Chapter 2
Financial Education in General Education Schools: A Competence Model

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Abstract The authors argue that being financially educated means more than being financially literate, and that financial education can and should be seen as a proper subset of economic education. To underpin this thesis, the chapter conceptualizes an enhanced understanding of financial education, which is closely connected to a competence model for economic education that is the subject of widespread discussion in Germany and has influenced school curricula in the recent past. The model comprises three areas of development for economic competence, each of which is identified by three competences one should possess in order to meet fundamental requirements in "economically shaped" life situations. Such situations are seen as including "financially shaped" life situations, which demand similar or even the same processes of analysis and judgment, routines and strategies. This model should consequently also be well suited to financial contexts and content. The authors' aim is to propose a set of distinct and structured, trainable and attainable, transferable competence goals for secondary schools. Although this model has been developed for general education in Germany, it should be applicable to different national education systems and various curricular settings.

Keywords Competence · Competence model · Financial education · Economic education

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2.1 Introduction

Financial literacy is often seen merely as the application of skills in dealing with routine money and financial matters, such as making a withdrawal or filling out a transfer order. Bearing the goals of general education in mind, however, the authors prefer to understand financial literacy as one part of financial education. For that reason the proposal is not only to work towards *financial literacy* but towards *financial education* (as an end, not a process). Furthermore, we argue that financial education must be treated as a proper subset of economic education, of which it is a key objective and important field. If this is true, financial education must encourage the development of an enhanced set of interrelated economic capabilities.

The fundamental propositions are:

- *Financial literacy*, if solely seen as knowledge and understanding that enable school students to deal with existing and future demands of individual money management, would be a goal too narrow for secondary schools. If it is to meet the much more ambitious overall school mission, financial education should also include social aspects of financial transactions, as well as important aspects of financial markets, the general economic order, and the national and international financial system (Gibson 2009; Remmele and Seeber 2012).
- *Financial education* should be seen as a part of economic education and can be completely subsumed under this domain: financially shaped life situations are simply a segment of economically shaped life situations. At the same time, economic education should not be reduced to financial education, and it should pick up on issues beyond money, income and asset management, e.g. such as situations in people's working life.
- According to the school mission, *economic education* in general education schools should enable students to act responsibly, autonomously and appropriately in economically shaped life situations (Retzmann et al. 2010, 3; Remmele and Seeber 2012, 196). As a subset of economic education, financial education must adhere to that school mission too.
- In consequence, the "financial" competences that financial education (as a teaching and learning process) address should be derived from an underlying framework of more general economic competences for financially shaped life situations (Pang 2010).

It is against this backdrop that the chapter presents a competence framework for financial education. The authors first define financial education and give reasons for their understanding of it. They then outline a competence model for financial education that is based (1) on a common understanding of competence and (2) on an already published model for economic education (Retzmann et al. 2010). The latter will be applied to the field of financial education. The focus here is on how the framework is derived and a step-by-step explanation of it on a general level. If concrete financial competences for special financial contexts are mentioned, they are only intended as examples. No teaching and training methods or prototypical school lessons are proposed. The aim is rather to put forward a distinct and structured set of trainable and ultimately attainable competence goals rather than a content-oriented syllabus.

2.2 Financial Literacy or Financial Education?

For almost a decade, the OECD (2005, 2008, 2009) has been emphasizing the need for financial education at all stages of formal learning. The OECD consequently included a test of financial literacy in its last PISA survey in 2012 (OECD 2013, 2014). Other supranational organizations, such as the Commission of the European Communities (2007), also support the objective of raising financial understanding among European citizens. Furthermore, there is a vast number of initiatives all over the world fostering similar educational efforts (see for an overview: Remmele and Seeber 2012, 191). What is surprising, however, is that there is no general agreement on the definition of financial literacy (Speer and Seeber 2013). Even the authors of much-cited studies refrain from defining the topic (e.g. Bucher-Koenen and Lusardi 2011; Lusardi and Mitchell 2007), highlighting instead a range of necessary financial decisions in everyday life to support their arguments for fostering financial education.

