

### Innovation Policy Learning

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## 2 Innovation Policy Learning

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### 7 Definition

8 The term innovation policy learning stands for  
9 the change of innovation policy-relevant knowl-  
10 edge, skills, or attitudes, which are the results of  
11 the assessment of past, present, or possible future  
12 policies (Biegelbauer 2013).

### 13 Emergence of the Term and 14 Development of Research

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

24 The notion “innovation policy learning” can  
25 be traced back to two different discussions, one  
26 rooted in political science and the other in eco-  
27 nomics. In political science, learning has been  
28 discussed as a category of policy analysis since

the 1960s, when Karl Deutsch introduced his 29  
cybernetics of government (Deutsch 1966). 30  
Another milestone for the development of the 31  
term was Hugh Heclo’s book on British and 32  
Swedish social policy (1974), in which he writes: 33  
“Governments not only, ‘power’ . . . they also 34  
puzzle. Policy-making is a form of collective 35  
puzzlement on societies behalf” (Heclo 1974, 36  
305). With this terminology, he captured one of 37  
the basic premises of the discussion on policy 38  
learning, namely, that political action cannot be 39  
explained alone by looking at interests and insti- 40  
tutions and how they relate to power, which 41  
would be the classical categories of political sci- 42  
ence. Rather policy-makers also engage into 43  
efforts to solve what they perceive to be policy 44  
problems (Bandelow 2003; Biegelbauer 2013). 45

Similarly influential is the “advocacy coalition 46  
framework”, developed mainly by Paul Sabatier 47  
(Sabatier and Weible 2007). In this framework, 48  
political processes are located in policy subfields, 49  
which are characterized by competing advocacy 50  
coalitions that may or may not change their 51  
belief structures through learning. At about the 52  
same time Peter Hall found that the change 53  
from Keynesian to monetarist economic policies 54  
in the early 1980s was best explained through 55  
social learning. His theory engulfs three targets 56  
of policy change, settings of policy instruments, 57  
policy instruments themselves, and finally 58  
policy paradigms, which are the ideational struc- 59  
ture policies are embedded in and which most 60  
importantly explain the scope and the workings 61  
of policies. Social learning proper encompasses 62

63 the change of policy paradigms, something  
64 happening only rarely (Hall 1993).

65 In the 2000s, policy learning approaches have  
66 been further developed, through, for example,  
67 critique of key terms (Maier et al. 2003), the  
68 further expansion of concepts of social learning  
69 (Oliver and Pemberton 2004), the advocacy coal-  
70 ition framework (Sabatier and Weible 2007),  
71 and of interpretative approaches (Grin and  
72 Loeber 2007), which also have integrated ideas  
73 from organizational sociology (Argyris and  
74 Schön 1978).

75 The second debate in which the term innova-  
76 tion policy learning is rooted stems from evolu-  
77 tionary economics. Neoclassic economic theory  
78 originally has exogenized innovation as a factor  
79 of economic development (Biegelbauer 2000).  
80 Yet with a number of empirical studies analyzing  
81 the production factors' input on growth carried  
82 out in search for new growth models, a new set of  
83 models was created in the late 1970s (Rosenberg  
84 et al. 1992). Joseph Schumpeter's vision of a  
85 dynamic and evolutionary economy (Schumpeter  
86 1971) was integrated into a number of studies  
87 (e.g., Nelson and Winter 1982; Carayannis  
88 and Ziemnowicz 2007), which transcended the  
89 disciplinary boundaries of economics and led to  
90 a view of economic growth and technological  
91 change, which has increasingly been rivaling the  
92 neoclassical economic model ever since.

93 The key difference between the old neoclassi-  
94 cal models and the newer Schumpeterian ones is  
95 that the latter are more dynamic in their  
96 evolutionary perspectives (Hofer 2003).  
97 With regard to technological change, this  
98 means an endogenization of the innovation  
99 process. Similar to the neoclassical model, the  
100 new models see technological change as  
101 the main driving factor for economic growth.  
102 However, since the new models are interested in  
103 explaining technological change, they assume the  
104 production function to include factors such as the  
105 level of technology or more broadly the stock  
106 of knowledge, investments into R&D, skills of  
107 the work force (human capital), indicators of  
108 the complexity of institutional arrangements,  
109 and the like, aside physical capital (Biegelbauer  
110 2000).

