

Heart for economics

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1-3-2016

”The master-economist must possess a rare combination of gifts. He must reach a high standard in several different directions and must combine talents not often found together. He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular, in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man's nature or his institutions must be entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood, as aloof and incorruptible as an artist, yet sometimes as near to earth as a politician.”

John Maynard Keynes in description of life Alfred Marshall in The Economic Journal

Three key words summarize our ambition for economics education in high schools: Broad, Meaningful and Coherent. *Broad* because modern economics takes a broad, relational view of people, thereby establishing connections to humanities and other social sciences. *Meaningful* because economics is about the students themselves: people of flesh and blood who face challenges in making sensible choices and who care about fairness and friendship. *Coherent* because the same limited number of fundamental principles apply to the rich variety of contexts to which economics can be applied.

The following three principles provide coherence to our program: (1) win-win; (2) two limitations that hamper judicious choices and good cooperation: bounded rationality and bounded morality; (3) three institutions that help improve choice and cooperation: compulsion (coercion), freedom and voluntary commitment.

Our ambition is to reform not only the contents but also the form of economics education. A modular approach caters to the various talents and interests of students and the diverse profiles of individual schools. It also allows for connections between economics and other subjects.

We plan to implement our reform proposals in the Netherlands. In the next couple of years, we aim to cooperate with schools, teachers and students to transform our vision into concrete teaching materials for economics education in Dutch high schools. The Appendix provides some background on the Dutch education system for those who are not familiar with it.

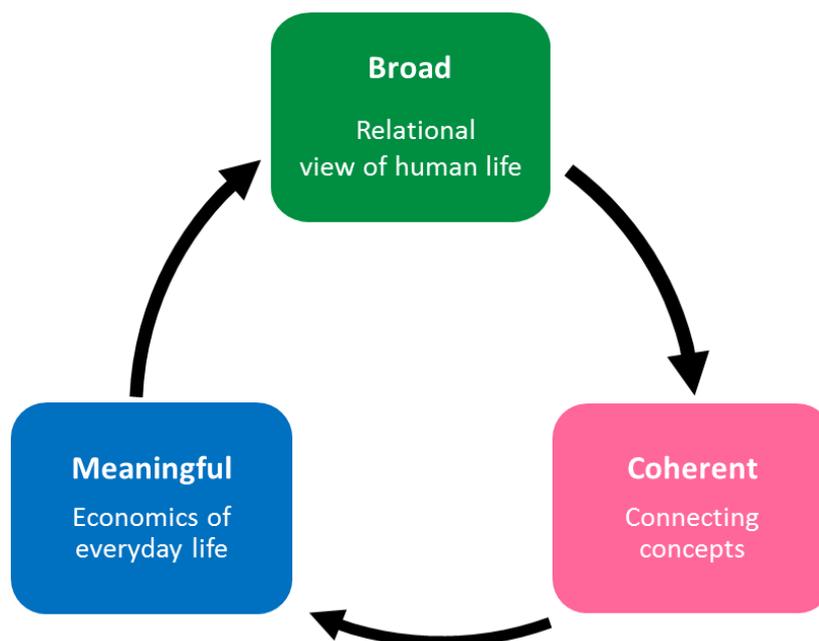


Figure 1. The three-pronged ambition

1. The ambition

Our three-pronged ambition is to provide education in economics that is broad, meaningful and coherent. These three ambitions reinforce each other (see Figure 1).

1.1 Broad: a relational view on human nature

Education in economics benefits from a broad, relational view on human nature that is consistent with other disciplines such as psychology and sociology. Key features of such a view are bounded rationality and bounded morality. This contrasts with the rational and amoral ‘homo economicus’ that still occupies the pages of economics textbooks.

Recent academic developments in economics support such a broad view on human behavior. Behavioral economics shows that people do not always act in a rational way. People often do what they do not want to do. If people have difficulty making sensible choices, they can benefit from trusting relationships with others. What people want and who they are depends in part on the social contexts in which people live.

Experimental economics shows that people care about fairness and reciprocity. People value not only the material results of cooperation but also the quality of the relationships. Hence, relationships are both an instrument and a goal in themselves. A more relational view of human beings does not imply that people are saints. Indeed, jealousy, conformism, social pressure and vengefulness originate also in the relational character of humans. Moreover, the desire to belong to a group can stand in the way of empathy with those outside that group.

1.2 Meaningful: economics is about everyday life

Students can identify themselves more with a broader, relational view of human nature than with the rational and amoral ‘homo economicus.’ Economics is about the students themselves: people of flesh and blood who face challenges in making sensible choices and who care about fairness and friendship. The stronger relationship with everyday life makes economics more meaningful for the students.

