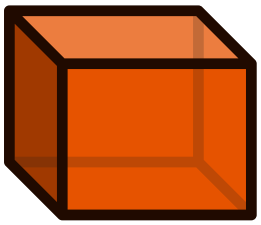
Economy Studies for Econometrics

New Ideas & Materials for Educators & Students



Economy Studies

Sam de Muijnck & Joris Tieleman

Rethinking Economics

OUR NEW ECONOMY

Amsterdam University Press

The book Economy Studies

This booklet is part of a series based on Economy Studies, a project for re-envisioning and redesigning economics courses and programs. The project emerged from the worldwide movement to modernise economics education, spurred on by the global financial crisis of 2008, the climate crisis, and the COVID-19 pandemic. It envisions a wide variety of economics graduates and specialists, equipped with a broad toolkit, enabling them to collectively understand and help tackle the issues the world faces today.

This is a practical guide for (re-)designing economics courses and programs. Based on a clear conceptual framework and ten flexible building blocks, this handbook offers refreshing ideas and practical suggestions to stimulate student engagement and critical thinking across a wide range of courses.

Key features

1 Adapting Existing Courses: Plug-and-play suggestions to improve existing economics courses with attention to institutions, history, values and practical skills.

2 Teaching materials: A guide through the rapidly growing range of innovative textbooks and other teaching materials.

3 Example Courses and Curricula: How to design pluralist, real-world economics education within the practical limits of time and resources.

What others say about Economy Studies

"A tremendous resource for both teachers and students of economics."

Prof. **Wendy Carlin** (UCL), director of the CORE Economics Education Project

"Based on a thorough analysis, the authors argue for a radical rethink of how economics is taught. Whether you agree or disagree with some of the specific suggestions, this book is definitely worth reading."

Claudio Borio, Head of Monetary and Economic Department at the BIS.

"This book is a tour de force. The mastery of the subject that the authors and their team display is astonishing. It was a source of inspiration for the development of the new program at the Vrije Universiteit of Amsterdam."

Prof. **Arjo Klamer** (EUR & VU)

Why this booklet

In this booklet, we provide suggestions, content and teaching material for how to modernise and enrich econometrics courses. In doing so we hope to assist educators in improving and adapting the courses they teach, as well as helping students make suggestions for how this could be done. It is important to note that we pose all these suggestions as potential sources of inspiration, not a checklist of all the things that necessarily should be included. After all, there is a practical limit to what can be taught within a single course.

Other booklets in this series available via www.economystudies.com:

1 Economy Studies for Students
2 Economy Studies for Program Directors and Deans
3 Economy Studies for Secondary Education
4 Economy Studies for Business Schools
5 Economy Studies for Public Administration & Law Programs
6 Economy Studies for Economics 101
7 Economy Studies for Microeconomics
8 Economy Studies for Macroeconomics
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15 Economy Studies for Finance
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19 Economy Studies for Behavioural Economics

Cover and interior design: Matterhorn Amsterdam

Publisher: Amsterdam University Press

Authors: Sam de Muijnck and Joris Tieleman, Our New Economy, Amsterdam 2021

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To see what you can do to help modernize economics education at your own university, see the Conclusion.

Summary

"I don't care who writes a nation's laws, if I can write its economics textbooks."

Paul Samuelson

1 Rethinking Economics Education

Humanity is wealthier, more connected and more technologically advanced than ever. Access to healthcare is rapidly expanding and poverty levels keep dropping in most parts of the world. At the same time, societies around the globe are facing a multitude of challenges. To name a few: climate change, biodiversity loss and resource depletion, growing inequalities and power concentrations, economic instability and soaring levels of private and public debt, ageing and migration, social polarisation and rising authoritarian nationalist populism. And, back on the table since 2020: pandemics.

Tackling such challenges requires a deep comprehension of the economy, which the current system of economics education does not sufficiently provide. Economists need a real-world understanding of how various industries work, how they are intertwined with each other, how economic power works, what roles states play and how these are embedded in our society at large. It also requires open minds which can look at issues from a variety of perspectives. A single theoretical framework cannot provide the answers to every question. A range of approaches which prioritise different methodologies, assumptions, units of analysis and outcomes, is necessary for gaining a good understanding of the economy and its issues. Economists need to be able to think critically, select the tools which are most relevant for the context and problem at hand, and understand the limitations and uncertainties of the conclusions that they draw from them. Finally, it requires an awareness and an explicit discussion of the moral dilemmas and normative trade-offs involved in economic decisions. In short, economists have a lot on their plate.

Economists also have a lot of influence, for good and for bad. Firstly, as key policy experts and advisors, economists largely run many of the most powerful public-sector organisations in the world: central banks, ministries of finance, social and economic affairs, the IMF and the World Bank. In the private sector, economists co-direct the behaviour of banks and other large companies. Secondly, the economic ideas that float around most prominently in our society exert an influence far beyond the formal advisory reports of professional economists, guiding decision-making of citizens everywhere. Economic thinking influences even those who do not become economists, as economists have a central role in the public debate and many citizens are taught basic economics in secondary or tertiary education.

The growing societal importance of economists and economic ideas has sparked a lively debate around the content and structure of economics education. A worldwide movement of students and academics calls for more pluralist, real-world focused and socially relevant programmes that would enable economics graduates to better understand and tackle the economic issues that the world faces today. This movement has accelerated over the last decade, spurred on by the global financial crisis of 2008, the climate crisis and the COVID-19 pandemic.

Under names such as Rethinking Economics, Netzwerk für Plurale Ökonomik, Institute for New Economic Thinking (INET), International Student Initiative for Pluralist Economics (ISIPE), International Confederation of Associations for Pluralism in Economics (ICAPE), Diversifying and Decolonising Economics, Economists for Future, Reteaching Economics, and Oikos International, these groups come together for dissent, discussion, self-education, action, campaigning, disseminating ideas and engaging with wider audiences.

Research by these groups indicates that many current programmes are not sufficient to prepare students for their future roles in society. They are often organised around the notion of 'thinking like an economist': training students to think exclusively from the neoclassical perspective and having skills in econometrics, while neglecting other valuable theoretical approaches and research methods. Furthermore, these analytical tools are taught in an overly abstract way and are presented as being value-free.

These groups and others have also produced a growing amount of innovative teaching material, beyond how economics programmes are traditionally structured. From online educational resources such as the open access CORE project and the bottom-up e-learning platform Exploring Economics, to multiple new pluralist and real-world focused textbooks. Many departments have introduced a wealth of new courses, or even started entirely new programmes.

2 This Book: Purpose and Overview

What has been missing so far in this field is an integral approach for constructing economics curricula and courses. This book aims to fill that gap. We bundle the ideas and materials of renewal and reform into a coherent multi-level vision for economics education: its overarching structure, its goals and its principles. We also provide the concrete building blocks for this in terms of academic content, including detailed overviews of teaching materials and practical suggestions. Finally, we translate these to the level of actual programmes and courses, providing a wide range of practical tools for implementation.

This entire book carries a CC-BY Creative Commons licence, which means that any part of the book may be freely copied, redistributed, remixed, transformed or built upon, without restrictions. As such, our proposal for a new integral approach to economics education can also be adopted and used partially, rather than being accepted as a whole. Each idea and suggestion can be judged and incorporated independently. You can totally disagree with principle 1 yet support principle 3. Or you might find little value in building block 5 and yet fall in love with building block 9. That's the idea: it's modular. Thus, the book as a whole can be used as a source of inspiration and overview of options for improving and renewing economics education.

Part I: Foundations

The first part of the book, Foundations, sets out our philosophy and the three guiding principles that should underpin any economist's education. In contrast to the currently common approach of teaching students to 'think like an economist', the Economy Studies approach is this: We envision an education where economics is not centred on a specific method of analysis or thought, but rather centred on a study matter, the economy. Economies can broadly be described as open systems of resource extraction, production, distribution, consumption and waste disposal through which societies provision themselves to sustain life and enhance its quality.

Based on this philosophy, we formulate three principles: Pluralism, Real-World and Values.

First, a discipline centred around a single subject matter requires a plurality of theoretical frameworks: one

single set of basic assumptions is not enough to understand such a multifaceted subject matter. Here it is important that students learn which ideas are compatible with each other and which are in conflict with each other. Some of these theories fall within the current economic mainstream, others exist on its fringes, and yet others are currently at home in other disciplines. It also implies a plurality of research methods, from basic statistics and regression analysis to interviews, network analysis and survey analysis. Such pluralism means that there is no single dominant framework, which might be more difficult for those receiving economic advice, but is ultimately beneficial for the quality of analysis and the resulting decisions.

Second, the notion of a programme centred on the subject matter of the economy implies a continuous and conscious orientation towards the economy as it exists in the real world. Students benefit from studying practical questions and gaining concrete knowledge, not just abstract analytical tools. For instance: How is the German car industry structured? What hurdles does the global energy transition face? What happens at a central bank? The Real-World principle ranges from studies of economic sectors and key institutions in the local or (inter-)national economy, to the histories of economies and case studies of specific economic challenges.

Third, we draw attention to the wide variety of normative principles and visions that can guide economic decisions and action, and which are often subtly embedded in economic theories. There is little sense in trying to 'solve economics problems' without considering what things exactly are worthwhile or problematic, and what values are at stake. Profits, sustainability, power, equal chances, equal outcomes, job creation, labour conditions, ownership, accountability, GDP growth, wellbeing – what should we focus on?

Economics has historically been, and is still, dominated by upper- and middle-class white men based in the Global North. This has consequences for each of the three principles. In terms of Real-World, it is important to pay attention to the lived economic realities of working-class citizens, women, minorities, and those living in the Global South. For Pluralism, we need to incorporate often ignored but valuable ideas and contributions of lower class, female, and non-western scholars. For Values, it is key to realise that people from different backgrounds have different priorities and values, and work to ensure that these are reflected in the questions we focus on and the theories and methods we use. In sum, we need to diversify and decolonise economics education.

