

Celeste Varum, Abigail Ferreira, Ana Breda

Economics Education Research: Theoretical Foundations and Empirical Research, Directions and Trends in the Past Decades

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With the crisis that has taken place from 2007 became clear that knowledge about economic issues is essential to address the increasingly complex day-by-day dynamics. Not surprisingly the theme of economics education enjoyed a clear revival, reflected also in the academic publications. This paper systematizes the existing literature, which is a necessary step in developing the field. For researchers, this review also supports the definition of a future research agenda. For practitioners, it provides an outline of the literature in this area, raising awareness to the diverse aspects of economic literacy.

1 Introduction

Issues related to economics education are under increasing attention by researchers, practitioners and policy makers alike. There are several reasons for that. First, knowledge of economic-related dynamics has become essential to live within an increasingly complex environment. That knowledge is essential to support the day-to-day decisions that a normal citizen must make (Bethune 2000, OECD 2005, Jappelli 2010). Even if this knowledge and competencies imply more than knowledge from economics, economics education can contribute to improve peoples understanding about the economy. Second, from a research and practitioner point of view, there has been an increasing interest on how to improve the quality of economics education at all levels.

From the first steps back in the 1960s, economics education enjoyed a clear revival also a theme for academic research (Lo et al. 2008). 'Economic education (or economics education) focuses on the scholarship of teaching economics. It encompasses the content to be taught, methods of teaching, evaluation of those methods, and information of general interest to teachers of economics in

Celeste Varum is Assistant Professor at the University of Aveiro. She conducts research in economics and international business and issues related to economic literacy, coordinates the Project Economicando, a research project financed by FCT, dedicated to the dissemination of economics among children. She is member of the research unit GOVCOPP. email: camorim@ua.pt

Abigail Ferreira is Graduate Assistant Professor at the University of Cape Vert (UNICV), where she teaches Economics, Accounting and Finance. Her main areas of research are in economics education and economic literacy. email: abigailr.ferreira@gmail.com

Ana Breda is an Associate Professor with habilitation of the University of Aveiro and Coordinator of the Geometrix Project. Ana Breda is a member of the Algebra and Geometry Group of the Research Centre in Mathematics and Applications-CIDMA. As a researcher, she is the author of several publications in the areas of geometry, combinatorics and mathematics education. email: ambreda@ua.pt

elementary through graduate school' (Becker 2001).

In this paper¹ we review the directions this literature has followed in the last decades. Surveying the academic literature on this theme is not an easy task. In what follows we aim to conduct a review of a representative sample of published articles, which may comprise a relevant step toward a rigorous account of the paths taken by economics education research over the last several decades.

We argue that there is a window of opportunity for future research in the field, considering not only the several gaps in existing literature but also because the interest on the matters is likely to increase.

The paper is structured as follows. Section 2 describes the methodology used to identify the published material. Section 3 discusses the results and provides a detailed review of the literature. Section 4 concludes and indicates directions for future research. Systematizing and organizing the existing literature is a necessary step in developing the field and bringing the value of economic literacy and economics education to a wider public.

2 Methodology

This study clearly aimed to conduct an assessment of existing academic research on economics education through which we could identify the main characteristics of the work developed and organize the knowledge created in this field. The review draws mainly on studies identified through an electronic search on the ISI Web of Science platform. The electronic searches drew on two major databases: the Science Citation Index Expanded (SCI) and the Social Sciences Citation Index (SSCI)². These two databases offer extensive coverage of all scientific research fields. The period covered was the widest permitted by the ISI platform, from 1900 to 2010. The research was performed in November 2010 and updated in January 2011. The database was obtained using the terms 'economic(s) education', 'teaching economic(s)', 'economic(s) literacy' and 'education in economic(s)' as search keywords³. Despite the diversity of the terminology in the literature, these

are the most commonly used expressions in research in the field. The search was also restricted to scientific articles, being excluded the materials as book reviews, letters, notes, and meeting abstracts. A qualitative review of each document was performed to eliminate documents unrelated to the subject. The final set contained 389 documents. Besides, we considered complementary relevant material published by the Journal of Social Science Education, the Journal of Economics and Economic Education Research, Journal of Economics and Finance Education and the Journal of Economic Research. We believe that the sample is sufficiently representative to identify the directions taken in published academic research. A qualitative analysis of the articles was performed in an attempt to provide a more conceptual view of the main developments in this research field.

