



Secondary school students' informal conceptions of complex economic phenomena



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ABSTRACT

The investigation of informal conceptions has a longstanding tradition in science learning, whereas respective research efforts concerning economic issues are rather scarce. The research to be presented here aims to contribute to filling this gap by exploring adolescents' informal conceptions of complex economic phenomena. More specifically, a research study was conducted that is focused on the issue of how secondary school students conceive and experience phenomena related to financial and economic crises. This study is informed by two complementary theoretical approaches (i.e. cognitive psychology and phenomenography) and encompasses data from 56 semi-structured interviews. These data demonstrate that students have severe difficulties to adequately understand complex economic phenomena, and often do not realize the influence that those phenomena exert in their daily lives.

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1. Introduction

The consideration of learners' informal conceptions¹ is indispensable for supporting sustainable and meaningful learning in any domain, primarily because they structure perception and guide attention as well as elaboration and interpretation of incoming information. Thus, informal conceptions influence subsequent learning, reasoning, and action. Given their importance, the investigation of these conceptions has a longstanding tradition, especially in science learning (for a bibliographic overview, see Duit, 2009). In contrast, comparable efforts concerning students' informal conceptions of social science in general, and of economic issues in particular are relatively scarce and mostly limited to younger children (e.g., the pioneering work of Berti & Bombi, 1988). However, as Lundholm and Davies (2013) recently pointed out,

“there is a current “blind spot” of investigations pertaining to the ages of 16 and beyond. This age span is particularly interesting, as this is where formal education in the social sciences domain increases—along with new experiences of social, political and economic phenomena. This means that issues of experience, socialization and education can and should be given central foci and be accounted for. Also, this is a time when adolescents and adults are asked to take part in democratic and societal decisions and make choices which impact on others and the future” (pp. 535–536).

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¹ Informal conceptions are sometimes also referred to using terms like naïve understandings, lay theories, or subjective theories. However, in this article, the more neutral terms informal conceptions and preconceptions (or understanding and perceptions as synonyms for conceptions) are preferred because they avoid preliminary judgments and thus seem to be more in line with recent considerations which regard students' informal conceptions as necessary ‘stepping stones’ (Wiser & Smith, 2009) to help them building up a more comprehensive understanding of a respective knowledge domain.

The research presented in this article aims to contribute to filling this gap by exploring adolescents' informal conceptions of complex economic phenomena. More specifically, an empirical study is described which focuses on the question of how secondary school students understand and experience phenomena related to financial and economic crises. This topic was chosen because of its central position in contemporary economic debate and its high profile in the media. It is also a complex economic phenomenon which is highly demanding as they tend to be multi-faceted, intangible, and systemic in nature (e.g., [Ajello, 2002](#)). The study is mainly driven by an educational interest: it intends to broaden the available evidence regarding students' informal conceptual understanding of complex economic phenomena in order to be able to adequately adjust the design and delivery of formal curriculum and instruction. The research activities adhere to a comprehensive view of how economic and particularly financial issues should be involved in education. This view particularly emphasizes the importance of understanding complex economic phenomena in promoting students' capacity to become active citizens in modern democracies (e.g., [Davies, 2012](#)). In addition to this overarching orientation, the study is informed by key findings from empirical research on adolescents' informal conceptions in the domain of economics, which are summarized in the following Section 1.1. Moreover, it is premised on two general theoretical approaches for investigating informal conceptions. These approaches, and the respective research questions they entail, are also outlined in the remainder of this Section 1.2. Section 2 then describes the method of the study, while Section 3 presents the results. Finally, Section 4 discusses these results and draws conclusions for the design of formal curricula and instruction as well as for further research needs.

1.1. Summary of key findings from empirical research on adolescents' informal conceptions in the domain of economics

As previously mentioned, empirical research on adolescents' informal conceptions in the domain of economics is quite rare. However, a few inquiries with this target group exist that can inform imminent research initiatives. Given their pertinence with regard to the specific focus considered in this article, two additional studies concerning adults' perceptions of the financial and economic crisis are also included (cf. [Leiser, Burgeois-Gironde, & Benita, 2010](#), and [Roland-Levy, Pappalardo Boumelki, & Guillet, 2010](#)).² Taken together, the results of these investigations suggest the following key challenges for learning and teaching:

- (i) The available studies mirror well-known evidence from other cognitively demanding domains, which conveys that students are inclined to perceive and understand complex phenomena in the light of their everyday experience (e.g., [Reiner, Slotta, Chi, & Resnick, 2000](#)), whereas more scientific concepts are often—if ever—portrayed and used only superficially (e.g., at the level of the formal language use). Respective results have, for example, been reported by [Leiser and Drori \(2005\)](#), who found that lay persons tend to perceive inflation as something that – comparable to an illness – “befalls” prices and money.
- (ii) Moreover, economic phenomena are usually represented in a simplistic and unidirectional way. This is in sharp contrast to their multifaceted and dynamic nature, and to explanations from economic theory, which treats these phenomena as outcomes of interactive systems. This problem is, for example, corroborated by research studies on price determination, which showed that – even after instruction and at high levels of the educational system – some learners tend to resist switching from a mono-causal model of price determination to one that considers the dynamic interaction of supply and demand as constituting mechanism (e.g., [Marton & Pang, 2008](#); comparable findings are obtained with regard to wages, as demonstrated in the study of [Birke and Seeber \(2012\)](#) or interest on credits as shown by [Speer and Seeber \(2013\)](#)).
- (iii) Additional evidence for a lack of systemic understanding comes from [Leiser et al. \(2010\)](#), who investigated adult lay person's perceptions of the financial crisis in six different countries. In their large-scale study, two major conceptions appeared, one seeing the economy comprised of individuals, with failings of moral or cognitive character, and the other seeing the economy as a complex system, functioning in cycles. This prevalent tendency to interpret systemic issues in a predominately individualistic perspective is particularly troublesome when it comes to an understanding of phenomena that require a transition from the micro- to the macro-perspective or from individual agency and motivation to structures ([Lundholm & Davies, 2013](#)).
- (iv) These latter findings also delineate a somewhat different situation as in the case of science where common sense notions ascribe sentient purposes to inanimate objects and animal behavior whereas scientific explanations ascribe phenomena to underlying systems which operate in the material world ([Chi et al., 1994](#)). In social science, the behavior of individuals may be understood in terms of their beliefs and purposes, whilst the outcomes of individuals' actions is understood in terms of systems which co-ordinate actions and normalize beliefs, or as [Lundholm and Davies \(2013, p. 517\)](#) state, “economic phenomena are embedded in economic systems and conceptions of economic phenomena are embedded in conceptions of economic systems.”
- (v) Unsurprisingly, young people often struggle to understand the nature and purpose of economic and financial policy systems (such as taxation) which are designed to produce different outcomes from those that would otherwise occur as a consequence of systematic interaction between unequal individuals with diverse beliefs and tastes ([Furnham, 2005](#))

² Given the fact that the study at hand addresses the target group of adolescents, the available research on children's conceptions is excluded from the subsequent literature review. For a respective account cf. for instance [Webley \(2005\)](#).

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