

Project outline:

Horizontal governance and learning dynamics in higher education

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1 Background and objectives

The project will contribute to an improved understanding of the change dynamics in higher education in the areas of higher education governance and learning processes in higher education institutions, as well as the way these two are related. This implies that the project is focused on the transformation of higher education in the context of a) changing societal and political processes that influence the governance, organization and institutional dynamics of higher education, including the learning environments in universities and colleges, and b) changes in the epistemic cultures and processes that constitute academic communities, their logics and their boundaries.

Globalisation and the emergence of the knowledge economy have led to a growing political focus on the (global) competitiveness of national economies. In this development higher education has become a core sector as a consequence of its central role in various knowledge processes. This has not been without its effects on major aspects of higher education systems and institutions. This concerns in the first place the governance of higher education. Traditionally higher education systems and institutions have been governed in a vertical way, i.e. the main governance relationships were organized within a sectoral governance pillar with all main actors involved being higher education actors, in the sense that they were political, bureaucratic or institutional representatives from within the sector. The increased focus on knowledge aspects has led to a growing need for coordinating horizontally hitherto 'disconnected' policy areas, especially higher and professional education, vocational education and training (VET), research, innovation, labour and technology.

Also for learning processes in higher education a horizontal dimension has emerged which poses a set of challenges for the traditional vertical way in which learning processes are organized and understood in higher education institutions. This horizontal dimension concerns the dynamics and processes through which knowledge is developed in various settings and through which students and higher education graduates become engaged in different expert cultures, in the study programmes offered by higher education institutions as well as through learning processes in professional practices. Environments for learning become extended, and comprise a multitude of sites and practices which may co-exist and interact in complex ways.

While quite a lot of research has been done on the traditional vertical governance dynamics,

as well as on learning within specific pedagogical sites, few studies have focused on the nature and effects of the horizontalization challenges traditional higher education governance and learning processes face. Moreover, hardly any studies are available on the way in which horizontal governance and learning processes interact, relate and influence each other. The overall aims of the project are to produce new knowledge about challenges that arise from horizontal governance and change processes in higher education, and their way of fostering academic and professional development, by:

- a) Examining how Norwegian knowledge policies are affected by the way in which at the European level common knowledge policies are developed, coordinated, and organized.
- b) Investigating how higher education policies, and especially the educational component of these, are integrated into the overall Norwegian knowledge policies.
- c) Analyzing how such horizontally coordinated knowledge policies and developments are handled at central level in higher education institutions.
- d) Studying how knowledge cultures constitute academic communities in contexts of change, with emphasis given to the arrangements and mechanisms by which students are enrolled in these knowledge cultures and become skillful participants in their areas of expertise.

2 State of the art and significance of the project

The project builds on a pre-project financed by the NFR's *Utdanning 2020* programme which resulted in an extensive literature review on "European integration and the transformation of higher education" and "Cultures of knowledge and learning in today's higher education" (Maassen and Stensaker 2010). The review pointed to several empirical and theoretical gaps in research on higher education. Research on student learning in higher education has predominantly focused on students as individuals within specific educational contexts, thus losing sight of how learning is constituted by wider institutional and cultural processes (Haggis 2009). Knowledge is in this research often treated as stable content belonging to given academic disciplines (e.g. Becher and Trowler 2001, Neumann et al. 2002). Hence, it has failed to address the dynamic and transformative aspects of knowledge and epistemic engagement which is better accounted for in research on epistemic cultures and practices within research communities (e.g. Knorr Cetina 1999, Kastenhofer 2007). Although we know quite a lot about how students construct understanding of given knowledge in specific settings, we lack insights in how they come to participate in wider expert cultures; in the mechanisms that facilitate enrolment or create barriers for participation; and in the role of educational programmes in linking and facilitating engagement across multiple sites.

