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Qualification Frameworks and the Concept of Knowledge

From Aristotle to Bologna, Brussels and Norway

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The purpose of this article is to analyse and discuss the concept of knowledge as it appears in Qualification Frameworks (QF). All Norwegian higher institutions are now working to bring their curricula in accordance with The Norwegian Qualification Framework. This is directly related to the two European processes The Bologna process and the EQF-process and the two European Frameworks linked to them. The problem formulation in this article is: What conceptions of knowledge can be identified in QF? This study draws on the theoretical basis of critical discourse analysis in the form developed by Norman Fairclough and Ruth Wodak. The article discusses how knowledge is conceptualized in the QF and some of the governing documents following them with a special emphasis on the Norwegian Framework. The theoretical understanding underpinning the analysis is built upon the Aristotelian notions of forms of knowledge. The analysis builds on modern scholars' reading of the three Aristotelian concepts of knowledge (episteme, techne and phronesis), and treats these concepts as a key to understanding the building bricks in the framework: knowledge, skills and competences. The purpose and aim for QF is to enhance mobility, transition and communication between the formal educational system, the students and society and future employers. The article questions whether it will be possible to reach the aim because of the lack of a consensus on core concepts.

Key words: Qualification Framework, Higher Education, Aristotelian Concept of Knowledge, Bologna Process, EQF-Process

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Introduction

The teacher education reform of 2010 added a demanding task for all Norwegian teacher education institutions: to be the first higher educational programme in Norway developing our new curricula in accordance with the new Qualification Framework (NKR)¹. This effort is directly related to the two European processes, the Bologna process and the EQF-process, and the qualification frameworks they contain (FQ-EHEA² and EQF³). The central concept in Qualification frameworks *learning outcome* are acknowledged as one of the basic building blocks of European higher education reform (Adam, 2008)

From a pedagogical point of view the implementation of QF raises several interesting and challenging questions concerning education. The questions regarding implementation and interpretation of QF in teacher education will not be discussed in this article; rather it will focus on the question **“What conceptions of knowledge can be identified in Qualification Frameworks?”**

This article is organised in four sections. An introduction to the topic and the theoretical framework together with a description of how the texts are selected is presented in section one. The three frameworks and some core international documents linked with the frameworks are described in the second section. In the third section concepts of knowledge are presented before a comparison between these concepts and the concepts used in the framework is presented. Concluding reflections and implications are drawn in section four. The three qualification frameworks follow as attachment.

¹ The abbreviation National Qualification Framework (NQR) is used as a common label for the different QF in different countries. The Norwegian NQR is called Nasjonalt Kvalifikasjonsrammeverk (NKR) See appendix for the full text in Norwegian and English (Cycle 1, 2 and 3). (Kunnskapsdepartementet, 2011b)

² “The Bologna Framework”: Framework of Qualifications for the European Higher Education Area (FQ – EHEA) was adopted by the Bologna-Minister meeting in Bergen 2005. See appendix for the full text (Bologna Process, 2005)

³ “EU-Framework”: Established by the recommendation of the European Parliament and The Council of Europe, 23 April 2008: On The Establishment Of The European Qualifications Framework For Lifelong Learning (EQF) See appendix for the full text.

Background: the Bologna process and the Norwegian Quality Reform

The implementation of QF is a central part of reforms in higher education. The Bologna process aimed to establish a European Area for Higher Education (EAHE) (Bergen Communiqué, 2005). One of the reasons for reforms in higher education might be found in the shift from elite university to mass university and the rising number of students attending higher education. University students are no longer necessarily aiming at a future position in academia after graduation; the knowledge-based society demands well-educated and skilful professionals and communicates this expectation to higher education institutions. The Humboldtian ideal, developing and disseminating knowledge for knowledge's own sake might not be regarded by governing bodies as the main purpose of higher education, rather a quest for useful knowledge.

Processes such as internationalisation, the mobility of students and workers and strong emphasis on lifelong learning are part of this picture, as is the emphasis on research and developing empirical knowledge as the basis for educating the new professions (by some called quasi-professions, earlier labelled vocational education and not part of higher education, but now established with education at Master's and PhD-level), and the call for entrepreneurial and innovative skilled candidates. The demand for useful knowledge and the extensive debate regarding theory and practice is linked to these aspects, as is the strong emphasis on competence.