3 Research in economics education

After notable and early contributions (e.g. Thurston 1900; Manter 1927) 'economic education has developed into a major subfield of economics with its own field classification in the Journal of Economic Literature' (Marlin & Durden 1993, p.171).

In Graph 1 we plot the results obtained through our search in the ISI indexed journals, following the procedure described above. Publication within the field developed along three big waves. A first wave on economic education research began in the 1960s and lasted up to mid-1980s. During this period publication on the matter remained relatively stable. Since then and until mid-2000 the number of articles published per year registered considerable growth. Since mid-2000 the number of articles published increased again, until reaching maximum in 2010, marking probably the beginning of a third wave.

The year of 2010 registered one of the highest number of publications (24) in ISI, and over 34 percent of the articles identified were published already in the 21st century (Figure 1). William E. Becker and William B. Walstad are two of the most distinguished authors who have published the highest number of articles, and probably are the most cited.

Considering the scale and scope of the published material, a major issue that needs to be addressed is how to organize the literature along new, precise lines. A few academic publications on this theme have made attempts to respond to this demand (Siegfried & Fels, 1979; Becker, Greene &

Rosen 1990, Marlin & Durden 1993). These reviews and surveys have proposed different ways to think about economic education, but they all agree that systematizing and organizing the existing literature is a necessary step in developing the field. These reviews also clearly point to the need for an updated and more in-depth analysis of the existing literature. This paper aimed to contribute to this purpose.

Economics education is a field within economics that focuses on a variety of themes ranging from the current state of, and efforts to improve the quality of economics education at all levels, the level of economic literacy of various groups, and factors that influence that level of economic literacy. Inspired by the typology suggested by Marlin and Durden (1993) we analysed the main focus, or issues addressed, in the articles (Table 1). The focus range from research issues and questions, courses and programs, methods and materials, outcomes from instruction, to teachers and instructors, and learning and students' characteristics.

A substantial part of published work addresses research issues and questions. Here we include the notable contributions by Johnson (1979), Marlin and Durden (1993) and appreciative papers, such as the one by Dumke (1977), Stigler (1983), Davies (2006), and Lucey and Giannangelo (2006) that highlight how economic and financial literacy contribute to a so-called 'maximalist' citizenship education. The literature supports the idea that economic education should begin as early as possible, preferably in the first years of school (Walstad 1992; Soper & Walstad 1991; Bethune 2000). Nonetheless, few studies address economics education in early grades. Accordingly to Bethune (2000), 'educating elementary students in economics is not the norm; rather it is often ignored for many reasons, including a perceived lack of need for economic education, time constraints in the classroom, and inadequacy of teachers in the field'. The need for economic literacy is also debated, and Stigler (1983) illustrates the difficulty of conveying essential economic understanding. Ma and Weisse (2009) reflect the worries related to the effects of educational policies in economic education.

Very useful, particularly from a research point of view, are the group of articles that discuss techniques useful for research on economic education (e.g. Spector and Mazzeo 1980; Becker 1983a, b). Beckers (1983a and 1983b) articles on research methodology in economic education provide suggestions for the development of theoretical models in

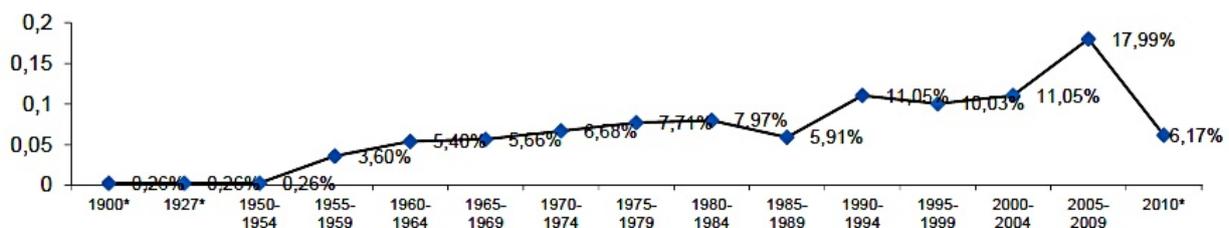


Figure 1 – Percentage of number of articles published (time-series of 5 years) (%) (*one year only)