Cooperation in school and in Europe

Students experience on a daily basis that cooperating with strangers is harder than with close friends who they know and trust and with whom their identity is linked. In this respect, the European Union is no different. Solving complex, cross-border issues, such as a large number of incoming refugees or debt problems, are a big challenge when countries are different and do not feel sufficiently connected to each other.

Students learn how the basic economic concepts that they experience in their own daily lives are also relevant in the rest of their own life courses and in society at large. Digitalisation allows education to be linked to timely subjects. In this way, economics becomes more meaningful and students gain more understanding of the complex choices that others face.

1.3 Coherent: principles provide unity in diversity

Three connecting principles create unity in the diversity of social contexts or topics. This makes economics easier to understand. Digital aides may also help in this respect. Based on their own interests, students can choose the contexts in which they learn the concepts. In addition, games can be used to help teach economics.

2 Current situation: society, science and students

The relationships can be strengthened between economics education and society, science and students.

2.1 Society

In part as a response to the financial crisis, the economics profession in general and economics education in particular is under attack. The criticism involves the narrow (rational and amoral) view of human nature, the lack of attention to ethics and the overconfidence in markets and monetary measures as indicators of human welfare.

Dissatisfaction with economics education has led to various initiatives such as CORE-ECON, Rethinking Economics and the movie Boom-Bust-Boom. Students around the world should profit from these initiatives.

2.2 Science

The relationship between the current teaching practice in economics and academic developments in the economic sciences can be tightened. Education is based too predominantly on a rational and amoral view of human nature. This view is now outdated in the modern economics profession. Even though the current curriculum in the Netherlands pays some attention to behavioral economics, rationality remains the main point of departure.

Game theory is a useful framework to study human interactions that occur outside the market. Unfortunately, in studying game theory, the teaching program still takes the amoral view of man as its point of departure. Experimental economics shows however, that humans tend to cooperate more than would be expected on the basis of the individualistic and amoral homo economicus. These insights deserve a more prominent place in the curriculum. The end of this document contains readings on recent important developments in the economics sciences.

2.3 Students

There is still a world to win by engaging students in economics education. Students find economics rather complex and of relatively little interest. That is not surprising, since the link between the subject and their daily lives is too weak. Moreover, the various contexts are taught as separate topics without much connection.

3. New content: the principles of 1, 2 and 3

Our goal is to narrow the gap between our ambition (section 1) and the current situation (section 2). To that end, we introduce three connecting principles: The principles of 1, 2 and 3.

3.1 The principle of 1: win-win

The word ‘economics’ originates in the Greek ‘nomos’ of ‘oikos’, which means: the rule of the household. The main principle for good governance of a cooperative arrangement (a ‘household’) is that of mutual benefit or win-win. Indeed, ‘treating others like you want to be treated yourself’ is the golden rule of ethics. Win-win implies striking a balance between your own interests and the interests of others. Your own interests count, but they do not count for everything. You are not “nothing” but you are not “all,” either. Win-win is based on three apparently paradoxical ‘algebraic’ foundations (Figure 2).

The *first* foundation is $1+1=3$. Cooperation yields more than the sum of the parts. The miracle of $1+1=3$ makes win-win feasible. The *second* foundation is that diversity is valuable. The more the partners differ in talents and preferences, the greater becomes the potential value added of cooperation. Difference turns into adding up: $- = +$. The *third* foundation is that sharing the fruits of cooperation helps to multiply the value of cooperation, or in terms of arithmetic symbols $:=x$. If all stakeholders profit, they all have an incentive to protect and expand the cooperation. The relationship between $1+1=3$ and win-win thus goes both ways. On the one hand, $1+1=3$ makes win-win feasible. On the other hand, however, win-win undergirds $1+1=3$: that is the creation of value through cooperation.

