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Innovation Policy Learning

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Definition

The term innovation policy learning stands for the change of innovation policy-relevant knowledge, skills, or attitudes, which are the results of the assessment of past, present, or possible future policies (Biegelbauer 2013).

Emergence of the Term and Development of Research

The approaches utilizing notions of policy learning share a conviction that the activities of policymakers can be explained by understanding these actions in terms of feedback cycles used in order to assess previous actions. Policy-makers engage in learning in order to make sense of the world they live in, to gain a better understanding of the effects of their policies, and to arrive at better decisions in the future.

The notion “innovation policy learning” can be traced back to two different discussions, one rooted in political science and the other in economics. In political science, learning has been discussed as a category of policy analysis since the 1960s, when Karl Deutsch introduced his cybernetics of government (Deutsch 1966). Another milestone for the development of the term was Hugh Heclo’s book on British and Swedish social policy (1974), in which he writes: “Governments not only, ‘power’... they also puzzle. Policy-making is a form of collective puzzlement on societies behalf” (Heclo 1974, 305). With this terminology, he captured one of the basic premises of the discussion on policy learning, namely, that political action cannot be explained alone by looking at interests and institutions and how they relate to power, which would be the classical categories of political science. Rather policy-makers also engage into efforts to solve what they perceive to be policy problems (Bandelow 2003; Biegelbauer 2013).

Similarly influential is the “advocacy coalition framework”, developed mainly by Paul Sabatier (Sabatier and Weible 2007). In this framework, political processes are located in policy subfields, which are characterized by competing advocacy coalitions that may or may not change their belief structures through learning. At about the same time Peter Hall found that the change from Keynesian to monetarist economic policies in the early 1980s was best explained through social learning. His theory engulfs three targets of policy change, settings of policy instruments, policy instruments themselves, and finally policy paradigms, which are the ideational structure policies are embedded in and which most importantly explain the scope and the workings of policies. Social learning proper encompasses...
the change of policy paradigms, something happening only rarely (Hall 1993).

In the 2000s, policy learning approaches have been further developed, through, for example, critique of key terms (Maier et al. 2003), the further expansion of concepts of social learning (Oliver and Pemberton 2004), the advocacy coalition framework (Sabatier and Weible 2007), and of interpretative approaches (Grin and Loeb 2007), which also have integrated ideas from organizational sociology (Argyris and Schöll 1978).

The second debate in which the term innovation policy learning is rooted stems from evolutionary economics. Neoclassic economic theory originally has exogenized innovation as a factor of economic development (Biegelbauer 2000). Yet with a number of empirical studies analyzing the production factors’ input on growth carried out in search for new growth models, a new set of models was created in the late 1970s (Rosenberg et al. 1992). Joseph Schumpeter’s vision of a dynamic and evolutionary economy (Schumpeter 1911) was integrated into a number of studies (e.g., Nelson and Winter 1982; Carayannis and Ziemnowicz 2007), which transcended the disciplinary boundaries of economics and led to a view of economic growth and technological change, which has increasingly been rivaling the neoclassical economic model ever since.

The key difference between the old neoclassical models and the newer Schumpeterian ones is that the latter are more dynamic in their evolutionary perspectives (Hofer 2003). With regard to technological change, this means an endogenization of the innovation process. Similar to the neoclassical model, the new models see technological change as the main driving factor for economic growth. However, since the new models are interested in explaining technological change, they assume the production function to include factors such as the level of technology or more broadly the stock of knowledge, investments into R&D, skills of the workforce (human capital), indicators of the complexity of institutional arrangements, and the like, aside physical capital (Biegelbauer 2000).

In evolutionary economics, an important mechanism for the creation of knowledge and skills is learning. This notion has been developed especially by Bengt-Age Lundvall’s concept of the “learning economy” (Lundvall 1992). Lundvall has differentiated between different forms of knowledge and skills, some of which had been rather neglected by economic theorizing before. This is especially the case with non-codified knowledge which accrues through “learning by doing” and forms an important knowledge base upon which a lot of innovation activities are based.