The review of research on current knowledge policies and integration efforts in Europe reveals that there is considerable variation in how policies and reform efforts are taken up and effectuated in different national and organizational contexts. Dynamics of organizational change in today's higher education are related to multiple orders and mutual transformations on different levels that defy a linear casual understanding of change (Gornitzka et al. 2010). Moreover, there are signs of sectorial differentiation between knowledge production and higher education teaching/learning respectively. This situation

generates new challenges related to coordination of different policies and instruments (Braun 2008). How these challenges are faced in higher education and with what effects is hitherto not much attended to in research. Moreover, in the literature on the conditions for effective knowledge policies the educational component has been largely neglected.

In the pre-project's final report we thus argued that a productive way forward is to involve researchers from the two traditions in joint research activities. What is needed is research that can contribute to our understanding of how education and learning is constituted in interplay between knowledge cultures and the political and societal transformations in society that higher education is embedded in. Moreover, we need to understand how knowledge policies play out differently in different academic communities and how they interplay with epistemic processes in constituting the 'inner life' of higher education institutions. This project, to be undertaken by the researchers involved in the pre-project, represents this 'way forward.' It integrates two research traditions and theoretical perspectives, and it addresses the overall question how recent developments in the governance of higher education relate to recent developments in knowledge and learning environments. It also has a structural operationalisation in the establishment per 1 January 2011 of the research group HEIK (Higher Education: Institutional dynamics and Knowledge cultures) at UiO's Faculty of Education, and the extended cooperation between HEIK and Arena, Centre for European Studies at UiO. As such the project is an ambitious effort to address the change dynamics in higher education through an integrated multi-level analysis, ranging from (supra)national governance changes, through the institutional leadership changes, to changes in the extended learning realities of students in higher education.

3 Research design and methodology

The empirical work will be organized in three work packages (WPs) which focus on the inter/national, organizational and programme levels respectively. In all three work packages new research activities will be undertaken, however, in all three WPs the research will be based on insights and findings from previous projects carried out by the involved researchers. For WP 1 we will focus on Norway in its European context as a national case for analyzing how the coordinated of knowledge policies has been developed over the last ten years. This implies that we will analyze both European level knowledge policies as emerged over the last decade, and especially the growing focus on the educational component in these policies. This work will be build on the intense research activities of Arena, Centre for European Studies (UiO) in the area in question (see: Gornitzka, 2007, 2009, 2010). In addition, a detailed examination will be undertaken of the way in which the development of the coordination of Norwegian knowledge policies, and especially the educational component in these policies, is related to the European level knowledge policy developments. For WP 2 and 3, we will focus on three Norwegian higher education degree programmes with a professional orientation and their institutional foundations. The choice of cases is described below, followed by descriptions of the three work packages.

Choice of cases

For understanding the way in which national knowledge policies within the larger common

European policy context have been developed when it comes to the integration of the involved policy areas, including higher education, as well as the educational component in these policies, the project will focus on Norway. As such, this part of the project fits a recent development in science policy studies (e.g. Braun 2008) that has examined the political coordination of knowledge policies at the national level in Europe with a special focus on research and innovation. This case study will allow us on the one hand to build on the work done in science policy studies, which will make it possible to compare the structure of the knowledge policy coordination with the structures in other countries, including Denmark and Finland. On the other hand, this project's focus on the educational component in the coordination of knowledge policies adds a new element to the study of policy coordination. Providing insight into the educational component will allow for a better understanding of the interactions between all components in the knowledge triangle policy areas, and not only the hitherto dominant research-innovation interaction. This national case study will be analyzed within its larger European governance and policy context. As indicated above, the project will investigate how the Norwegian case relates to the European level development of knowledge policies over the last 10 years.

