

**“Use of Current Best Evidence“ – Promises and Illusions, Limitations and Contradictions in the Triangle of Research, Policy and Practice**

**Draft, to be published in: International Journal of Training Research, Vol 10/3  
(Contemporary and emergent methodological issues in VET research: Dynamic boundaries and diverse approaches, ed. by Roslyn Cameron & Roberta E. Harreveld)**

By: Lorenz Lassnigg <<mailto:lassnigg@ihs.ac.at>>

Employment-Qualification-Innovation (EQUI) <<http://www.equi.at/>>

Institut fuer Hoehere Studien(IHS)/Institute for Advanced Studies <<http://www.ihs.ac.at>>

Post-adress: Stumpergasse 56, A-1060 Vienna, Austria

**Abstract**

This paper explores the methodological and epistemological implications of the relationships between R&D, policy and practice. The proposals towards ‘evidence-based policy and practice’ are analysed with respect to this triangle from three angles: (1) meaning, (2) production, and (3) use of evidence. A comprehensive model of the research cycle, and its relationship to the triangle of research, policy and practice serves as conceptual framework. The basic problems of ‘evidence-based policy and practice’ are demonstrated through empirical cases: (1) the contested ‘evidence’ regarding achievement standards, (2) the state of the production of evidence in Austria, and (3) the use of evidence in Qualifications Framework policies.

‘Evidence-based policy’, unlike ‘evidence-based practice’ turns out to be a ‘mission impossible’. Evidence-based practice might be more promising, but if it depends on a change in policy and governance, it is itself confronted with the problems of evidence-based policy.

## **Paper**

This paper explores the methodological and to some extent epistemological implications of the relationships between research and development (R&D) and policy and practice. The proposals towards 'evidence-based policy and practice' launched by the OECD (2007, 1995) and taken up by the European Commission (EU Commission, 2007) offer an example which merits further consideration. A striking observation in this case is that while the original proposal formulated by the OECD (as a political expert organisation) was taken up by the EU (as a political organisation), it was then 'withdrawn' by one of its former proponents by a change in wording from 'evidence-based policy' to 'evidence informed policy' (Schuller, Jochems, Moos and van Zanten, 2006). This change in fact removed the essence of the original proposal, since the general notion that policy should draw on existing knowledge or 'evidence' is basically as old as policy making itself. So while some parts of the policy community took up and continue to follow the notion of 'evidence-based policy', others have taken a step back. Accordingly, it might be beneficial for researchers and social scientists to take a deeper look at the practical implications of the expression 'evidence-based policy and practice'.

To do so, we will analyse this relationship in the education sector and focus on the implications of a 'tight relationship' between research and policy and practice. This implies a deliberate and proactive production and use of evidence as it is originally brought forward, in contrast to a looser relationship in which the available evidence is (or at least should be) 'somehow' used. 'Evidence-based policy and practice' must also in itself be considered a policy proposal that seeks to change practices on both sides (i.e. R&D and policy and practice). We could thus examine the evidence behind evidence-based policy and practice as well, or, more ironically, ask self-reflective questions about 'evidence based evidence-based policy and practice'.

The main message that emerges from the analysis is that ‘evidence-based policy’, unlike ‘evidence-based practice’, is a kind of ‘mission impossible’. Addressing the contradictions, traps and intricate paths this mission ultimately requires far more effort than the insubstantial results would justify. It tries paradoxically to link two cultures and two kinds of practice whose internal logics reject its own basic purpose. The purpose of research is to keep on asking questions, even if there already seem to be solutions. The purpose of policy is (to pretend) to give answers and sell solutions – questions only serve to complicate matters. This produces the often cited – and not always necessarily with cynical intent (cf. Marmot, 2004) – ambiguity of ‘evidence-based policy’ vs. ‘policy-based evidence’.

More recent reasoning about the relationship between research and policy making has pointed to a wide range of different views regarding its possibility (from optimistic, through pragmatic to critical; Sanderson, 2011) and its desirability (a tight binding of political decisions to evidence could undermine the realm of democracy). Yet the interfaces between research and policy making have also been subjected to deeper, broader and more varied analysis (ranging from how to actually go about doing so effectively to a more theoretical and conceptual examination of the complexities involved). In their report on a major and influential OECD activity, Tracey Burns and Tom Schuller (2007) even coin a specific kind of research at the interface of research and policy, which they name ‘evidence informed policy research’:

In very broad terms the research that is used to produce evidence-informed policy can be distinguished from purely scientific research in that the former is oriented to informing action while the latter is oriented to developing theory and testing hypotheses (although these are not mutually exclusive categories). The distinction is important, as burdens and standards of proof of causality are very different, and in many cases those responsible for evidence-informed policy are obliged to use

the best available evidence at a given moment in time, whatever its strict epistemological status. (Burns and Schuller, 2007, p. 16)

This article focuses on the implications of this evidence-based policy proposal from the research perspective and, in particular, how it might influence the way research is conducted and/or the approaches and methods used. In doing so, we look at research and its relationship to policy and practice as a form of social practice in itself, focusing on the relationship between research and education policy, and taking the relationship to education practice only as far as is necessary for this purpose. In order to get behind the implications and meaning of ‘evidence-based policy and practice’, we break the topic down into three critical aspects, which we feel are key to understanding these relationships: (1) meaning of evidence; (2) practices of evidence production; and (3) the relationship of research to policy making.

1. What might ‘evidence’ mean? How is it conceptualised? What is the meaning of ‘evidence’ as a specific ‘kind’ of knowledge compared to other notions of knowledge? How is it processed in the debates on the relationship between research and policy making? Are some kinds of knowledge excluded or discarded by the notion of evidence? The answer to all these questions is that ‘evidence-based policy’ ideally asks for a kind of authoritative ‘hard’ evidence that research cannot provide. A key reason for this is the irresolvable and unavoidable battles about evidence within the field of research itself. These oscillate between unrealisable promises and attempts to fulfil them by the optimists and the hard conceptual struggle to deconstruct the promises by the critics. The pragmatic endeavours in between face the constant risk of becoming caught in the twilight zone between evidence-based policy and policy based evidence.

2. What are the implications of the production of ‘evidence’? This is the key methodological question. Are certain methodologies excluded or discarded by the demands of ‘evidence-based policy and practice’? Here we can observe a differentiation in research that somehow separates specific secondary practices of production of ‘evidence’ as a special kind of

knowledge from the primary research practices of striving for new information and knowledge. This is also a reflection of the knowledge society: the amount of available knowledge and the accessibility of this knowledge has changed fundamentally in the last decades – primarily as a result of the internet and the related globalisation in research. While knowledge about many issues was relatively scarce in the 1970s, and access to this knowledge was monopolized by (parts of) the research community, knowledge and accessibility has now become so abundant that even researchers can scarcely maintain an overview and understand it in its breadth and variety. Special selection practices and institutions have emerged to search and structure knowledge under different labels and in different forms: brokerage institutions, knowledge management, rankings in academic journals and ‘think tanks’ are all examples of such secondary practices.

3. How is the relationship between research and policy making influenced by ‘evidence-based policy and practice’? What are the implications for research? Does it constitute a certain understanding of policy making which research has to follow? Which views are promoted and which are discarded? Here, we take the familiar, simple triangle of R&D, policy and practice used by the OECD in its early studies on education R&D as a point of departure to illustrate that policy and practice are different things and that the channels to them from research are thus also different. This simple distinction is often neglected in reasoning about ‘evidence-based policy and practice’ and the more complex models that have replaced the triangle. This separation of policy and practice, and in fact separation of policy practice and – in our case – education practice is a fundamental issue with wide ranging implications for our concepts of the construction of society. In the modern social sciences, there are some fundamentally different views and concepts of how policy influences society, most of which however remain implicit in the reasoning about evidence-based policy. A closer analysis shows that the latter only makes sense if a certain fairly narrow hierarchical rational policy making model is assumed, which in itself is not evidence based. Accordingly, we will explore what a broader

concept of policy making might mean for the relationship between education policy and practice.

We begin with a conceptual analysis of the main points, inspired in essence by an institutionalist perspective (Meyer, 1977, Meyer and Rowan, 1977), but which also uses elements from systems theory (Luhmann and Schorr, 2000, Vanderstraeten, 2000, Qvortrup, 2005) and the Bourdieuan analysis of social practices in the field of power (Rawolle and Lingard, 2008, Maton 2005); in addition the traditions of innovation systems research (Lundvall, 1992, Braczyk, Cooke, and Heidenreich, 1998, Cooke, 2001, Fagerberg and Sapprasert, 2011) and science studies (Knorr-Cetina, 1999) related to the 'knowledge society' provide an intellectual framework.

The empirical section draws on material relating to the development of educational research over the last three decades in Austria, a small EU country which only opened culturally and intellectually towards Europe in the mid-1990s and has a strong historical tradition of Roman Catholic 'Counter Reformation' mixed with the ups and downs of its relationship and common history with neighbouring Germany and its cultural influences. Social sciences based education research is a relatively new phenomenon in Austria, as is the involvement of research in policy making. Indeed, more recently, the internationalisation of research has meant that in some areas more has become known about Austria through comparative research than through 'domestic' research endeavours. The empirical base draws on a set of earlier studies indicated below; This material has been re-analysed and reflected. The empirical work includes a new institutional analysis of the structures of education research, new specific analyses and reviews of the shape and impact of research in some policy areas (e.g. governance and financing, the Qualifications Framework, VET and lifelong learning) and specific expertise pertaining to the development of an education research strategy (see Lassnigg 2009a,b, 2011, forthc.a,b for the presentations of the material used for these

analysis) The relationship of Austrian research to European and international initiatives is also considered.

## **MEANINGS AND CONCEPTS OF 'EVIDENCE': BATTLES IN THE ACADEMIC FIELD**

Many meanings of the term 'evidence' are applied in the discourse on the use of research in policy and practice, and at least three dimensions can be identified as playing an important role. The first such dimension is constituted by epistemological issues. Depending on how a researcher is positioning himself or herself in the span between constructivism and causality, and related to this in the span of quantitative-causal and qualitative-interpretive paradigms, he or she will adhere to widely different meanings of evidence. The second relates to the battles within the scientific field concerning the rating and status of these different epistemological positions. The third dimension brings the relationships of the researchers to the contextual actors into play, which strongly influence the potential and conditions of utilisation of results and thus the competitive positions of the different epistemologies. In this interpretation, the 'evidence-based policy and practice' paradigm assigns a particular structure to the various battles and clashes between the many different research and methodological positions and world views by relating them to the seemingly homologous contextual conditions of utilisation by external forces, i.e. policy makers and practitioners. This structure assigns certain meanings to 'evidence', thus including some research approaches and methodologies and excluding others in the battles among the 'academic tribes' and their respective followers outside the academic community.