Numerous definitions can be found (e.g. SEDI 2004; Australian Securities and Investments Commission 2003). For the most part, the focus is on practical knowledge: skills relating to spending or saving money, managing a bank account, money, loans and debt, insuring risks and so on (Remmele and Seeber 2012, 196). The core arguments for financial education are the dynamically changing financial landscape and increasing demands on private households. Tasks, trends, challenges and risks that frequently come up include greater individual responsibility for pension and health insurance planning, an increasing variety and complexity of financial services, the growing volume of private bank loans, etc. (e.g. Reifner 2006; Cole and Shastry 2009; OECD 2013). None of these definitions is aimed specifically at school education.

According to this understanding of financial literacy, tests typically do not require reasoning and judgment on the economic order or the legal framework of financial markets, nor even an economic understanding of how these markets work or under which conditions they are likely to fail. In the end, testing on financial literacy is narrowed down to three items on basic concepts used in a set of frequently quoted national surveys (e.g. Almenberg and Säve-Söderbergh 2011; Bucher-Koenen and Lusardi 2011; Lusardi 2013, 1): One deals with a savings calculation including the interest rate, a second tests understanding of the inflation rate as depreciation and a final one concerns risk diversification. Another questionnaire, developed by the OECD (OECD INFE 2011), surveys everyday financial behavior and generates corresponding test items.

Finally, the items of three Financial Fitness for Life tests (e.g. Walstad and Rebeck 2005) show a broader understanding of financial literacy in line with recently published financial literacy standards (Bosshardt and Walstad 2014). They include additional questions about the opportunities for raising income and the economic way of thinking. But, their content makes (almost) no reference to the role of governments, the interests of financial service providers, or the handling of financial information (Retzmann and Frühauf 2014).

The limited capabilities associated with financial literacy seem to be more geared towards providing an initiation into an increasingly complex, difficult and uncomfortable social and economic environment than to enabling citizens to participate in social change. Our criticism of this over-emphasis on meeting external requirements is that it reflects a limited understanding and is therefore incomplete—at least in a school context.

For its recent PISA study the OECD (2014, 33) broadened the former definition of financial literacy. It now also includes capabilities relating to societal requirements and is as follows:

> Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life.

Although the OECD names societal well-being and participation in economic life, the test items barely refer to these topics. "Financial literacy in PISA is primarily conceived as personal (!) financial literacy" (ibid., 34). The notion of motivation and confidence is not mirrored in the test items. The mission of school education demands a broader understanding, which we will henceforth call 'financial education', as an enhanced level of 'financial literacy'.

In this context, it is noteworthy that the European Commission (2007, 8) calls for *financial education*, not just financial literacy:

> Consumers should be educated in economic and financial matters as early as possible, beginning at school. National authorities should give consideration to making financial education a compulsory part of the school education curriculum.

One argument for this demand is the schools' task of preparing students for their future life. Another is the supposed, and partly proven, success of schooling in financial matters (e.g. Lusardi 2004; Cole and Shastry 2009; Mandell 2009). Both support the recommendation to give this topic appropriate weight within school education (Remmele and Seeber 2012, 193). One consequence of the outlined discussion is the need for a concept of financial education that incorporates practical, economic, societal and political knowledge and understanding. The following model takes this broadening of the scope into account.

2.3 Competence Model for Financial Education

The following model attempts to bridge the gap in educational theory relating to the purpose of financial education. It is based on the proposition that financial education should be part of economic education at general education schools. If successful, the latter leads to personal autonomy, domain-specific capabilities and social responsibility. These goals are also to be considered as guiding principles when defining financial education. For a better understanding of the model, a short explanation of the underlying theoretical framework (Weinert 2001; Klieme et al. 2003; Retzmann et al. 2010) is helpful. The cornerstones are:

(1) The stated competence goals are developed on the basis of an understanding of competence as an internal capability attributed to the student.
(2) The stated competence goals are domain-specific.
(3) The model distinguishes three different areas of financial competence that correspond to guiding principles valid for general education.