For examining horizontal governance at the organizational level, and the constitutive role of knowledge cultures in educational programmes, we will focus on three programmes rooted in the areas of law, computer engineering and university-based teacher education. They are all profession-oriented programmes comprising several knowledge domains and learning sites. They are selected because of their capabilities to provide insight in common change mechanisms on the one hand, and differences in knowledge cultures and practices on the other. The knowledge base for professional work is at stake in the three domains, and subjected to negotiations between several disciplines, stakeholders and interests. For instance, all programmes are challenged to strengthen the use of research-based knowledge and the focus on systematic methods and procedures (Steinvikutvalget 2009, St.meld 11/2008-2009, NOKUT 2008). In engineering education a core challenge is to balance between disciplinary knowledge from the natural sciences and applied, procedural knowledge for advanced problem solving (Bucciarelli and Kuhn 1997, Downey 2009, NOKUT 2008). Engineering education also shares with teacher education the challenge of connecting knowledge practices and learning in education and workplace contexts. Law is challenged to internationalise the knowledge base and contextualise Norwegian legislation in a wider international context (Steinvikutvalget 2009). At the same time the three programme areas differ as to their relations to wider knowledge cultures and their national and international outreach. While the teaching profession historically has emphasized local and experience-based knowledge, (Cochran-Smith 2005, Jensen et al. forthcoming) law is very much based on written texts which are shared across the profession (Latour 2010). Computer engineering is based on global technologies and the use and development of these in advanced problem solving is a core issue. Both teaching and law has traditionally been nationally framed and regulated, while the knowledge base as well as educational standards in engineering have been internationally regulated for a long time (Hatlevik 2000). We have selected three programmes as empirical cases which all are in the process of being reorganized to meet the challenges described above. The selected programmes are:

- *The 5 year integrated master programme in teacher education at the University of Oslo, Faculty of Education.* This programme educates subject-matter teachers for

upper secondary school. It offers four specialties representing different academic disciplines, and is currently in a process of integrating courses and developing stronger connection between theoretical and practical domains. It provides opportunities to study enrolment mechanisms in the intersection between different knowledge cultures and learning sites.

- *The 5 year integrated master programme in Law at the University of Oslo.* This programme is currently reconstructed after programme evaluations, with a new structure operating from fall 2011. Changes comprise efforts to integrating more methodology, to internationalize the knowledge base and improving relations between academics and students.
- *The bachelor's programme in Computer Engineering at the Oslo and Akershus University College:* This programme is to be restructured from 2011, following from the national evaluation of engineering programmes and the new national guidelines for engineering education. Changes relate to connecting laboratory-based education with problem-solving practices and to linking education with research and innovation.

Together, these programmes allow us to investigate horizontal mechanisms of change in programmes embedded in different knowledge cultures and institutional dynamics. They are also based in two distinct institutional cases: University of Oslo as a traditional research-intensive university, and a profession-oriented university college which aspires to achieve in the near future a formal university status. These organizations will serve as cases for analyzing the impact of knowledge policies on institutional education strategies.

WP 1: Development of Norwegian knowledge policies in European contexts (2000-2010)

Goals: This work package has two overall goals. First analyze the development of knowledge policies at the European level since 2000. This analysis will contain both the general development of European level knowledge policies, and more specifically the emerging of the educational component in these policies (Gornitzka 2007, Maassen and Stensaker 2011). As regards the analysis of this European knowledge policy development the following questions will be addressed:

- How have the political institutions and administrative capacity relevant to the “Europe of Knowledge” developed at the European level since 2000?
- How have the political institutions and administrative capacity with respect to the educational component of the “Europe of Knowledge” developed at the European level since 2000?
- How have European level knowledge policies that have been developed in the framework of the “Europe of Knowledge”, including higher education policies, been coordinated since 2000?

Second, an analysis of the coordination of Norwegian knowledge policies since 2000 will be undertaken. What happens when emerging European aspirations and institutions enter national higher education and research systems that traditionally have known a high level of system integration through national laws, regulations and funding? As national systemic borders are perforated nation states’ ability to keep national higher education systems coherent is challenged, suggesting that a process of “de-bordering” taking place (Bartolini 2005, Kohler-Koch 2005). Such de-bordering is not without tensions and the extent of and how de-bordering takes place will be conditioned by diverse national and to institutional

realities (Goedegebuure et al. 1993; Gornitzka and Maassen 2000; Maassen 2008). Taking these considerations and the theoretical perspective presented above as a starting point, the analysis of the Norwegian knowledge policy arena will be addressed through the following questions:

- How has the coordination of overall national knowledge policies, including higher education policy, developed in Norway since 2000?
- How does the development of the national knowledge policies in Norway relate to the emergence of European level knowledge policies that have been developed since 2000 in the framework of the “Europe of Knowledge”?