The Norwegian Quality Reform might look like a direct follow-up of the Bologna Declaration of June 1999 (NOU 2000, p. 14; St.meld. nr. 27, 2000-2001). But the assessment of the Norwegian higher education system started earlier with the appointment of a National Commission in April 1998 (Nyborg, 2001). This culminated in the implementation of the reform in 2003, which changed the entire system of higher education in Norway. The Quality Reform was characterized by a strong international focus, but it was also a national reform of our system of higher education, which meant that it was inwards-directed, and had the national arena of higher education both as primary frame of reference and object of reform (Tjomsland, 2004).

To follow up the Bologna Process there were regular stocktaking reports that answered to the ten indicators within three areas connected to the process: *Degree system*: 1) Stage of implementation of the first and second cycle; 2) Access to the next cycle; 3) Implementation of national qualifications framework. *National implementation of Standards and Guidelines for Quality Assurance in the EHEA*: 4) Stage of development of external quality

assurance system; 5) Level of student participation in quality assurance; 6) Level of international participation in quality assurance. *Recognition*: 7) Stage of implementation of Diploma Supplement; 8) National implementation of the principles of the Lisbon Recognition Convention; 9) Stage of implementation of ECTS; 10) Recognition of prior learning.

European policy makers are concerned with the implementation processes in the countries that have adopted the framework, and monitor them closely (Bologna Process Stocktaking London, 2007; Bologna Process Stocktaking Benelux, 2009). For different national politicians it has been important to report “mission completed” to the European bodies.

Critical discourse analysis

The concept *discourse* have many meanings that often seem to be contradictory or mutually exclusive, but the definition from Van Dijk (1977) sees discourse quite generally as *text in context* and as evidence to be described empirically. The critical discourse analysis model offered by Fairclough (1989) puts the text in context and provides tools to analyse texts from different angles.

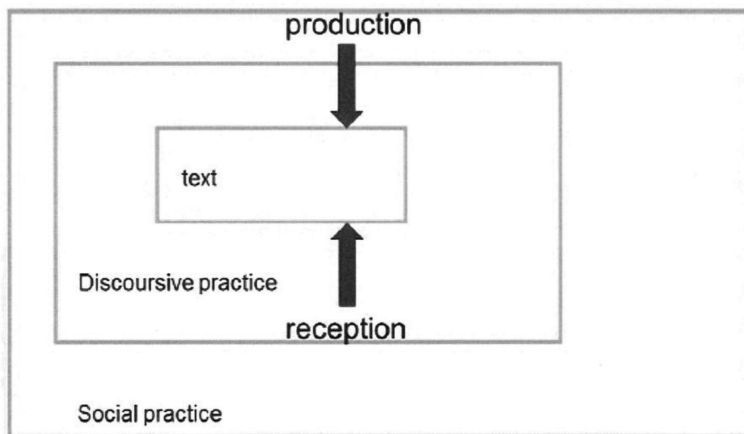


Fig 1. Fairclough's critical discourse analysis model (Fairclough, 1989, p. 25).

Critical discourse analysis theory and method builds on: “[...] the complex model of communication that is interactive and dialogical in character, rather from the sender-hearer form of type of model used in traditional

communication theory” (Wodak & al, 2000, p. 24). Also the *intertextuality* that is related to this type of communication and the assumptions that every text is embedded in a context and is synchronically and diachronically related to many other texts is central in this theory.

This analysis builds on this definition:

Critical Discourse Analysis sees discourse – language in use in speech and writing – as a form of ‘social practice. Describing discourse as a social practice implies a dialectical relationship between a particular discursive event and situation(s), institution(s) and social structure(s) which frame it: the discursive event is shaped by them, but it also shapes them. That is, discourse is socially constituted, as well as socially conditioned – it constitutes situations, object of knowledge, and the social identities of and relationships between people and groups of people. It is constitutive both in the sense that it helps sustain and reproduce the social status quo, and in the sense that it contributes to transforming it. (Wodak, 1996, p.15)

This emphasizes the idea of discourse as constitutive of reality and raises questions of power and ideology.

A decisive aspect is that discourse should be understood as *action* and an act of communication. Because of intertextuality, there can in principle be no objective beginning and no clear end, since every discourse is bound up with many others and can only be understood on the basis of others (Wodak & al, 2000, p. 26). Interesting questions are: How may one decide how much contextual knowledge is necessary? Where does a context begin and end? Do we have to describe ‘everything’ about a context?

The study objects in this article are pedagogical-political texts (the three QF mentioned above), which are intended to lead to action in different higher institutions throughout Europe, and it is most interesting to see which paradigms and traditions they are part of. The intertextuality of the documents is striking. Knowing the meaning, background and rationality of the frameworks are important to later understand their implications for teacher education.