The Foundations part ends with a chapter on didactics. Improving economics education is not simply a matter of changing what is taught, but also how it is taught. Various surveys among employers of economists show that more attention for communication and collaboration skills is needed. There are also worrying indications that economics classes often fail to facilitate open, critical, but also respectful, discussions. Finally, to make economics education more lively, interesting for students and connected to the real world, a greater variety of teaching and examination methods could be used. On all these fronts we provide practical suggestions.

The second part of the book is devoted to the Building Blocks. Where the Foundations part discusses the purpose and principles of economics education in general, the building blocks are more applied: ten thematic areas of knowledge and skills, which form the meat and bones of the Economy Studies course design method. Each of the ten building blocks covers an area of knowledge and set of skills that we see as essential for the education of future economists.

Part II: Building Blocks

The second part of the book is devoted to the *Building Blocks*. Where the *Foundations* part discusses the purpose and principles of economics education in general, the building blocks are more applied: ten thematic areas of

knowledge and skills, which form the meat and bones of the Economy Studies course design method. Each of the ten building blocks covers an area of knowledge and set of skills that we see as essential for the education of future economists.

We start out with two building blocks that focus on acquiring basic economic knowledge, one conceptual and one focused on the real world. Introducing the Economy is about getting a feeling for economic matters, discussing what the economy is in the first place, why it is relevant, how it is related to other aspects of the social and natural world, and what societal roles economists have. Know Your Own Economy, on the other hand, has a more concrete focus as it is about knowledge of the actual (national and local) economy and its structures, institutions, and sectors.

The third and fourth building blocks deal with history: History of the Economy and History of Economic Thought & Methods. The fifth and sixth building blocks are more conceptually oriented, dealing with how economies can and have been organised, at micro and meso levels – Economic Organisations & Mechanisms – and at the macro level – Political-Economic Systems.

The seventh and eighth building blocks provide a broad and diverse analytic toolkit: Research Methods & Philosophy of Science and Economic Theories. These two, especially the latter, are relatively large. In most programmes, they will require more space than the other building blocks. Finally, building blocks nine and ten deal with practically contributing as an economist: Problems & Proposals is about analysing concrete economic challenges and formulating or evaluating proposed policies and actions, and Economics for a Better World asks how normative principles and visions can guide action to address the major challenges of our times, and helps students to be reflective of their own role as an economist

These building blocks can be used as templates to create stand-alone courses or modules, or they can be combined in courses. They can be re-ordered, combined or integrated in many ways to suit the specific needs of each programme. For instance, Building Block 3: Economic History could be taught as a stand-alone subject, or integrated with the fourth building block into a course History of Economic Thought and Reality, or integrated as a minor component in an existing Labour Economics course. In our ideal world, these building blocks would be combined to form a wide range of economics programmes. Different contexts and challenges require differently trained economists.

Part III: Tools

The third part of the book, titled Tools, provides material that is directly actionable. It starts with Pragmatic Pluralism, a suggested format (including references) for teaching theory in a pluralist manner without drowning students in the enormous diversity of ideas out there. We list thirteen core economic topics and set out for each topic the two main opposing perspectives, a key complementary perspective and additional insights coming from other approaches.

Often there is no space in programmes for completely new courses but there is room for adjustment in some existing courses. In Adapting Existing Courses, we offer ready-to-use sets of suggestions and material to do so, for courses like Micro, Macro, Public Economics and Finance. The Curriculum Review Tool offers a clear starting point for applying our building blocks to an existing programme. This tool helps identify possible blind spots of a programme and suggests ways to strengthen it. The Example Courses that follow illustrate how the building blocks can be used to create completely new courses. The next chapter maps out several complete Example Curricula, demonstrating how the building blocks might be combined to form a complete bachelor or master programme in Economics.

While this book is primarily oriented towards full economics programmes in academic education, in the chapter Courses for Non-Economists we suggest limited packages of core economic ideas that may be useful for business schools, secondary school economics programmes, in an academic minor or for self-study. Finally, Learning Objectives offers tools for designing the learning objectives behind economics courses, starting not from the question 'what does the teacher know best?' but from 'what do the students need to know, to be prepared for their future societal roles?'.

Part IV: Online Materials

Economy Studies is more than a book. On the website, we offer an extended version of the Pragmatic Pluralism chapter, a broader range of Adapting Existing Courses topics, additional Example Courses and Example Curricula. We also provide background material on each of the Economic Approaches described in this book, as well as neighbouring sub-disciplines such as economic sociology and economic geography. In addition, we provide a more complete overview and discussion of research methods, coordination and allocation mechanisms, and the history of economic thought and methods. Finally, we offer much more extensive lists of teaching materials for each of the building blocks.

Online, we also work together with the INET Education Program, at the Institute for New Economic Thinking. This platform will host free educational resources online, accessible to students, teachers and the general public. This includes video lecture series, syllabi, teaching modules, lecture notes, readings, sample quizzes and exams. The platform will also serve as a center to build up an online community of teachers and learners, working together to improve the way economics is taught and learned. Each of the chapters in this book has a discussion page on that platform.

What kind of graduates would a program based on these ideas and materials produce? It is important to acknowledge that they would not have all the skills that current-day graduates have. Less mathematical sophistication, less expertise in econometric analysis, less knowledge of neoclassical theory. In exchange for these losses, students gain: A deeper understanding and more concrete knowledge of the economy in which they live and will work. An awareness and understanding of the various ways in which economic processes can be organised at the micro, meso and macro levels. Practical skills for investigating and tackling questions of economic policy: understanding the context, choosing the right tools, from a variety of theoretical and methodological approaches. And the ability to argue morally as well as analytically, and to clearly distinguish the two.

With this *creative commons* work, we hope to inspire economists and all students of the economy to rethink how we learn economics. The economic challenges we face as societies are enormous, so we desperately need well-prepared economic experts and a citizenry able to participate in economic discussions. Economics education has the vital task of preparing these people as best as possible.

This booklet provides a preview of the *Economy Studies* project. The full book also includes the complete set of building blocks, additional teaching materials, a curriculum review tool, example courses and curricula and suggestions for learning objectives. If you are interested to learn more, visit our website and buy or download the whole book, open access, or contact us.
economy.st

Adapting Econometrics Courses

General Approach to Adapting Existing Courses

Change often happens incrementally and slowly. In the economics textbook market, for example, there is an unwritten rule that new textbooks cannot differ more than roughly 15% from the standard textbook in order to be 'acceptable' (Colander, 2003).

While our book clearly breaks this rule and proposes more far-reaching and fundamental changes in most chapters, in this chapter we focus instead on how existing courses could be adjusted incrementally. By doing so, we hope to assist educators in improving and adapting the courses they teach without needing to rip them up and start again, as well as helping students make suggestions for how this could be done.

First, we set out the typical contents of current public economics courses. Second, we provide our suggested additions and changes. It is important to note that we pose all these suggestions as potential sources of inspiration, not a checklist of all the things that necessarily should be included. After all, there is a practical limit to what can be taught within a single course.

Typical contents of current courses

Large parts of economics programs are currently devoted to econometrics, mathematics and statistics. More specifically, students are taught calculus, algebra, optimization and, most important of all, regression analysis. In this way, students learn how to work with mathematical models and test them with the help of existing quantitative datasets.

Frequently used textbooks::

- Introduction to Econometrics by James H. Stock and Mark W. Watson
- Introductory Econometrics: A Modern Approach by Jeffrey Wooldridge
- Econometric Analysis by William Greene
- A Guide to Modern Econometrics by Marno Verbeek
- Using Econometrics by A. H. Studenmund
- Basic Econometrics by Damodar N. Gujarati
- Introduction to Econometrics by Christopher Dougherty
- An Introduction to Econometrics: A Self-Contained Approach by Frank Westhoff

Suggested additions and changes

Practical skills and real-world knowledge

For didactical reasons, it can be helpful to (first) work with made-up data, so that students can learn all the technical aspects step by step. In their future career, students will, however, have to work with real data and be able to draw substantive, and not only technical, conclusions. For this reason, we advise to let students work as much as possible with real data and substantive questions, so that they learn how to apply technical skills and knowledge.

This brings us to a larger point that the focus of methods courses should not be on (advanced and fancy) techniques, but on those skills and knowledge that are needed in practice. The vast majority of students will become professional economists tasked with practical, rather than academic, issues and problems. This is not to say that they do not need to learn how to perform methods technically correct, they definitely do. But it does mean that sophisticated techniques are often unnecessary and potentially even harmful as they are more likely to be applied or interpreted wrongly. Rather than spending teaching time on sophisticated techniques, we thus advise to spend more time on practically applying methods and carefully interpreting the substantive implications of results. After learning about the technicalities of a method, students can be given assignments and projects in which they need to apply the method to a real world issue. Some courses already do this. It is important to note here that the goal in such cases is to gain insight in how to tackle a practical problem and not to test a theoretical model, although theories of course can be helpful.

For more detail, see Building Block 2: Know Your Own Economy and Building Block 9: Problems & Proposals.

A range of analytical tools and approaches

Methods courses in economics could be enriched by teaching about philosophy of science, data collection and other data analysis methods, such as network analysis.

First, philosophy of science. To have a good understanding of what these methodological choices entail, a good basis in the philosophy of science is necessary. This is not specific to economics, but applies to all scientific disciplines. The specific knowledge about philosophy of science that should be taught is, however, specific to economics as its subject matter and issues have their own characteristics. Teaching about philosophy of science does not need to be (overly) abstract and can productively be integrated with concrete applications of methods, thereby making it clear to students how these matters are relevant in practice.

Second, data collection. In order to be able to apply a data analysis method, one needs data and how this data is collected is crucial to how the results should be interpreted. For this reason, it is critical that methods courses devote time to discussing how data is collected and teaching students data collection methods, such as survey research and experiments. By gaining hands-on experience with such data gathering methods, students will not only learn how to apply them in their later careers but also be better at critically assessing existing datasets and applications by others.