Methodology: We will first make an updated review of the European level development of knowledge policies, i.e. policies in the following areas: higher education, VET, research, innovation and technology. This review will be mainly based on Gornitzka (2007) and the work done in the pre-project (Gornitzka et al. 2010). In this review special attention will be given to the educational component in the knowledge policies, and to the ways in which the coordination of European-level knowledge policies has developed. This review consists of a literature study, and a set of interviews with key European actors.

Next the development of Norwegian knowledge policies will be studied. Also here the focus will be on higher education, VET, research, innovation and technology policies. To start with a review of all relevant policy documents will be undertaken, as well as the academic literature discussing these policy areas in Norway. Based on this review a number of interviews with key actors, in all relevant Norwegian Ministries, will be undertaken aimed at analyzing the inclusion of the educational component in these policies, as well as the level and nature of the coordination of these policies. In addition, in consultation with the reference group additional Norwegian national bodies and agencies will be identified, of relevance for the understanding of the development and coordination of Norwegian knowledge policies. This can be expected to include national employers’ organisations, unions, and the Norwegian Association of Higher Education Institutions (UHR). Of each of these bodies and agencies key staff will be interviewed.

WP 2: The impact of knowledge policy developments on institutional education strategies

Goals: The aim of this workpackage is to examine the impact of European and national knowledge policies on the educational strategies of Norwegian higher education institutions. This will be done through two institutional case studies, the University of Oslo, and the University College Oslo¹. This selection is in line with the selection of the educational programmes involved in WP3. Through this WP we want to improve our understanding of the roles institutional leadership actors and bodies in higher education institutions play in connecting European and national level knowledge policy developments, to the learning processes in their institutions, and vice versa.

¹ At the time of the application for this project University College Oslo (HiO) is in a merger process with University College Akershus, to form per 1 August 2011 the new University College Oslo Akershus. (HiOA). In WP2 the development of the educational strategies of HiO until 1 August 2011 will be analyzed, as well as the educational strategies of the new institution HiOA, taking into account the dynamics of the transition period.

Methodology: The institutional case-studies will be conducted through institutional document reviews and in-depth interviews with key institutional actors. The interviewees consist of members of the institutional leadership structure, i.e. the rectors (current and previous), pro-rectors for education (current and previous), and members of the institutional board. In addition, interviews will be undertaken in the faculties involved in our study. i.e. the Faculties of Law and Educational Sciences of the University of Oslo, and the Faculty of Engineering of University College Oslo (see also WP3). Here it concerns the deans, the prodeans for education, the involved programme coordinators, and selected academics involved in the coordination and offering of the involved educational programmes since 2000.

WP 3: The enrolment of students in knowledge cultures

Goals: This WP aims to develop a thorough understanding of enrolment mechanisms in the knowledge cultures of the selected higher education programmes, with special emphasis given to how objects and modes of connectivity provide access to wider knowledge cultures in the local educational arrangements. Previous research has shown that theoretical perspectives introduced during education may link the students with science and stimulate further explorations over time (Jensen and Lahn, 2005) and that ways of engaging with knowledge in education seem to be continued in working life (Smeby, forthcoming). Hence, involving students in knowledge practices that provide access not only to expert knowledge but also to the procedures and rationalities through which such knowledge is produced and validated is a core issue for higher education. The main research question to be investigated in this WP is: *What characterizes the knowledge cultures in play in the selected programmes and their mechanisms of enrolment?* This question will be addressed by way of three sub-questions:

- How do students within the selected programmes get access to epistemic practices and principles in their respective fields?
- What role do epistemic objects play in linking persons and practices in educational activities to the wider knowledge culture?
- What characterises the social and material configurations of the different knowledge cultures, in terms of space-time relations, human-material configurations, and type of connections to wider knowledge policies and knowledge developments?