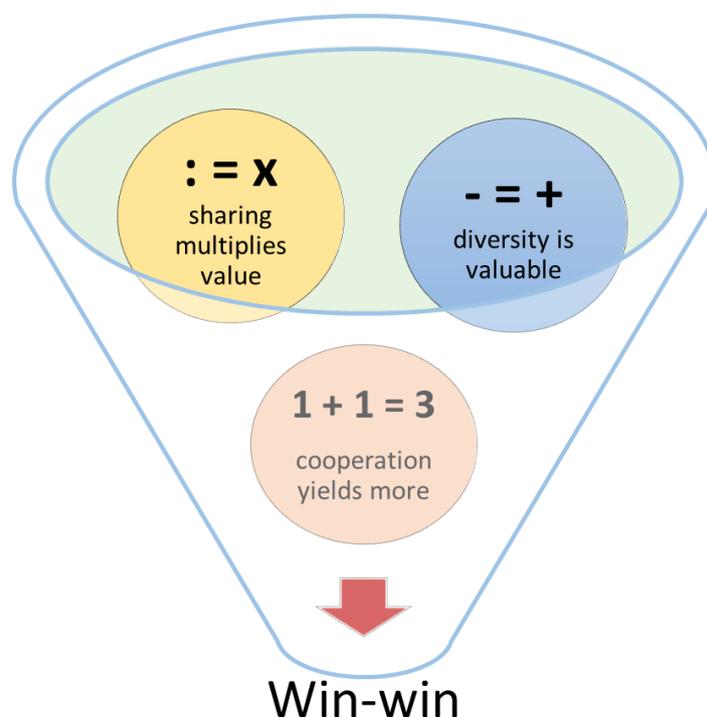


Figure 2: Win-win and the 3 foundations:

$1+1=3$, $- = +$ and $:=x$

3.2 The principle of 2: bounded rationality and morality

The principle of 2 identifies two limitations that complicate choosing and cooperating well, namely bounded rationality and bounded morality (Figure 3). Bounded rationality limits people in their ability to make sensible choices. Bounded morality can frustrate good cooperation. In particular, people can harm each other if they think they can profit from that. They also feature limited empathy for others.

3.3 The principle of 3: compulsion, freedom and voluntary commitment

Institutions are a response to the limitations that stem from the principle of 2. They aim at bringing reality closer to the ideal world by protecting people from their cognitive and moral limitations. Good governance strikes a balance between, on the one hand, preventing mistakes and avoiding harm and, on the other hand, allowing people to make their own choices.

The three main modes of governance are compulsion, freedom and voluntary commitment. They make up the principle of 3 (Figure 3). These three governance models are related to, respectively, government, market and friendship.

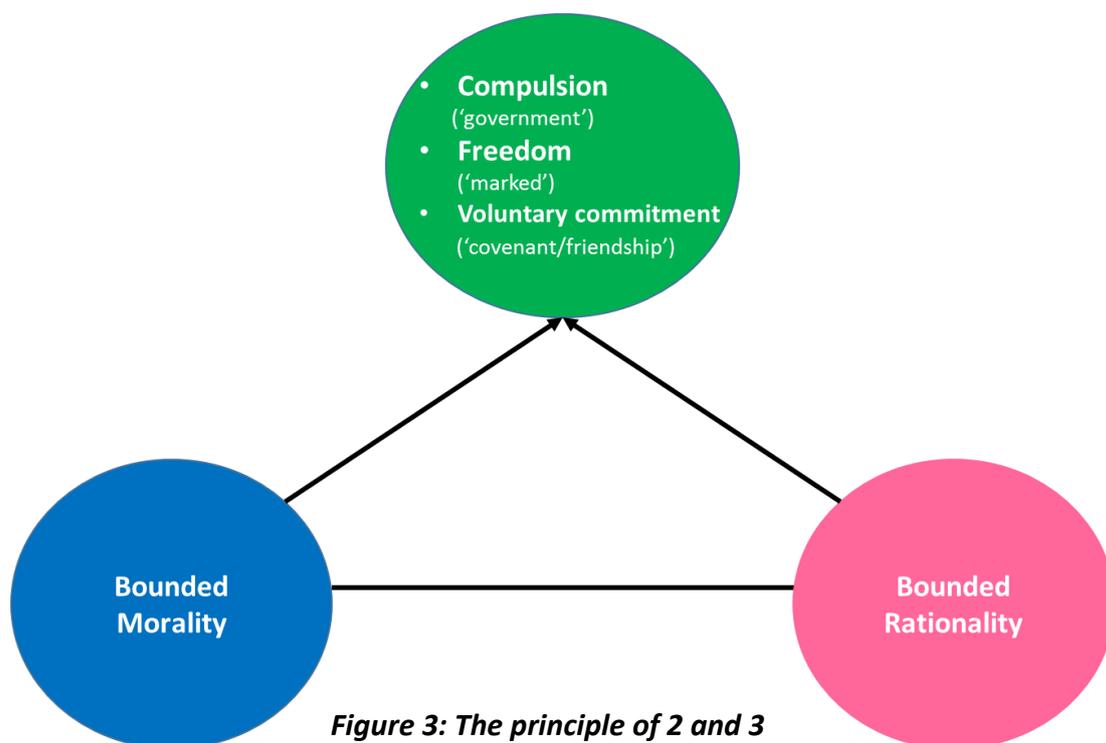


Figure 3: The principle of 2 and 3

Each of the institutions features strengths and weaknesses. The disadvantage of compulsion is that leaders may abuse their power or may lack relevant information. Compulsion is also not motivating for those who are subject to coercion. Freedom can cause people to harm others or themselves. Voluntary commitment to one's own group can be at the expense of others. Our limited empathy and benevolence is often biased towards those we know and trust. The limitations of the institutions imply that they often are applied best in combination, so that the strength of the one can offset the weakness of the other (and the other way around).