Third, other data analysis methods. While regression analysis is a highly important data analysis method, it is not the only relevant one. For this reason, we encourage teachers to also teach other data analysis methods, such as network analysis. The importance of such newer methods is increasingly clear, with examples such as the financial crisis of 2008 and its build-up with massive international financial flows, or the covid-19 crisis of 2020 with the global spread of the virus.

For more detail, see Building Block 7: Research Methods & Philosophy of Science.

Teaching Materials

- Economic Methodology: Understanding economics as a science by Marcel Boumans and John B. Davis, from 2010. A sharp and accessible introduction into economic methodology and philosophy of science with explanations of different views on science and key debates on how economics should be practiced.
- Social Research Methods by Alan Bryman, most recent edition from 2015. A prominent textbook that introduces a wide variety of quantitative and qualitative research methods, such as interviews, structured and participant observation, content analysis, and survey research.

- The SAGE Handbook of Applied Social Research Methods by Leonard Bickman and Debra J. Rog, most recent edition from 2009. A leading textbook on applied research with attention to choosing the right method for the question at hand, practical considerations, and how to make informed methodological decisions for a variety of quantitative and qualitative methods.
- Handbook of Research Methods and Applications in Heterodox Economics by Frederic Lee and Bruce Cronin, from 2016. An instructive collection of essays with explanations, reflections on and applications of innovative research methods that deviate from the standard econometric approach usually taught in economics programmes, such as survey research, network analysis, experiments, ethnography, and agent-based computational modelling.
- Qualitative Research Practice A Guide for Social Science Students and Researchers by Jane Ritchie, Jane Lewis, Carol McNaughton Nicholls, and Rachel Ormston, most recent edition from 2013. A useful introduction into how to do rigorous and reflective quantitative research with chapters on interviews, focus groups, observation, research design, ethical considerations, and data analysis.
- Mostly harmless econometrics: An empiricist's companion by Joshua D. Angrist and Jörn-Steffen Pischke, from 2008. This textbook aims to introduce students to econometrics in a more practical way and with more attention to causality.
- Handbook of Research Methods and Applications in Experimental Economics by Arthur Schram and Aljaž Ule, from 2019. This informative collection of essays discusses the various aspects of experimental economics, from field experiments and neuroeconomics to methodological procedures and its relation to theory and policy.
- Networks by Mark Newman, from 2010. This introductory textbook helps students understand how networks can be studied and modelled, whether one studies a social, biological or technological network.
- Social Network Analysis by John Scott, from 1991. This textbook introduces students to social network analysis, its history, concepts and methodology.
- International handbook of survey methodology by Edith, D. de Leeuw, Joop J. Hox, & Don A. Dillman, from 2008. This useful collection of essays introduces students to the various aspects of survey research, from survey design and implementation to the data analysis and ethical considerations.
- The Handbook of Pluralist Economics Education by Jack Reardon, from 2009, chapter 10. This useful book on how to diversify economics programs, includes a chapter full of ideas and suggestions for courses on mathematics.

Institutions and different ways of organising the economy

Some parts of the economy are more often, or easily, captured in statistics than others. Key examples of this are paid versus unpaid labour and the formal versus informal sector. These biases in data towards some parts of the economy have important implications for how different societal groups are represented. Women, for example, do a disproportionate amount of unpaid labour. Not capturing that part of the economy leads to underestimating and valuing women's contributions to the economy. Furthermore, it can lead to missing important societal issues and providing fitting policy advice that takes them into account. When it comes to labour market policies, for example, it is important to include unpaid labour in the analysis, as ignoring it will lead to overlooking issues related to the double burden, or second shift, that women disproportionately perform. Similar biases can be observed surrounding the informal sector, often leading to an underrepresentation of workers in the Global South.

As a general rule, it is important to be aware of how the data is collected and not to (apriori) assume this is a 'representative' sample of the people and the economy. Often data contains biases towards some groups and parts of the economy, and this can hide and exacerbate existing inequalities. A good researcher is not only technically capable to work with data, but is also aware of its limitations which inform the substantive

conclusions that can be drawn from them.

Teaching Materials

- Invisible Women: Data Bias in a World Designed for Men by Caroline Criado-Perez, from 2019. This influential bestseller draws attention to the ways in which data are biased in terms of gender, with chapters devoted to statistics on work, health, fashion, and people's public and daily lives.
- Data Feminism by Catherine D'Ignazio and Lauren F. Klein, from 2020. This book argues data are mainly constructed by and also often biased in favour of white men and argues a intersectional feminist approach can help our understanding of the world and improve data science.
- The perils of perpetuating postcolonial biases in research by Munyaradzi Makoni, from 2018. This article briefly discusses Western biases in research and provides short suggestions on how to tackle them.

Societal relevance and normative aspects

The goal of many research methods is to provide knowledge about the world, which is as objective as possible. Often, methodological decisions do, however, have ethical implications. For this reason, it is important that students learn to think about the normative aspects of conducting research, so that they can make carefully considered decisions about it in their future careers.

For more detail, see Building Block 1: Introducing the Economy and Building Block 10: Economics for a Better World.

Teaching Materials

- The Oxford Handbook of Professional Economic Ethics by George F. DeMartino and Deirdre McCloskey, from 2016, chapters 18 and 19. This insightful collection of essays explores the different aspects of ethics in economics, with two chapters devoted to statistical significance, and honesty and integrity in econometrics.
- The Oxford Handbook of Philosophy of Economics by Harold Kincaid and Don Ross, from 2009. This collection of essays provides an overview of the literature on the philosophy of economics, divided up in sections on microeconomics, macroeconomics and welfare, with chapters on experiments, computational economics, causality, data mining and facts and values in modern economics.
- Philosophy of Economics by Uskali Mäki, from 2012. This collection of essays introduces students to the various ideas and debates surrounding the philosophical foundation of economics and its methods, with chapters on econometrics, game theory, experiments, economic forecasting, and mathematics.

History

When teaching students various research methods, it can be enriching to briefly discuss their origins and development. Teaching students about the context and debates surrounding research methods can get students more engaged with the material as it involves a different kind of knowledge, which is more substantive than technical. Teaching about the history of methods can also be combined or integrated with teaching students about philosophy of science, as the two developed in interaction with each other.

For more detail, see Building Block 3: Economic History, Building Block 4: History of Economic Thought & Methods and Building Block 7: Research Methods & Philosophy of Science.

Teaching Materials

- Economic Methodology: A Historical Introduction by Harro Maas, from 2014. A well-written and useful book on the history of economic methodology from debates about deduction and induction, statistics,

modelling, and experiments in economics.

- Economic Methodology: Understanding economics as a science by Marcel Boumans and John B. Davis, from 2010. A sharp and accessible introduction into economic methodology and philosophy of science with explanations of different views on science and key debates on how economics should be practiced.

What to take out

To create space for the above suggested additions, we advise to focus more on the core statistical techniques and methods and less on sophisticated mathematical and statistical skills, as surveys among employers of economists indicate that professional economists rarely need them. While in elective courses it can be valuable to focus on sophisticated econometric techniques, in compulsory methods courses it is more useful to focus on mastering applying and communicating relatively basic statistical techniques.

Building Blocks: Overview

The meat and bones of the Economy Studies course design method are the ten building blocks. Each of these building blocks covers an area of knowledge or a skill that we see as essential for the education of future economists. They can be used as templates to create courses, of generally six to ten weeks each. One can also pick and choose elements of the different building blocks to combine them into a broader course, or split up a building block into several courses.