Methodology: We will first examine how the educational programmes become organised through horizontal dynamics of change, with special attention to how new knowledge domains are introduced and how the educational activities are linked to research. This will be done by way of document analyses and interviews with key actors in the programme development. Students' participation will then be studied in a set of educational activities that intend to provide access to epistemic principles and practices and which are linked with the wider knowledge culture. As all the programmes currently are in the process of being changed, concrete activities to be selected for further investigation is to be decided in the first period of the project, in collaboration with the programmes' representatives in the reference group. Relevant settings are courses/modules that incorporate methodology and epistemic principles in the expert culture, and courses/modules in which students are to work in inquiry-oriented ways with real and complex problems in the given culture. Data will be collected through observation, qualitative interviews, activity logs, and by documenting

knowledge resources utilised in the activities. Starting with a small number of selected knowledge settings and participants, we will employ a snowball strategy for identifying and selecting more settings to be examined. This will partly take place by employing a 'shadowing' technique, that is, following selected students in their knowledge practices as they move across activities (Czarniawska 2007), and partly by following the knowledge objects they engage with to trace their histories and connections across sites (Bruni 2005). By focusing on knowledge arrangements in selected settings and how students become connected to and positioned to explore these arrangements, the strategy is related to the one employed by Nesper (1994).

However, rather than applying the actor-network vocabulary utilized in his analyses we will analyze students' participation as objectual practices embedded in epistemic cultures (Nerland and Jensen 2010, Jensen and Lahn 2005, Knorr Cetina 2001) with special attention given to mechanisms of enrolment. In doing so, the WP will also provide insights in what 'Research-based education' today may look like, within the context of extended knowledge environments and expectations to students as inquiry-oriented co-producers of knowledge (Simons & Elen 2007, UHR 2010).

4 Project management, organization and international partners

The project will be led by Peter Maassen and Monika Nerland who also will coordinate the WPs. Other senior researchers involved are Åse Gornitzka, Karen Jensen and Bjørn Stensaker. Together the team has extensive experience and expertise in researching change processes in higher education, as well as in researching knowledge and learning in different professions. One postdoctoral candidate will, together with senior researchers, carry out empirical work in the three educational programmes in WP3 and frame his/her project as a comparative study of knowledge cultures and enrolment mechanisms in higher professional programmes. The other postdoc will work in the intersection between WP 1 and 2 and, together with senior researchers, analyze relationships between governance and change mechanisms at international and national levels. The concrete division of labor is to be discussed with the actual candidates and considered in relation to their expertise.

The project will also have a reference group comprising representatives from the three educational programmes to be studied, one representative from Norwegian educational authorities, and two international experts on higher education change dynamics and professional learning respectively.

APPENDIX 1: Theoretical perspective: Institutional dynamics and knowledge cultures

To start with the project takes as a point of departure that higher education belongs to the core institutions of modern societies, in terms of continuity as well as change (Maassen and Olsen 2007). Historically, the development of the university as a specialized higher education institution dedicated to specific purposes and principles was part of the large-scale transformation from pre-modern to modern societies in Europe. Institutional differentiation created interdependent but partly autonomous institutional spheres of thought and action based on different logics, norms and values, principles of organization and governance, resources, and dynamics, such as democratic politics, market economy, religion, science, art, and civil society. In some periods institutional spheres are in balance, but historical dynamics can be understood in terms of tensions between them. In different time periods the economy, politics, organized religion, science etc., can all lead or be lead and one cannot be completely reduced to another. At transformative points in history institutions can also come in direct competition.

In constitutional democracies higher education is functionally dependent on, but partially autonomous from other institutions. Contemporary political-administrative orders, nevertheless, routinely face institutional imbalances. Collisions between key institutions are an important source of change and radical transformation of one institution is usually linked to changes in other institutions. As a consequence, there is a need to clarify the conditions under which institutional reform, including changes in learning environments, is a fairly autonomous (internal) process, and the conditions under which internal processes are overwhelmed by wider political processes and societal mobilization. There may be public debates about what different institutions are supposed to accomplish for society, how each is to be justified and made accountable, what is to be core institutions and auxiliary institutions, and what kind of relationship government is supposed to have to different types of institutions. A possible outcome is the fall and rise of institutional structures and their associated systems of normative and causal beliefs and resources. Arguably, higher education now faces this kind of situation, even though universities and colleges are still the main institutions through which accumulated knowledge on advanced levels is produced, and where the skills and competencies needed for the future labor force are developed in teaching and learning processes.