4. How to convert ambition into practice: evolution not revolution

Figure 4 shows how the guiding principles explained above can glue together the different economic subjects that currently constitute the basis of the school exam.

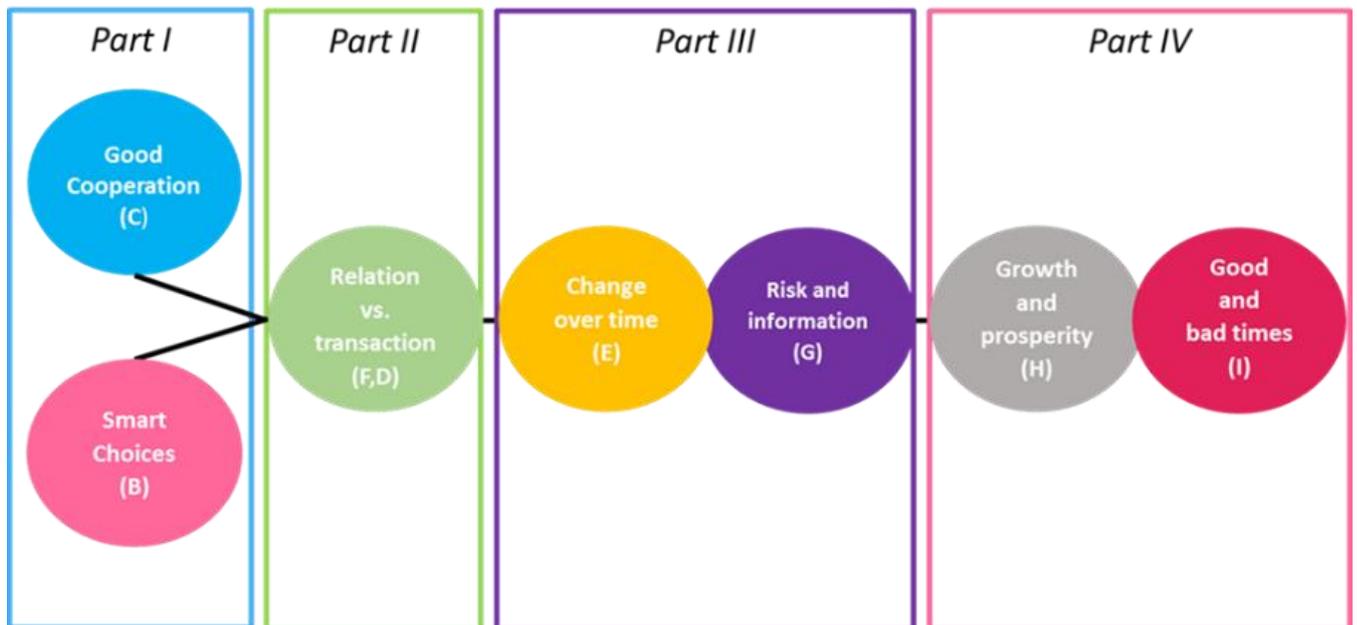


Figure 4: Exam program secondary schools

4.1 Smart choices and good cooperation

The exam program for secondary schools can be divided into four parts. The first part deals with choosing and cooperating well. Our approach treats choice and cooperation in the same way. For both of these two legs, we adopt three steps. Each of these three steps is linked with one of the three main principles introduced in section 3 (see Figure 5):

Step 1: ideal; finding the balance of win-win as the principle of 1;

Step 2: reality; dealing with bounded rationality and bounded morality as the principle of 2;

Step 3: improvements; establishing a balance between compulsion, freedom and voluntary commitment as the principle of 3.