Selection of texts

The three frameworks, EQF, FQ-EHEA and NKR are closely interlinked and built on some shared policy documents (Kunnskapsdepartementet, 2011a). The Tuning project⁴, funded by the EU, but initiated by the Bologna-process, has provided several of the base documents for developing the Bologna Framework. Also the documents connected to EQF especially refer to the work of the Joint Quality Initiative (Bologna process-network), and use the FQ-EHEA descriptors as a reference in their information about EQF. Finally, the Council of Europe also emphasizes the close linkage of the two European processes and the documents they contain:

In the area of qualifications frameworks, the Council of Europe has been an important actor since the concept was first brought into the European policy debate in 2003 and since 2007 the Council of Europe has taken the lead in “supporting the sharing of experience in the elaboration of national qualifications frameworks” (Communiqué of the Ministerial Conference of the Bologna Process held in London in 2007). As such, the Council of Europe chairs the Bologna working group on qualifications frameworks and it has developed close co-operation with the European Commission (paragraph 9) which oversees the European Qualifications Framework for lifelong learning adopted in 2008. (Council of Europe, 2010, p. 3)

European and national frameworks (EQF, FQ-EHEA, NKR)

Qualification Frameworks were first mentioned in the Bologna Conference in Copenhagen in 2003 and in the Berlin communiqué in 2003 (Bergan, 2010). The frameworks have been identified as a key tool for the realisation of the EHEA and are supposed to function as tools both for students, curriculum development and national bodies responsible. It is said that QF are not intended to be administrative straightjackets or to make all national education systems identical, but rather an instrument to help European higher education strike a balance between what we have in common and what is particular to each system. The FQ-EHEA is supposed to be an

⁴ TUNING Educational Structures in Europe started in 2000 as a project to link the political objectives of the Bologna Process and at a later stage the Lisbon Strategy to the higher educational sector. Outcome of the project are presented in a range of publications.

instrument that promotes transparency by providing a common framework for the diversity that is one of the strengths of European higher education, and hence a framework to help understand diversity (Bologna Process homepage), and also enhance communication between the formal educational system, students and society and future employers.

The utility aspect is most emphasized: “An NQF means an instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society” (Cedefop, 2009, p. 1).

None of the two European Qualification Frameworks adopted the proposal from the Tuning project without major changes. EQF and FQ-EHEA define ‘learning outcome’ in the same way, but have different descriptors. The Bologna Framework does not use the concept ‘competence’ as a descriptor. The EU-framework does, but in a different way to that proposed by the Tuning Project.

A learning outcome is a statement of what a learner knows, understands and is able to do on the basis of a given qualification	
EQF (EU)	FQ- EHEA (Bologna)
<ul style="list-style-type: none"> • Knowledge: In the context of EQF Knowledge is described as theoretical and/or factual. • Skills: In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments) • Competence: In the context of EQF competence is described in terms of responsibility and autonomy 	Dublin descriptors (generic) <ul style="list-style-type: none"> • Knowledge and understanding • Applying knowledge and understanding • Making judgements • Communication skills • Learning skills Not subject specific

Fig 2. Definition of learning outcome in EQF and in FQ- EHEA.

The implementation process demands some questions and considerations regarding aspects relating to the nature of knowledge and core elements related to the body, borders and levels of knowledge, the teaching-learning processes linked to the tradition, and finally what the education qualifies students for.

QF is supposed to promote a better relationship between level, learning outcomes, assessment criteria and teaching methodologies. This is connected with important pedagogical questions regarding which definitions of knowledge and learning are chosen: what is important knowledge; which knowl-

edge must be generic across study programmes; how do we provide learning environments for the knowledge; which learning strategies will be fruitful; and finally, how do we assess? All are didactical questions that are at the core of pedagogical theory and teacher education:

The development of qualifications frameworks on a European as well as on a national level deals with issues that represent the *heartland* of curriculum policy and curriculum practice. Consequently, I find curriculum theory a fruitful analytical point of departure given that qualifications take account of the prescribed learning objectives and learning outcomes of higher education. With the introduction of qualifications frameworks, curriculum issues that used to be dealt with on an institutional level have become political issues on a national and even supranational level. Implicitly and explicitly a framework indicates what ought to be the purpose, content, sequence and evaluation of a programme, which all represent central elements of the definition of curriculum. (Karseth, 2008, p. 3)

From the EU it is noted that: “There is broad agreement that NQF supports the introduction of explicit, learning outcomes based qualifications levels. Without these, the process of linking national qualifications levels becomes complicated. Some countries originally sceptical of the value of NQFs, for example Finland and Norway, have embraced the concept and are now actively involved in their development and implementation” (Cedefop, 2011, p. 10).