1. The economic education model has been developed according to the German debate on learning outcome standards. These standards concentrate on testable cognitive competences, even if those competences also include abilities and dispositions which are difficult to test. Although we do not propose any standards in this chapter, we use the terms to explain our model in the same way as the performance-oriented literature. In consequence we describe competence goals to be achieved as a purpose of learning.
   The PISA tests are based on Weinert's (2001) concept of 'competence' as "prerequisites for meeting complex demands" (OECD 2001, 6). As competence components they reflect "interrelated attitudes, values, knowledge and skills" (OECD 2002, 5). We refer to this conception too. It is compatible with the definition of the European Center for the Development of Vocational Training. In its glossary to unify the use of terms in educational research in Europe, it defines competence as the "proven ability to use knowledge, skills and personal, social and/or methodological abilities … (CEDEFOP 2011, 35)."
   A distinction is made in the literature between two types of competence: domain-specific (factual and procedural knowledge within a domain) and generic (social, personal, general skills) competences (Krämer and Seeber 2009, 1). Factual knowledge comprises knowledge of facts and structures. We regard 'skills' "to perform tasks and solve problems" (CEDEFOP 2011, 162) as practical/methodological abilities to be demonstrated in financially relevant life situations.
2. The application of financial and economic knowledge and understanding depends on a range of basic skills (Remmele et al. 2013):

   2.1. *Methodological skills*, such as problem-solving or learning strategies,
   2.2. *Numeracy*, for example to calculate alternative loan offers,

2.3. *Literacy* (reading, writing) for understanding, e.g., terms of business in prospectuses or newspaper articles on government decisions,
2.4. Media or *ICT skills* are necessary on a basic level, e.g., for internet research.

Because these basic skills lack domain-specificity, our model of economic competence does not attach any objectives or standards to these preliminary capabilities. The model refers to domain-specific competences that are needed to make effective financial decisions, to make economically sound judgments and to solve problems efficiently.

A school domain typically refers to one or more corresponding scientific disciplines. For our purpose the most relevant is economics and commercial law in addition. The model does not just reflect neoclassical theory but also incorporates elements of game theory as well as old and new institutional economics (e.g. evolution of institutions, efficiency of institutions, asymmetric information). Furthermore, as a consequence of educational goals (see below), a school domain reflects not just an academic discipline but also the economic and political order, ethical and political norms, and law. On account of the general level of this chapter, not all these references can be made explicitly in the following description.

In accordance with the requirements listed above we assume economic education at school to comprise relevant life situations that require “financial” competences. In order to define these situations, we differentiate between three economic roles that are not mutually exclusive and sometimes overlap in reality: consumer, earner and economic citizen (see Sect. 4). These roles serve to generate homogeneous classes of economically shaped life situations for which certain competences are needed.

These role concepts do not claim to be comprehensive, but they are relevant, structuring today’s economic life with a focus on financial decision-making, planning and action. They cannot strictly correspond to competence areas, as no competences are exclusive to a consumer, earner or economic citizen. Practice may be specific, but competences are generally linked to the individual and not to the specific situation in which they are required. Different situations can require similar or even the same processes of analysis and judgment, as well as the same routines and strategies. For example, students with distinct economic decision-making competence can evaluate the benefit and cost of alternative actions in different situations, i.e. irrespective of their own role. It is essentially the same competence applied to different—and in our case financial—contexts. Because of these characteristics of competences, students do not need to be taught to judge, decide and act in every different financial life situation. Curriculum designers working with this model are quite free to decide which specific content and which prototypical situations are to be included.

3. The missions of general education schools may differ to a greater or lesser extent across different cultures, but we assume the following to be broadly applicable in modern societies, even if it reflects the German discussion. Schools must foster whole person development in order to enable individuals to live an autonomous life and manage practical challenges, and to enable them to make decisions about and a contribution to political affairs (von Hentig 2004, 11). In our model, these general education goals are seen as a precondition of competence construction. As a consequence, the model claims to comprise practical and declarative knowledge, as well as the ability to make well-informed and reasonable judgments on the economic and social framework.

We thus define *financial competence* as the sum of an individual's cognitive judgment, decision-making and planning abilities, their practical and technical skills for implementing decisions and plans, including the use of electronic media, and their motivational, volitional and social disposition with regard to liquid funds (cash, bank money), recent and future income and material and nonmaterial assets for themselves, as a trustee for other people, and as a social or political representative for the general public, in efficiently and responsibly generating and implementing such assets to achieve the best possible effect on the short, medium and/or long-term well-being of the people concerned. The term *financially educated* is used to describe a person who is willing and able to judge, decide and act autonomously (self-governing), appropriately and responsibly in accordance with these transferable competences in financially shaped life situations.