In this project we interpret an institution as “a set of behavioural rules and practices that are embedded in the first place in a structure of meaning, which explains and legitimizes the behavioural rules; and in the second place in a structure of resources, that enables action in accordance with the rules” (March & Olsen 1989, 2006). Using an institutional approach we will analyze how the dominant organisational template of vertical policy coordination has influenced the Norwegian attempts to coordinate various knowledge policy areas horizontally. In addition, we will examine how the dominant institutional template of education and learning in higher education has changed over the last ten years in the Norwegian knowledge policy arenas. A possible set of assumptions here is that institutionalised structures spread via contagion and imitation, that new institutions mirror hegemonic organisational templates and widely held norms and ideas about what

constitutes appropriate modes of organisation of policy processes, that adaptation processes are driven by normative environment, and that change is solution driven.

However, this diffusionist approach to change in institutional templates can be modified by emphasizing that new institutions are not automatic responses to environmental 'dictate,' and that new institutions are extracted from and mediated by the pre-established framework of institutions that empower and constrain actors. Our study of change mechanisms in higher education, will not stop at the 'policy conditions' level. We want to go from 'letter to life', i.e. we want to study also how these new policy templates relate to new, spatially extended learning dynamics in higher education programmes. For that purpose we also need to address the horizontal dynamics related to knowledge cultures (Bechmann et al. 2009) and their influence on education and learning. Here we will employ an epistemic culture perspective (Knorr Cetina 1999, 2007). This perspective highlights knowledge as constitutive for expert cultures and practices. By its focus on how knowledge is produced, circulated, warranted and recognized in distinct ways in different knowledge cultures, and how academics and students become involved in and informed by these processes, it provides a perspective on educational programmes that bridges the research - education divide and opens for investigating changes driven by knowledge development. Knowledge cultures are constituted by their distinct heuristic practices and knowledge relations - including instruments, configurations of people and things, strategies, ways of envisioning knowledge, and the ways in which these factors come together to constitute a certain knowledge world (Kastenhofer 2007). These arrangements and mechanisms are mutually constituted. Together they form the "machineries of knowledge construction" which in a given area of expertise "make up how we know what we know" (Knorr Cetina 1999). They form collective belief systems about knowledge, as well as principles and procedures for handling knowledge in relevant ways. At the core of knowledge cultures is their relation to objects. Knowledge cultures are object-centred in the sense that they are oriented towards exploring, developing and mobilizing knowledge objects (Knorr Cetina 2001). Such objects are indefinite representations of a problem area which call for further exploration at the same time as they give some directions for use. Examples of such objects in the context of higher education are models for medical treatment, programming languages, and legal texts. They are created through the mobilisation of expertise to handle emergent and complex problems in society; they incorporate science-generated knowledge and they are continually developed as experts in different settings attend to them, explore their complexity, and take them into use in their current activities. For students, engagement with objects is important for getting access to the distinct ways of developing and handling knowledge in their expert field (Jensen and Lahn 2005, Nerland 2008). Knowledge cultures are typically dispersed across a variety of sites, in which people come to participate in multiple ways and where the processes and products of different activities are interlinked in complex 'machineries' of knowledge construction. Hence, they form multiple and horizontal dynamics of continuity and change. Educational programmes are embedded in these wider machineries, and form settings which simultaneously "concentrate student activity within bounded material organizations of space-time" and link students to "distant sites of disciplinary practice" through their ways of setting up patterns of movement and participation (Nespor 1994: 133). This is linked to the ways in which epistemic objects 'travel' across sites. People may approach them from different angles – e.g. in education and in research contexts – and through their different ways of exploring the objects they become

attached to the wider knowledge culture and contribute to the objects' further life. The project employs this perspective on knowledge cultures and objects to examine how knowledge communities in higher education become reconstituted in periods of change as well as the arrangements and mechanisms that enrol students in these expert cultures. We will focus on selected educational settings where knowledge is at stake, where the educational arrangements are subjected to change, and where different knowledge cultures come into play.

