term 'opportunity cost' does not appear in any of analysed textbooks and 'marginal concepts' barely appears. All the analysed textbooks have a specific section related to economics/personal finance. The investigated terms occur most frequently in these sections although some also are found in other sections as well. GDP/growth is such an example.

It is possible to identify language on both a high semantic flatline and on a low semantic flatline and escalators. To identify semantic waves often several pages have to be analysed. This fact makes it relevant to describe the semantic profiles in the analysed textbooks as escalators rather than semantic waves. According to Maton (2013), shifting between scientific knowledge and everyday knowledge enables cumulative knowledge. The presence of only downward or upward escalators or a few semantic waves is not enough to create cumulative knowledge building.

Table 6. Summary of coverage of the investigated economic terms

Term	Textbooks used in the preparatory programmes for higher education		Textbooks used in the vocational programmes	
	Term (textbooks)*	Pages**	Term (textbooks)*	Pages**
Opportunity cost	- (8)	46	- (9)	32
Marginal concepts	1 (8)	1	- (9)	-
Demand and supply	8 (8)	108	3 (9)	47
Interest	8 (8)	130	8 (9)	74
Inflation	8 (8)	57	5 (9)	17
GDP/growth	8 (8)	155	7 (9)	63

Note: *Appearance of terms in number of textbooks/analysed textbook. **Number of pages covering investigated terms.

5 DISCUSSION

The purpose of this research was threefold. First, to study the prevalence of the economic terms opportunity cost, marginal concepts, demand and supply, interest, inflation and GDP/growth in textbooks. Second, to investigate whether the language regarding the chosen terms shifts between everyday and specialised discourses. Third, to compare textbooks used in the vocational programmes and in the preparatory programmes for higher education regarding the use of the terms and language shifts.

Textbook authors lay the greatest weight on GDP/growth, interest, demand and supply and inflation and pay less attention to opportunity cost and marginal concepts. This is surprising as opportunity cost and marginal concepts are considered some of the most important economic terms according to economic epistemic communities. According to Maton (2013, 2014), insufficient use of subject-specific terms can have negative impact on the construction of semantic waves, in this case meaning that the analysed textbooks do not offer optimal preconditions to develop in-depth economic knowledge through cumulative knowledge building, at least not regarding opportunity cost and marginal concepts.

As the semantic profiles in the analysed textbooks generally can be described as escalators rather than semantic waves, it is of great importance that social studies teachers have adequate economic knowledge, allowing them to link downward and upward escalators into semantic waves. Otherwise there is a risk that the learners will receive insufficient economic education. Limited content and limited economic terminology, especially in textbooks used in the vocational programmes, also mean that there is a risk that not all learners are given equal preconditions to develop economic knowledge. In addition, learners in the vocational programmes can be expected to belong to a group of students who will benefit most from having access to powerful economic knowledge in schools because they are less likely to have access to such knowledge outside of school, compared with learners from social environments where studies are a priority and who are often overrepresented in the preparatory programmes for higher education.

Naturally, there are differences regarding economic content in different courses based on guidelines in syllabi (SNAE, 2011a, 2011b). These differences are most likely perceived by textbook authors and they affect the content in textbooks. Nevertheless, this is troublesome and contradicts Young's (2008, 2009, 2014) idea of making powerful knowledge accessible to everyone. Therefore, it is pertinent to revise the syllabi for the vocational programmes (1a1, 50 hours) so that the economic content is extended. If some learners receive insufficient basic economic education, it can be a problem for democracy as some people in society may not be able to perceive and understand the economic dimensions of the situation and thereby are less prepared to make well-informed decisions. Lacking economic knowledge can of course also lead to problems in personal finances if, for instance, it is not understood that consumption based on loans and credit can become very expensive.

The limited appearance of central scientific economic terms and the limited use of scientific economic terms in the analysed textbooks may be due to several reasons. First, there are few systematic mappings of what might constitute particularly important economic knowledge. This may negatively affect textbook authors when choosing content. Attempts to map important economic knowledge have been made (e.g. by Davies & Mangan, 2007, Modig, 2020 and Siegfried & Krueger, 2010); however, further systematic mapping is needed. Second, Young's (2014) and Maton's (2013, 2014) theories about the importance of using adequate subject-specific language and shifting between everyday and specialised discourses may not be well known among teachers, textbook authors and policymakers and need to be disseminated. The importance of being able to shift between everyday and specialised discourses also highlights the importance of using adequate economic terms in education as schools and teachers have a unique opportunity to equip learners with that ability by using and linking those terms to learners' everyday experiences. Further, various interests and purposes can of course influence textbooks authors, in turn this might explain the scarce occurrence and the omission of some economic terms. Based on Young's (2008, 2009, 2014) theory of powerful knowledge it is important to consult economic experts on what should be considered important economic knowledge from a private and public perspective when designing teaching materials such as textbooks. In order to be able to discuss the prevailing economic paradigm people need to be educated regarding such knowledge. Therefore, knowledge derived from epistemic communities is important when designing textbooks. However, to obtain a more pluralistic view on what might be considered important economic knowledge it would be interesting if other groups (e.g., entrepreneurs, technology scientists, policymakers, ordinary people, etc.) also could gain influence in the design of social studies textbooks. Third, textbook authors may have gone too far in reducing the economic subject-specific content in their ambition to bring economic knowledge down to an understandable level. This may also be a case of trying to reduce a dominating neoclassic narrative. Finally, as this article introduces knowledge on economics and semantic waves only in social studies textbooks from a Swedish perspective, it is suggested that similar mapping be undertaken in other countries to obtain a more general picture of the theme.

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APPENDIX 1: REFERENCES FOR REVIEWED SOCIAL STUDIES TEXTBOOKS

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