In a money-based economy financial matters are an essential part of everyone's life. Yet individual opportunities and constraints on individual action, as well as economic chances, risks and challenges to financial well-being, are—more or less directly—influenced by the entire economic system and order. According to this fact, financially shaped life situations can be seen as a segment of economically shaped life situations; it is not least for that reason that the goals and issues of financial education could be embedded entirely in processes of a comprehensive economic education.

The following paragraphs present a rough sketch of our framework. As Table 2.1 shows, the model distinguishes three competence areas in economically shaped life situations (Remmele and Seeber 2012, 196). In this chapter, we adapt them for the purposes of financial education. One of the underlying publications was the project report on economic literacy requirements of adults, funded by the German Ministry of Education and Research (Weber et al. 2013). These authors used literature-based analysis of social changes, empirical research on offers in adult education, and a survey on the subjective demand and objective need for economic education. Financial literacy was a central part of this research.

These three areas of domain-specific competence (column 3) correspond to the goals of general education listed in the first column. While our model begins with the competence areas and then concretizes the competences, the OECD defines competence "categories" (content, processes, context) and in a second step sub-categories

(OECD 2014, 34 ff.). Responsibility in interaction with others as well as understanding the interests and values of others are not included in PISA's model, even though they are relevant factors of personal development. And "economic conditions and public policies" (ibid., 35) are recognized as contexts students should know about; in the concrete test, however, they are merely a negligible addendum.

In our model, three competences are assigned to each area (Tables 2.2, 2.3 and 2.4) in order to further distinguish the requirements in economically shaped life situations according to the competence area. These competences may serve as the basis for developing learning outcome standards and subsequently test items for monitoring purposes and curricular recommendations.

Table 2.1 Competence areas of financial education as a part of general education (based on Retzmann et al. 2010)

General education empowers students to care about …	Financial education	Competence areas
… themselves	Economically well-educated individuals make economically motivated and reasonable financial decisions between given alternatives while pursuing their own legitimate interests	Decision-making and rationality (of the individual)
… contemporaries	Economically well-educated individuals consider the interests and benefits, wishes and values of others responsibly in interactions for an economic purpose	Relationship and interaction (with others)
… the cause	Economically well-educated individuals understand that the financial system can be and is shaped by the political framework and the extent to which it requires a political order	Order and system (of the whole)

Table 2.2 Competence requirements for rational decision-making (based on Retzmann et al. 2010)

Decision-making and rationality	Competence requirements
Analyzing situations	Students identify situation-specific objectives of economic agents (individuals and organizations) and determine their possible actions They analyze factors limiting their scope of action (constraints)
Evaluating different possible actions	Students anticipate the consequences of different possible actions and consider their respective probabilities They evaluate (objective) consequences with respect to subjective criteria (preferences) and select the best action under the given conditions
Shaping possible actions	Students analyze to what extent constraints on action can be altered, their scope of action extended and decision-making abilities improved

Table 2.3 Competence requirements for understanding and shaping economic relationships and interactions (based on Retzmann et al. 2010)

Relationship and interaction	Competence requirements
Analyzing constellations of interests	Students describe financial relationships as an exchange of services or goods for a mutually higher benefit They identify the interests involved and analyze their converging and/or conflicting nature They attribute the actions of all interacting participants to their respective interests and evaluate the consequences for those involved
Analyzing, evaluating and shaping cooperation	Students identify cooperation extending beyond concrete financial exchanges as opportunities to achieve common interests, and identify and justify resulting advantages They name causes of cooperation problems and demonstrate possible solutions, justifying them with respect to the different interests
Analyzing relationship structures	Students analyze financial relationships with respect to their characteristic formal and informal rules and their incentive effects They analyze the function and historical transformation of example institutions as rules and behavioral expectations

Table 2.4 Competence requirements for understanding the economic order and system (based on Retzmann et al. 2010)