The Norwegian Qualification Framework

The two European frameworks introduce familiar concepts, but in a new wrapping. Of the two alternatives for describing learning outcomes, the Norwegian working group (appointed by the Norwegian Ministry of Education and Research) emphasized in their report that the descriptors had to be simple and understandable for everybody, and they proposed that the Ministry should establish NKR based on EQF rather than the Bologna framework (Kunnskapsdepartementet, 2007). The Ministry established the Norwegian Qualification framework for Higher Education early in 2009, followed by a three page letter referencing the proposal of the national framework the working group submitted in 2007 and the institutional responses to it. The notions were *Læringsutbytte* (*Learning Outcome*) using the EQF-descriptors *Kunnskap* (*Knowledge*), *Ferdigheter* (*Skills*) and

Generell kompetanse (Generic Competence). Norway does not operate with “intended learning outcome” and “achieved learning outcome” as, for instance, Sweden does⁵. Further deployment or discussion of some of the significant issues that were raised in a number of consultation replies from the institutions was lacking (Karseth, 2008).

Attention regarding the introduction of QF has been low among professionals in Norwegian higher education. Several stakeholders find this puzzling and one can speculate about whether this is due to the traditional view that curricula and syllabuses are technical and administrative (and perhaps boring?) issues, caused by the view that QF constitutes administrative requirements of a more technical nature, where a relatively mechanical transfer from current syllabuses into a new template would be possible without major difficulties. Implementing QF might also be regarded as a bureaucratic matter, not as a profoundly scientific, pedagogical and educational task. Also from the EU it is noted that:

While most stakeholders agree on this general objective, experiences so far show that NQF developments are indeed political processes which in some cases trigger conflicting points of view. Frameworks provide a new platform for dialogue – across traditional borderlines of subsystems, sectors and institutions – facilitating discussion on how to improve current practices and how to remove barriers to education, training and learning. It is important to keep in mind this political character of the new national frameworks; to understand them as neutral, technical instruments, seems inappropriate. (Cedefop, 2009, p. 2)

Ewell notes as drawbacks linked to implementing learning outcome:

(...) the terms and concepts underlying outcomes based approaches are fundamentally rooted in the contexts of business, education, and the social sciences. Business concepts (like those associated with Total Quality Management) provoke natural suspicion in much of the academy because they are associated with what many see as growing commercialization or “managerialism” in higher education. At the same time, education and the social sciences are not generally at the top of the disciplinary “pecking order” at most universities. Together, these perceptions mean that the

⁵ Sweden use “lärandemål” [learning goal] and läranderesultat” [learning achieved]. See also the article by Vidar Gynild (2011) for an interesting discussion on this topic.

initial legitimacy that any outcomes based approach will command will vary significantly and predictably by disciplines. For the professions, accustomed to external standards and frequently subject to licensing examinations governing entry, the approach will be largely familiar and should encounter little resistance. For other disciplines, care and time must be taken to allow the underlying concepts to be translated and internalized. (Ewell, 2001, p. 9)

In Norway it has been emphasised that “[...] neither the technical review, nor the referencing process as a whole is intended to change the Norwegian education system. The NKR has to fit the Norwegian context and has to be rooted in the existing Norwegian education, practices and structures” (The Norwegian referencing group, 2011, p. 2).

Writing complete new curricula based on learning outcomes is a comprehensive, complex and interesting epistemological process. Curricula are traditionally ‘input-focused’; the descriptions are usually in terms of what the study will cover, the content is listed and the main theories, events, processes and relationships are mapped-out. Adam states that:

In terms of curriculum design and development, learning outcomes are at the forefront of educational change. They represent an adjustment in emphasis from ‘teaching’ to ‘learning’ typified by what is known as the adoption of a student-centred approach in contrast to the traditional teacher-centred viewpoint. Student-centred learning produces a focus on the teaching – learning – assessment relationship and the fundamental links between the design, delivery and measurement of learning. (Adam, 2006, p. 3)

Different disciplinary fields use different languages and map their content differentially. Belcher’s striking concept of Academic Tribes and Territories offers a fruitful metaphor for academic activity, traditions and culture in Higher Education institutions (Becher & Trowler, 2001). In Norway – different from Anglo-Saxon countries – there has been no tradition of using the qualification framework. The short professional education mainly offered by university colleges has had the tradition of national curricula given by the government.