In sum, this theoretical perspective allows us to examine how change dynamics in higher education are constituted in interplay between knowledge cultures, and political and institutional transformations in society. This calls for a multi-level research design which we describe below.

APPENDIX 2: References

- Bartolini, S. (2005) *Restructuring Europe. Centre formation, system building and political structuring between the nation state and the EU*. Oxford: Oxford University Press.
- Becher, T. & Trowler, P. (2001) *Academic tribes and territories: intellectual inquiry and the cultures of disciplines*. Buckingham: Open University Press.
- Bechmann, G., Gorokhov, V. & Stehr, N., (Eds) (2009). *The social integration of science. Institutional and epistemological aspects of the transformation of knowledge in modern society*. Berlin: Edition Sigma
- Braun, D (2008). Organising the political coordination of knowledge and innovation policies. *Science and Public Policy*,35(4): 227-239.
- Bruni, A. (2005). Shadowing Software and Clinical Records: On the Ethnography of Non-Humans and Heterogeneous Contexts. *Organization*, 12 (3): 357–378
- Czarniawska, B. (2007) *Shadowing, and other techniques for doing field work in modern societies*. Malmö: Liber .
- Downey, G. (2009) What is Engineering Studies For? Dominant Practices and Scalable Scholarship. *Engineering Studies*, 1(1): 55-76.
- European Commission (2005) *Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy*. Brussels: COM(2005) 152 final.
- Goedegebuure, L. et al. (1993) *Higher Education Policy. An International Comparative Perspective*. Oxford: Pergamon Press.
- Gornitzka, Å. (2007) The Lisbon Process: A Supranational Policy Perspective. Institutionalizing the Open Method of Coordination. In: P. Maassen & J.P. Olsen (eds.) *University Dynamics and European Integration*. Dordrecht: Springer: 155-178.
- Gornitzka, Å. (2009) Networking administration in areas of national sensitivity – the Commission and European higher education. In: A. Amaral, G. Neave, C. Musselin, & P. Maassen (Eds) (2009) *The European Higher Education Area. Various Perspectives on the Complexities of a Multi-level Governance System*. Dordrecht: Springer.
- Gornitzka, Å. (2010) Bologna in context: a horizontal perspective on the dynamics of governance sites for a Europe of knowledge, *European Journal of Education*, 45(4): 535-548.
- Gornitzka, Å. & P.Maassen (2000) Hybrid steering approaches with respect to European higher education. *Higher Education Policy*, 13: 267-285
- Gornitzka, Å., M. Elken, P. Maassen and M. Vukasovic (2010) European integration and the transformation of higher education. Report from the Pre-project, submitted to Research Council of Norway http://www.uv.uio.no/pfi/forskning/prosjekter/eie-utd2020forprosjekt/HEIK-Utd2020-Part1-EI_and_transformation_of_HE.pdf
- Haggis, T. (2009). What have we been thinking of? A critical overview of 40 years of student learning research in higher education, *Studies in Higher Education*, 34 (4), 377-390
- Hatlevik, I.K.R. (2000). Styring og regulering av sykepleier-, lærer- og ingeniørutdanningen fire land. [Steering and regulation of teacher, nursing and engineering education in four countries,] Report no. 4. Oslo: NIFU
- Jensen, K. & Lahn, L. (2005). The binding role of knowledge: an analysis of nursing students' knowledge ties. *Journal of Education and Work*, 18(3), 305-320.
- Kastenhofer, K. (2007). Converging epistemic cultures? A discussion drawing on empirical findings. *Innovation* 20(4), 359-373
- Knorr Cetina, K. (1999). *Epistemic cultures: How the sciences make knowledge*. Cambridge, MA: Harvard University Press.
- Knorr Cetina, K. (2001) Objectual practice. In T. Schatzki, et al., *The practice turn in contemporary theory*,175-188. Routledge.
- Knorr Cetina, K. (2007). Culture in global knowledge societies: Knowledge cultures and epistemic cultures. *Interdisciplinary Science Reviews*, 32(4), 361-375.