Order and system	Competence requirements
Analyzing markets	Students explain pricing in financial markets They transfer their knowledge about the conditions for efficient markets and their constraints on financial markets They classify the actions of economic subjects on markets at a macroeconomic level
Analyzing economic systems and orders	Students analyze the most important guiding principles and regulatory tools of economic systems and orders, and the implied relationship between markets and government They relate the economic and social effects of government actions to each other
Judging political regulations economically	Students analyze the expected consequences of political measures in an economic system and the attainability of economic and sociopolitical objectives They analyze the individual possibilities of action as citizens and evaluate them economically and under the guiding principles of the relevant economic order

Decision-making and rationality: In a more or less free society and economy all people are free to pursue their own happiness within legal and ethical boundaries, and it is desirable that they are able to do so. Yet freedom also implies the necessity for individual decision-making in numerous situations, including financially shaped life situations. To meet the implied requirements, students should acquire the ability to decide rationally between alternative actions in financially shaped life situations while considering the given constraints, e.g. their budget or creditworthiness, and analyzing the factors limiting their freedom to act. More specifically, they can anticipate the probable consequences, consider their known or unknown likelihood, and evaluate them based upon their own preferences, in order to choose the best course of action to maintain or improve their financial well-being under the given conditions. Students are able to analyze to what extent the constraints on their actions can be altered, their scope of action increased and their decision-making abilities improved—at least in the long run. They are willing and able to apply these abilities responsibly.

Relationship and interaction: Economic action predominantly takes place in a social context and is therefore inter-action. Each participant in economic processes engages in temporary or long-term economic relationships that seem beneficial to both parties and have an impact on others. For this reason, competent students describe economic relationships as an exchange of goods or financial services for a mutually higher benefit. They are able to identify the interests involved and analyze whether they are of converging or conflicting nature. They can relate the actions of all interacting participants to their particular interests and evaluate the consequences of action for those involved. Students identify cooperation beyond exchange as a way of achieving common interests and identify and justify the advantages of cooperation. They are able to name causes of cooperation problems, develop possible solutions and justify them with respect to the different interests. They analyze the characteristic formal and informal rules that often underlie economic relationships, especially their incentive effects, and the function and historical evolution of example institutions, rules and behavioral expectations.

System and order: Proper analysis is a prerequisite for reasonable judgment and responsible action. This also applies to the level of system and order. Financial competence should therefore include the ability to identify economic interrelationships as systemic effects. For example, students can explain market pricing in different markets, and they are able to analyze the conditions for efficient financial markets and the constraints on them. They can classify the actions of economic subjects on markets at a macroeconomic level and describe the economic consequences of distributions (income and assets) by markets for national economies and society. Students analyze the most important guiding principles and regulatory instruments of economic systems and orders—primarily the one they live in—and the implied relationship between financial markets and governments. They are able to relate the economic, social and ecological effects of government action to each other. Students analyze the expected consequences of political measures for the financial system and the attainability of economic and social policy objectives. They analyze the individual possibilities of action as citizens and evaluate these economically and under the guiding principles of social ethics.

Finally, this area of competence, in which students must switch from the agent's to an observer's perspective on rules, order and system, includes many more topics in economic education than in financial education. For example, students understand market mechanisms, discuss income and wealth distribution and the guiding principles of the social order as a framework for economic order. Issues in this area of competence form the basis of judgments related to financial education. Students, e.g., know about interest rates as a special area of prices and about financial markets as a special area of markets. They are able to develop their own well-founded opinions on financial issues of social concern, such as the current debate on a financial transaction tax, ideas on the regulation of bankers' bonuses, and not least on government spending with regard to their roles as tax payers, transfer recipients and citizens.

2.4 Economic Competences in Financial Contexts

The claim that economic and financial education are necessarily linked is based on the assumption that economic understanding is necessary for autonomous financial decisions and well-informed and reasonable judgments. In his study on financial literacy among Hong Kong school students, Pang (2010, 659) also states that financial literacy is a "function of student understanding of a limited set of interrelated economic concepts." In group discussions with teachers he validated as core concepts:

> relations among saving, consumption, and investment, the opportunity cost of financial decisions, the relations among risk, return, and liquidity, inflation and the real value of return on investment, and present value and discounting (ibid., 662).