Central concepts in qualification frameworks

Competence

The concept *competence* is frequently used in educational contexts. The Tuning project links the concept to learning outcomes:

According to Tuning, learning outcomes are expressed in terms of the *level of competence* to be obtained by the learner. Competences represent a dynamic combination of cognitive and meta-cognitive skills, and ethical values. Fostering these competences is the object of all educational programmes, which build on the patrimony of knowledge and understanding developed over a period of many centuries. Competences are developed in all course units and assessed at different stages of a programme. Some competences are subject-area related (specific to a field of study), others are generic (common to any degree course). (González & Waagenaar, 2008, p. 9)

This definition and framing for QF seems very familiar to the Norwegian educational tradition. The Tuning project proposes competences as the main target to be implemented, followed by statements about which learning outcomes, educational activities and workload are contained in the module:

Programme of Studies:
 Name of the module / course unit:
 Type of course (e.g. major, minor, elective):
 Level of the module / course unit (e.g. BA, MA, PhD):
 Prerequisites:
 Number of ECTS credits:
 Competences to be developed:
 1.
 2.
 3.
 4.
 5.
 6.

Learning outcomes	Educational activities	Estimated student work time in hours	Assessment

Fig 3. Planning form for an educational module. (Gonzales and Waagenaar, 2008, p. 88).

The concept of competence⁶ is and has been crucial in Norwegian education. A common-sense definition many have been leaning on is “Competence is the combination of knowledge, skills and attitude”. Our teacher education has had a tradition of more than 10 years of writing curricula in a competence-based framework. But it is also interesting to note that in the translated version of the curricula determined by the Ministry in 1999, the concept “competence” was translated to “skills”: *Specialist subject skills* (Fagleg kompetanse), *Teaching skills* (Didaktisk kompetanse), *Social skills* (Sosial kompetanse), *Professional ethics skills* (Yrkesetisk kompetanse) and *Development skills and the ability to change* (Endrings- og utviklingskompetanse). As NKR was implemented in Norway, familiar concepts were given a complete new framing and partly new content.

The concept of knowledge

The “new” Aristotelian tradition of knowledge as outlined by Gustavsson (2000), Saugstad (2005) and Grimen (2008) seems to have grown from the new interest and development of practical and professional knowledge in Higher education and research. In Norway this debate is especially important as an increasing number of university colleges emphasize professional and vocational knowledge, develop more research based education and aim at establishing professional Master- and PhD-programmes. These processes emphasize the importance of developing a scientific *and* practical knowledge base for education programmes which do not primarily aim at educating future university scholars but a skilled working-force in modern society.

The important question ‘What is knowledge’, is complicated, comprehensive and challenging to get to grips with. The concept of knowledge is part of common-sense and our daily life. In the 1980s a new awareness of practice arose which had its roots in a ‘pragmatic turn’, and a focus on the utility use of knowledge and on the development of competences as an alternative to traditional and theoretical-scientific academic knowledge.

⁶ A brief search of documents from the Norwegian Ministry’s web (April 12) provides 1140 hits on the term/concept. One definition one may find is this: Competence is the knowledge and skills used to solve problems and meet challenges (My translation) http://www.regjeringen.no/nb/dep/kd/tema/utdanning_og_kompetanse.html?id=1407). The concepts *formal competence* and *real competence* are also often used to signify the difference between a formal qualification and the qualifications awarded through working-experience, and are established as core concepts in Norwegian recognition-procedures of lifelong learning.

Discussions connected to practical knowledge gained influence in the development of the “knowledge society”. With the starting point in the writings of the philosophers Wittgenstein, Ryle and Polanyi, questions regarding practical knowledge including the concepts of bodily and tacit knowledge were discussed, and also the relationship between practical and theoretical knowledge. Grimen argues the case for using a comprehensive concept of knowledge where practical knowledge is a natural part:

The term ‘knowledge’, might signify a family of phenomena. There is a reason to argue that practical knowledge is knowledge; it might be articulated, it might be learned and be criticised, it is transferable and might be articulated through action. (Grimen, 2008, p. 84. My translation)

Tacit knowledge. “We can know more than we can tell”

In vocational and professional knowledge the concept of bodily and tacit knowledge is central. Polanyi introduced the concept and emphasized the tacit aspect in all knowledge, and conversely, that no knowledge is completely tacit (Polanyi, 1983; Grimen, 2008). Polanyi opposed the materialistic vision of the world and the view that all knowledge has to be explicitly verifiable. He traced positivism to the rejection of Aristotelian and religious traditions, which were seen as oppressive and hindrances to the pursuit of truth (Mitchell, 2006). He also emphasizes the personal dimension of knowledge and that knowledge is an activity, and proposes the concept of “knowing” as different from “knowledge”.