- Kohler-Koch, B. (2005) *European governance and system integration*. European Governance Papers (EUROGOV) No. C-05-01, <http://www.connex-network.org/eurogov/pdf/egp-connex-C-05-01.pdf>.
- Latour, B. (2010) *The making of law*. [English translation] Cambridge: Polity Press.
- Maassen, P. (2008) The Modernisation of European Higher Education. National policy dynamics. In: A. Amaral and I. Bleiklie (eds.) *From Governance to Identity. Festschrift for Mary Henkel*. Dordrecht: Springer: 95-112.
- Maassen, P. and J.P. Olsen (eds.) (2007) *University Dynamics and European Integration*. Dordrecht: Springer.
- Maassen, P. and B. Stensaker (eds.) (2010) *Beyond reform – investigating the intangible factors influencing change in higher education*. Report from the Pre-project, submitted to the Research Council of Norway. http://www.uv.uio.no/pfi/forskning/prosjekter/eie-utd2020forprosjekt/HEIK-Utd2020-Intro-Beyond_reform.pdf
- Maassen, P. and B Stensaker (2011) The Knowledge Triangle, European Higher Education. Policy logics and Policy implications. *Higher Education* (published online 12 August 2010)
- March, J.G. & J.P. Olsen (1989). *Rediscovering Institutions. The Organizational Basis of Politics*. New York: The Free Press.
- March, J. G. & J.P. Olsen (2006). Elaborating the “New Institutionalism”. In R.A.W. Rhodes, S. Binder and B. Rockman (eds.) *The Oxford Handbook of Political Institutions*. Oxford: Oxford University Press: 3-20.
- Nerland, M., Jensen, K., and Bekele, T. (2010) Changing cultures of knowledge and learning in higher education: a literature review. Report from the Pre-project, submitted to Research Council of Norway http://www.uv.uio.no/pfi/forskning/prosjekter/eie-utd2020forprosjekt/HEIK-Utd2020-Part2-Changing_cultures.pdf
- Nerland, M. & Jensen, K. (2010). Objectual practice and learning in professional work. In S. Billett (Ed): *Learning through practice: models, traditions, orientations and approaches*, pp. 82-103. Dordrecht: Springer.
- Nerland, M. (2008). Knowledge cultures and the shaping of work-based learning: The case of computer engineering. *Vocations and Learning: Studies in Vocational and Professional Education*, 1, 49-69.
- Neumann, T., Parry, S., Becher, T. (2002). Teaching and learning in their disciplinary contexts. *Higher Education*, 25 (4), 405-417
- Nespor, J.(1994) *Knowledge in motion. Space, time and curriculum in undergraduate physics and management*. Falmer Press
- NOKUT (2008) Evaluering av ingeniørutdanning 2006 – 2008. [Evaluation of Norwegian engineering programs 2006- 2008.]
- Simons, M. & Elen, J. (2007) The 'research-teaching nexus' and 'education through research': an exploration of ambivalences. *Studies in Higher Education* 32(5), 617-631
- Smeby, J.-C. (forthcoming). The significance of professional education. In Jensen et al., forthcoming.
- Steinvikutvalget (2009) Innstilling fra arbeidsgruppen for utvikling av rettsstudiet. [Report from the committee appointed to give recommendations for the new master programme in Law]. Oslo: University of Oslo, Faculty of Law
- St.meld. nr. 11 (2008-2009) *Læreren, rollen og utdanningen*. [White paper on teacher education]. Oslo: Kunnskapsdepartementet
- UHR (2010) *Utdanning + FoU = Sant*. Rapport om forskningsbasert utdanning. [Report on the concept of research-based Education]. July 2010. The Norwegian Association for Higher Education Institutions.