### **Epistemology: Causality over Constructivism?**

In the various epistemological positions, we can observe a tendency towards a hegemonic discourse that equates the meaning of 'evidence' to the application of a very sophisticated version of the causal and quantitative research paradigm. This in turn enjoys strong support

from some academic disciplines, in particular economics and psychology. Under the auspices of the OECD, Thomas Cook and Stephen Gorard (two prominent researchers who to some extent represent different research paradigms) propose a research cycle model that very subtly relates different kinds of research practice to different functions of the utilisation of research (Cook and Gorard, 2007, p. 44). This model comprises a continuity of six stages of research practice that build on each other and run through two distinctive sub-cycles before coming to full use in the implementation of results or ‘mainstreaming’ at stage seven. Stages 1-3 subsume *descriptive* practices of analysis and conceptualisation ([1] evidence synthesis, [2] development of ideas/artefacts, [3] feasibility study); stages 4-6 represent *causal* analyses ([4] prototyping/trialling, [5] field research, [6] definitive testing); and stage [7] “*mainstreaming*” includes practices of dissemination, impact assessment and monitoring. The model (see figure 1) is very subtle in the way it somehow gives room to all kinds of research practices (‘anything goes’), positions practical use as the ultimate goal of these practices, and gives an implicit order to the practices by the ‘definitive testing’ stage, positioning the second cycle on top of the first. While policy and practice might seem to be the final stage in this structure, it is in fact definitive testing that is the decisive stage, since it is here that the results or interventions which may be brought into use should ideally be decided. Since definitive testing means the identification of causal relationships (impact analysis), the model in fact implicitly includes a decision in favour of the quantitative-causal model and places the constructivist and interpretive approaches in the first cycle.

A good example that illustrates the difference between the first and the second cycle is given by the methodological endeavours in evaluation research, which will be further discussed below. In this field much descriptive work is performed, trying to show how interventions are implemented, or how different stakeholders perceive them, etc. From the point of view of definitive testing in the second cycle, however, ‘real’ evaluation starts with the question of whether the intervention has an impact as compared to a similar situation without intervention



(the ‘counterfactual’). This question can be answered by applying an experimental design (which, however, is frequently not applicable on various grounds), or a quasi-experimental design (which poses in most cases very high requirements for data and methodology). The methodological requirements for definitive testing influence in fact to a high degree the evaluation practices, e.g., by data limitations related to time-frames or indicators, or by missing information concerning the construction of the counterfactual. In the end, the results are often much less rigorous than promised.

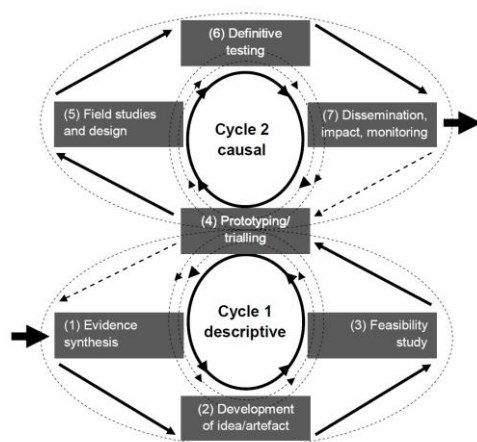


Figure 1: Stylised model of the research cycle (based on Cook and Gorard, 2007)

### **Rating and Positioning: Reinstating ‘Rigorous Research’ vs. the ‘New Production of Knowledge’?**

This second dimension concerns the relationship between the first and the second cycles in the above model. The model gives room to a broad array of research approaches and methods, yet also accords them certain positions, giving prominence to the causal impact analysis approaches by letting them authoritatively decide what constitutes ‘evidence’. This relates to demands for evidence that is based on ‘rigorous research’ and addresses the issue of *who will assess and determine which kinds of procedures count* as evidence. It is also where the issues of methodology and power play in research meet, with traditional academic research acting as

the guardian of truth and the various competing 'powers' challenging its position, or at least deemed to be doing so by observers.

Main distinctions in this power play can be found firstly between basic academic 'refereed' research and applied market-led research and secondly in the content-related classifications which distinguish between information, knowledge and 'evidence'. In the 'knowledge society', there is a broad discourse about various forms of 'knowledge' (i.e. symbolic declarative representations as well as various forms of experience) and their production and use. While this cannot be dealt with in greater detail in this paper, we must still bear in mind that the traditional paradigm of the production of evidence by basic research is seriously challenged in the social studies of science. The concepts of 'new knowledge production' outside the traditional research domain through 'mode two' practices or joint knowledge production by researchers and practitioners or stakeholders in the 'trans-disciplinarity' paradigm offer primary examples of this challenge (see Gibbons et al., 1994; Nowotny, Scott and Gibbons, 2003). Other knowledge production concepts question a 'linear model' of research application that assumes a production line from pure basic research through applied research to development (performed by different players in different institutions). The innovation system concepts referred to above, for example, question precisely this linear model and state – in concordance with the 'mode two' approach – that the use of research and the knowledge production process are much more complex than the linear model assumes. In such concepts, the various players are not ordered in a linear production line, but interact in complex ways; practice and applied research are as important a source of new knowledge and scientific breakthrough as basic research. Interestingly, this kind of reasoning has been applied predominantly to technological innovation in the commercial sector and seldom to other sectors of society like social services (OECD, 2000). Still, there is a contradictory situation with the distinction between pure and applied research. Whereas in innovation and science studies a blurring of these categories is envisaged, the distinction remains intact on a

policy and institutional level, e.g. indicated by the establishment of the ‘universities of applied science’ in Austria as well as in other countries.

Another concept which tries to bridge the dichotomy of basic and applied research was proposed by Donald Stokes (1997) and taken up by the OECD. It constructs ‘use inspired basic research’ as an additional model of knowledge production in between the traditional dichotomy. This concept is based on the cross-classification of the two dimensions “quest for fundamental understanding” (yes/no) and degree of “considerations of use” (low/high); in ‘use inspired basic research’ both dimensions are positively followed, whereas pure research only strives for fundamental understanding and applied research only has a degree of considerations of use (OECD, 2003, p.27). As we will see, this concept is important in education research as it could apply to the large scale assessments (LSAs) of achievement (e.g, PISA-Program for International Student Assessment, TIMSS-Trends in International Mathematics and Science Study). How far this concept is really helpful remains to be seen. If we relate this knowledge production competition to figure 1, our first concerns must be the kinds of knowledge which come into play at stage [1] (‘evidence synthesis’; inward arrow) and the methodologies accepted at this stage. There are in principle at least three sources at this point: results (a) from basic research, (b) from stage [7] of a previous full cycle, or (c) from stages [3] or [4] of a previous cycle or less formal experiential knowledge. Different positions can be seen, for instance, in the methodological disputes in evaluation research, where supporters of the ‘rigorous position’ set very high experimental or quasi-experimental design standards for what constitutes a sufficient evaluation. Strong improvements in meta-study or meta-evaluation methodologies have also raised synthesis standards in recent years. These developments can be clearly seen, for example, in labour market policy evaluations, a field with some close ties to education research (see the various documents at <http://www.iza.org/en/webcontent/research/ra1> or Card, Kluve and Weber, 2009 for a meta-analysis).

There can also be different players and instances involved at the various stages, in particular in the first cycle. In the second cycle, however, the strong criteria regarding ‘definitive testing’ mean that the academic community again comes into play. Tension is already growing within this community between pure researchers oriented to publication in highly rated journals and transfer oriented researchers, who want to apply their efforts to the ‘definitive testing’ in stage [6].

If we take these competing views at face value, we see that the new emphasis on ‘rigorous evidence’ in the traditional academic sense positions a certain fraction in the knowledge production field against a new variety of players in the ‘new production of knowledge’. Likewise, the competition between the different forms of knowledge is aggravated vis-à-vis the users. An important aspect of this power play is the dichotomy of ‘excellence’ vs. ‘relevance’, the former being a mantra of the pure basic researchers in their ivory towers, who are in turn accused of irrelevance by potential users and also in part by researchers from the applied camp.

It should also be noted that these battles are further complicated by the different meanings of the term ‘evidence’ in different cultures/languages. The German term *Evidenz*, for example, means more the ‘taken-for-granted’ in everyday practices and discourses than the secured results of rigorous research. A translation of evidence-based policy and practice using this meaning of *Evidenz* would in fact give a different flavour to the whole policy paradigm by separating the concept from the debates in the research field about what really constitutes evidence and referring simply to some kinds of ‘facts’ instead of just (political) ideas and ideologies. This notion of ‘evidence’ may well not be just a German phenomenon. Phil Davis from the UK Cabinet Office makes a similar point:

The problem I think we have is that people want to use evidence, but they do not necessarily want to use research evidence. That has been one of my problems

working in government. Research evidence is not as valued as much as perhaps some of us around this table would like it to be. (Davis, 2005, p.1)

### **Researchers and Users/Commissioners: Truth vs. Money?**

This leads us to the relationship between research and its use, or in figure 1 terms, the relationship between stages 1-6 and stage 7 and the step outward to the users and commissioners (outward arrow). Here, a fierce debate about ‘academic capitalism’ has developed with regard to the dangers of compromising the traditional academic quest for truth by considerations of use and the imperative of earning money (Rhoades and Slaughter, 2004). Yet there is also broad consensus about the necessity of raising new money (‘third-party funds’) for research.

These issues relate in particular to the questions of how and by whom the basic decisions about the production of evidence are made and, consequently, also to the less obvious decisions regarding the selection of pre-existing evidence (only ‘evidence’ that has already been produced can be selected/not selected for use). Depending on their function, these decisions can be taken at different stages from a producer (supply) or a user/buyer (demand) perspective, thus creating a clear link to the basic vs. applied research divide. Moreover, the assessment and selection of evidence/non-evidence presupposes sufficient access to and an appropriate overview of the available research materials (i.e. information, knowledge or evidence). Accordingly, the attention given to stage [1] of the research cycle – the review and synthesis of available evidence – is very important in proposals concerning evidence-based policy and practice. However, this task seems to lie on the border between basic and applied research, and frequently tends to fall in between, since it is rated rather low by the former and is too time consuming and expensive for the latter. In the field of psychology, for example, some fairly visible battles are currently being fought with regard to attempts to establish transfer-oriented research as an academically recognised endeavour (see, for example, Spiel, 2009; Kanning et al., 2007).

Another relevant aspect here is the linkage between research results and their application. How strong must the evidence be for a decision to be taken? Clearly, a good (rigorous) evaluation normally requires that research is embedded in the delivery from the beginning, while the implementation must also consider the research requirements (e.g. controlled pilot studies, possible experiments, etc.). At this point in time, the efforts required and cost to policy research would be very high if evidence-based policy and practice meant completing the full cycle from stages [1] to [7]. Policy making would in fact have to change many of its normal practices to comply with the demands of an evidence-based policy set by a rigorous research methodology. Consequently, there are few examples of the application of this paradigm. A review of the use of evaluation in Austrian labour market policy shows that research has been applied in this field since a relatively early date (from the beginning of the 1980s). While many evaluations have been commissioned, most were situated in the first cycle (using no counterfactual), and those which do use more sophisticated methodologies remain without clear consequences for policy making (Lassnigg, 2009c.) Since there tend to be more examples of strong evidence-based programmes in professional practice (Flay et al, 2005), the path towards the effective use of evidence would seem to run more through practice than policy, although there are some demands from the latter as well (e.g. Slavin, 2008a; Nutley, 2003).

