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***Problem-Based Learning and Economics – a Match in Heaven or in Hell?***

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*“Existing economics is a theoretical [meaning mathematical] system which floats in the air and which bears little relation to what happens in the real world”* (Ronald Coase, according to Fullbrook, 2007, p. 2).

Abstract:

PBL imply research based on real-life problems and subsequently theory and methodology needs to be tailor-made to the problem in hand. When making problem-based economically oriented projects students thus, need to construct their own theoretical framework by combining different economic paradigms, linking to other social sciences and consulting research on the problem at hand. This is challenging within the field of economics. Theories from mainstream economics are less than adequate in this respect as they are often very remote from real-life economic problems, are difficult to connect to other theories, and tends to redefine a problem in order to make it fit into the abstract methodological approach. Also, non-mainstream economics might, however, be experienced as being too abstract and arm’s length. The students are, hence, very dependent on their supervisor to navigate in this messy water.

*Introduction*

Years ago, one of the authors of this paper attended his first-year study and was to prepare an assignment. The problem chosen was very topical environmental challenges, as the Danish parliament had just passed the first anti-pollution bill ever. He consulted his supervisor for advice on how to understand the environmental problems from an economic point of view. The supervisor told our hopeful young student to read a bulky mainstream textbook entitled “Economics”. The book contained a lot of graphs and formulas but nothing, which could help the student conceptualising environmental challenges in contemporary society.

One convincing way of overcoming such *faux pas* is to follow in the footsteps of the universities and other educational institutions, which organise part of their educational activities as problem-based. In the literature, so-called Problem-Based Learning (PBL) is defined as a student-centred pedagogy where open-ended problems based on real-life examples are pivotal for learning processes. In this paper, we discuss how mainstream research and teaching but also to some extent heterodox thinking might be in conflict with PBL.

The two key words in the title of this paper are PBL and Economics. As a consequence, these are defined and discussed in the two first sections of the paper. It is argued that mainstream economic theory will most often be at odds with doing PBL. In the third section, it is argued that this also goes for mainstream economic textbooks not only because they reflect research but also because they are less pluralistic than mainstream economic research. In the fourth section, it is argued at some length how economics – mainstream as well as heterodox – often clash with PBL. In the final section, we briefly describe how students doing PBL might deal with this clash and resolve the tensions there might have been had they relied on mainstream research and teaching only.

*PBL: Considerations and prerequisites*

Problems – in the form of real-life cases – could be used as illustrations of theoretical points and issues. However, PBL should not be seen in such a connotation where theory, an embedded method, and restrictive disciplinary boundaries limit cognition. PBL should – so to speak – bee seen the other way around, i.e. real-life problems are guiding cognition open to adequate methods and various conceptual systems. The theoretical considerations behind this line of thinking are especially inspired by scholars like Wright Mills (2001, originally 1959) and Oskar Negt (1975, originally 1968). These authors suggest the use of every-day examples (or problems) derived from the immediate experience of students and researchers as a convenient and effective starting point for cognition of the society of which they are an integrated part.

This notion of learning and research implies that cognition of *general* and *common* social conditions is based upon *specific* and *particular* examples. Thus, the starting point is specific and particular real-life examples that through analytical use of adequate theory are conceptualised as symptoms of the general social context and its (mal)functioning. Hence, the particular example, i.e. problem, is brought into a comprehensive framework, that embraces a general social context explaining what is at stake in the specific case (Hansen & Ingemann 2016).

Doing PBL implies that a great part of the educational activities is carried out as student-centred projects in project-groups formed by a handful of students (Kolmos, Fink og Krogh, 2004). The group will choose a real-life problem of their own choice and turn it into a research-problem, i.e. how this problem as a symptom or manifestation can reflect fundamental social conditions and thus be analysed and explained.

During the process of making a project a supervisor, i.e. a member of the academic staff, supports students. At the end of the process, the group hands in a project report in which they present their argument, findings and account for their cognition process (including methodological considerations *ex ante*) from problem to conclusion. In that process, students are supposed to be driven by their curiosity for explaining and understanding their own social context.

*What is ‘Economics’?*

As mentioned in the introduction the other key word was *Economics*. This term is very often defined narrowly so that it only refers to mainstream economic research and related textbooks. Both are typically dominated by neoclassical and New Keynesian theory. This dominance by certain paradigms is by no means self-evident but could be traced back to the historical development of economics as a social science.

In accordance with numerous other writers we would argue that Economics has moved more and more away from real-life economic problems. One can account for this development by addressing three dimensions of economic research and theory-building: (1) field of research, (2) meaning of context, and (3) level of abstraction.

The famous *Methodenstreit* taking place around 1884 marked both substantially and symbolically a crucial turning point for economics; one can even claim that the *Methodenstreit* marked the mere setting up of economics as a discipline of *pure economics,* which framework of understanding since then has been dominant (for a further description of this development, see e.g. Fusfeld 2008, Clift 2014, Milonakis & Fine 2009). In the following, we shall link the above-mentioned three dimensions to the *Methodenstreit* and the subsequent evolution of economics.