which issues and questions can be conceptualized and tested, and review statistical and econometric techniques appropriate for model estimation and statistical testing of specific hypotheses for economics education. Regarding the research techniques, by 1980, Spector and Mazzeo concluded that research in economic education was becoming increasingly quantitative. This trend continued in the following decades. Recent applications are well reflected in the paper by Ma and Weiss (2009). Our analysis of the literature published on this matter reveals that the articles are predominantly appreciative and empirical, with formal studies and literature surveys representing only a small fraction of existing material.

A line of research debates the existence (or lack thereof) of ideological messages associated to economic education, as deeply discussed by Rider (1984, 164). Take for example Nelson and Sheffrin's (1991) discussion on the Test of Economic Literacy⁴ (TEL) -their argument is that what is taught and measured is ideology instead of literacy, because 'the TEL is reflective of the consensus of mainstream economists' (1984, 164). These arguments were later refuted by Walstad (1991, 167).

Several studies investigate the level of economic literacy among groups of the population and explore the determinants for their findings (e.g. Gleason & Van Scyoc 1995; Wood & Doyle 2002; Jappelli 2010). The survey instruments vary between studies and indeed, related to this, there is a discussion upon the frameworks to evaluate economic competencies (e.g. Macha 2011). Bethune (2000) discusses how scarce is economic education assessment tools for students below the 5th grade level and develop a testing device for use in the early grades. Kote and Witt (1995), otherwise, focus on the possibilities, as well as on the conceptual difficulties, of an international comparative study to assess economic literacy of students.

A large share of the existing literature addresses the content and structure of economics education in different countries (e.g. Becker 1997, 2000; Hansen 1991; and Walstad, 2001 for US; Bronfenbrenner 1985 for Japan; Weber 2002 for Germany; and Abbot 2003 for England). These studies focus predominantly on studies at University level, and upon the US case. The special issue from the Journal of Social Science Education is a notable contribution on this regard, discussing Civic and Economic Education in Europe. This literature raises important issues about the significant structural problems of delivering economic education (where and how).

A third set of studies have methods and/or materials as their main subject. This literature in general raises issues about the effectiveness of different delivery methods.

Are there alternatives to the traditional lecture-oriented approach, which Becker (1997) calls the 'chalk-and-talk approach'. It becomes apparent from the literature that lecturing is still the method more frequently used but there seems to be an increasing awareness and use of non-traditional methods. On this matters, Williams and Walker (1993) address the use of Internet and computers, Wood et al. (1992), Gremmen and Potters (1997) research upon the use of games or simulations (Zapalska & Brozik 2008) in order to support student authentic experience, while Leet and House (2003) Sexton (2006) and Luccasen and Thomas (2010) discuss the use of television shows and movies. These methods based upon new technologies seem to be effective mediums of interaction that complement classroom instruction, facilitate learning (Agarwal & Day 1998) and enhance economics education (Tsami 2008; Savage 2009). Other researchers emphasize