When it comes to the applicability of research for actual use, certain approaches in the deliberately 'critical' domain will also tend to be excluded, partly by virtue of self-exclusion and partly because their use is not deemed sufficiently 'constructive'. In particular, the Foucauldian discourse theories and the Bourdieuan view of science as a part of the field of power, which integrate knowledge inextricably into the predominating power structures in the existing order, tend to deconstruct the prevailing policies rather than contribute towards their improvement in the way preferred by policy makers. It would seem that the evidence-based policy paradigm cannot be commonly shared even within research (see Bridges, 2008).

## **Cases Illustrating the Battles about Evidence: Efficacy of Achievement Standards and Distribution of Research Practices**

### ***Efficacy of achievement standards***

The implications of these ‘battles about evidence’ can be demonstrated using examples from European and Austrian education policy and research. One such case is the research into school governance, in particular the more specific questions of the use and impact of achievement standards for improving schools.

Here, we can identify a kind of ‘hegemonic discourse’ in that a broad number of experts and researchers (mostly from outside pedagogics, i.e. in education economics) promise positive effects from the kind of policies suggested by the ‘hard evidence’ produced by their econometric models (Bishop and Woessmann, 2004; Bishop, 2006; Hanushek and Woessmann, 2011). The empirical basis behind this research is laid by comparative analyses of LSA data, mainly PISA and TIMSS. The main message of this research is based on principal-agent theorising and tells us that schools must be autonomous in terms of their teaching function. However, since teachers and students incline towards opportunistic behaviour and therefore do not push themselves towards maximum achievement, effective external control of the results is required through periodic performance measuring standards. If these standards are not established properly, autonomy would produce worse results than traditional input control. Other researchers (mainly from pedagogics) read and interpret the available body of research differently and reject this kind of evidence.

An examination of this discourse reveals the demands posed by standards policy advocates and their econometric methodology on the one hand, and a broad array of competing perspectives and theories about school improvement questioning this ‘hard evidence’ on the other. Many people also simply ignore or discredit the data and methodology used to produce the evidence. In the policy field, there has also been a broad move towards changes in education governance in line with at least some parts of the proposal for an increase in school

autonomy and a related increase in the measurement of achievement. We could therefore conclude that there was at least a superficial movement towards ‘evidence-based policy and practice’.

However, if we look more closely at these policies and their relationship to research, we can see some broad gaps in several respects along the three dimensions outlined above. First, we can analyse the practices of the standards policy advocates in the evidence battle. A process has taken place here that is closely related to the continual increase in available data from international LSAs since the 1990s. This data allows achievement measurements to be related to various types of background information about school systems and their participants.

Parallel to this rise in available data, an international group of researchers (mainly education economists) has emerged, whose members are prominently positioned in the national and international education policy debates. To some extent, positions previously developed in the United States based on national data have now spread internationally, supported by collaborations between established US researchers (e.g. John Bishop or Eric Hanushek) and younger European researchers (e.g. Ludger Woessmann). In the case of Austria, the ‘evidence’ produced by these researchers has been imported to some extent into the national discourses mostly by means of analogy, without much original domestic research (Lassnigg, Bock-Schappelwein and Pitlik, 2009). It is evident here that the quantitative-causal paradigm has strongly established its position in the governance discourse.

Second, we can look at the development of this discourse on the user side. In Austria, and similarly in Germany and Switzerland, the messages of the use advocates have been adopted quite influentially at the policy rhetoric level. The results of the LSAs (in particular TIMSS and PISA) have also been increasingly absorbed by the policy discourses, leading to the establishment of an applied research and development institute (*Bundesinstitut für Bildungsforschung, Innovation & Entwicklung des österreichischen Schulwesens*, BIFIE) by the education ministry. This institute is in charge of implementing and analysing the LSA data



and also for developing and implementing an Austrian achievement standards policy. However, these kinds of activities are more or less completely separated from the ‘hard evidence’ referred to above. The analysis of LSA data is confined to simple descriptive reports (see [www.bifie.at](http://www.bifie.at)), while the data is monopolised by BIFIE and not even freely provided to collaborators in joint projects. Economics of education does not play any role in research, and the establishment of standards is more or less reduced to measurement, without providing minimum standards, without publication of results, and without establishing consequences for the agents. Instead, it is planned to combine the measurement with some kind of support and improvement strategy. The main lesson from ‘hard evidence’ showing an increase in autonomy as a necessary ingredient for improvement is ignored by the policy community, which still holds to the traditional bureaucratic and politicised system.

Third, we can look at the research practices and results actually obtained with respect to governance and achievement standards, and at the kinds of ‘evidence’ actually utilised. A large three-country study was commissioned and completed for Austria, Germany, and Switzerland by education researchers with a pedagogics background who have developed a complex, competing educational governance model (Oelkers, Reusser et al., 2008). A broad review of research into achievement standards in four selected countries (USA, The Netherlands, Sweden, UK) included in this study produced contrary results and conclusions to the above -mentioned ‘hard evidence’ from comparative econometric studies. According to this review, the implementation of standards does not improve practices in schools. In particular, if standards go hand in hand with improvement, the relationship is not causal, but simply accompanies an effective, broad, complex improvement strategy. In this case, research from the first cycle might overrule the causally oriented definitive testing in the second cycle. This opens up the question about who is right, or how the different findings might be explained. The Oelkers, Reusser et al. (2008) study includes about 50 pages of literature references, yet these do not include the main economics of education works cited above. It is

not easy to determine whether these are actively ignored as part of the evidence battle, or if this is simply a reflection of passive ignorance on the part of a different camp.

We could also try to explain this difference in results between the economists' and the pedagogical school developers' camps by putting forward some (partly competing) arguments. One argument in favour of the econometric 'hard evidence' position might be that the cited review done by Oelkers, Reusser et al. (2008) could include many studies which themselves would not pass the 'hard evidence' criteria, thus producing a biased result. This argument would be to some extent self-referential, because only very selected studies would be accepted as 'evidence'. Two arguments in favour of the review' results might be the low quality of the variables used for producing the 'hard evidence', and the possible differences between a national and a comparative cross-national perspective. As far as the low quality of the background data concerned, it is widely known that it is difficult to produce consistent and plausible patterns of results using the institutional variables from, for example, the PISA study (Lassnigg and Vogtenhuber, 2009; Schümer and Weiß, 2008). This means that the models needed to produce the 'hard evidence' have to be quite sophisticated, yet are not very robust. It is not easy to say whether this points in the direction of artificial results or in the direction that truth is difficult to uncover. From a national/cross-national comparison perspective, we can apply knowledge from institutional theories that would give the complex national systems a certain holistic logic of performance: if certain abstract elements from this structure are de-contextualised for purposes of comparison, the results would reflect effects in an artificial supranational structure that does not actually exist anywhere in this quality. Thus, the effects might hold in this artificial structure, but not in a real national structure.

### ***Distribution of research practices***

To further illustrate the evidence battles, this section offers a brief review of how the practices in Austrian education research relate to the different phases of the research cycle. An examination of the current state of affairs leads us to the conclusion that the education

research scene in Austria is so weakly developed and the use of research is still at such a naïve stage that no serious battles about evidence have as yet emerged in this quasi ‘prehistoric’ period (although there are of course battles going on about other aspects, like status or group affiliations). The state of research is reflected in the first National Report about Education published in 2009 (Specht, 2008; 2009). Additional material on the state of education research in Austria was prepared for the National Report and discussed at a working conference entitled ‘Austria on its way to an evidence-based development of education?’ (*Österreich auf dem Weg zur evidenzbasierten Entwicklung des Bildungswesens?*) in November 2008, which set out to bring the main education research players in Austria together (see <http://www.equi.at/dateien/Programm-EBPP-IHS.pdf>). If we apply the separation between the first and second cycles in figure 1, we can see that available education research in Austria is situated almost entirely in the first cycle. There is virtually no causally oriented quantitative research. Consequently, very few Austrian researchers are visible in the international academic research community. However, we should also point out here that Austrian teacher education is almost completely separated from research, as it is split across two kinds of institutions. Teachers for compulsory schools are trained in post-secondary institutions that have been formally upgraded to tertiary institutions, but have neither the culture nor the resources to conduct research; teachers for upper level schools are trained at universities, but primarily with a subject focus – the pedagogic element in their training is very small. This institutional duality also separates the teaching profession into competing camps with different levels of status.

One specific point about the BIFIE (which evolved from the organisation of the first LSAs in Austria, i.e. starting in 2000 with TIMSS and then later PISA, and has changed the scene quite significantly) is that in financial terms, it consumes at least the same amount of money (or recently even more) previously allocated by the ministry to the education research scene as a whole (about 7-8 million euro). It thus has a kind of monopoly position, a position which

is reinforced by the fact that it 'owns' the LSA data and does not make its data available to researchers (with the exception of international public data, which lacks some important specific information about Austria). Because the entry requirements for the use of such data in terms of the needed competencies are fairly high, this kind of monopolisation leads to low usage in the Austrian research community. BIFIE itself has so far primarily provided only descriptive analyses of the data. Consequently, this database is also rarely used for quantitative causal research. Since this institute is also a main provider of research for policy purposes, no second cycle 'hard evidence' is available in Austria.

Before the foundation of BIFIE, about half of Austria's policy oriented research was commissioned to and provided by a set of small, non-university institutes. VET research is not integrated into BIFIE and is still provided mainly by these other institutes. Because they are self-financing, they are not able to provide basic academic research, so this is more or less totally lacking for the VET sector. In general school oriented education research, a specific two-strand tradition had evolved in Austria prior to the foundation of BIFIE. In the 1970s, a policy of bureaucratic school trials (referred to as 'experiments') were implemented with very moderate political impact; since the 1980s, and perhaps as a reaction to these trials, a very strong qualitative action research position oriented to school development and the education of teachers and school management representatives has evolved. Quantitative research had mainly been situated at a descriptive level, with the addition of some larger studies, e.g. on the attitudes and mental state of students (Eder, 2007), or the relationships between parents and schools (Eder, 1998). There were fierce battles between the quantitative and qualitative research camps back in the 1980s, but these have been at least temporarily resolved to some degree by bringing the protagonists together in common initiatives like the National Report. If we were to speculate on the future development of education research in Austria in terms of the model in figure 1, we cannot expect much emergence towards the full cycle. Accordingly, production of evidence related to stage [6] will remain weak, and evidence-based policy and

practice will not evolve very much. The situation is even worse in VET research, as the existing institutions are weak and strongly divided in line with their different stakeholders and ‘patrons’, a relationship to the universities is lacking (except in business education), good data is not available, and resources are limited. Since 2008, a VET research conference has been held every two years, which provides an overview of the state of the art. Unlike its Swiss counterpart (see <http://www.ehb-schweiz.ch/en/researchanddevelopment/vet2009/Pages/default.aspx>), which has a strong international orientation towards the second cycle in figure 1, the Austrian VET conference is aimed more at bringing the different stakeholders together and presenting the research that is being done, primarily at the first cycle level. The envisaged participation in PIAAC (the OECD Programme for the International Assessment of Adult Competencies) might also bring about an improvement if used strategically. Attempts, e.g., by the author as a member of a high level expert group, to introduce a strong orientation towards evidence in the second cycle sense into the Austrian government’s ‘lifelong learning strategy’ (e.g., by systematic use of piloting and rigorous evaluation) have not been successful (Lassnigg 2011; see the strategy Austrian Government 2011).