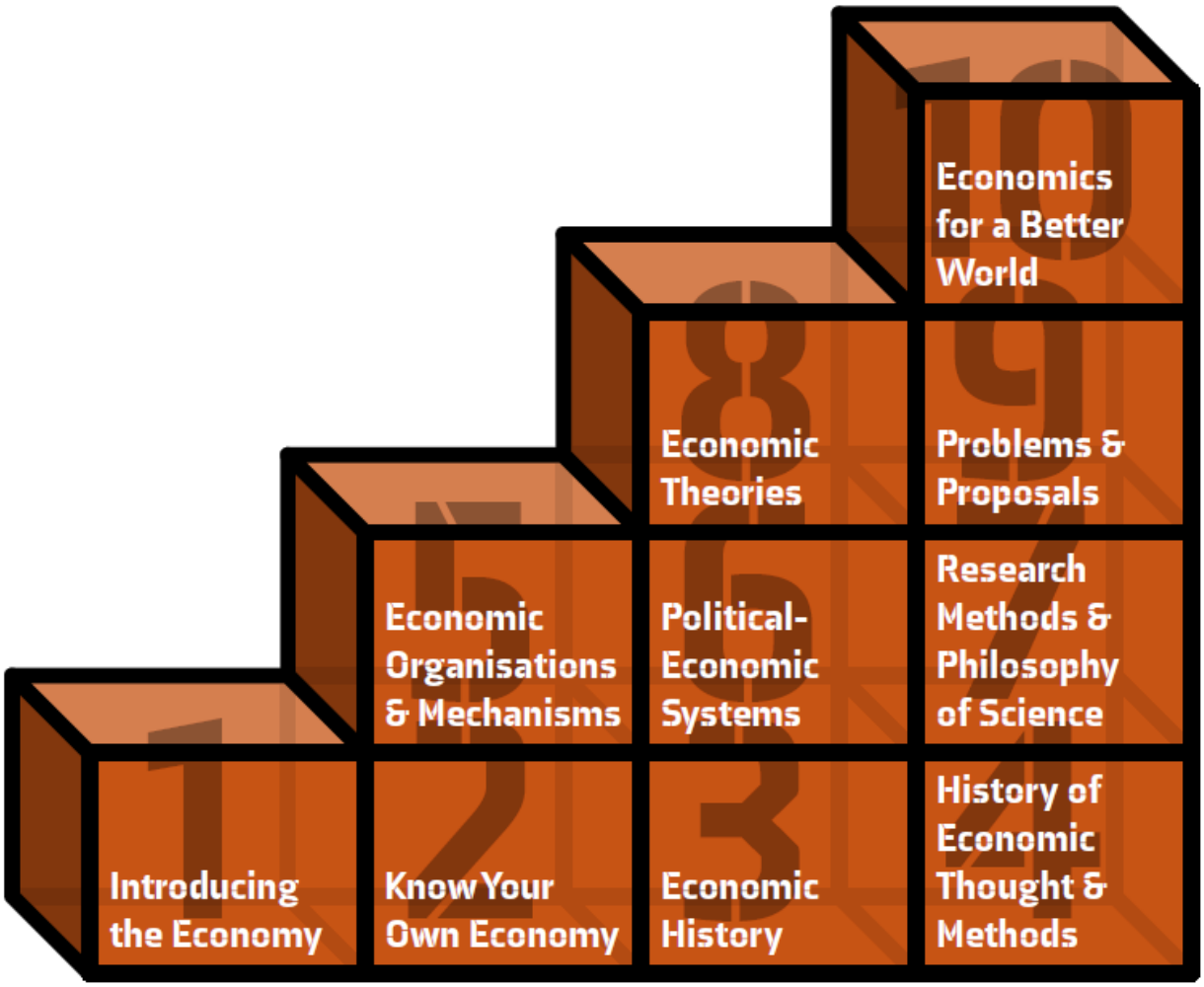


Figure 1: The ten building blocks that form the core of this book. The order of the numbers is not necessarily the order in which they should be taught. Their relative size varies, with building blocks 7 and 8 generally taking up much more space than the others.

The first two building blocks focus on helping students to develop a feeling for economic matters and teaching them basic conceptual and real-world economic knowledge. *Building Block 1: Introducing the Economy* discusses the definition and relevance of 'the economy' and how it is related to other aspects of the social and physical world. *Building Block 2: Know Your Own Economy*, explores actual national and local economies and their structures, institutions and sectors.

With this basic knowledge in hand, we explore the history of economic thought and of the real-world economy. *Building Block 3: Economic History* explores the fascinating and diverse history of economic events and developments. *Building Block 4: History of Economic Thought & Methods*, in contrast, is about the remarkable

and complex history of ideas about the economy. Together, these chapters provide a crucial foundation for students' further education.

Besides knowing basic economic concepts, facts and history, it is key that economics students learn how economies can and have been organised, at micro-, meso- and macro-levels. *Building Block 5: Economic Organisations & Mechanisms* investigates the different forms of economic interaction and organisation that operate at each level and together make up an economy. *Building Block 6: Political-Economic Systems* reviews the complex structures, institutions and power relations that form the overarching structure of an economy.

Another core element of a good economics education is a broad and diverse analytic toolkit, filled with relevant methods and theories. *Building Block 7: Research Methods & Philosophy of Science* is about both quantitative and qualitative data collection and analysis methods. In *Building Block 8: Economic Theories* we propose a 'pragmatic pluralist' approach to teaching theories by focusing on only the most important insights for every topic. These two building blocks will likely take more space in most programmes than the others, as the centre of gravity of an academic education lies in methods and theories.

The last two building blocks are largely concerned with the productive application of economic ideas in the real world. Economics education should be preparing the economic experts of tomorrow for their future roles in society. *Building Block 9: Problems & Proposals* deals with the practical skills necessary for the work of almost all economists: analysing real-world problems and working on proposals to address them, whether in a company, government agency, think tank or academic department. *Building Block 10: Economics for a Better World* deals with the values involved in decision making, asking what normative principles and visions can guide actions to address the major challenges of our times.

Building Block 4: History of Economic Thought & Methods

The history of ideas about the economy, from theories to methods, from mainstream and heterodox economics to other disciplines studying the economy.

What: This building block lays out the history of ideas about the economy. This includes the history of economics as a discipline, both mainstream and heterodox, as well as how other disciplines have analysed the economy over time. It also covers the different methods used throughout the history of the discipline. Since intellectual developments never take place in a vacuum, we suggest coupling this history of ideas with the historical contexts in which they evolved as described in Building Block 3: Economic History.

Why: History of thought about the economy is a crucial element in the training of future economists, for two reasons. First, it helps to structure and understand current ideas. It enables students to organise and group the various insights they gain, by giving them an overview of their shared roots. This helps students to develop a more direct or personal relationship to economic ideas and theories, as well as prominent (economic) thinkers. Second, it shows that the current paradigm is not the only way to think about the economy and that ideas about the economy change over time. This encourages critical thinking and provides students with fresh insights from a broad set of ideas, old and new.

Contrast with current programmes: Generally, economic programmes today hardly include any history of economic thought, and where they do, we propose a broader history of economic thought than is usually taught. The scope we suggest is the history of ideas around the economy, rather than the history of how today's mainstream academic discipline (economics) came to be. That includes ideas from both orthodox and heterodox economics, as well as from other social science sub-disciplines such as economic sociology, economic anthropology and economic geography.

Sections:

"We cannot help living in history. We can only fail to be aware of it."

Robert Heilbroner (1960, p. 209)

Throughout most of his study programme, one of the authors of this book experienced economic theory largely as an unstructured cloud of individual models, papers, names and methods. He perfectly well understood each of these on its own, and was well aware that they all dealt with similar types of subject matter. But he found it difficult to see how it all connected to each other.

It was only when he followed a (relatively short) online course in history of economic thought, that this amorphous mass of ideas and techniques began to take a defined shape. Central principles emerged. Ideas began to group themselves. As the fog lifted, a clear structure became visible: all those unconnected models and names turned out to be the many branches of a few large trees, connected at the base in their common roots.

In our view, this is the main purpose of teaching history of economic thought: to give students an overview of the larger structure, a coat rack upon which to hang the ideas presented throughout the programme. It is also an excellent opportunity to include critical thinking, as different perspectives can be compared and contrasted.

The purpose of a course on economic history is not to teach 'forgotten theories'. If they were unjustly forgotten, we suggest teaching them in theory and topic courses based on their contemporary value, not as historical relics. Nor is it to show how history inexorably leads up to the current set of mainstream ideas, as the best incarnation of economic thinking to date.

If anything, we propose a history of economic thought that shows how ideas clash, how schools of thought compete and how the winner is not always the most useful or insightful one. Politics, power, personalities and pure luck play a large role in this, as any good historian of economic thought will make abundantly clear.

We thus simply propose to expose students to this diverse and complex history, rather than trying to present some simple linear story of progress which leaves out many crucial and fascinating parts of the history. In this way, a history of economic thought can help students to understand what lies behind different economic ideas and debates, enabling them to make their own judgments as economists.

Such a genealogy of ideas is useful for all students, a structure in which they can house the various individual tools gained throughout the programme. But there is one group for whom it is especially valuable: those going into research roles themselves. An economist who only reads current publications and is ignorant of the economic ideas developed before them, is awkwardly at risk to spend enormous amounts of time and energy to reinvent the wheel. In addition, they are far more likely to lack crucial critical thinking skills. Understanding the ideas and their contexts will on the other hand give students a broader perspective of economic ideas and allow them to see it in a more holistic manner. This is crucial in the making of future economists, where they are better equipped to make judgement of current economic ideas and debates. A financial employer of UK economists argued economics programmes should start with the history of economic thought as the great economists of the past "have a large amount to tell us about how economies are run" (Yurko, 2018, p. 11).

For conceptual convenience, we divide the historical material into three different sections in this chapter. We start with the discipline of economics. The next section highlights several valuable ways of studying the economy, which currently have a home in other social disciplines. The third section deals with the history of methods. However, we do not necessarily advocate using these categories to organise a course. They are simply heuristic devices. In the last section of the building block, we do discuss various ways to structure courses.

1 The Discipline of Economics

When teaching students about the history of the discipline of economics, it is important to expose students to the diversity by which it is characterised. We will emphasise two different expressions of diversity here: diversity in terms of people and diversity in terms of ideas.

Firstly, it is important to recognise the diversity in terms of people in the history of economic thought. Since most societies were, and still are, dominated by white males, it is perhaps no surprise that the same applies to economics. Therefore, it is important to ensure that the many relevant contributions of female and non-white thinkers are not ignored. In terms of including schools of thought, for this reason it seems particularly important to include approaches such as feminist and structuralist economics. But the point goes beyond this. There have been many important contributions from female and non-white thinkers in almost every approach. Thus, we need to actively include a larger diversity of thinkers into curricula, and go beyond the old, limited, set of white male economists.

This already starts at the roots of the discipline: do we teach Adam Smith (1776) as the founder of the discipline, or Ibn Khaldun (1377), who outlined early theories of division of labour, taxes, scarcity, economic growth, and the origins and causes of poverty? Subsequently we find that histories are currently often presented as exclusively male. This is not quite accurate. Ursula Webb Hicks and Vera Smith Lutz, for example, made highly influential contributions to neoclassical economics throughout the twentieth century, in particular with regards to the role of banking in economic development (Brillant, 2018). There are also important more recent thinkers, male and female, from the Global North and Global South, such as Jayati Ghosh and Thandika Mkandawire, who are critical of the neoclassical approach to economic development, international economics and macroeconomic policy. It is imperative that we include such examples in the story of economic thinking that we tell students.

Besides discovering the diversity of voices, students should become familiar with the diversity of economic theory. We suggest not to focus exclusively on one school of thought or the mainstream of the discipline, but rather to showcase debates between different points of view and include discussions of dissent thinkers as well as the dominant paradigms at points in time. As such, it does not suffice to tell the typical story, starting from the classical political economists, moving to the birth of neoclassical economics, the Keynesian revolution and finally to the formation of the modern discipline after the second world war. While each of these episodes are important in the history of the discipline, this story leaves out many crucial elements.