111 In evolutionary economics, an important  
112 mechanism for the creation of knowledge and  
113 skills is learning. This notion has been developed  
114 especially by Bengt-Age Lundvall's concept of  
115 the "learning economy" (Lundvall 1992).  
116 Lundvall has differentiated between different  
117 forms of knowledge and skills, some of which  
118 had been rather neglected by economic theoriz-  
119 ing before. This is especially the case with  
120 non-codified knowledge which accrues through  
121 "learning by doing" and forms an important  
122 knowledge base upon which a lot of innovation  
123 activities are based.

124 The wider framework of Lundvall's conception  
125 of a learning economy is the concept of "national  
126 systems of innovation" (Freeman 1987; Lundvall  
127 1992; Nelson 1993), "the network of institutions in  
128 the public and the private sectors whose activities  
129 and interactions initiate, import, modify and  
130 diffuse new technologies" (Freeman 1987).

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

## 149 **Ramifications for Innovation Policy and** 150 **Policy Analysis**

151 A number of policy instruments have been  
152 devised to foster policy learning: evaluations,  
153 benchmarks, foresight exercises, impact assess-  
154 ments, expert commissions, and studies have

155 been utilized to make policy-making ever more  
 156 evidence-based and rational (Biegelbauer 2007,  
 157 2009; Biegelbauer and Mayer 2008).

158 Especially the European Union has built  
 159 a whole learning architecture as part of the  
 160 Lisbon Agenda and the Strategy 2020, both  
 161 featuring the main goal of making the EU the  
 162 most innovative and competitive region of  
 163 the world. These strategies make use of the  
 164 open method of coordination and its plethora of  
 165 learning instruments. The exact nature of the  
 166 open method of coordination, for example, the  
 167 degree of its formality, differs from policy field to  
 168 policy field (Borrás and Greve 2004; Borrás and  
 169 Radaelli 2011). In RTDI policy, it engulfs  
 170 a variety of rather informal networks, projects,  
 171 and platforms in which experiences with RTDI  
 172 policy-making are to be analyzed and exchanged  
 173 (Lisbon Expert Group 2009). An important role  
 174 plays a set of indicators, the Innovation Union  
 175 Scoreboard, which has been developed in order to  
 176 ease a systematic comparison of the EU member  
 177 states' experiences – the Innovation Union  
 178 Scoreboard covers the 27 EU member and 7  
 179 additional countries with 25 innovation  
 180 research-related indicators as part of the EU's  
 181 Strategy 2020, which has replaced the EU Lisbon  
 182 Agenda in 2010 (Biegelbauer 2012).

183 In the 2000s, efforts have been made to  
 184 integrate the two strands of research described  
 185 here, one from political science and another one  
 186 from evolutionary economics, in order to  
 187 better understand innovation policy learning.  
 188 This has taken the form of historical analyses of  
 189 innovation systems and innovation policy on  
 190 national (Biegelbauer 2000) and supranational  
 191 (Edler 2003) levels, of comparisons of national  
 192 systems of innovation (Biegelbauer and Borrás  
 193 2003), analyses of the relation between innova-  
 194 tion theory and policy development (Mytelka and  
 195 Smith 2001), critique of (naïve) benchmarking  
 196 exercises (Lundvall and Tomlinson 2001), and  
 197 the open method of coordination in innovation  
 198 policy (Lisbon Expert Group 2009).

## Conclusions and Future Directions 199

200 From the research on innovation policy learning,  
 201 several conclusions can be drawn for the further  
 202 development of policy analysis. First of all, the  
 203 concentration in the research field on rational  
 204 decision-making in the sense of the maximization  
 205 of personal utility should be balanced with other  
 206 perspectives on decision-making processes. Pol-  
 207 icy-making is not only about a quest for power  
 208 and influence, it is also about gaining knowledge,  
 209 solving problems, and dealing with historically  
 210 contingent norms and practices in the form of  
 211 institutions, discourses, and culture (Gottweis  
 212 1998; Prainsack 2011).

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

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

## Cross-References 234

- ▶ Innovation Policies 235
- ▶ Innovation Systems and Entrepreneurship 236
- ▶ Joseph A. Schumpeter and Innovation 237
- ▶ National Innovation System/National  
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