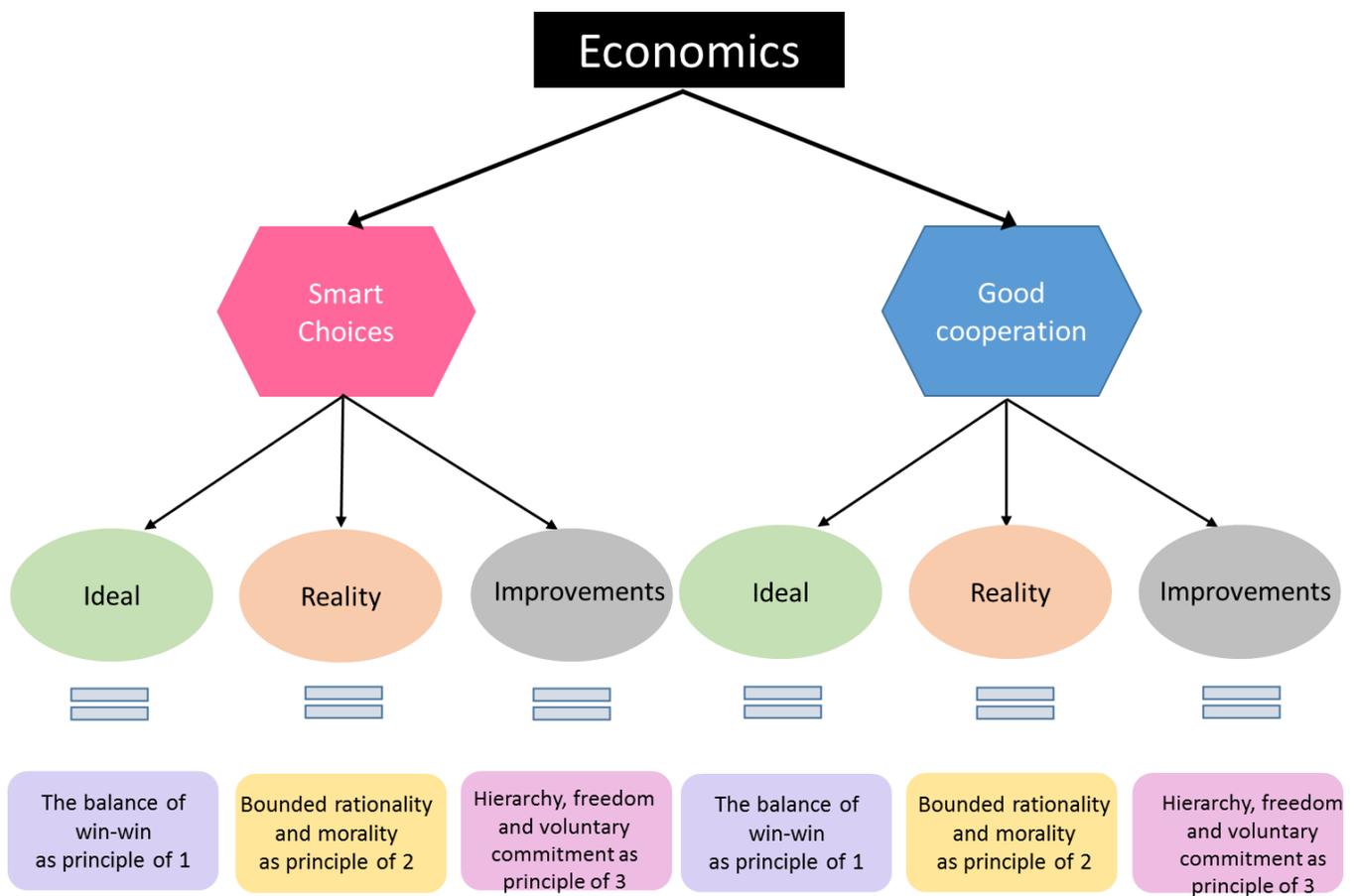


Figure 5: Economics in 2 x 3 steps

4.2 Relationship versus transaction

The second part of the exam program involves the difference between transactions and relationships. In addition, it explores when transactions on the market are an appropriate governance mode and when personal relationships or government involvement become more suitable ways to govern human interactions.

Transactions are transient, more or less anonymous, interactions in which people do not have to know each other well. Relationships, in contrast, have a more durable character and partners get to know and trust each other more intimately.

In relatively simple, standardized interactions with many potential trading partners, transactions on anonymous markets function well. In more complicated interactions between a few partners, in contrast, personal relationships do better. If many players affect each other in complex ways, the government may have to play a role. Figure 6 shows the two main dimensions determining the preferred mode of governance: the complexity of the interaction and the number of potential cooperation partners.