Students would, for example, miss the fact that the historical school, in particular its German branch, was highly influential during the 19th century. Not only in terms of theoretical and empirical work, but also in terms of influencing actual policies of countries; by placing the state at the centre of its analysis. This strand of thought, in turn, was crucial for the emergence of institutional economics in the United States. This approach also significantly contributed to the theoretical, empirical and policy work that economists engage in. These are just two examples. It would also ignore the long history of Marxian and Austrian economic thought, and more recent history of structuralist, ecological, behavioural, evolutionary, feminist and complexity economics.

A course cannot practically cover every approach in detail; rather, the goal should be to make clear to students that there exist many different and sometimes conflicting ways of thinking about the economy. It is crucial to explicitly discuss these debates and intellectual conflicts that have shaped the history of the discipline. This helps students get a sharp understanding of how approaches differ from each other, place theoretical ideas into perspective and think independently.

One way to do this would be to examine a limited number of intellectual conflicts in a bit more detail. This can help students understand how economic debates work, from the construction of arguments to the importance of institutional power. For example, one could discuss the so-called Cambridge Capital Controversy (Cohen & Harcourt, 2003). This was a debate in the 1950's and 1960's between the post-Keynesian economists such as Nicholas Kaldor, Joan Robinson and Piero Sraffa at the University of Cambridge (UK) and the neoclassical economists such as Paul Samuelson, Robert Solow and Franco Modigliani at MIT (US Cambridge, Massachusetts) on whether it makes sense to define capital, as an input of production processes, by its monetary price. Though technical, the debate had far-reaching consequences. For one, the post-Keynesian economists argued that the neoclassical mathematical models of economic growth were internally inconsistent. Although this was admitted to indeed be the case by leading neoclassical economists such as Paul Samuelson, those models did remain in use as they defended them based on their practical usefulness.

Descriptions of such historical skirmishes provide students a view behind the curtain of the discipline, showing how even the most widespread ideas can be fruitfully questioned. To be sure, the point here is not to choose sides when discussing these debates. Students should be given a fair presentation of the different sides of the debates and they should make up their own mind as to which arguments they find more convincing. Learning how to make these kinds of judgments is a key skill economists need to learn that they will require for their future work, so we should help and trigger students to do so, rather than just trying to convince them of one point of view.

2 Interdisciplinary Economics

Economists are not the only ones who have thought about the economy. Many valuable insights into how economic processes work have been developed by other social scientists. If we would solely focus on the ideas of economists, we would thus miss out on important insights. Therefore, it is key that courses on the history of economic thought also include ideas on the economy developed in other disciplines.

There are a number of fields that are of particular importance here: economic sociology, economic geography, economic history, economic anthropology and political economy. These are all sub-disciplines that (typically) exist outside the field of economics but are nevertheless organised around studying the economy. As such, they form important traditions and fields in the history of economic thought and should be taught as such.

One way to include these neighbouring disciplines is again by examining a single concept from different perspectives. For example, the meaning of money and value (creation) is one of the economic discipline's main concepts but perceived very differently in the various other fields that study it. Disciplines such as anthropology and sociology, for example, contributed a lot to our understanding of money and value, paying particular attention to social networks, culture and power relations (Carruthers & Ariovich, 2010; Graeber, 2005; Hart, 2005).

Another concept to explore from the perspective of different disciplines is the market. For instance, economic sociologists using a cultural approach have found that market devices, which refer to cognitive tools,

technologies and rules of thumb, fundamentally alter economic outcomes, such as prices, rather than only facilitating economic life to be more efficient (MacKenzie et al., 2007). By taking a different approach to the economy, new insights are generated.

A key part of the literature on these market devices focuses on the ideas and mathematical models of economists, which turn out to be crucial market devices that shape economic processes. A good example is how the Black-Scholes-Merton model shaped how derivatives traders priced options (MacKenzie, 2008; MacKenzie & Millo, 2003). While in the beginning the model was fairly weak at empirically describing or predicting how option markets behaved, slowly more and more traders began to use the model. In doing so, it created its own reality as it strongly began to structure option markets and as a result became fairly good at predicting market behaviour for a while. And as such, the market device performed, rather than simply described, economic life. Thus, this literature also illustrates the performativity of economics: the study of economics does not simply (try to) reflect the world, but influences and performs upon the world it studies through its methodology.

If the history of economic thought is confined to the ideas of economists, students would not experience these alternative perspectives nor grasp as easily the performativity of economics. Therefore, we advise to include interdisciplinary insights into how economies work in courses on the history of economic thought.

3 Methods

Finally, methods are a crucial aspect of the history of human beings and their understandings of economies. Economic thought is strongly shaped by the methodological tools used to study the economy and, as such, methods are a key aspect of teaching history of economic thought.

Just as with the history of theories, the history of methods is both diverse and complex. Therefore, again, instead of focussing on the technical details, students should acquire a rough understanding of how different methodological approaches developed, evolved over time and in particular conflicted. Exposing students to these debates helps them to think critically about methodological choices made in literature as well as their own.

Students should learn about how the different methods evolved over time and shaped economic thought as a result. A key part of this history is how statistics slowly developed as the economists' method of choice during the 19th and early 20th century. Throughout this period, many different forms of statistical analysis developed and competed with each other as well as other methods, such as interviews and qualitative historical analysis. After the Second World War in particular, a strongly mathematical approach to economics became more and more dominant, and still today skills in mathematics are seen as crucial for success. Students have much to gain by learning about this complicated and fascinating history.

There have been many other clashes of methodological views that one could discuss with students. For example, the Methodenstreit during the late 19th century between Austrian economists, such as Carl Menger, who argued for using deductive reasoning, and German economists favouring historical and comparative statistical approaches. Alternatively, there have been many debates about how to best study business cycles throughout the twentieth century between economists such as Wesley Clair Mitchell, Jan Tinbergen, John Maynard Keynes, Milton Friedman and Lawrence Klein. And many recent discussions have been about the use of experimentation and simulation in economics (Maas, 2014).

4 Practical Suggestions

Given the large scope of history, we first advise to focus on particular examples and be selective in terms of geographic or temporal scope. Second we discuss organising the content effectively depending on your goal: either by theoretical approach or chronologically, and in a standalone course or lectures that are part of a broader course. And finally, we consider the need to include the contexts in which ideas developed.

Firstly, it is important to realise that one can never be completely comprehensive. No course will have enough teaching time to discuss all relevant economic thinkers in history. So, how then to focus and select ideas and thinkers to teach? As stated in the introduction of this chapter, we think the history of economic thought can be very useful to help students organise their thinking and be able to place specific ideas in a larger intellectual tree of economic thought. As such, it is important to allow students to develop an understanding of the different branches of this tree. We would therefore advise to make students familiar with the various branches, without necessarily going into great detail into all of them. Next to giving such a broad overview of the history, one could go into more detail into specific debates and ideas to also give students more concrete knowledge and a feeling of the history, rather than studying it as if history was a concatenation of isolated events. Independently of this, one could focus on the history of thought in the country the university is located in. The history of economic thought is often dominated by the UK and US; however, for a programme situated in Brazil, for example, it makes sense to pay particular attention to how economic thinking has evolved there. In general, we should make the history of economic thought less Eurocentric; for instance, why should we teach about Adam Smith as 'the father of economics' while ignoring many others, such as Chanakya and Ibn Khaldun, who wrote about the same topics centuries earlier?

Secondly, there are a number of ways in which courses can be structured. A course can be entirely dedicated to the history of economic thought, but the topic can also be a small part of a broader course (Dow, 2009). In a course on micro or financial economics one could, for example, devote one lecture to the history of the ideas that will be discussed in more detail throughout the course. When teaching a course on the history of economic thought one could organise it by theoretical approaches. One would thus discuss the history of Marxian political economy, followed by the history of neoclassical economics, followed by the history of complexity economics, etc. Another way to organise such a course is to structure it chronologically: first discussing the early history of dispersed individual economic thinkers, subsequently the formation of the discipline and ending with its recent developments.

Thirdly, it can be very helpful to take time to discuss the contexts in which ideas emerged: history of economic thought can be fruitfully combined with economic history as well as broader social, cultural and political history. For instance, Adam Smith's notion of the division of labour becomes a more insightful story when coupled with his visit to a proto-factory for pins, one of many small firms arising in that age of early industrialisation. It becomes even more interesting when we add a description of the general economic circumstances of the time; the growing class of landless peasants looking for paid jobs following the enclosures of their commons, and in the background a growing tide of political liberalism.

An interesting teaching technique might be to let students assume the positions of various historical thinkers or schools of thought, and then debate from those positions, in written or spoken form. This can help students practice understanding others and placing themselves in others' shoes, which stimulates active reflection on the topic. Besides teaching them the mental flexibility of understanding and taking on various positions, this also helps to develop their faculties of writing and public speaking.

In addition, students can learn a lot from reading (parts of) original texts, whether it is The Communist

Manifesto of Marx and Engels (1848), the Economic Possibilities for our Grandchildren of Keynes (1930), The Use of Knowledge in Society by Hayek (1945), Equality of What? by Sen (1979), How Did Economists Get It So Wrong? by Krugman (2009) or Beyond Markets and States: Polycentric Governance of Complex Economic Systems by Ostrom (2010). This gives students a direct impression of economic debates and helps them understand and reflect upon them. Reading classics is, however, a time intensive task, so it is important not to assign too much text. How much is too much, of course, depends on the teaching level and available teaching time. Our advice is to let students read (small) parts of original texts accompanied with secondary literature and teaching materials on the ideas and history. Besides reading old texts, it can also be insightful for students to watch or listen to old debates and presentations. The two classic television series The Age of Uncertainty by John Kenneth Galbraith, originally broadcasted in 1977, and Free to Choose by Milton Friedman, originally broadcasted in 1980, for example, give an informative view on the economic debates of the time.