Winther and Achtenhagen (2009, 92) similarly refer to these fundamentals of "economic literacy". Beyond this, it is astonishing that most discussions on financial literacy treat income simply as a given factor and, with the exception of the "Financial Fitness for Life" test series, nearly all requirements concern the use of income (spending or saving), but not the means of generating, earning and raising in particular monetary income. Our framework for financial education includes this frequently neglected topic. Likewise the US National Standards for Financial Literacy present a system of six areas of knowledge and understanding. One category is "earning income" (Bosshardt and Walstad 2014, 67).

Financial competences are required in different contexts. The following paragraph describes the roles and outlines the concrete competences, in addition to discussing differences to economic education:

1. The role of the *consumer* comprises life situations of buyers, savers and investors, debtors and insurance holders. Differentiating between them is useful, since in such roles individuals act in different markets (for goods, financial services, etc.) and on different sides of the market (e.g. as loan applicants or

capital providers), and they therefore pursue different interests. Most of these sub-roles already comprise financially shaped life situations. For the purposes of financial education, however, some other life situations of private persons should be taken into account: the roles of bailsmen, renters, inheritors and owners are all relevant too. Across these different contexts, the implied requirements of reasoning, decision-making and action may be similar, but they often differ on account of the specific details of the respective situation and context by which they are framed.

2. The *earner* role relates to employees and self-employed people, freelancers and/or entrepreneurs. It covers an array of life situations and is concretized on the one hand as the economic role of a person making a vocational choice, a trainee or employee, and on the other as the role of a producer, supplier, entrepreneur and employer. It is clear that not everyone will ever take on all these roles. But to develop competences to analyze, establish and form 'economic relationships and interactions' as described above, it is necessary to learn to switch viewpoints and take into account the motivation and interests of economic partners.

   Occupational orientation, preparation for and support of vocational choice are part of the school mission, and economic education contributes to these goals with a broad range of intended competences, e.g. being able to compare one's own talents and capabilities with requirements on the labour market, finding information on vocational alternatives, etc. Although economic education has a broader scope, it converges with financial education at this point: For most people, wages are the most important factor for financial well-being.

3. The role of *economic citizen* refers to life situations deriving from the fact that humans are part of a political community which supports, utilizes and integrates individuals differently. The role of a transfer recipient includes life situations in which an individual benefits materially from being a member of a community that practices solidarity. The role of a taxpayer relates to life situations in which an individual is supposed to make a material contribution to a community. A voter votes on rules and selects representatives to shape the community. And finally, an involved citizen actively contributes to building the economy, society and government by participating in the community and potentially even exercising functions and positions.

This comparison of economically shaped life situations reveals that they are connected and overlap with financially shaped life situations, but that there are also visible differences between the two. There is a lot to commend the treatment of financial education as a special topic of school education, but it must be included in the broader perspective of economic education.

2.5 Conclusion

Financial education will fail to adhere to the overall school mission, which claims the student's autonomy, capability and responsibility to be the ends of all pedagogical efforts, if it is reduced to training of the practical and technical skills needed in everyday life. In the same way, reducing financial literacy solely to the requirements of individual money management would also be too restrictive. The measures to earn and raise income now and in the future and to create and build material and nonmaterial assets are fundamental financial requirements of growing importance to life in modern societies and highly developed economies. Furthermore, it is important to switch from the agent's perspective, which is adequate for individual money management and financial transaction processes, to that of an observer on rules, markets, order and system to enable the individual to make economically sound political judgments on political decisions, participate in society and contribute to political affairs.

It has been shown that financially shaped life situations can be seen as a segment of economically shaped life situations, requiring similar or even the same processes of analysis and judgment, as well as similar efforts, approaches and strategies. It comes as no great surprise that sound economic understanding is necessary for autonomous financial decisions and well-informed and reasonable judgments. But if financial education is to be seen as an integral part of economic education, efforts to foster financial education must encourage the development of an enhanced set of interrelated economic capabilities for financially shaped life situations such as spending, saving, investing, bailing, borrowing, lending or earning money.

In developing curricula for financial education, it is necessary to determine the long-term goals and the fundamental ends before conceptualizing interventions and lessons. If financial education is to contribute to the development of transferable competences, a competence model is needed that displays distinct and structured, trainable and attainable competence goals, like the draft model for economic education described above. Because this model is based on Weinert's definition, a connection exists between the authors' model and the international discussion on competence. Learning outcome standards for financial education at each level can be derived from the underlying general competence model for the economic domain.

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