## **PRODUCTION OF ‘EVIDENCE’: RESEARCHERS, PRACTITIONERS AND ‘BROKERS’?**

### **The ‘linear model’ and the ‘new knowledge production’**

This section looks at the longstanding, ongoing debate on the purposes of research, with its traditional notion of a clear separation of pure research, applied research and development along the lines of the ‘linear model’ of application and use of research described above.

Different tasks have been modelled along this ‘production line’, with different institutions contributing differently to the process, starting with ‘discoveries’ in pure research, which are then given concrete technical applications by applied research and finally transformed into

prototypes by other R&D development activities. Indeed, the above model of the research cycle might in fact implicitly reproduce this ‘research to application’ production line.

However, research into science – and increasingly also into innovation – has shown that this model does not correctly represent the complex relationships between research and its practical use. Common factors in the ‘new production of knowledge’ (Nowotny, Scott and Gibbons, 2003), ‘innovation systems’ (OECD, 1997) and ‘triple helix’ (Etzkowitz and Leydesdorff, 1997) models are that the various actors involved contribute differently to the production of knowledge and that discoveries might be and are frequently made in activities outside the pure research model. The ‘Pasteur’s Quadrant’ model (Stokes, 1997) also seeks to find a new relationship between pure and applied research by combining the two dimensions and constructing a combination of basic research that is oriented to use in addition to the traditional elements of pure basic research and pure applied research. At the same time, the concept of the ‘third mission’ for the university has been coined, adding service to the economy, community and society to the two traditional missions of academic research and teaching. All these approaches and concepts endeavour to find new interpretations of how research and the sciences might change and develop with the increasing role of knowledge in the economy and society.

Different interpretations can be attributed to these differentiations in the R&D ‘production line’. Those who argue in favour of a blurring of boundaries do so on functional (innovation research) or on factual observation or reflection grounds. They see various kinds of technology or professionalism as knowledge which grows from (reflective) practice, not basic research, and differentiate between mode one knowledge (based on traditional academic research) and mode two trans -disciplinary applied knowledge (emerging from practice). However, there are also arguments for separation, both from a functional as well as a power struggle perspective. Functional arguments can be derived from the basic ideas of systems theory (Stichweh, 2005, 2011a,b) , where functional differentiation leads to distinct

autopoietic subsystems, which each follow their own logic and are only coupled to each other by secondary mechanisms or processes. Politics on its own, for example, is viewed as a subsystem that is not able to govern the other subsystems. Power arguments can be derived from the Bourdieuan view of cultural production, where science as a social field is embedded in the field of power, with the various actors battling for their own successful positioning in the field. The fractions within academic research, the different camps in academic and applied research or university and non-university research, the experts, analysts, consultants and developers can all be seen as different actors in this field, with mode one and mode two knowledge serving in these battles as different symbolic resources.

### **Production of ‘evidence’ as a secondary mechanism in the mode two**

An important aspect in the production of evidence process also related to the evidence-based policy and practice proposal is the tendency to single out the production of ‘evidence’ as a secondary mechanism on top of research (or practice) as the primary mechanism of production of declarative (or experiential) knowledge. Many kinds of distinct entities perform various reviews and meta-studies, distilling ‘real evidence’ from research results (e.g. ‘best practice’ compilations; see Slavin, 2008b, 2008c) and translating the evidence found to the various audiences in policy and practice. These entities are strongly emphasised and pushed by the OECD activities, where they are referred to as ‘brokers’. However, in economic terms, they could be seen as an analogy to the derivative markets, which put a second cycle on top of the primary capital markets in order to insure against the risks on these primary markets (and might at least sometimes produce additional problems of aggregate uncertainty). In terms of the ‘new production of knowledge’ paradigm, these knowledge management mechanisms might be interpreted as an attempt to somehow turn actors with mode two knowledge into referees over actors with mode one knowledge. An interesting parallel development is that at approximately the same time as the ‘new production of knowledge’ (which predicted a demise in traditional academic knowledge), a strong push for excellence emerged in the academic

community. This push could be interpreted as an attempt to reinstate the power of academic research vis-à-vis mode two knowledge. Julio Frenk (1992), for example, suggests a framework for how the academic community could solve the problems of reconciliation between excellence and relevance:

...three possible models to approach the tension between excellence and relevance: academic subordination, segregation and integration. Only the latter makes it possible to reconcile the advantages of proximity to decision making with the procedures to assure academic quality' (Frenk, 1992, abstract).

### **Lines of systems differentiation: reflective and scientific knowledge**

In systems theory terms, there is also a distinction between two kinds of knowledge production, one pertaining to the sub-systems (e.g. education) and their reflexive knowledge (i.e. pedagogy) and one pertaining to the science system with its principal medium of truth (Kurtz 2007). This distinction bears some similarities to the traditional basic-applied research distinction. The analyses of Niklas Luhmann and his collaborators and successors in this paradigm demonstrate how (systems theory based) sociology analyses education from the broader perspective of understanding its position in society and its relationships to other sub-systems (e.g. the economy, politics). For this endeavour several theorems and findings in particular from history (basic education paradigms) and institutionalist research (in particular the endemic lack of a predictable 'technology' in education) are used (Luhmann and Schorr, 2000, Qvortrup, 2005, Vanderstraeten 2000, 2003, 2004). This approach of systems theory provides interesting perspectives on the classic triangle of research, policy and practice. This triangle combines the main forces in the evidence-based policy and practice proposal, as its three cornerstones would reside in different subsystems of society, in our case science, politics and education.



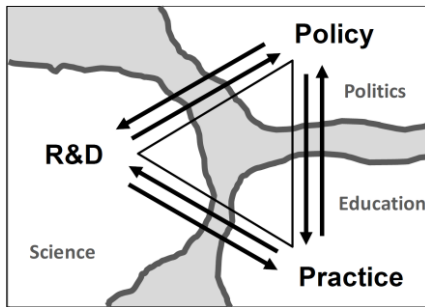


Figure 2: The triangle of research, policy and practice embedded in subsystems

Davies (2005) takes a pragmatic, experience-based view and sees a main problem in the relationship between policy makers and researchers with their different notions of evidence. He constructs a long list of ‘knowledge translation’ mechanisms or institutions in processes he calls the ‘evidence chain’.

If you ask policy-makers where they go for their evidence, they will tell you that they go first to their special advisors, then to people who are called experts (in whom I have little faith), then to think-tanks and opinion formers, lobbyists and professional associations, media, their constituents, consumers and various users of services and only then, if they bother, will they turn to academics and research evidence. This point was also made by an internal piece of research in the Department of Trade and Industry in which a survey of their decision-makers found that academic research was not even mentioned. (Davies, 2005, p. 1)

As far as the different types of evidence are concerned, policy makers seem uninterested in the two main cornerstones of the research cycle. “Two types of evidence which they did not mention were experimental evidence (which most had never heard of and did not want to know about) and systematic reviews of evidence.” (Davis, 2005, p. 1).

The widely used ‘brokerage’ metaphor that should mediate between R&D and policy and practice could even reside in the economy as a fourth subsystem, because brokerage is essentially a market activity that mediates between and makes a profit from supply and

demand in a specific market (e.g. housing or assets). The concept implies a market relationship between the supply of knowledge from science and the demand for knowledge from practice (e.g. political or education practice), with this market serving as the coupling mechanism between the subsystems. This implicitly reflects the ‘academic capitalism’ approach, which suggests a process of economisation of the academe brought about by a neo-liberalist regime. Systems theory, however, would reject this view, as the science subsystem is coordinated not by money, but by the medium of truth – the use of money instead of truth as the coordinating device would destroy this system.

To find empirical representations of these issues in the field of education, we need only refer to the hype surrounding LSAs (PISA, TIMSS, PIRLS, PIAAC, etc.) and their specific features in the production of evidence. Here, we can apply the idea of ‘Pasteur’s Quadrant’ in the first instance and the triangle of research, policy and practice in the second. The LSAs provided by the OECD (e.g., PISA) can be ordered into Pasteur’s Quadrant as they are ‘use inspired basic research’ in origin. However, if we look at how they are implemented at a country level, we find they are embedded in the specific environment of that country. If this environment is inspired by the traditional ‘linear model’, it will have no ‘absorptive capacity’ (Cohen and Levinthal, 1990) for use inspired basic research, and the different camps will absorb the use of the LSA data according to their capacities.

This can be demonstrated in more detail by the Austrian case. A first main point is that while very elaborate data production and analysis methodologies are used in the international research (achievement measurement models, complex sampling, background variables, etc.), very stylized and simplified signals are sent out to the public in terms of use (e.g. country ranking tables with at times only very small differences, an emphasis on mean scores and disregard of distributions, little or no explanations). At the national level, research, policy and practice take up these signals in different ways and the basic approach of use inspired basic research can be lost. We have already sketched the basic structures of the Austrian context,

where the available resources and the configuration of actors do not allow for an elaborate use of the data. If we compare the comparative analyses from the OECD with the Austrian analyses, we can see a large gap in terms of analytical endeavour in that the domestic analyses mainly provide more detailed descriptive analyses of the Austrian data, with some comparative references. Instead of taking up on the international analyses to push domestic analysis in an evidence synthesis sense, the national analyses somehow insulate the Austrian debates from their international counterparts.

### **Research for policy vs. research for practice: the impact of governance structures**

Another basic point to the triangle (figure 2) is that it shows two different paths outwards from research, one to policy and one to educational practice. This has important repercussions for research in terms of demand and understanding. The distinction between these paths is demonstrated implicitly by a strong emphasis on evidence-based practice. Robert Slavin's (2008a, 2008b, 2008c) discussion of evidence-based reform refers primarily to reform at the practice level. According to Slavin successful programmes to improve practice should be rigorously assessed for their impact, and those which have an impact should be used by schools and teachers. Research requires a rigorous evaluation of programmes, and policy should provide the framework for innovation and research as well as the incentives and support for their application. Reform requires the spread of successful practices among schools using a simple market inspired model taken from other sectors (e.g. health, agriculture or industry). The provision of a variety of programmes for each issue is very important, as it offers schools choice. These programmes must also be described in terms that are understandable for practitioners (just like other products). Practitioners must be given professional education to ensure they strive for improvement and can understand and integrate successful practices.