Teaching Materials

- The Worldly Philosophers: The Lives, Times and Ideas of the Great Economic Thinkers by Robert Heilbroner, most recent edition from 1999. While first published in 1953, it remains perhaps the best introduction into the history of economic thought to this day. In a remarkably well-written and accessible manner it discusses the ideas of key economists and puts them into historical context.
- Grand Pursuit: The Story of Economic Genius by Sylvia Naser, from 2012. Another very accessible but more recent book introducing the history of economic thought through captivating narratives.
- Economic Methodology: A Historical Introduction by Harro Maas, from 2014. A well-written and useful book on the history of economic methodology from debates about deduction and induction, statistics, modelling, and experiments in economics.
- The History of Economic Thought Website made by INET: http://www. hetwebsite.net/het/. A useful collection of material and discussions of different schools of thought, historical periods and institutions.
- A Companion to the History of Economic Thought by Warren J. Samuels, Jeff E. Biddle, and John B. Davis, from 2003. An extensive and detailed collection of contributions covering many periods and developments in the history of economic thought, as well as covering historiography and different ways of approaching that history.
- Routledge Handbook of the History of Women's Economic Thought by Kirsten Madden and Robert W. Dimand, from 2019. A unique history of economic thought book focusing on the too often ignored contributions of women around the world.

If one is looking for more standardised textbooks, these three other options might be useful.

- History of Economic Thought by David Colander and Harry Landreth, from 2001, is accessible and transparently opinionated, triggering students to think for themselves and form their own opinion.
- History of Economic Thought by E. K. Hunt and Mark Lautzenheiser, most recent edition from 2015, is written from an explicitly critical perspective on the current mainstream profession and reflects upon great thinkers of the past, how today's dominant approach developed and approaches that have been pursued at the margins of the discipline.
- A History of Economic Theory & Method by Robert B. Ekelund and Robert F. Hébert, most recent edition from 2016, is the most extensive of the three and covers the classics as well as more innovative topics such as economics' relation to art, religion, archaeology, technology and ideology.
- As with economic history, national history is always particularly relevant. The Routledge History of Economic Thought book series can be useful for this, as it contains books on many countries, such as A History of Indian Economic Thought by Ajit K. Dasgupta from 2015, The History of Swedish Economic Thought by Bo Sandelin, most recent edition from 2012, and Studies in the History of Latin American Economic Thought by Oreste Popescu, from 2014.

Building Block 7: Research Methods & Philosophy of Science

A broad methodological toolkit with quantitative and qualitative data collection and analysis methods, and reflection upon them.

What: The philosophy of science provides an important foundation for evaluating research methods. We encourage discussing ontology, epistemology, and ethics with students. This helps them choose suitable methodologies for their own research projects and develop their critical thinking when encountering research results. Research methods are a vital element in the modern economist's toolkit. This includes quantitative analysis methods, such as descriptive statistics, regression analysis and network analysis. It also includes qualitative analysis methods, such as case studies. Besides such data analysis tools, students should also gain experience with quantitative and qualitative data collection: designing and conducting experiments, survey research and interviews. This will give them a feel for data quality and put them in touch with the actual context that they are studying, beyond only the numbers.

Why: Economists are knowledge workers. Much of our work, both inside and outside academia, consists of working with – more or less formalised – research methods. Hence, we need a broad range of methodological skills and knowledge, as well as the ability to reflect upon our methodological choices and explain the implications for the interpretation of our findings. These are unique skills that make economists valuable members of teams and organisations.

Contrast with current programmes: Methods courses in current undergraduate programmes are generally limited to mathematics and various forms of regression analysis. These are useful tools for proving and testing economic theories, and crucial for publishing in today's academic journals. For a lot of work, however, it is essential to have a broader range of methodological tools available. The main purpose of most economists' work is generally guiding action, rather than developing and improving theories. Hence, students need to learn how to apply various quantitative and qualitative data collection and analysis methods to real data.

Sections:

"Research is formalized curiosity. It is poking and prying with a purpose."

Zora Neale Hurston (1942, p. 91)

Quantitative data analysis methods are important. In economics however, they do not require much defending: they are already the established status quo. Quantitative data collection methods, however, are rarely taught to economics students, despite the fact that students do learn how to analyse this data once it is collected. Philosophy of science, too, is largely accepted as a necessary component of academic programmes, even if it is still too often banished to the fringes of the programme. We believe it could be taught in a more integral and applied manner, as we discuss in the first section of this chapter.

The most unusual of our suggestions must be the inclusion of qualitative methods in the economist's toolkit. Hence, we will start by briefly making the case for methods like interviews and case studies. A good example is found in Karen Ho's work on Wall Street. Financial institutions, which are at the heart of the economy, are so quantitatively oriented that they generally prefer hiring physicists and mathematicians over economists and other social scientists. But when the curtain came crashing down in 2007, numbers were not enough to understand what had happened. In Liquidated, Karen Ho investigates financial instability by conducting over a hundred interviews and engaging in participant observation during her work as a consultant in various investment banks on Wall Street during multiple years (2009).

Her findings indicate how investment banks export their own insecure workplace labour arrangements to other sections of the economy. She identified a Wall Street culture that has distinct fads and fashions in its approach to business management. In the years before the crisis, this culture had come to focus relentlessly on downsizing and the flexibility of labour arrangements. Thereby, it had contributed both to the practices that led to the crisis throughout the broader economy, and to a banking landscape unable to withstand the shock, once it came.

Most students will not go on to extensively study topics such as the driving forces of Wall Street, nor will they have time for ethnographic research. Yet interviewing, absorbing and understanding bits of culture, and analysing case studies are skills that go beyond analysing pre-existing statistical data sets. They complement these data sets by providing context and new insights into mechanisms which can help to explain observable phenomena, and are crucial for any economist, regardless of their area of expertise.

Qualitative methods are particularly important for understanding institutions and culture, crucial in economic dynamics. They also allow us to gain insight into the nature of different kinds of economic relationships, such as employment, transactions, buyer-supplier relationships and competition. Qualitative methods can also inform us about unexpected developments within the economy. For example, interviews and participant observations have provided new insights into how the financial sector works and why financial instability arises. Qualitative research methods can be very helpful in understanding the context of a specific case and acquiring an overview of how those involved perceive the situation. These various skills are particularly useful when working on concrete problems as professional economists. In short, qualitative methods can contribute both to the development of theory and to practical, concrete understanding.

It can also be very useful and productive to combine quantitative and qualitative research methods, often called mixed methods research. We discuss this on our website.

We start this building block with the philosophy of science and a broad overview of available methods, from quantitative to qualitative and from data collection to data analysis. We then explore quantitative methods in more depth, first discussing data collection methods, then discussing various techniques for data analysis. We subsequently do the same for qualitative methods. The chapter ends with suggestions on how to teach and effectively combine these various aspects of research methods, and a list of useful reading and teaching materials.

1 Philosophy of Science

The aim of teaching philosophy of science is not to teach students 'the best way to do research'. Rather, it is to teach students how to make informed methodological choices and to be reflective on those choices. This requires explicit attention for the limitations of methods and the trade-offs involved in the process of making methodological decisions. The two aspects of philosophy of science that are of particular importance are those that relate to the ontology and epistemology of economics. Here we only mention a few of important questions and approaches students should be exposed to; our website discusses further details.

Ontology is the study of the nature of the world. It asks questions such as: is there a world 'out there' that we can study objectively, or do we actively construct reality? Does the world consist of individual parts that relate to one another, or is it a systemic whole? It also questions whether the economic world fundamentally differs from the natural world. Epistemology is about how we can or cannot know things. It asks whether we can objectively observe reality, or whether "knowledge" is always the result of our own interpretation and experience. It also considers the different ways in which we can or should acquire knowledge. For example, should we start from empirical observations or from logic? These questions are answered differently by different methodological traditions, such as positivism, interpretivism, (critical) realism, and pragmatism.

The goal here is not to convince students to choose one particular approach. Instead students should understand the different approaches, and in particular which arguments they make, so that they can make informed methodological decisions when studying a topic. The ethics related to doing research are also an important aspect of the philosophy of science. Most universities have ethics committees to review the moral acceptability of studies, whether experiments, surveys or interviews. It is important to introduce students to ideas and debates surrounding these issues.

Philosophy of science does not have to be overly complicated or abstract. The easiest way to ensure this is to integrate it with other aspects of research methodology, which is why we combine them into this single building block. Philosophical issues can be discussed with the help of specific studies and concrete applications of methods, rather than only discussing the concepts in the abstract. When, for example, teaching students about the technicalities of regression analysis, it is important to discuss ideas about what statistical significance really tells us about the world (Ziliak & McCloskey, 2008).

2 Research Methods: A Broad Overview

Now we turn to the research methods. In figure 7 below, we present an overview of qualitative and quantitative data collection and analysis methods. This is meant to illustrate the wide variety of options there are when teaching research methods to economics students. But as teaching time is always limited, we allocate the methods in two categories, essential and additional. We suggest the methods in the 'essential' box are most relevant for all economists to become familiar with.

The additional methods can, however, be crucial for students specialising in certain directions. If a student, for example, decides to specialise in qualitative research, it is key that he or she also learns about doing

observations and how to apply content analysis and grounded theory to qualitatively analysing data. On the other hand, a student focused on quantitative methods would, for example, be helped by learning about automated data collection, and mathematical and agent-based modelling. As such, there are many relevant methods that are often too much to teach to all economics students, but are of great importance for those specialising in a certain direction.

We are very aware that this categorisation is likely to be contested and we advise teachers to change it according to their own views. At the same time, we recommend keeping the list of essential methods short, in order to keep it practically feasible to teach in a programme.

The methods categorised as essential are elaborated upon in the headings 3-6 of this chapter, below. In the online resources, we discuss the additional methods mentioned in the table.