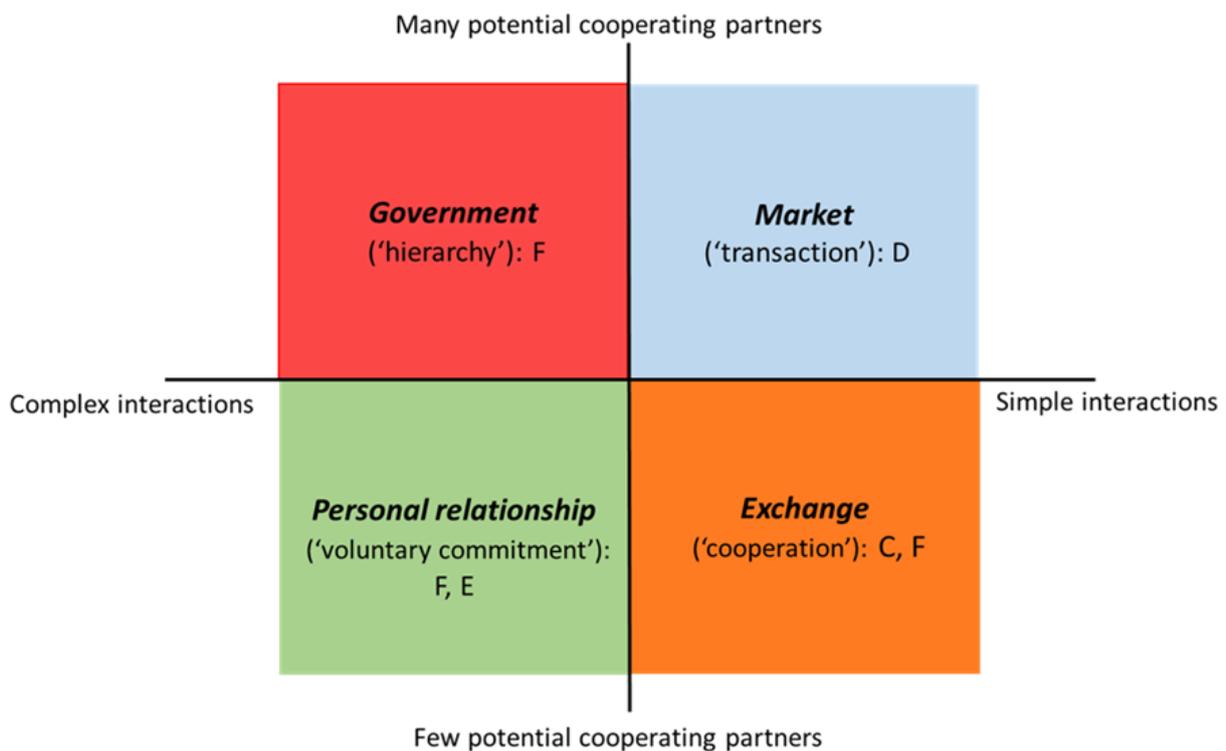


Figure 6: Relationships versus transactions

4.3 Time and risk

The third part of the program introduces time and risk into the picture. This complicates the two main challenges in economics: choosing well and cooperating well. Time and risk introduce new opportunities for choosing and cooperating well but also raise new threats. To illustrate, solidarity in relationships can protect partners against risks but relationships also introduce new risks. Accordingly, relationships are a two-edged sword.

4.4 Macro-economics

The fourth and final part of the program deals with macro-economics. This introduces yet another layer of complexity by adding more anonymous agents. Bounded rationality and social preferences result in animal spirits and herding behavior, rendering cooperation fragile. On the one hand, the financial sector is an essential part of the social infrastructure for trading and reducing risk. On the other hand, the sector itself is a source of systemic risk. Indeed, the financial crisis is an example of a relational crisis on the level of society as a whole.

5. Celebrate diversity: tailor to diverse needs

Modern education should contain both a common core that is available for all and modules that tailor to specific students with particular needs and talents. Sections 3 and 4 described the common core. A digital platform allows this core to be combined with specific modules of choice in order to tailor to heterogeneous students and specific schools. These additional modules may differ from the core in terms of both content and form.

5.1 Different profiles

Students with different profiles (humanities and literature, natural sciences, social sciences) can learn economics in different ways. Humanities students can use stories from the literature. Students who focus on the natural sciences can rely more on mathematics and analogies from the sciences. Students with a social science major typically use more graphic tools and contexts out of the news, history or other cultures and places.

5.2 Different levels

The level of difficulty can and will differ between students and school types. By extending the core with more advanced modules, we cater to students who want to excel and are able to do more than the average student. The development of these advanced modules can help boost cooperation between high schools and universities.

5.3 Different choices

Students can assemble their own menu from a digital platform that includes various applications and subjects of choice. Teachers develop the choice architecture for students. In this way, schools can develop their own profile and identity. Indeed, the limited core offers plenty of room for schools to broaden and deepen the core materials. In this way, students, teachers and schools bear more responsibility for the actual curriculum. The possibility to tailor the program to the specific interests of students makes students more eager to learn.