There might be several possible causes why knowledge is tacit. Formal and informal norms and rules (as legal law or etiquette) might be one, which is regarded as common sense, unproblematic or self-evident another, and not comprehending one’s own knowledge is a third. Articulating tacit knowledge has been central in developing professional education and research. In several vocational or professional contexts bodily perceptions and knowledge are central and critical for dealing with the situation.

“Whereof one cannot speak, thereof one must be silent”

The early Wittgenstein’s concept of “tacit knowledge” stems from his first theory of language, where he addressed the limits of language and what there is beyond language. He made a distinction between *saying* and

showing, arguing that there are, beyond the senses, things that can be formulated in sayable (sensical) propositions, things that can only be shown (Stanford Encyclopedia of Philosophy). His ideal was a direct correspondence between language and the object it depicts; concepts had to have a reference to objects in the world to represent the truth. And by this there would be an existence of that which is unsayable.

The famous concepts “knowing that” and “knowing how” introduced by Ryle are one of the foundations of professional theory: “(...) knowing that something is the case and knowing how to do things” (Ryle, 1945, p. 4), Ryle construed and asserted that the workings of the mind are not distinct from the actions of the body, “Intelligently to do something (whether internally or externally) is not to do two things, one “in our heads” and the other perhaps in the outside world; it is to do one thing in a certain manner” (Ryle, 1945, p. 3). He also stated that knowing how to perform an act skilfully may not be only a matter of being able to reason practically, but also a matter of being able to put practical reasoning into action.

The Aristotelian concept of knowledge

In developing professional and practical education, Saugstad (2005) proposes Aristotle’s broad conception of knowledge (Aristotle Book VI, p. 112⁷) as a key to understanding practical knowledge and suggests that three of his his main categories of knowledge: *episteme* – the theoretical, *techne* – the productive, and *phronesis* – the social-ethical, can serve to differentiate and expand modern comprehensions of knowledge, learning and practice. Epistemological history shows that changing hierarchy and representatives of the dominant science view themselves as the bearer of “true knowledge”. Aristotle himself regarded *episteme* as the most advanced and valuable (Aristotle Book VI, p. 117).

Also the Swedish philosopher Bernt Gustavsson notes that knowledge, as depicted in the media and in political discourse, appears as if it were completely clear what we mean when talking about knowledge (Gustavsson, 2000). He also proposes using the Aristotelian division of knowledge to grasp the multifaceted and complex picture of knowledge today when he

⁷ All references to Aristotle’s *Nicomachean Ethics* are taken from the Bokklubben Nye Bøker edition (1999), and includes the page numbers in that edition.

outlines the relationship between profession and knowledge. He emphasises that *episteme* and *techne* is part of the Greek tradition, while *phronesis* – in his view the most interesting concept of the three – is a specific Aristotelian one. *Techne* and *phronesis* are practical knowledge and hence of the body. You might demonstrate bodily knowledge without speaking, but not without the body acting.

The Danish educational philosopher Tone Saugstad uses Aristotle's conception of knowledge as a key to understanding practical knowledge, and the differences between learning in practice and learning in schools, and also the paradigmatic differences between these ways of learning. She divides knowledge into theoretical and practical knowledge forms, and then describes the characteristics of each according to four principles:

- Correspondence between knowledge form and area of life;
 - The function or purpose of knowledge;
 - The activity form, or how knowledge is unfolded;
 - How knowledge is learned;
- (Saugstad, 2005, p. 353)

In schools and the educational sector, the social constructionist tradition, with emphasis on situated learning, has had a significant impact. According to this paradigm all learning is related to activity and social practice. Interest is thus not aimed at de-situated knowledge that is abstract and independent of context. The demand for useful or usable knowledge has had among both students and in educational policy contexts significant impact; theory must be relevant to practice, and what you learn must be directly useful for later professional work. Saugstad questions the coupling of theory and practice:

The Aristotelian differentiation between theoretical and practical knowledge raises questions about the dogma that educational theory and practise are, or should automatically be, connected. This, in turn, opens up a discussion about what should be learned in schools and what should be learned in practical life. (Saugstad, 2005, p. 348)

Saugstad extracts two strategic directions in the current education policy landscape: revitalization of the apprenticeship model and the use of various management theories, combined with the ideas of progressive education as examples of strategies that are adopted to reduce the gap between theory

and practice. These strategies ignore in her opinion that the different forms of knowledge, *episteme*, *techne* and *phronesis*, are differentiated and related to various areas of life: function and purpose, activity, shape and form of learning. Because all practical knowledge appears in the form of personal proficiency or expertise, and is based on life experience and rehearsal, it has to be learned by doing what one has to learn in the situation where what is learned is to be applied. Therefore, learning in practice is qualitatively different from the scholastic form of learning.