Seen both from a perspective of philosophy of science and from a corresponding methodological perspective, the *Methodenstreit* covered a very radical conflict between Gustav von Schmoller and Carl Menger (e.g. Clift 2014). The former represented the German Historical School, at that time a dominant paradigm, while the latter represented a new Austrian paradigm that subsequently initiated what was later baptized the marginal revolution. The battle between the two camps led to the split of economists into two different paradigms: one following the trajectory of the classical tradition of interpreting economy as an integrated part of the social governance- and allocation-system, and another neoclassical line of pure economics tending to regard economics as a methodology for studying theoretically formulated allocative processes and problems. The former is in modern-days also characterised as heterodox thinking and the latter as orthodox.

Regarding the *field of research*, classical thinking was based on a conception of economics as *political economy*, i.e. the art of managing the state. This required and contributed to the development of a macro-perspective embracing the state as an institution regarded as being necessary to ensure the common good. In opposition, the neoclassical line advocated for *pure economics* which implied a demarcation of a rather narrow field of research where general social elements, except the mere economic allocative in a micro-perspective, were excluded and looked upon as exogenous.

As for the question of context, classical thinking underlined the importance of this. Particularly for paradigms in line with the German Historical School, time and place were seen as essential to understand and explain societal change. As a consequence, ideographic methods were necessary as society was conceptualised not as a mechanical device but rather as an evolving mechanism, which had to be mapped in contextualised detail (Shionoya 2005). The neoclassical perspective did on the contrary deny the importance of context and subsequently of evolving institutions. The latter could be regarded as given and kept *ceteris paribus* and, hence, outside the scope of analysis and theory-building. Thus, from a neoclassical perspective, problems defined by context, i.e. real-life problems, does not deserve attention *an sich*, while explanations of real-life problems are presupposed to be based upon universal, nomothetic relations (Ingemann 2013).

Turning to the question of *level of abstraction,* the epistemic foundation of the classical line of thinking implies analytical considerations to be deeply rooted in real-life problems, and the theoretical level tends to provide heuristic tools enabling scholars to conceptualize and analyse real-life problems and further to suggest solutions. Following an epistemological distinction inspired by Karl Popper’s ontology of three worlds and adapted by scholars advocating for critical realism like Jespersen (2007): the classical line tends to move between *world 1* (observation of real-life), *world 2* (intellectual analysis and recognition), and *world 3* (application of knowledge upon world 1).

In contrast, the neoclassical line is based upon an epistemology calling for pure theory and considerations by means for *ceteris paribus* abstractions and having the laboratory of natural sciences as the design ideal for carrying out abstract experiments. Thus, the neoclassical line of thinking tends to stay in the abstractive world 2, and hence blame real-life for being inconsistent with the abstract assumptions of the theory when faced with a problem like unemployment.

The neoclassical impact on the evolution of economics as part of social sciences was fortified over the 20th century (Lawson 1998). In this process, the change in focus compared to the historical school was underlined by Lionell Robbins (1932) who emphasised that the neoclassical ontology was *pure economics* while the epistemology was *pure theory,* in his definition of economics: economics is about the allocation of scarce goods.

Accordingly, economics had been transformed from a social science about how to manage the state to a science concerned with allocation and subsequently no longer aiming at explaining and understanding economic processes as part of nations (political economy). The aim was rather to evolve techniques tailor-made to solve puzzles about allocation in various fields (Milonakis & Fine 2009, and Hodgson 2001) based on closed system thinking (Chick 2004).

*What about the teaching of mainstream economics?*

How did this development of economics as a science influence teaching in economics? It is well known that in general most teaching into economics is organized as lectures being based on textbooks. Textbooks are, hence, crucial for understanding what we teach and how to teach. It is also well known that the underlying theoretical framework of most textbooks of economics are dominated by neoclassical and New Keynesian paradigms (in the long run markets work perfectly but in the short run there might be some frictions leaving some space for state intervention in the form of rules and regulation and an activist fiscal and monetary policy).

However, a recent analysis by one of the authors of this paper (Madsen 2013) suggests that a real life event like the financial crisis is more visible in textbooks than in much mainstream economic research but the theoretical apparatus is essentially left unchanged. This reflects that textbooks like mainstream research share the vision of a pure economics.

But textbooks could be different from mainstream research. After the WW 2, textbooks were much closer to reality and the real-life economy also theoretically, than recent textbooks as illustrated by the brilliant, and at first very popular, Keynesian oriented textbook by Tarshis (1947). This textbook was, however, accused of being left wing and was as a consequence ostracized. To avoid similar criticisms Samuelson decided to make his textbook far more ‘scientific’ than did Tarshis by including far more diagrams and equations (Samuelson, 1997) hereby having a decisive impact on the future format of textbooks. Later, Samuelson also became one of the main founders of the so-called neoclassical synthesis. These efforts into developing a pure economics by himself and others were transformed into textbook friendly interpretations in later editions of his book.