6. Unity in diversity

The previous section described how we can exploit differences between students and schools to enhance the learning process. In addition to diversity, we also need a common basis to facilitate cooperation. Unity in diversity allows the value-added of diversity to be fully realized. This section elaborates on the common elements within the proposed method.

6.1 Core

The modular IT-platform contains a common core that is compulsory for everyone. This shared basis yields a common language, which facilitates communication. The common core can be more limited than in the current curriculum.

6.2 Classroom: economics done together

The classroom offers opportunities for social interaction by means of discussion, games, teamwork and experiments. In this way, students experience the concepts that are taught in actual social interactions. They learn not only with their heads ('intellect') but also with their hearts ('emotions') and with their hands. Economics you must do. In fact, economics you must do together. Students experience first-hand how rewarding it is to accomplish something together.

6.3 Testing

Our approach needs testing methods that respect the fact that problems in economics, similar to those in philosophy and history, do not always have clear-cut answers, but do require proper analyses. We aim at contributing proper testing methods.

6.4 Connecting modules

The digital platform allows economics to be connected with other disciplines in so-called 'linking modules'. Students realize that boundaries between subjects are not cast in stone, but are there to be crossed whenever appropriate, which benefits not only economics but the other subjects as well (see Figure 7). In this way, education becomes more coherent. Economics as a social science ('gamma') connects the humanities ('alpha') and the sciences ('beta'). The connections between economics and other subjects are numerous. The grand stories in literature, philosophy and film are wonderful contexts for teaching concepts. Mathematics can be explained with the aid of economic examples, and economic principles can equally well be explained with math. Neural science and evolutionary biology teach us a lot about the human brain

and behavior. Interactions in natural sciences and engineering often have analogies within economics. History offers a beautiful context for explaining how and when cooperation and choosing worked well and when it did not. Also social geography provides a nice context for thinking about economic principles.

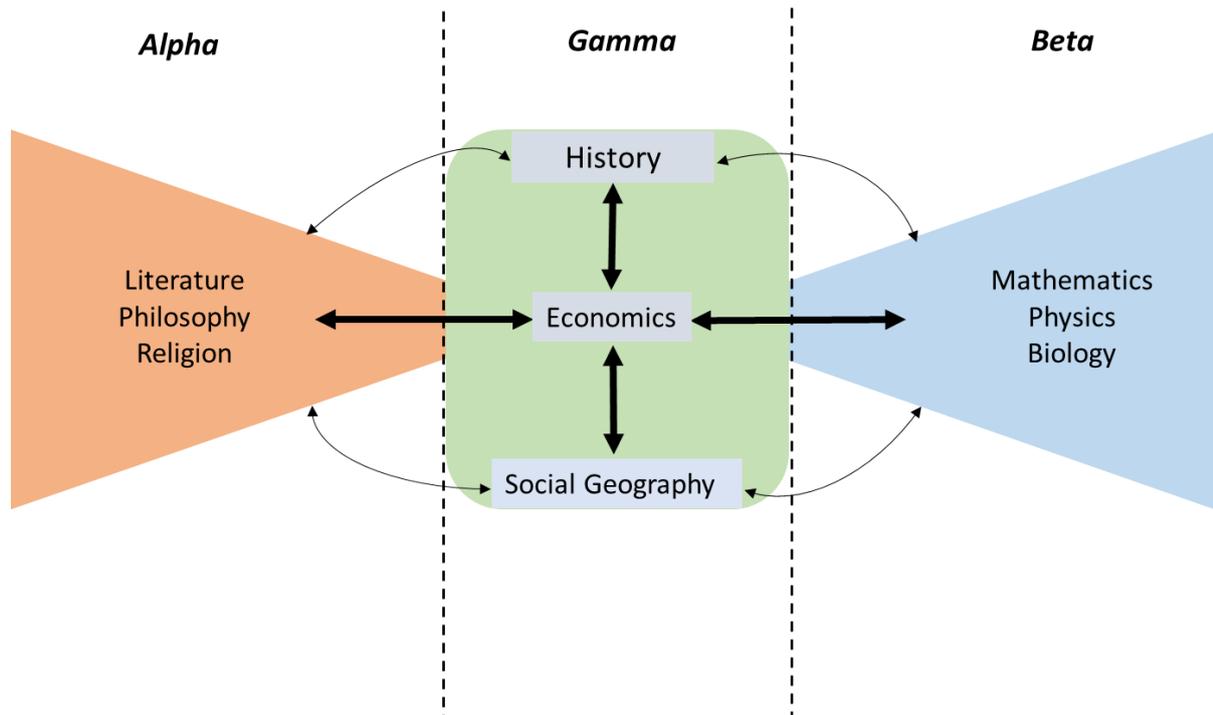


Figure 7: Economics as connection between Alpha and Beta

7. Conclusion

Our vision of broad, meaningful and coherent economics education is consistent with Platform 2032 – a recent advice to the Dutch government about the future of education. The advice emphasizes the formation of personality (‘choosing well’) and socializing and formation of citizenship (‘cooperating well’). The future of education revolves around not only cognitive skills but also social skills.