Aristotelian concept of knowledge applied to NKR

Modern scholars offer, with reference to Aristotle, a better understanding of the concept of knowledge, aspects of teaching and learning and the relationship of theory and practice. It can also contribute to the problem related to the implementation of the NKR, how to prevent this process from being only a technical exercise. Teacher education has to build on a broad concept of knowledge since a teacher needs subject knowledge, must know how to manage challenges and tasks, and of course also be able to act ethically as wise mentors for students. Today, this is a requirement for all professional education programmes; to be able to participate in society as active citizens there is a demand to act wisely in a given situation, often without time for deep analysis and contemplation.

The table below tries to show the possible connections between today's knowledge discussions and the ancient forms of knowledge. It is based on my reading of Aristotle and different modern scholars (Grimen, 2008; Gustavsson, 2000; Saugstad, 2005) interpretations and presentation of Aristotelian thoughts. The table draw on the tradition of discourse analysis as these texts are embedded in a historic context and hence related to many other concepts. The lack of an objective beginning and a clear end is also striking, and shows how this discourse is bound up with many others and can only be understood on the basis of others.

The three Aristotelian concepts of knowledge are interlinked and may, of course, not be transformed directly into today's educational life, rather be used as a key to come to a closer understanding of the building bricks in the frameworks. Our tradition of knowledge has its roots back to ancient Greece, hence might modern interpretations and discussions of Aristotle and some overall epistemological concepts be framed in this simplified schema:

Aristotelian forms of knowledge		
Theoretical-scientific knowledge: EPISTEME <ul style="list-style-type: none"> To know/knowledge Justified true belief (definition from Plato) Understand how the world is structured Tested and falsified knowledge, universally, abstract, generic 	Practical-productive knowledge: TECHNE <ul style="list-style-type: none"> To know how to do/proficiency Knowledge in action (poesis) To create and produce Instrumental, situated knowledge 	Political- ethical knowledge PHRONESIS <ul style="list-style-type: none"> To act wise/prudence Meaningful and value-based actions of an ethical-social character (praxis) Practical wisdom, sound judgement, ethical human beings, the normative intertwined in the knowledge
Related to enlightenment, positivism, empiricism, phenomenology	Pragmatic tradition Reflection <i>on</i> practice in practice	Hermeneutics
Objective knowledge Mathematics, natural sciences	Tacit knowledge Bodily knowledge	Social and ethical knowledge, reflections: what the good consists of
Knowledge that inhibit its own goal	Knowledge as an instrument/means to reach a goal outside the activity	The goal is part of the action
“Knowing that”	“Knowing how”	“Knowing when”
Correspondence between knowledge form and area of life		
Theoretical Scholastic paradigm	Practical Non-Scholastic paradigm	Practical Non-Scholastic paradigm
Primarily used in science and scientific theory. Exist out of necessity, might not be different, humans cannot change the theoretical knowledge. Universal, certain, eternal, general, abstract True and secure knowledge	The utility and useful aspect of knowledge is central. Focused on possibilities/what might happen. Situated knowledge, based on experience and context. Productive, practical, pragmatic, negotiable. Humans might influence on this knowledge	Concerning thinking and reasoning, how we think about what could be different Ethical attitude (hexis) Tradition, ethics related to actual knowledge, not strictly distinguishing between fact and value. Used in politics, culture and the development of society
The function or purpose of knowledge:		
TO KNOW Purpose: to give man insight into the cosmos, by observation and by focusing on regularities and generalities. To understand how the world is made manifest in the form of a divine and rational order True/false	TO KNOW WHAT TO DO (KNOWING) Purpose: intervening and changing the surrounding world to make a better material life To be able to create and produce Primarily used in craft aesthetic, vocational education, development of competence Usefulness /utility	TO KNOW HOW TO DO WHAT IS GOOD Purpose: building a foundation for an ethical society Develop good judgement, act as ethical humans, citizenship Primarily used in interpretation and understanding especially in professions concerning humans
The activity form, or how knowledge is unfolded;		
Theoria: contemplative, analytical and understanding activity to observe the world from the Gods’ angle without being involved in that which is being observed The activity is not directed towards an end but is its own goal	Poesis; The goal is outside the activity. Hence the activity is instrumental, aiming at a result/product.	Praxis; Humans meaningful and valued based activity of an ethical-social character. Not instrumental: good and just action with the aim is integrated in the action itself
How knowledge is learned, different areas of knowledge are learned in different ways;		
Analytical and systematic principle of learning De-contextualised and de-situated learning Does not demand life experience Can be learnt in the classroom by the young	Practical knowledge based on life experience and rehearsal /repetition Learning by doing Vocational training	Practical knowledge learned by living in the world and performing social and ethical acts Be part of the moral humanity Experience, mentoring and good role-models