For long the textbook by Samuelson has not dominated the market for textbooks. The textbooks of today have even at an introductory level 3-400 graphs and has despite numerous real-life examples become even more theoretical and mainstream than the textbook by Samuelson as illustrated by one of the best-selling books by Mankiw (2012). Real-life economic events are used to illustrate theoretical points rather than the other way round as illustrated by how most textbooks cope with the financial crisis (if at all mentioned. Madsen, 2013, p. 219, documents how Mankiw as one of the only textbooks does not find the financial crisis worth mentioning in any of the summaries to the chapters).

Furthermore, like most economic research, important economic textbooks essentially build on one (typically New Keynesian/neoclassical) without letting the reader become aware of this fact. This leaves the reader with the impression that the textbook is ‘economics’ and also to some extent is supposed to present the economy as it ‘is’. This closed and non-pluralistic approach has elsewhere been characterized as ‘autistic’ (some years ago an on-line journal was called ‘post-autistic economics’): we are left in a closed uni-dimensional theoretical universe without ever been explained why.

*The clash between PBL and economics*

As indicated, Problem-Based Learning tends to have real-life problems as its starting point rather than theoretical problems. However, the Achilles heel of orthodox economics has for long been its lack of ability to deal with real-life problems due to massive neoclassical influence on both ontology and epistemology. By real-life problems, we understand such defined by, and empirically observable in, actual context like a high level of unemployment. Thus, real-life problems are to a certain extent problems *for someone* in social surroundings and these problems are considered as being solved if or when they eventually disappear.

The main dilemma is, hence, that mainstream economics has been more focused on solving theoretical rather than real-life problems – i.e. problems that are defined by theory without questioning the ontological and epistemological hard core (re Lakatos & Feurabend 1999). Even when coping with real-life phenomena such as unemployment, it has been in the form of a theoretical conceived abstract optimisation choice for the individual between staying idle or choosing to work.

In contrast to this atomistic and decoupled focus, most interesting real-life economic problems are – as implied in PBL – embedded in societal contexts and, thus, influenced by social relations and vested interests. Quite a few people would have to experience a problem to make it a societal problem. Furthermore, the choices individuals are believed to have must be real – not conceived or theoretical. What unemployed actually do when they are unemployed is a relational and thus social problem; what they might do if we assume unemployment to be a free choice between being idle or not – is mostly not.

Of course, the intention of most economists or large parts of economics is in some sense to cope with real-life problems but also to non-mainstream economics economic real-life phenomena are more abstract than one would expect when doing PBL within social sciences in general. More often than not, economic real-life phenomena are not real in the sense, that we can observe them with our own eyes: the implications of unemployment and business cycles are very real while their visibility as well as the underlying mechanisms are of a more theoretical than real-life nature as they appear below the surface (Jespersen 2007).

This is one of the paradoxes of doing PBL involving economics. All types of macro-economic theory – be it Keynesian or not – has an arm’s length approach to real-life phenomena understood as current context. This is also why the choosing of an adequate economic curriculum supporting problem-based project work is an art, which involve cross-disciplinary theories within economics as well as outside the narrowly defined area of orthodox economics: institutionalism, economic sociology, ecological economics, etc.

The last-mentioned schools of thought represent more empirically and context oriented ways of coping with the economy and society at large and they have been developed by scholars puzzled by real-life problems – e.g. Veblen (1899) observing conspicuous consumption or Boulding (Boulding 1971) and Daly (Daly 1973) observing serious and real threats to the environment. Similarly, we must reckon that Keynes (1936) aimed at solving a very real problem at that time, namely unemployment. Based on real-life problems, scholars have founded and developed schools of thought aiming to conceptualize such problems and potentially also contribute in solving them. As a consequence, PB-projects would find it easier to relate to and apply these kinds of theories rather that ‘pure economy’ theory.

*Where to go from here?*

Concerning textbooks supporting and underpinning project work more than the standard economics textbook, two decent choices are here Stilwell (2011) and Chang (2014). Both of these textbooks are, however, rather superficial and probably not specialised in the problem, which students are analysing.

In a way, for students a part of doing PBL-projects is to skip the textbook and develop their own ‘textbook’ of the problem at hand. One key feature of a problem-based project has a lot in common with a standard journal article. There needs to be a chapter or section on ‘the state of the art’ concerning the problem and this research might be both mainstream and heterodox. This knowledge is part of the ‘theory’ of the project as it is some stylized facts concerning the problem *in casu* and parts of the results might also be theoretical founded.

Often it is very difficult for the students to find relevant literature and it is even more difficult to use it to analyse the research question (‘the problem’). Furthermore, students might also need some basic textbooks to understand and interpret the research. The role of the supervisor is to stimulate and facilitate this process. Not just to hand out an arbitrary textbook.

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