Education is about teaching kids to take responsibility for their own lives and to take account of the interests of others – also those with different preferences and talents. In addition, creativity is crucial, teaching students how to make new combinations and create new relationships between subjects. Not subjects, but domains and themes occupy a central place in the future of education.

Our vision offers opportunities for teachers. Economics becomes a central subject from which to integrate other subjects. Students are more intrinsically motivated to learn. Teachers get more responsibility for selecting and creating modules. They keep learning and create relationships with other teachers. The profession of teacher gains in significance.

In the next couple of years, we plan to develop our vision further by collaborating with schools, students and teachers. The ultimate aim is to create new concrete methods for teaching economics.

Appendix: Economics in Dutch secondary education

Compared to the situation in many other countries, tracking in Dutch secondary education happens relatively early. At age 12, Dutch students are tracked into three levels. This is determined by a joint decision of their primary school teacher, parents and the score on a centralized exam at the end of primary school. In the lowest track, vmbo, students are prepared for vocational professions. This track lasts four years. The intermediate level, havo, has a duration of five years and prepares students for higher professional education; more specifically, it prepares students for professional college. Finally, the most academically challenging level, vwo, is a six-year track that prepares students for university education.

During the first year of secondary education (at age 12), the performance of the student can alter the track on which the student is allowed to continue. Students are sometimes allowed to move between tracks, but this depends on their performance and the specific policies of the school concerned (not all schools offer all tracks). They can continue at a higher track after finishing a lower one, but this implies additional years of secondary education. At the end of secondary school, students take part in nationwide exit exams. The results on these exams, together with the results on school exams, determine whether a student obtains a diploma.

The subject of economics is offered in all tracks, but schools differ in which grade the subject starts. All schools have to offer economics as an exam subject in the final two years of vmbo and havo, and in the last three years of vwo. Students have to choose between four profiles in the second part of their high-school education. The subject economics is mandatory for students who have chosen the ‘economic and societal’ profile. In three profiles (nature and technique, nature and health, culture and society) students can choose to include economics.

Many students study the subject of economics. At the havo track, over 50 percent of students choose the economic profile. At the vwo level, the economics profile is also the most popular, with a market share of over 30 percent.

To inform students on the subject economics before the choice of profiles, many schools offer economics in the second grade of vmbo, and in the third grade of

havo and vwo. Schools are free to offer economics in all grades.

In 2004, the minister of education and science installed a commission led by the Dutch economist Coen Teulings, in order to update the curriculum for the havo and vwo levels. The general feeling was that economics in secondary education had not kept up with developments in academics and society. The commission (Teulings II) designed its new economics program on the basis of the results of a preceding commission, also led by Teulings (Teulings I), that had formulated the aims and principles in 2002. The report ‘The Wealth of Education’ by Teulings II was presented in 2005. The explicit educational aim of the program was that students should “develop an economic outlook on social phenomena”.

The nine domains of study listed below constitute the current program.

A) Skills in economic analysis; B) Scarcity; C) Exchange; D) Markets; E) Exchange over time; F) Cooperating and negotiating; G) Risk and information; H) Wealth and growth; I) Good times, bad times

Domain A involves skills; it describes what pupils are supposed to be able to do rather than what to know about economic theory. This domain is organized in five types of skills: information selection, arithmetical and graphical illustration, choice of outlook, strategic understanding, and finally what is simply called ‘experiments’. Doing economic experiments cannot be tested in a central exam, and this type of skill is left to the schools.

Dutch pupils are supposed to learn to distinguish between economic reality and the ways economists try to model this reality. The pupils not only have to know how to use an economic model, but they also have to know how to weigh the relative usefulness of the model.

Domains B (scarcity) and C (exchange) fall outside the scope of central examination. The domains E, F, and G contain most of the economic content that was newly introduced by Teulings. The H and I domains, the macro-domains, were much debated. The central point of criticism was the absence of a central theory. The test producer of the national exams Cito declared that no complete macro-questions were possible. A new commission reformulated the H and I domains in 2015.

Further readings

Bounded rationality

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Bounded morality

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Bounded rationality and morality

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General

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