	Qualitative	Quantitative
Data Collection	Essential: • Interviews Additional: • Non-participant observation • Document collection • Participant observation • Focus groups	Essential: • Experiments • Survey research Additional: • Structured observation • Automated data collection
Data Analysis	Essential: • Case studies Additional: • Content analysis • Grounded theory • Discourse analysis • Qualitative comparative analysis • Analytic induction • Framework analysis • Ethnomethodology • Phenomenology • Thematic analysis • Property space analysis	Essential: • Descriptive statistics • Regression analysis • Network analysis Additional: • Mathematical modelling • Principal component analysis • Factor analysis • (Multiple) Correspondence analysis • Cluster analysis • Geospatial information systems • Automated content analysis • Structural equation modelling • Simultaneous equation models • Vector autoregression • Agent-based modelling

3 Quantitative Data Analysis: Descriptive Statistics, Regression Analysis & Network Analysis

Statistics can provide very helpful insights into economic systems and dynamics. For this reason, we think it is important that economics students acquire a good basis in quantitative data analysis in their programmes. When teaching quantitative data analysis methods more diversity can also enrich economics education. Current programmes focus predominantly on regression analyses. Students could benefit from learning a broader set of statistical techniques, and in particular network analysis. It is becoming increasingly clear how such new methods can help us understand economic dynamics, such as the Global Financial Crisis of 2007-2008 and its build-up with massive international financial flows, or the COVID-19 crisis with the global spread of the virus.

More generally, we encourage putting less emphasis on mathematical modelling in compulsory economics courses. Surveys among employers of economists indicate that professional economists rarely need sophisticated mathematical or econometric skills (Yurko, 2018). What is generally needed in practice, is being able to work, make sense of and communicate relatively basic statistical analyses. As such, economics programmes can better prepare students for their future roles by putting less emphasis on mathematical skills. As Robert Frank, professor at Cornell University (2011, p. 408) writes:

"Most introductory courses (and my own was no exception in the early days) make little use of narrative. Instead, they inundated students with equations and graphs. Mathematical formalism has been an enormously important source of intellectual progress in economics, but it has not proved an effective vehicle for introducing newcomers to our subject. Except for engineering students and a handful of others with extensive prior training in math, most students who attempt to learn economics primarily through equations and graphs never really grasp [it]."

This is not to say that mathematical modelling has no use. For those students with interest or talent for mathematics, like ourselves, it should be possible to specialise in this area through elective courses. In this way, the students who would later like to publish papers in mainstream economics journals have the opportunity to learn the research methods generally required there. At the same time, those less inclined towards mathematics are not prevented from becoming economists. In this way, economists, as a group, will be better able to fulfil their societal role as they will be able to apply a broader range of methods.

When mathematics is taught, we advise to mainly teach it mainly through tutorials and assigned homework as these allow for more differentiation and personal attention. Even more so than for other parts of economics education, students follow mathematics at different speeds and learn it in different ways. The traditional lecture teaching style, with a single professor standing at the front of the class writing out equations on the blackboard, therefore, does not seem to be the best way to enable students to develop their mathematical skills.

4 Quantitative Data Collection: Experiments & Survey Research

Beyond these techniques of analysis, we suggest that students gain hands-on experience with data collection methods, and in particular experiments and survey research. This will give them a feel for how datasets should be interpreted, but also help them gauge the reliability and limitations that come with any dataset. Let students design their own questionnaire and go out and gather a small dataset by themselves, and then work

with that dataset on the aforementioned analytical techniques.

More and more programmes are incorporating behavioural economics and experimental methods. We applaud this development and encourage it, but we do think that learning how to collect quantitative data through surveys is even more critical. The main reason for this is that most data used by economists, both in academic and policy circles, still comes from surveys or processed government and tax files.

As Chang put it (2012, p. 1): "Some economists say [numbers] are like sausages: you don't know what they really are until you cut into them." If students do not learn how datasets are constructed during their education, they are likely to never really understand the numbers they will be intensively working with for the rest of their careers. Just as with statistics, it is important that students not only learn how to do the techniques, but are also taught how to reflect upon the advantages and disadvantages of methodological choices.

5 Qualitative Data Analysis: Case Studies

There are many different forms of qualitative data analysis, but case study research seems most essential for any economist. This is a useful approach to finding and describing essential information, and has the additional advantage that it almost automatically provides students with knowledge about the actual economy. Like interviewing, case study research is often applied by professionals working outside of academia. For this reason, it is useful to focus on teaching students to apply the method in practice and what aspects to be conscious of. Academic research is generally done more carefully in a longer time span and puts more emphasis on methodology. Practical applications of methods are often more concerned with the substance and conclusions. Students should therefore learn how to be able to acquire practically useful insights but in a methodologically proper manner.

For the systematic analysis of qualitative data, there are many other methods as outlined in the table above, such as content analysis, grounded theory, qualitative comparative analysis, and analytic induction. And like with quantitative analysis, it is useful for students to learn to work with software for analysis. However, while these methods are of great importance for students specialising in qualitative analyses, they seem to be less important for the average professional economist. Therefore, we recommend offering these qualitative data analysis methods in elective, rather than compulsory, courses. More details on these other techniques can be found in the online resources.

6 Qualitative Data Collection: Interviews

In addition to the large variety of qualitative data collection methods mentioned in the table above, we believe the most foundational method is interviewing. A key example of the usefulness of interviewing to economics is the study of Bewley into wage rigidity (1999). Rather than theorising about human behaviour in the abstract, he realised more insight into the matter could be gained by empirically investigating why both employers and employees are reluctant to let wages fall during recessions, creating a widely cited breakthrough study by using interviews.. Interviews are not only used by academic researchers. Many professionals in different types of organisations often use interviews to collect data, as it is a uniquely useful method for systematically acquiring knowledge about processes and people's experiences and thoughts.

Students can easily start working with this method, just as running a regression analysis on a computer can be done with the push of a button. The challenge is, however, to do it well and to make students conscious

of methodological issues and trade-offs, and helping them acquire skills and experience by practising the method. It is, for example, important to pay attention to issues such as the structure of an interview, the phrasing of the questions, the non-verbal communication during the interview, and the context in which the interview takes place.

7 Practical Suggestions

We have three suggestions for how to teach these methods: be as hands-on as possible, use up-to-date software and teach specific approaches as part of a broader overview of the methods field.

First, ask students to apply the methods you teach them. Students find it much more interesting that way, and much more memorable. Perhaps most importantly, it prepares them for how they will use the methods in the future in their careers, as most students will become practical – rather than academic – economists. Another possibility is to teach methods in the context of a larger research project, which includes reading and evaluating existing research as well as letting students conduct empirical research themselves.

We understand that, for didactical reasons, it can sometimes be helpful to use fictional data to introduce students to the basics. However, we think it is important that this practice is kept to a minimum and students learn to work with real data as much as possible. The importance of this was expressed by a UK public sector manager who said (Yurko, 2018, p. 11):

"I'd basically make a lot of it more applied. I'm always slightly astonished you can go through three years of an undergrad learning macroeconomics without really knowing what GDP is or even knowing where to look on the internet to get GDP data. … It would be useful if they had a bit more of how to actually use econometrics rather than the technical, basic how to do econometric proofs."

To collect quantitative data students could design their own survey to investigate a particular research or policy question. Going door to door to conduct those surveys and finding respondents online will teach them much about the messy nature of statistical data, and it is a valuable personal experience that they will not forget easily. In addition, it breaks the school-like monotony of lectures and working groups. Once collected, the data can be analysed using the various descriptive and inferential statistical techniques mentioned above.

Teaching the qualitative data collection method of interviewing is an excellent opportunity to send students out to do fieldwork. For instance, students could be tasked to find a company, government institution, a bank or any other economic environment to do observations and conduct (brief) interviews with a number of employees. This data could then be analysed using qualitative data analysis techniques, such as content analysis and case study.

Second, we advise to use state-of-the-art software, both for quantitative and qualitative data analysis. Being able to work with up-to-date software is often a highly rewarded skill in employment and thus important to teach in economics programmes. We do recognise that this might sound easier than it is, as it requires continuous time investment from the teacher to be acquainted with recent developments in software. To find the right software, ask employers and academics at the research frontier, or search online.

Third and finally, we suggest it is useful to teach students to understand and be able to evaluate a broader set of methods, which students will not learn to actively apply themselves. Such overviews of the methods field will enable students to grasp more advanced work and other types of research, and to know what things to

pay attention to. Approach the methods in an integrated way and connect the different aspects to each other. Instead of teaching and reflecting on the techniques (only) separately, discuss them together. An assignment could be to read a certain set of papers or research reports, and reflect upon the main methodological choices and steps, and explain how the results should be interpreted. Properly reading and summarising literature is a skill in itself, not only a preparation phase for conducting new research projects.

Unfortunately, there are limitations on how many methods students can be taught in up to three-year programmes. It is practically impossible to try to teach them all relevant methods. It is, however, possible to give them an overview and basic understanding of them, and to give them the skills required to learn new methods quicker and more thoroughly. We would therefore advise teaching students a wide range of methods relatively briefly, and select a few research methods for hands-on training, in more detail. This gives students both a rough idea of different methods as well as the experience of working more in-depth with some of them.

Teaching Materials

- Economic Methodology: Understanding economics as a science by Marcel Boumans and John B. Davis, most recent edition from 2015. A sharp and accessible introduction into economic methodology and philosophy of science with explanations of different views on science and key debates on how economics should be practiced.
- Social Research Methods by Alan Bryman, most recent edition from 2015. A prominent textbook that introduces a wide variety of quantitative and qualitative research methods, such as interviews, structured and participant observation, content analysis, and survey research.
- The SAGE Handbook of Applied Social Research Methods by Leonard Bickman and Debra J. Rog, most recent edition from 2009. A leading textbook on applied research with attention to choosing the right method for the question at hand, practical considerations, and how to make informed methodological decisions for a variety of quantitative and qualitative methods.
- Handbook of Research Methods and Applications in Heterodox Economics by Frederic Lee and Bruce Cronin, from 2016. An instructive collection of essays with explanations, reflections on and applications of innovative research methods that deviate from the standard econometric approach usually taught in economics programmes, such as survey research, network analysis, experiments, ethnography, and agent-based computational modelling.
- Qualitative Research Practice A Guide for Social Science Students and Researchers by Jane Ritchie, Jane Lewis, Carol McNaughton Nicholls, and Rachel Ormston, most recent edition from 2013. A useful introduction into how to do rigorous and reflective quantitative research with chapters on interviews, focus groups, observation, research design, ethical considerations, and data analysis.