Table 1 Research themes of economic education research

Main research themes	Exemplificative papers
Research issues and questions	Dumke, 1977; Johnson, 1979; Siegfried and Fels 1979 Spector and Mazzeo, 1980; Stigler, 1983; Becker, 1983a, b; Rider, 1984 Nelson and Sheffrin, 1991; Marlin and Durden 1993; Kote and Witt, 1995 Gleason and Van Scyoc 1995; Wood and Doyle 2002 Lucey and Giannangelo 2006; Davies 2006; Ma and Weiss 2009; Lo et al. 2008; Macha, 2011, Japelli, 2010
Courses and programs	Becker et al., 1975; Bronfenbrenner, 1985. Hansen, 1991; Becker 1997, 2000; Walstad, 2001; Weber, 2002; Abbot 2003 Smith and Edwards, 2007
Methods and/or materials	Wood et al., 1992; Diamond and Medewitz, 1990; Gremmen and Potters, 1997; Becker, 1997 Agarwal and Day, 1998; Leet and Houser, 2003 Jensen and Owen, 2003; Emerson and Taylor, 2004 Dickie, 2006; Sexton, 2006; Tsami, 2008 Zapalska and Brosik, 2008; Savage, 2009 Bergstrom, 2009; Luccasen and Thomas, 2010
Outcomes from instruction, efficacy of courses, and impact upon attitudes	Soper and Brenekke, 1981; Buckles and Freeman, 1984; Baumol and Highsmith, 1988; Highsmith and Baumol, 1991; Grimes, 1994; Diamond and Medewitz, 1990; Kennedy and Siegfried, 1997 Simkins and Allen, 2001; Arias and Walker, 2004 Arai et al., 2005; Christiansen et al., 2008; Venetoklis, 2007; Haucap and Just, 2010; Grimes et al., 2010
Teachers and instructors	Bosshardt and Watts, 1990, 1994; Ashworth and Evans, 2000 Allgood and Walstad, 1999; Walstad and Rebeck, 2001 Ettlinger, 2006; Jocoy, 2006; Walker, 2006
Learning and students characteristics	Siegfried, 1979 Heath, 1989; Walstad and Robson, 1997 Borg and Stranahan, 2002; Shanahan and Meyer (2001) Swope and Schmitt's, 2006; Schaur and Watts, 2010

competence-based learning activities, for example, through classroom discussions and experiments (Jensen & Owen 2003; Emerson & Taylor 2004; Dickie 2006; Bergstrom 2009).

Relatively fewer articles focus on outcomes from instruction. Among these, some deal with the effectiveness of education in economics by evaluating the achievement of students in economics (e.g. Soper & Brenneke 1981; Buckles & Freeman 1984; Diamond & Medewitz 1990; Buckles & Walstad 2008). These studies aim to explore a wide range of system-wide determinants affecting the success in economic education (e.g. Baumol & Highsmith 1988; Grimes 1994; Highsmith & Baumol 1991). Overall their contribution is notable to enhance knowledge regarding overall status of economic education in schools and for recommending needed changes.

A number of studies evaluate the efficiency of specific courses and explore specific determinants for success. For example, Kennedy and Siegfried (1997) and Arias and Walker (2004) explore the effect of class size upon the results in introductory courses. The authors find statistically significant evidence that small class size has a positive impact on student performance. Simkins and Allen (2001) study the results obtained in the course of principles of macroeconomics and explain the differences between Black and White Universities.

Regarding the effects of economic instruction, inspiring and challenging are the studies that discuss the effects upon students' attitudes and values. On this regard there is a notable line of research investigating whether people that studied economics have different values, attitudes and behaviour. Several studies reveal that these differences exist. On this, there has been a debate concerning the hypothesis that economics students are more selfish (less cooperative, trustful, and trustworthy) than other students. For example, Venetoklis (2007) showed that economics education affected the distributive justice preferences of students. In Haucap and Just (2009), students enrolled in economics have shown different attitudes towards various allocation mechanisms for a scarce resource. In Arai et al. (2005) economics students tended to behave rationally in many standard experimental games, but they were not especially less trustful or less cooperative in other situations. Worrying are the findings from Arai et al. (2005) that reveal economics students to be more selfish and to behave more egoistically in game experiments.

While differences have been found, there is not agreement on the sources of the differences. The differences may be attributed either to nature and nurture effects. Accordingly to the first line of argumentation, students that chose to study economics are already different than the others by nature. From another perspective, the differences are attributed to attending economics instruction. On their study Haucap and Just (2009) find the differences in attitudes towards various allocation mechanisms for a scarce resource to be related.

either to nature and nurture. Arai et al. (2005) conclude that education, inculcation, and culture play most important roles in generating trust. They also find the effects of education likely to depend on culture. If, to a certain degree, economics instruction indeed changes attitudes, and indeed leave students less cooperative, one may raise doubts about the social benefits of teaching economics, as well highlighted by Haucap and Just (2009), and about whether economic instructors are entitled to change students' behaviour. For future research it will be interesting to analyze further on this, as also other factors (nature, social, culture,..) likely to affect the effect of economic education upon students' attitudes.