(a) Autonomous schools innovate by use of full-cycle R&D (R.Slavin)      (b) Policy controlled R&D in a bureaucratic school system

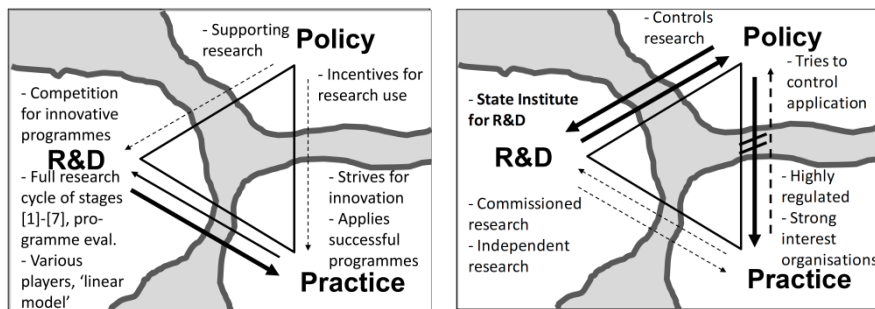


Figure 3: Stylised models of production of evidence, embedded into the triangle of research, policy and practice

### *The Austrian case*

Figure 3 gives a stylised account of the structure of relationships in the triangle of research, policy and practice in Austria (b) as compared to the model of autonomous professional innovation provided by Slavin (a). We can see that the activity in (a) lies between research and practice, whereas the relationships in the bureaucratic system (b) are completely different and somewhat complex. Policy controls research in both directions (programme, inputs and results) and also tries to control the application of results. The principal agent problems in such systems and the strong position of teacher trade unions in the regulated system make this quite difficult. Reform has a completely different meaning in this system, referring not to the reform of practices by schools, but the reform of regulations by policy. Each innovation has to be negotiated with the trade unions, and a change in practices normally costs more because it involves additional work (at least during the change). Policy changes at this level would require evidence that is even more difficult to produce than the evidence required by programme evaluation – bringing us neatly back to our earlier deliberations on standards. This system also constitutes specific relationships between the different players in the scientific field. Four main groups have emerged here in Austria: (1) the state institute and a

small select group of its collaborators with their focus on quantitative research and development, (2) a group of mainly qualitative researchers engaged in school development activities, primarily action research and, to some extent, also teacher education and further training for head teachers, (3) a group not involved in such policy related research, which has developed a strong criticism against the LSAs (in particular PISA) and an anti-reformist attitude, and (4) a group of VET researchers quite separate from the others, some with strong links to the employer and labour organisations.

One thing all these groups have in common is that they do not produce ‘evidence’ in the strong research cycle sense outlined above. They move in the first cycle, mostly not even providing comprehensive research synthesis. Interestingly, they provide exactly the kinds of evidence Davis (2005) notes that the senior politicians he observed were looking for:

They wanted quantitative and statistical evidence, economic evidence, qualitative and survey evidence. [...] They wanted both hard and soft evidence, from national and international sources. (Davies, 2005, p. 1)

Other cases also underline the basic structure in Austria. For example, a large development project in the compulsory school sector, which addresses one of the most contested issues in Austrian education policy – early tracking between the ages of ten and fourteen – and costs a large amount of money, is not accompanied by rigorous evaluation (although some form of evaluation is being run, and the project should be mainstreamed on basis of the evaluation results). Similarly, a large project to modularise the apprenticeship system is underway in the VET sector, also without rigorous evaluation, but with heavy political bargaining and some accompanying surveys. The same applies to the standards project mentioned above, as well as two successive teacher education reforms and the development of a lifelong learning strategy. If we were to take a pluralist approach to the production of evidence, we might expect the full range of epistemological and methodological positions to be realised in a research system. However, in the Austrian example, research is missing altogether in the second cycle.

Moreover, as the Austrian research conference on ‘evidence-based policy’ (see above) shows, this limitation is scarcely even understood or called for in the research community.

## **THE POLICY SIDE: METHODOLOGIES AND USE OF RESEARCH**

### **Gaps between education policy and practice**

On the policy side, there is one main (mostly neglected) issue in evidence-based policy and practice, namely how policy relates to practice and the implications of this relationship for research and methodology. This third side of the research, policy and practice triangle concerns the relationship between the two categories of users, policy makers and educational practitioners. While research itself is only indirectly affected, this relationship is much more important than the direct communication problems between researchers and users. We have already shown the different structures in figure 3 and discussed their consequences for the production of evidence. The relationships between policy and practice are now increasingly also being addressed by studies relating to the ‘governance’ of education.

In education research, it is frequently assumed that policy can be translated fairly directly into practice. This is essentially a legacy of the bureaucratic tradition in education. However, this relationship is not actually quite so straightforward. Indeed, certain strands of research at different levels suggest that the opposite might be the case. Systems theory argues that educational and political practices follow different logics, and that it would be extremely unlikely for one subsystem to directly and successfully influence the other. Economic theory of politics also points to the separation of politics from its content. Governance research argues that the relationship between policy and education practice would be dependent on the governance mechanisms that are in place, and much reasoning has emerged about multilevel governance and ‘New Public Management (NPM)’. The well-known historical analyses by David Tyack and his colleagues in the US (Tyack and Cuban, 1997) show that in education, policy attempts have always changed considerably in practice. As a consequence, we should

specifically consider separating evidence for policy and evidence for practice, as well as the implications of this distinction for research and research methodologies.

### ***New public management as an example***

The development of governance mechanisms and choice between various typologies and governance instruments are a main issue in policy practice, implying ideas and assumptions about the influence of governance on the results of education. There has been a great deal of descriptive research at the policy practice level with regard to how education systems are actually governed, the types and instruments of governance used, how these have changed, etc. However, expectations of the impact of governance on education practice have mostly been based on assumptions, not 'evidence'. This concerns the whole concept of NPM which has swamped the debate for over a decade. Much research has been carried out into what NPM might mean and how it could be implemented, etc. However, the available 'evidence' extended only to the input and process aspects. A recent project that sought 'evidence' in Austria, Germany and Switzerland of the impact of the various NPM related 'new governance' instruments (financing, autonomy, standards, school programmes, evaluation, inspection, etc.) scarcely found any positive 'evidence' (Altrichter and Maag-Merki, 2010). This shows just how much these main policy issues are driven by beliefs and ideology. Accordingly – and paradoxically – we might find ourselves confronted with different effects of 'evidence-based' changes on the level of policy as opposed to educational practice. The governance mechanisms at the policy level might seemingly show 'evidence-based' changes that are supported by extensive R&D 'advocacy' focused on the 'production of artefacts' and showing the various possibilities and applications of the new governance regime. Yet these changes might have no – or at least not the expected – influence on education practice. At the level of educational practice, we might also have a great deal of evidence regarding the kinds of practice that would work better or worse, yet not have the structures and/or resources to implement them. The European Qualifications Framework policy and subsequent National

Qualifications Framework policies, which also concern the governance of education and training, are good examples of this gap.

### *The case of Qualifications Frameworks*

We can also look at the extent to which the European and national policies have been accompanied by the production of ‘evidence’. At the European level – in contrast to the ideal of ‘evidence-based policy’ – there are strong indications that the processes have been set in motion without the availability of evidence. Michael Young distinguishes in several publications (e.g. Young, 2005; Allais, Raffé and Young, 2009) between ‘advocacy research’ and ‘critical research’ and shows that the policy process has been based on the former without reference to the latter. Anne Boudier and her colleagues (2009; critical) and Bjornavold and Coles (2007-08, see also Coles and Werquin, 2009; advocacy) have pointed to the tremendous time pressure under which the process was set in motion at the European level. Pia Cort (2010) shows that the policies have in fact been advocated and implemented in a majority of points against the evidence.

In terms of the research cycle model, the implementation of the Qualifications Framework (QF) started more or less after stage [2], the production of artefacts. Even a superficial look shows that the policy process is characterised by a fundamental contradiction: the EU institutions propose to implement a QF based on learning outcomes, however, a descriptive study performed after this proposal shows that the European education and training (ET) systems have so far definitely not been based on learning outcomes (CEDEFOP, 2009). Moreover, Bjornavold and Coles (2007-08) propose in a first stage the creation of QFs which aim at learning outcomes without being based on learning outcomes, which clearly constitutes a very contradictory situation. The QF was expected to be a powerful instrument for change that would primarily reduce the power of the providers in the ET system.

If we look at Austrian experience with the development of a QF, we can see further complications with evidence-based policy and practice (for a description of the process see



Mayer and Staudecker, 2011). During the preparatory period, the process was strongly supported by commissioned research projects that could be placed in the development of ideas/artefacts [2] and feasibility studies [3] phases (for examples, see Markowitsch, 2009 and Federal Ministry, 2006). The time pressure imposed at EU level was taken on board by the Austrian authorities, and the evidence synthesis [1] stage was removed from the agenda. After a political consultation process had been initiated, further feasibility studies were commissioned. Ultimately, these studies were flawed by a lack of resources and the strong time pressure, and we can see that they lie clearly in the advocacy research category. Existing results from academic research were not taken into account, and the contradictory concept of creating a learning outcomes based QF that was not actually based on learning outcomes was adopted by the Austrian authorities. Although the system is admittedly for the most part not based on learning outcomes, the consultation paper included a table containing proposals for the linkage of the Austrian formal education and training programmes to the levels of the EQF. Only two stakeholders (the Federation of Austrian Industries and the governing body of the universities of applied science) opposed this procedure. Aside from this, the consultation process did not raise any critical questions about the model. Instead, it criticised the lack of representation of education and training providers in the management of the process and raised some general issues regarding a feared impact of the QF on more fundamental, but not defined changes to the system. In the subsequent process, negotiations about the positioning of education and training programmes were launched, and the university sector successfully opposed the plan to create a comprehensive QF via a political power play. As a result, this basic aspect has been replaced by a proposal for two sectoral frameworks at the upper levels 6-8, one for higher education institutions and one for VET institutions. However, severe conflicts regarding the recognition and accreditation of non-formal and informal learning have led to the whole process becoming stuck in a kind of moratorium.