The wider framework of Lundvall’s conception of a learning economy is the concept of “national systems of innovation” (Freeman 1987; Lundvall 1992; Nelson 1993), “the network of institutions in the public and the private sectors whose activities and interactions initiate, import, modify and diffuse new technologies” (Freeman 1987).

The notions of learning economies and national systems of innovation transformed in an ongoing process what was before science, technology, higher education, and industry policies into innovation policy (Biegelbauer and Borrás 2003; Edler 2003; Carayannis and Campbell 2006). This move impacts on the selection of policies as well as on the ways policies are perceived. Policy instruments have become more complex and are constructed to fulfill a multitude of purposes for the needs of a multitude of actors, and their effects are expected to be systemic (Kuhlmann and Smits 2004; Weber 2009). These changes have been interpreted as policy learning closely connected to the developments in the area of evolutionary economic innovation theory (Mytelka and Smith 2001).

**Ramifications for Innovation Policy and Policy Analysis**

A number of policy instruments have been devised to foster policy learning: evaluations, benchmarks, foresight exercises, impact assessments, expert commissions, and studies have...
been utilized to make policy-making ever more evidence-based and rational (Biegelbauer 2007, 2009; Biegelbauer and Mayer 2008).

Especially the European Union has built a whole learning architecture as part of the Lisbon Agenda and the Strategy 2020, both featuring the main goal of making the EU the most innovative and competitive region of the world. These strategies make use of the open method of coordination and its plethora of learning instruments. The exact nature of the open method of coordination, for example, the degree of its formality, differs from policy field to policy field (Borrás and Greve 2011). In RTDI policy, it engulfs a variety of rather informal networks, projects, and platforms in which experiences with RTDI policy-making are to be analyzed and exchanged (Lisbon Expert Group 2009). An important role plays a set of indicators, the Innovation Union Scoreboard, which has been developed in order to ease a systematic comparison of the EU member states’ experiences – the Innovation Union Scoreboard covers the 27 EU member and 7 additional countries with 25 innovation research-related indicators as part of the EU’s Strategy 2020, which has replaced the EU Lisbon Agenda in 2010 (Biegelbauer 2012).

In the 2000s, efforts have been made to integrate the two strands of research described here, one from political science and another one from evolutionary economics, in order to better understand innovation policy learning. This has taken the form of historical analyses of innovation systems and innovation policy on national (Biegelbauer 2000) and supranational (Edler 2003) levels, of comparisons of national systems of innovation (Biegelbauer and Borrás 2003), analyses of the relation between innovation theory and policy development (Mytelka and Smith 2001), critique of (naive) benchmarking exercises (Lundvall and Tomlinson 2001), and the open method of coordination in innovation policy (Lisbon Expert Group 2009).

Conclusions and Future Directions

From the research on innovation policy learning, several conclusions can be drawn for the further development of policy analysis. First of all, the concentration in the research field on rational decision-making in the sense of the maximization of personal utility should be balanced with other perspectives on decision-making processes. Policy-making is not only about a quest for power and influence, it is also about gaining knowledge, solving problems, and dealing with historically contingent norms and practices in the form of institutions, discourses, and culture (Gottweis 1998; Prainsack 2011).

Second, these different factors, for example, interests, cognition, institutions, discourses, and cultures, all play a role in the policy-making process, which is much messier, less sequential, and rational as usually depicted in the statements of politicians, accounts of journalists, but also social scientists (Hoppe 2009; Biegelbauer 2013).

Third, there is an urgent need for a fine-grained empirically driven policy analysis recognizing the messiness of decision-making processes instead of producing more schematic depictions of policy-making utilizing models of lower solution. Such a policy analysis could lead to a deeper understanding of the interplay of factors leading to policies and stay closer to accounts of policy-making one can hear from policy workers once the microphone has been turned off. Such a policy analysis could further our understanding of policy-making, and it moreover would be also useful for providing orientation and reflection knowledge for politicians and civil servants.

Cross-References

- Innovation Policies
- Innovation Systems and Entrepreneurship
- Joseph A. Schumpeter and Innovation
- National Innovation System/National Innovations Systems
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