There are also two studies that examine the impact of the level of economic understanding on an individual's financial decisions, for example regarding bank accounts and participation in the stock market (e.g. Grimes et al. 2010; Christiansen et al 2008). A very small fraction of studies measure the effects and results of economic instruction along these lines.

Another group of studies direct attention to instructors and teachers effects in economics education (Bosshardt & Watts 1990, 1994), and they discuss instructor training in economics (Allgood & Walstad 1999; Walstad & Rebeck 2001). There are also articles on teaching styles, individual methods and strategies for teaching economics (Ettlinger 2006; Jocoy 2006; Walker 2006), as well as on the danger of certain practices. On this regard, on their study, Ashworth and Evans (2000) conclude that students may be discouraged from the study of A-level economics by relatively severe grading at the mid-point of A-level study.

Finally, on students characteristics effects upon learning economics or finance, see, for example, Siegfried (1979) and the studies by Walstad and Robson (1997) and Heath (1989), who explored the gender bias in economic education (that men generally perform better than woman). Other characteristics that were considered include personality, preferences and ability (e.g. Borg & Stranahan 2002). Swope and Schmitt (2006) found that students characterized as "judging types" (described as decisive, organized, and self-regimented) generally performed better (economics grades over the entire curriculum) than students characterized as "perceiving types" (described as curious, adaptable, and spontaneous). Shanahan and Meyer (2001) show that on entry to university students show considerable variation in their perceptions of what economics is and what economists do, and such variation affects student learning.

The research themes identified above evolved over time along the three major waves. When considering the big waves, one realizes that methods and materials as well as research upon the outcome from economic education gained momentum as themes for research in the second wave of studies. The research on these matters is likely to increase taken the variety of methods and also the need to obtain evidence on the effectiveness

of education programs in economics.

4 Conclusion

Not surprisingly, research related to economic education increased substantially over time, and significantly further in the recent decade.

Economic education has been an important area of research in economics, and the interest on the matter is likely to increase. The current economic crisis highlights, now more than ever, the immediate necessity of endowing citizens with economic and financial knowledge, which enables them to optimize their financial decisions and to take a more active and responsible role in the society. There is a window of opportunity for future research and publication on this field taking in consideration not only the several gaps in exiting literature but also because the interest on the matters is likely to increase.

The literature supports the idea that economic education should begin as early as possible, but it is essential to provide new evidence on economics education at precollege levels, including empirical evidence on teaching methods, research on children's understanding of economic concepts, and the development and/or improvement of assessment measures and evaluative frameworks to test student understanding.

The literature also raises issues about the need of economics education and of employment of new pedagogic methodologies. The question of whether or not pre-college programs should embed economics is not clearly addressed. What is clear is that it is unlikely that economics can be taught in any substantial way at schools due to resource limitations and lack of teachers training in the matters.

The programs and activities related to economic education can rely on different teaching methods. Along with the general trends in society, recent literature emphasizes the use of Internet and computers, television shows and movies (Leet & Houser 2003; Sexton 2006; Luccasen & Thomas 2010). However, further evidence is needed on the efficiency of these methods to teaching economics.

This paper surveys the themes more commonly addressed in the economic education literature published in the last decades. Regarding the main subject of the articles, a vast majority are dedicated to research issues and questions and research on courses and programs. At empirical level, there is a notable lack of research on the use and effects of economics education on individuals' attitudes, and on wider economic competitiveness. Studies along these lines are needed. All over, governments are broadly supporting the embedding of economics, enterprise, financial and entrepreneurship capacities, across education and through society more generally. In the EU, unlike the US, there is a high dependency of education upon public resources. In the current economic climate it is uncertain if and how this agenda will be (or should be) supported.

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Endnotes:

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² Using these databases implied a risk of not including relevant articles published in journals not covered in the ISI. For example, the *Journal of Social Science Education*, the *Journal of Economics and Economic Education Research*, *Journal of Economics and Finance Education* and the *Journal of Economic Research* are not included in the ISI platform.

³ The search was performed in the topic field, which runs the search in titles, keywords and abstracts.

⁴ The TEL is a standardized multiple choice test for economic achievement at the high school level that was, first developed under the auspices of the Joint Council for Economic Education (JCEE) by Soper (first edition dates from 1978 and was later revised by Walstad and Soper (1988).