If we reflect on the implications of these limited research practices for the relationship between policy and practice, we can draw some clear conclusions. Both advocacy research and critical research converge in seeing the QF as an important reform instrument for ET systems. However, they diverge in their positive and critical appraisals of the policies, and can almost be likened in their extreme positions to the Greek goddesses Panakeia and Pandora. Mainstream research in both camps assumes a strong impact of policy on practice through the adoption of a QF. The focus on outcomes would substantially raise the weight of the users (individuals and enterprises) in the ET system and systematically undermine the power of the providers. However, both camps do not take sufficient account of the way education governance systems function. As indicated above, governance (or 'new governance') has evolved as another artefact with similar flaws regarding evidence as the QFs. As a consequence, this could reinforce the distinction between research geared to the policy level and research geared to the practice level. These levels are related to each other through governance systems. Different strands of research assume different impacts of governance systems: they might moderate the influence of policy on practice, or they might neutralise the impact of policy on practice. If we make this distinction here, we can clearly see that QFs are situated on the policy level, and are related more to policy practice than to education practice. In order to assess the impact of QFs, we must therefore analyse (not assume) how the governance of ET systems works. The limited research available currently points more in the neutralising than the moderating direction. The best known studies in this regard are those about reform in the US school system by David Tyack and his colleagues, which show how reforms are in turn 'reformed' by insiders in the ET system (Tyack and Cuban, 1997). The available academic studies about QFs also show that those frameworks which reflect the structures of the system in question work successfully (e.g. David Raffe on the Scottish system, Raffe, 2009, Raffe, Howieson and Tinklin, 2005), while those which try to reform the system (e.g. Allais, 2007a,b on South Africa) fail. These studies lead us to assume that

Stephanie Allais' image of a QF as a 'castle in cyberspace' (Allais, 2007a) is in fact perhaps more appropriate than that of either Panakeia or Pandora.

### **Policy practice vs. education practice and the production of 'evidence'**

This brings us back to our considerations about the triangle of research, policy, and practice, where we should take the distinctions even further. Research for policy is different from research for practice, and there are many forms of evidence which should be produced and used comprehensively. Distinguishing between the producers and the users of research assigns policy an important position as a commissioner of research and a gatekeeper for its use. This raises another issue, namely the conditions under which the 'best evidence' can be produced. These might well depend on the governance system, which allocates powers in the system, i.e. also between researchers, policy makers and practitioners. How these powers are distributed in a system is therefore a key issue. A bureaucratic and politicised system like that in Austria does not offer very supportive conditions for the production and use of evidence. However, as reflective researchers, we should also ask to what extent these conclusions are based on evidence, and how the evidence base might be improved.

This gap between policy practice and education practice seems to be one of the main issues in the evidence-based policy and practice proposal which relates strongly to the definition and production of evidence previously discussed. There are some particularly important aspects to these relationships. First, the evidence-based policy and practice proposal includes a very simplified and pooled concept of how the relationships in the triangle work (straight, top down, hierarchical) and also opts for a particular research paradigm (quantitative-causal). Because the relationships are more complex, the proposal does not work. One important aspect here is the fact that there are two kinds of practice in the triangle, namely policy practice and education practice. This means that one channel will work towards policy practice and the other towards education practice. The evidence-based policy and practice

proposal can only work if both are in line with each other. As we have tried to show, this has so far not normally been the case.

Another gap in the overall reasoning is that the policy practices remain a black box or a blind spot, and that political science is more or less neglected in the education science approaches. There is therefore a tendency in the reasoning to build on an instrumental-rational model of policy making and attempt to push policy making further in this direction if limits of rationality from an educational and instrumental point of view are detected. Political science has been much more sceptical about NPM and the outcome orientation hype than those actors who have advocated and pushed these policy models towards education (March and Olsen, 1995, Hood, 2000, Peters 2002). More recent analyses have emphasised increasing complexity in policy making, and a model of policy as assemblage has been proposed by Radhika Gorur (2011), using the development of the PISA research as a case study.

## **CONCLUSIONS**

In this article, we have analysed the policy proposal of ‘evidence-based policy and practice’ conceptually and provided empirical indications of the main problems in this approach, using cases from European and Austrian education policy as examples. The methodological implications for research were analysed from three different angles: (1) meaning of evidence, (2) production of evidence, and (3) use of evidence. A comprehensive model of the research cycle and its relationship to the triangle of research, policy and practice served as a conceptual framework for this analysis.

Overall, the ‘evidence-based policy and practice’ proposal turns out to be a means of directing attention to research and its results as a contributor to policy and practice. However, it also emerges that the actual contribution has so far been very limited. Thinking in terms of a cumulative, emerging process which is still in its infancy and will improve if it is given enough time to unfold might seem convenient from a familiar research perspective, but does

not stand up to a critical analysis. The proposal has too many serious flaws, and finally leads to an endless strain on the side of research – similar to the Brothers Grimm’s tale of The Hare and the Hedgehog, where research tries to run faster and faster, but ever lags behind policy at best – at worst, research functions as a legitimising ideology only.

We have also shown some phenomena which must be taken into account in any attempts to contribute to evidence-based policy and practice:

- The meaning of evidence is a contested terrain within research that includes fierce internal battles at the epistemology, methodology and application levels. These battles concern not only conceptual questions which might be resolved by good arguments, but also social divisions and relationships between different institutions that are viewed differently from different paradigms and approaches. As a consequence, users will always be able to select different results from different perspectives, and the attempts to establish approaches and methodologies that inherently carry more truth than others cannot succeed. There is also a strong competition between different sources of knowledge, experience that is difficult to formalise and systematic research that constantly raises new questions.

- A distinction is made between the production of evidence in the narrower sense of guaranteed usable knowledge and the production of research results in a broader sense. The linkages of research to use are differentiated, and there is a competition underway between the different forces about who should produce the evidence for use – the researchers who find the results or other institutions who transform them into acceptable and digestible pieces. This ultimately includes a battle about who is expected to accommodate whom, i.e. whether researchers should accommodate users or vice versa. In methodology terms, there are indications that users have different understandings of evidence than researchers and, moreover, that the key aspects of what each side understands as evidence are somehow mutually exclusive: subjective anecdotal evidence vs. objective proven evidence.

- The concerns about the use of evidence are strongly focussed on the relationships and linkages between producers and (potential) users, while the eminent relationship between policy and practice remains implicit, receives too little emphasis or is neglected. A closer look at this relationship shows that different channels run from research to policy and practice, and that the influence of policy on practice is problematic. This linkage is constituted by governance mechanisms, and a main fallacy of ‘evidence-based policy and practice’ on the research side is the tendency to neglect the difference between policy and practice as well as the complexities of governance. Figure 4 illustrates what happens when the overall mission becomes diffuse and the problems disappear or become disguised in a kind of haze.

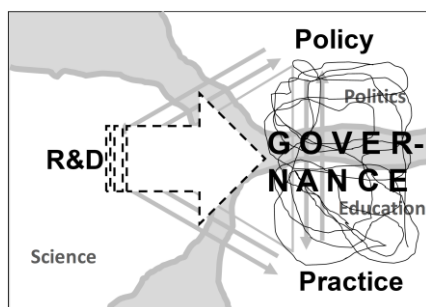


Figure 4: The fallacy in evidence-based policy and practice: neglect of governance and conflation of policy and practice

Some basic problems of ‘evidence-based policy and practice’ have been demonstrated by empirical case studies. First, different approaches and (competing) disciplines produce different kinds of ‘evidence’. As is demonstrated by the research into achievement standards, even the most sophisticated results and recommendations are partly neglected and partly questioned on plausible grounds. Consequently, the course of research and the course of policy deviate, and the policies taken do not really need to refer to the available ‘best evidence’. Second, as the Austrian case shows, there are entire research cultures which do not provide research results of a quality deemed necessary by some exponents for evidence-based

policy and practice. Accordingly, this proposal cannot be realised in these environments.

Third, main policies like the Qualifications Frameworks which have a worldwide impact on the political communities – are still pushed forward based entirely on questionable beliefs and against the testimony of research.

One final conclusion is that we should not try too hard to follow the evidence-based policy proposal, but instead look to deconstruct it and ponder why it has been pushed so strongly by its advocates – particularly since a closer look would seem to suggest that it cannot be realised according to its promises. The story is a little different with regard to evidence-based practice, which might prove to be more promising. However, this would – at least in some cases – depend on a change in the policy environment and existing governance structures, which of course brings us back to the problems of evidence-based policy.

### **Acknowledgements**

This paper is based on a lecture given at the joint ETF and VET and Culture Network Conference “Research for VET Policy and Practice”, 31.August-3.September 2011 at the European Training Foundation (ETF), Torino. The author thanks Sue Shore, Peter Kell and two referees for their encouraging comments.

### **References**

- Allais, S, Raffe, D and Young, M 2009, Researching NQFs: Some conceptual issues. Employment Sector. *Employment Working Paper No. 44*. ILO, Geneva. Retrieved from [http://www.ilo.org/wcmstp5/groups/public/@ed\\_emp/@ifp\\_skills/documents/publication/wcms\\_119307.pdf](http://www.ilo.org/wcmstp5/groups/public/@ed_emp/@ifp_skills/documents/publication/wcms_119307.pdf)
- Altrichter, H and Maag-Merki, K eds 2010, *Handbuch Neue Steuerung im Schulsystem*, VS Verlag, Wiesbaden.

Austrian Government 2011, *Strategie zum lebensbegleitenden Lernen in Österreich*. Retrieved from [http://www.esf.at/esf/wp-content/uploads/LLL-Strategiepapier\\_20111.pdf](http://www.esf.at/esf/wp-content/uploads/LLL-Strategiepapier_20111.pdf)

Bishop, J H 2006, 'Drinking from the fountain of knowledge: Student incentive to study and learn - Externalities, information problems, and peer pressure', in *Handbook of the Economics of Education*, vol 2, eds E A Hanushek and F Welch, North Holland, Amsterdam, pp909-944.

Bishop, J H and Woessmann, L 2004, 'Institutional effects in a simple model of educational production.' *Education Economics*, vol 12, no.1, pp17-38.

Bjørnåvold, J and Coles, M 2007-08, 'Governing education and training; the case of qualifications frameworks', *European journal of vocational training*, no.42/43, pp203-235.

Retrieved from <http://www.cedefop.europa.eu/EN/Files/42-en.pdf>

Bouder, A, Dauty, F, Kirsch, J.-L. and Lemistre, P 2009, 'Legibility of qualifications: an issue as long-standing as Europe', in *Modernising vocational education and training. Fourth report on vocational education and training research in Europe: background report*, vol 3, ed CEDEFOP, Publications Office of the European Union, Luxembourg, pp89–140. Retrieved from <http://www.cedefop.europa.eu/EN/publications/5011.aspx>

Braczyk H-J, Cooke, P, Heidenreich, M, eds 1998, *Regional innovation systems: The role of governances in a globalized world*, Routledge, London.

Bridges, D 2008, 'Evidence-based reform in education: a response to Robert Slavin', *European Educational Research Journal*, vol 7, no.1, pp129-133. Retrieved from <http://dx.doi.org/10.2304/eej.2008.7.1.129>

Burns, T and Schuller, T 2007, 'The evidence agenda', in *Evidence in education: Linking research and policy* ed OECD, Paris, pp15-32.