Conclusion

In this concluding chapter, we briefly review what this book has offered and then look ahead, offering practical suggestions and ideas for economics teachers and professors, programme directors and students.

1 A New Vision for Economics Education

Our rapidly changing world is faced with many economic challenges, such as increasing debt levels, staggering inequalities and serious forms of ecological breakdown. These challenges are complex and cross multiple dimensions of our social and natural systems. To face these troubles, therefore, it is not nearly enough for economists to hold knowledge in formal, theoretical abstractions. Whilst these may be sophisticated, they only reflect a fraction of what is actually going on in the real world. We need broadly-trained economists with an understanding of the real-world economy. We need economists who know for example how the main industries work, who can grasp the interfaces between state and corporate systems and who see how economies are embedded in the society and ecology at large.

This requires open minds which can look at issues from a variety of perspectives. Given the multifaceted nature of economic systems, no single theoretical framework or methodology can answer all questions, or capture all of its dimensions and mechanisms. Instead, economists need the ability to think critically and evaluate the appropriateness of a range of fundamentally different approaches. In doing so, they also need to be able to clearly distinguish and explicitly discuss the moral dilemmas and normative trade-offs involved in economic decisions.

This book sets out a concrete path towards building such a pluralist and real-world based economics curriculum. While we envision a large diversity of possible economics programs, we suggest that all programs would be improved by following these three organising principles: a pluralist toolkit of theories and methods, sufficient real-world economic knowledge and practical skills, and active training in the consideration of moral and social questions. To flesh out these principles, we propose ten concrete Building Blocks: practical material for the creation of courses. These Building Blocks include introductory material, history of economic thought and reality, forms of economic organisation, research methods, theoretical approaches, normative ideas, practical skills and knowledge of the real economy.

What kind of graduates would a program based on these ideas and materials produce? It is important to acknowledge that they would not have all the skills that current-day graduates have. They would have less mathematical sophistication, less expertise in econometric analysis, and less knowledge of neoclassical theory. In exchange for this, students would gain a deeper understanding and more concrete knowledge of the economy they will live and work in. This includes:

- An understanding of the linkages between the economy, the environment and society.
- The ability to analyse different types of economic topics and problems, by using a variety of theoretical and methodological approaches.
- An integral understanding of how various smaller mechanisms make up larger economic systems.

- Practical skills for investigating and resolving questions of economic policy: both understanding the context and choosing the right tool.
- The ability to argue morally as well as analytically, and to clearly distinguish the two.

In short, such programmes would produce academically-trained professional economists: broad thinkers and practical scholars, rather than students who are trained to write academic research papers.

2 Change Is Necessary and Possible

It will not be easy to build such programmes. We fully realise that these changes cannot be introduced overnight. Surprisingly rare is the academic economist who can teach even a basic introductory course on their national economic sectors and institutions. The structure of the discipline - highly internationalised, methods-centred and organised around a single pyramid structure of journals - does not facilitate the creation of such knowledge. The same applies to pluralism in economic theory: the decades-long marginalization of valuable schools of thought has left us with a dearth of suitably trained academics.

In addition, academic programmes tend to have a strong path-dependency. Most are only updated infrequently and changed piecemeal. Long-running courses have to be adjusted, the order of courses stacking on top of each other has to be reconsidered, new courses have to be developed and new expertise has to come into the economics departments. In many countries, national or international frameworks regulate academic programme content. In short, this is a long road, but one that we believe is both necessary and possible.

The changes we propose are necessary. The devastating impact of our economy on the life-sustaining ecological systems of this planet is increasingly visible, making the realistic study of that economy all the more urgent. The unprecedented centrality of the economy in our society and the big role of economic ideas in political decision-making make it all the more vital for economists to be firmly rooted in the real world, to have a pluralist perspective and to be trained in distinguishing the moral tangles inherent to economic questions. We need to prepare a new generation of economists, and we should start this work now.

And the changes we propose are possible. Indeed, they are happening, thanks to the energy of a growing worldwide network of students and academics. More and more pluralist and real-world textbooks, course formats, readers, best practices and other materials are becoming available (see the online *Teaching Materials* resource chapter for many examples). Increasingly, faculties are teaching economics primarily as a subject-based pluralist discipline, rather than a method-centred monist approach. Economic faculties are hiring academics from other theoretical schools and other disciplines, thus reversing the narrowing of the past decades and enriching both students and colleagues with fresh insights. Various universities are starting to experiment with teaching-based career tracks, enabling staff to focus on developing better teaching materials rather than spending every free minute on trying to get published in mainstream academic journals. Pluralist programs are springing up inside and outside of traditional economics departments, throughout the academic world. Perhaps most importantly, more and more faculties are opening up to the idea of widening their student's view beyond the traditional theories and methods.

3 Calls to Action

But while there are hopeful signs of change, this is only the start. We need more students, teachers, programme directors and deans to make a difference and help ensure that the economists of the future are prepared for their roles in society. So what can each of us do to bring economics education to a higher plane?

Students, be critical of what you are learning. Do not just ask: *"Is this part of the exam?"*. Instead, ask: *"Does this reflect the real world?"*, *"In what other way could one also look at this issue?"*, and *"What are the moral dilemmas surrounding this case?"*. Look up the course you are following in chapter *Tool 2: Adapting Existing Courses* and discuss the suggested additions and changes with your teacher. Design your own ideal course with the tool of chapter *Tool 4: Example Courses* and campaign to make your dream into a reality. Talk to your lecturers and find out who is interested in your ideas. Build public support by publishing an open letter or petition that advocates for the creation of this new course.

Get in contact with the programme committee and apply the *Tool 3: Curriculum Review* to your programme to see what could be improved. Build, or join, a local team of critical students. Organise a reading group or an event. If you want, you can get affiliated with the international Rethinking Economics network and benefit from the experience, contacts and resources of a large worldwide network of student groups. Doing it together will not only help you last longer and achieve more impact, it will also be more fun.

Teachers, think about what you are preparing your students for. Less than 3% of them will become academic economists, the rest will work inside government agencies, policy institutes and think-tanks, (central) banks and other financial corporations, private sector and not-for-profit companies, NGOs and campaign groups, and journalistic entities. As such, they will work on tackling practical and real-world problems, rather than publishing academic articles. So, confront your students with the messy and complex real world, let them practice tackling actual cases, start lectures with today's newspaper, ask guest speakers from the relevant field, and let students go out of the classroom and see it with their own eyes.

Stimulate open discussions and active participation from students, bring in literature from other disciplines, actively expose the weaknesses of the theories you are teaching. Make normative assumptions explicit and let students struggle with the resulting moral dilemmas. Make sure that you are not just pushing through a textbook; be proud of your role as a teacher and *use* it. Make use of the suggestions provided throughout this book, and in particular in *Tool 2: Adapting Existing Courses*. Kick-start discussions, play devil's advocate. Trigger students to start thinking, critically and independently.

Most academics reach many more people through their teaching than through their academic papers. Yet today, teaching is underappreciated and under-rewarded. Often, the time allocated for teaching is not nearly enough. Please speak out about this. Challenge that status quo, with the students as your allies.

Deans and programme directors, support and facilitate good teaching. Make sure that your faculty have enough resources and time available for teaching. Enable them to constantly improve their teaching and update the taught material. Give students a voice and role in designing and adapting the courses. And ask yourself: how is our program built? Was it created through a departmental power struggle about which professors' specialisation is more important and deserves most space in the programme? Or is it carefully designed based on a clear idea of the societal roles students are being prepared for?

Do not be afraid to deviate from the standard programme at other universities. Variety in programs makes economics education stronger, not weaker. Take a look at the chapter *Tool 5: Example Curricula* and draw

inspiration from other innovative programmes. And try your hand at the Curriculum Review Tool, to see where in your programme there might be gaps in terms of relevant knowledge or skills. You could also ask teachers or students to run this analysis, and set up a series of meetings to discuss the outcomes. Or you could ask members of the international Rethinking Economics movement to organise a workshop or conference to further explore how the programme could be improved. Attention and open discussion about how to better economics education can only be positive, contributing to better prepared future economists.

Governments, create the right conditions for good economics education. Look at how resources for teaching and research are distributed. Does this encourage relevant, open-minded and interdisciplinary research and teaching, or does it encourage scoring on the intellectual square millimetre through a competitive 'publish or perish' system? Are universities stimulated to offer their faculty career options focused on education and reward good teaching? Governments could also follow the French example (2014) and initiate an independent and in-depth investigation of the state of the economics education in the country.

Climate change, inequality, economic instability, ageing, power concentration, pandemics, biodiversity loss, social polarisation, resource depletion, migration, poverty; these are core challenges for the world of today and tomorrow. Economists have a central role in society and need to tackle these challenges head-on. Reforming and modernising economics education is therefore of great importance not only to the students and teachers directly involved in it, but also to society as a whole. Let's build better courses and programmes, together.

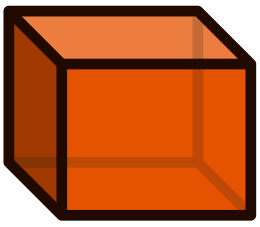
Ready to get started?

This book is free and open access. We hope it serves you. Here are three things you can do to help this movement for renewing economics education:

1. **Send this or another booklet to three colleagues/students: economy.st/short**

2. **Contact us to organize a workshop at your faculty: economy.st/workshops**

3. **Subscribe to the newsletter: economy.st/news**



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