Card, D, Kluve, J and Weber, A 2010, 'Active labor market policy evaluations: A meta-analysis', *The Economic Journal*, vol 120, no.548, ppF452–F477. doi:10.1111/j.1468-0297.2010.02387.x



CEDEFOP (European Centre for the Development of Vocational Training) 2009, *The shift to learning outcomes. Policies and practices in Europe*, Office for Official Publications of the European Communities, Luxembourg. Retrieved from [http://www.cedefop.europa.eu/etv/Upload/Information\\_resources/Bookshop/525/3054\\_en.pdf](http://www.cedefop.europa.eu/etv/Upload/Information_resources/Bookshop/525/3054_en.pdf)

Cohen, W M. and Levinthal, D A 1990, 'Absorptive capacity: A new perspective on learning and innovation', *Administrative Science Quarterly*, vol 35, no.1, Special Issue: Technology, Organizations, and Innovation, pp128-152.

Coles, M and Werquin, P 2009, 'The role of national qualifications systems in helping to modernise vocational education and training systems', in *Modernising vocational education and training. Fourth report on vocational education and training research in Europe: background report*, Vol. 3, ed CEDEFOP, Publications Office of the European Union, Luxembourg: pp141-178. Retrieved from <http://www.cedefop.europa.eu/EN/publications/5011.aspx>

Cook, T and Gorard, S 2007, 'What counts and what should count as evidence', in *Evidence in education: Linking research and policy* ed OECD, Paris, pp33-49.

Cooke, P 2001, Regional innovation systems, clusters, and the knowledge economy, *Industrial and Corporate Change*, vol 10, no.4, pp945-974. Retrieved from [https://webapp0.web.sh.se/C1256CFE004C57BB/0/3B57D93FDE3D6405C125768000476506/\\$file/Regional%20systems%20of%20innovation.pdf](https://webapp0.web.sh.se/C1256CFE004C57BB/0/3B57D93FDE3D6405C125768000476506/$file/Regional%20systems%20of%20innovation.pdf)

Cort, P 2010, 'Stating the obvious: the European Qualifications Framework is not a neutral evidence-based policy tool', *European Educational Research Journal*, vol 9, no.3, pp304-316.

Davies, P 2005, 'Evidence-based policy at the Cabinet Office' A transcript of a talk at Overseas Development Institute, Impact and Insight meeting, 17th October 2005. Retrieved from [http://www.odi.org.uk/rapid/events/Impact\\_Insight/Presentation\\_1/Davies.html](http://www.odi.org.uk/rapid/events/Impact_Insight/Presentation_1/Davies.html)

Eder, F 1998, *Schule und Demokratie. Untersuchungen zum Stand der demokratischen Alltagskultur an Schulen*. Series Bildungsforschung des BMUKK, vol 14, Studienverlag, Innsbruck.

Eder, F 2007, *Das Befinden von Kindern und Jugendlichen in der österreichischen Schule - Befragung 2005*. Series Bildungsforschung des BMUKK, vol 20, Studienverlag, Innsbruck. Retrieved from [http://www.bmukk.gv.at/medienpool/15670/befindlichkeitsstudie\\_07.pdf](http://www.bmukk.gv.at/medienpool/15670/befindlichkeitsstudie_07.pdf) (condensed version)

Etzkowitz, H and Leydesdorff, L eds 1997, *Universities and the Global Knowledge Economy: A Triple Helix of University-Industry-Government Relations*, Pinter, London.

EU-COMMISSION 2007, 'Towards more knowledge-based policy and practice in education and training', *Commission staff working document*, EDUC 138 SOC 316, 12 September 2007, Brussels.

Fagerberg, J and Sapprasert, K 2011, 'National innovation systems: the emergence of a new approach', *Science and Public Policy*, vol 38, no.9, pp669–679. Retrieved from

<http://www.sv.uio.no/tik/InnoWP/Fagerberg%20%26%20Sapprasert%2020111115.pdf>

Federal Ministry of Education, Science and Culture ed 2006, *European Qualifications*

*Framework – EQF in the Context of Tertiary Education. Analysis based on a comparison of selected countries*. Federal Ministry, Vienna. Retrieved from [http://www.equi.at/dateien/IHS-DUK\\_EQF-Lassnigg-Vogtenh.pdf](http://www.equi.at/dateien/IHS-DUK_EQF-Lassnigg-Vogtenh.pdf)

Flay, B R, Biglan, A, Boruch, R F, Gonzalez Castro, F, Gottfredson, D, Kellam, S, Moscicki, E K, Schinke, S, Valentine, J C and Ji, P 2005, 'Standards of Evidence: Criteria for Efficacy, Effectiveness and Dissemination', *Prevention Science*, vol 6, no.3, pp151-175.

doi:10.1007/s11121-005-5553-y.

Frenk, J 1992, 'Balancing relevance and excellence: Organizational responses to link research with decision making', *Social Science & Medicine*, vol 35, no.11, pp1397-1404.

doi:10.1016/0277-9536(92)90043-P

Gibbons, M, Limoges, C, Nowotny, H, Schwartzman, S, Scott, P and Trow, M 1994, *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*, Sage, London.

Gorur, R 2011, 'Policy as Assemblage', *European Educational Research Journal*, vol 10, no.4, pp611-622. Retrieved from <http://dx.doi.org/10.2304/eeerj.2011.10.4.611>

Hanushek, E A and Woessmann, L 2011, 'The economics of international differences in educational achievement', in *Handbook of the Economics of Education*, vol 3, eds E A Hanushek, S Machin and L Woessmann, North Holland, Amsterdam, pp89-200.

Hood, C 2000, *The Art of the State: Culture, Rhetoric, and Public Management*, Oxford University Press, Oxford.

Kanning, U P, von Rosenstiel, L, Schuler, H, Petermann, F, Nerdinger, F, Batinic, B, Hornke, L, Kersting, M, Jäger, R, Trimpop, R M, Spiel, C, Korunka, C, Kirchler, E, Sarges, W and Bornewasser, M 2007, 'Angewandte Psychologie im Spannungsfeld zwischen Grundlagenforschung und Praxis - Plädoyer für mehr Pluralismus', *Psychologische Rundschau*, vol 58, no.4, pp238-248. doi:10.1026/0033-3042.58.4.238

Knorr-Cetina, K 1999, *Epistemic cultures. How the sciences make knowledge*, Harvard University Press, Cambridge MASS.

Kurtz, T 2007, 'Sociological theory and sociological practice', *Acta Sociologica*, vol 50, no.3, pp283-294. doi:10.1177/0001699307080933

Lassnigg, L 2009a, 'Ökonomisierung des Lernens und Vertreibung der Bildung? <Lifelong Learning> und <evidence-based Policy und Practice>', *Magazin Erwachsenenbildung No.7-8*, online [http://erwachsenenbildung.at/magazin/09-7u8/meb09-7u8\\_08\\_lassnigg.pdf](http://erwachsenenbildung.at/magazin/09-7u8/meb09-7u8_08_lassnigg.pdf)

Lassnigg, L 2009b, 'Policy Learning and Outcome Orientation in Austrian VET – Theoretical and Empirical Explorations', in *VET Boost: Towards a Theory of Professional Competencies. Essays in Honor of Frank Achtenhagen*, eds F K Oser, U Renold, E G John, E Winther and S Weber, Sense Publishers, Rotterdam/Taipeh, pp385-408.

- Lassnigg, L 2009c, 'Zum Verhältnis von Steuerung und Evaluation – am Beispiel der Arbeitsmarktpolitik', *Zeitschrift für Evaluation*, vol 8, no.1, pp137-146.
- Lassnigg, L 2010, 'LLL-Strategie in Österreich. Praktische Überlegungen zu Entwicklung und Umsetzung', in *Materialien zur Erwachsenenbildung No.2/2010*, ed BMUKK, Vienna <http://www.equi.at/dateien/LLL-Strategie.pdf>
- Lassnigg, L forthc.a '<Lost in Translation>: Learning outcomes and the governance of education', *Journal of Education and Work* (accepted for publication 2012)
- Lassnigg, L forthc.b '<Evidence> about <Outcome Orientation> – Austrian experience with European policies', in *The Architecture of Innovative Apprenticeship*, eds L Deitmer, U Hauschildt, F Rauner and H Zelloth, *Technical and Vocational Education and Training Series*, Springer, Dordrecht.
- Lassnigg, L, Bock-Schappelwein, J, Pitlik, H 2009, 'Bildungsökonomie: Eine vernachlässigte Quelle erweiterter Steuerungswissens im österreichischen Bildungswesen', in *Nationaler Bildungsbericht Österreich 2009, Band 2: Fokussierte Analysen bildungspolitischer Schwerpunktthemen*, ed W. Specht, Leykam, Graz, pp361-379.  
<https://www.bifie.at/buch/1024>
- Lassnigg, L and Vogtenhuber, S 2009, 'Governance-Faktoren, Schülerleistungen und Selektivität der Schulen', in *PISA 2006. Österreichischer Expertenbericht zum Naturwissenschafts-Schwerpunkt*, eds Schreiner, C and Schwantner, U, Leykam, Graz, pp376-386. <http://www.bifie.at/buch/322/9/5>
- Luhmann, N. and Schorr, K-E 2000, *Problems of reflection in the system of education*, Waxmann, Münster.
- Lundvall, B-Å ed 1992, *National systems of innovation: Towards a theory of innovation and interactive learning*, Pinter, London.
- March, J G and Olsen, J P 1995, *Democratic governance*, The Free Press, New York.

Markowitsch, J ed 2009, *Der Nationale Qualifikationsrahmen in Österreich: Beiträge zur Entwicklung*, Studies in Lifelong Learning, vol 3, LIT Verlag, Münster.

Marmot, M G 2004, 'Evidence based policy or policy based evidence? Willingness to take action influences the view of the evidence-look at alcohol', *British Medical Journal*, vol 328, no.7445, pp906–907. doi:10.1136/bmj.328.7445.906

Maton, K 2005, 'A question of autonomy: Bourdieu's field approach and higher education policy', *Journal of Education Policy*, vol 20, no.6, pp. 687-704.  
doi:10.1080/02680930500238861

Mayer, S and Staudecker, E 2011, 'The National Qualifications Framework in Austria – background, objectives and current state of implementation', *Austrian Education News*, no.66/2011, pp1-7. Retrieved from [http://www.bmukk.gv.at/medienpool/20994/aen\\_66.pdf](http://www.bmukk.gv.at/medienpool/20994/aen_66.pdf)

Meyer J W 1977, 'The effects of education as an institution', *American Journal of Sociology*, vol 83, no.1, pp55-77.

Meyer, J W and Rowan, B 1977, 'Institutionalized organizations: Formal structure as myth and ceremony', *American Journal of Sociology*, vol 83, no.2, pp340-363.

Nowotny, H, Scott, P and Gibbons, M 2003, 'Introduction <Mode 2> Revisited: The New Production of Knowledge', *Minerva*, vol 41, no.3, pp179-194.  
doi:10.1023/A:1025505528250.

Nutley, S 2003, 'Bridging the policy/ research divide. Reflections and Lessons from the UK' Keynote paper presented at 'Facing the Future: Engaging stakeholders and citizens in developing public policy'. National Institute of Governance Conference, Canberra, Australia 23/24 April 2003. Retrieved from <http://www.treasury.govt.nz/publications/media-speeches/guestlectures/pdfs/tgls-nutley.pdf>

OECD 1995, *Educational research and development: trends, issues and challenges*, OECD, Paris.

OECD 1997, *National innovation systems*, OECD, Paris. Retrieved from

<http://www.oecd.org/dataoecd/35/56/2101733.pdf>

OECD 2000, *Knowledge management in the learning society*, OECD, Paris.

OECD 2003, *Knowledge management. New challenges for educational research*, OECD, Paris.

OECD 2007, 'Evidence in education: linking research and policy. Executive Summary'.

Retrieved from <http://www.oecd.org/dataoecd/27/14/38797034.pdf>

Oelkers, J, Reusser, K with contributions by Berner, E, Halbheer, U and Stolz, S 2008,

*Qualität entwickeln - Standards sichern – mit Differenzen umgehen*, Bildungsforschung vol 27, BMBF, Bonn and Berlin. Retrieved from

[http://www.bmbf.de/pub/bildungsforschung\\_band\\_siebenundzwanzig.pdf](http://www.bmbf.de/pub/bildungsforschung_band_siebenundzwanzig.pdf)

Peters, B G 2002, 'From change to change: patterns of continuing administrative reform'

Paper presented at the VII Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública. Lisboa, Portugal, October 8-11, 2002. Retrieved from

<http://cdi.mecon.gov.ar/biblio/docelec/clad/cong7/dp2335.pdf>

Qvortrup, L 2005, 'Society's educational system - An introduction to Niklas Luhmann's pedagogical theory' *Seminar.net - International journal of media, technology and lifelong learning*, vol 1, no.1. Retrieved from [http://www.seminar.net/files/LarsQvortrup-](http://www.seminar.net/files/LarsQvortrup-SocietysEdSystem.pdf)

[SocietysEdSystem.pdf](http://www.seminar.net/files/LarsQvortrup-SocietysEdSystem.pdf)

Raffe, D 2009, 'National Qualifications Frameworks in Ireland and Scotland: A comparative analysis', Paper presented at the European Conference on Educational Research, Vienna, 28-

30 September. Retrieved from <http://vetnet.mixxt.org/networks/files/download.7362>

Raffe, D, Howieson, C and Tinklin, T 2005, 'The introduction of a unified system of post-compulsory education in Scotland', *Scottish Educational Review*, vol 37, no.1, pp46-57.

Retrieved from <http://www.scotedreview.org.uk/pdf/250.pdf>

Rawolle, S and Lingard, B 2008, 'The sociology of Pierre Bourdieu and researching education policy', *Journal of Education Policy*, vol 23, no.6, pp729-741.

doi:10.1080/02680930802262700

Rhoades, G and Slaughter, S 2004, 'Academic capitalism in the new economy: Challenges and choices', *American Academic*, vol 1, no.1, Special Issue: Academic Values, Market Values: The Shifting Balance, pp37-60. Retrieved from

<http://www.aft.org/pdfs/highered/academic/june04/Rhoades.qxp.pdf>

Sanderson, I 2011, 'Evidence-based policy or policy-based evidence? Reflections on Scottish experience', *Evidence and Policy*, vol 7, no.1, pp61-78.

Schuller, T, Jochems, W, Moos, L and van Zanten, A 2006, 'Evidence and policy research', *European Educational Research Journal*, vol 5, no.1, pp57-70. Retrieved from

<http://dx.doi.org/10.2304/eej.2006.5.1.57>

Schümer, G and Weiß, M 2008, *Bildungsökonomie und Qualität der Schulbildung.*

*Kommentar zur bildungsökonomischen Auswertung von Daten aus internationalen*

*Schulleistungsstudien.* Gewerkschaft Erziehung und Wissenschaft, Frankfurt. Retrieved from

<http://www.gew.de/Binaries/Binary36403/GEW-Bioeko-web.pdf>.

Slavin, R E 2008a, 'Evidence-based reform in education: what will it take?' ECER Ghent Keynote, *European Educational Research Journal*, vol. 7, no.1, pp124-128. Retrieved from

<http://dx.doi.org/10.2304/eej.2008.7.1.124>

Slavin, R E 2008b, 'Perspectives on evidence-based research in education – What works?

Issues in synthesizing educational program evaluations', *Educational Researcher*, vol 37,

no.1, pp5-14. doi:10.3102/0013189X08314117

Slavin, R E 2008c, 'Evidence-based reform in education: Which evidence counts?',

*Educational Researcher*, vol 37, no.1, pp47–50. doi:10.3102/0013189X08315082

Specht, W 2008, 'The National Educational Report – A step in the direction of evidence-based policy in Austria', in *Educational monitoring, comparative studies, and innovation.*

*From evidence-based governance to practice*, OECD/CERI regional seminar for the German-speaking countries in Potsdam (Germany) from September 25 to 28, 2007, eds State Institute for School and Media Berlin-Brandenburg, Federal Ministry for Education, the Arts and Culture and Swiss Conference of Cantonal Ministers of Education, Berliner Wissenschaftsverlag, Berlin, pp41-51.

Specht, W ed 2009, *Nationaler Bildungsbericht Österreich 2009*, vol 2: Fokussierte Analysen bildungspolitischer Schwerpunktthemen, Leykam, Graz. Retrieved from <https://www.bifie.at/buch/1024>

Spiel, C 2009, 'Evidence-based practice: A challenge for European developmental psychology' *European Journal of Developmental Psychology*, vol 6, no.1, pp11-33.  
doi:10.1080/17405620802485888

Stichweh, R 2005, 'The Present State of Sociological Systems Theory', in *O Pensamento de Niklas Luhmann*, ed J M Santos, LusoSofia/Universidade da Beira Interior, Covilhã, pp347-371. Retrieved from [http://www.lusosofia.net/textos/o\\_pensamento\\_de\\_niklas.pdf](http://www.lusosofia.net/textos/o_pensamento_de_niklas.pdf)

Stichweh, R 2011a, 'Niklas Luhmann'. in *The Wiley-Blackwell companion to major social theorists, vol II, Contemporary social theorists* ed G Ritzer and J Stepnisky, Wiley-Blackwell, Chichester, pp287-309. Retrieved from [http://www.unilu.ch/files/stw\\_niklas-luhmann-blackwell-companion-to-major-social-theorists.pdf](http://www.unilu.ch/files/stw_niklas-luhmann-blackwell-companion-to-major-social-theorists.pdf)

Stichweh, R 2011b, 'Systems Theory', in *International encyclopedia of political science*, vol 8, ed B Badie, D Berg-Schlosser and L Morlino, Sage, New York, pp2579-2582. Retrieved from [http://www.unilu.ch/files/stw\\_systems-theory-international-encyclopedia-of-political-science\\_2.pdf](http://www.unilu.ch/files/stw_systems-theory-international-encyclopedia-of-political-science_2.pdf)

Stokes, D E 1997, *Pasteur's Quadrant. Basic Science and Technological Innovation*, Brookings Institution Press, Washington, D.C.

Tyack, D and Cuban, L 1997, *Tinkering toward Utopia: A Century of Public School Reform*, Harvard University Press, Cambridge MASS.



Vanderstraeten, R 2000, 'Luhmann on socialization and education', *Educational Theory*, vol 50, no.1, pp1-23. doi:10.1111/j.1741-5446.2000.00001.x

Vanderstraeten, R 2003, 'Education and the condicio socialis: Double contingency in interaction', *Educational Theory*, vol 53, no.1, pp1-35. doi:10.1111/j.1741-5446.2003.00019.x

Vanderstraeten, R 2004, 'The Social Differentiation of the Educational System', *Sociology*, vol 38, no.2, pp255-272. doi:10.1177/0038038504040863

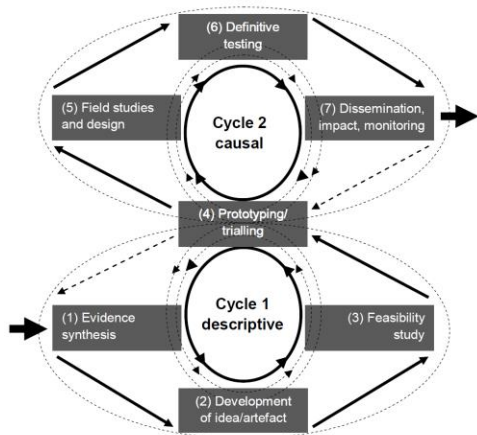


Figure 1: Stylised model of the research cycle (based on Cook and Gorard, 2007)

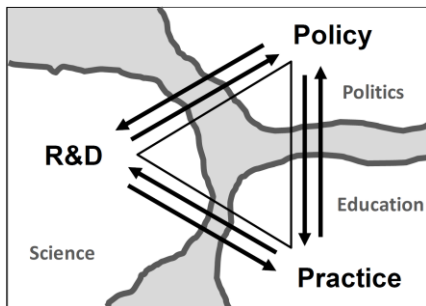


Figure 2: The triangle of research, policy and practice embedded in subsystems

- (a) Autonomous schools innovate by use of full-cycle R&D (R.Slavin)      (b) Policy controlled R&D in a bureaucratic school system

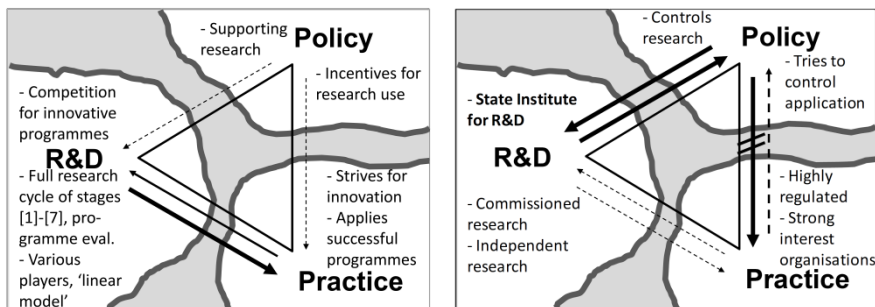


Figure 3: Stylised models of production of evidence, embedded into the triangle of research, policy and practice

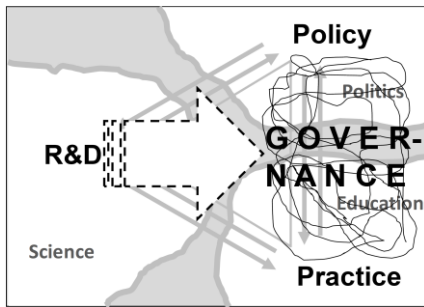


Figure 4: The fallacy in evidence-based policy and practice: neglect of governance and conflation of policy and practice