Fig 4. A reading of Aristotle and presentation of his thoughts by contemporary scholars.

Comparison of the descriptors and Aristotle's concept of knowledge

At the risk of violence against Aristotle one might tentatively connect the concept in the two European and the Norwegian frameworks, with some of the characteristics of the Aristotelian knowledge field. In the basic document prepared for the Bologna Conference in Bergen, the Bologna Working Group cites the Tuning project in defining competence, and one might find some of the formulations as inspired by Aristotle:

[...] the description of competences embraces three strands, 'knowing and understanding' (theoretical knowledge of an academic field, the capacity to know and understand), 'knowing how to act' (practical and operational application of knowledge to certain situations), 'knowing how to be' (values as an integral element of the way of perceiving and living with others and in a social context). (Bologna Working Group on Qualifications Frameworks, 2005, p. 41)

Having in mind that according to Aristotle and the modern scholars who draw on his epistemology, there are no clear boundaries between forms of knowledge – they overlap – one could try to place QF in the chart as proposed over. The EQF-concepts *knowledge*, *skills* and *competence* have seductive similarities with the Aristotelian *episteme*, *techne* and *phronesis*. The documents leading to QF, the definitions in the Bologna framework and the EQF division of knowledge into three strands inspired me to see if there was a relationship between the frameworks and the Aristotelian forms of knowledge. The five Bologna descriptors are more problematic than those of EQF. One may argue that 'knowledge and understanding' fit well with the concept of *episteme*, just as 'applying knowledge and understanding' match *techne*. 'Communication skills' might be described as practical knowledge and therefore be affiliated to *techne*, or on the other side, as it is also strongly tied to 'being' and to act or live in the world with others, it could be linked to *phronesis*. 'Learning skills' also could be placed otherwise as it is a prerequisite to be able to acquire all types of knowledge. Having sound judgment is a kind of practical knowledge with similarities to the Aristotelian *phronesis*.

Aristoteles		
Episteme	Techné	Phronesis
FQ - EHEA		
Competence defined by the Tuning project as		
<i>theoretical knowledge of an academic field, the capacity to know and understand</i>	<i>'knowing how to act' (practical and operational application of knowledge to certain situations),</i>	<i>'Knowing how to be' (values as an integral element of the way of perceiving and living with others and in a social context).</i>
FQ – EHEA: Dublin descriptors (my attempt to label the descriptors)		
Knowledge and understanding	Applying knowledge and understanding Communication skills Learning skills	Making judgements
EQF		
Knowledge Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the EQF, knowledge is described as theoretical and/or factual.	Skills [...] „Skills“ are described as “the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments)”.	Competence [...]„competence“ is referred to as “the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. In the context of the EQF, competence is described in terms of responsibility and autonomy
NKF (Citations from the Norwegian referencing report, 2011)		
<u>Kunnskap</u> [...] proposal knowledge „ <i>kunnskap</i> “ is defined as the “theories, facts, terms, principles and procedures within a discipline, field, academic area and/or a vocation, profession or work situation.”	<u>Ferdigheter</u> [...] „skills“ are referred to as „ <i>ferdigheter</i> “, and described as “the ability to apply knowledge to solve problems and complete tasks. There are various types of skills – cognitive, practical, creative and communicative skills.”	<u>Generell kompetanse</u> In the NKR proposal the following description is used: “ <i>Generell kompetanse</i> is the ability to apply knowledge and skills in an independent way in various situations through showing the ability to cooperate, to take responsibility, the ability to reflect and think critically in study and work situations.”

Fig. 5 Table with Aristotelian forms of knowledge vs the three qualification frameworks.

NKR defines knowledge in relation to what is learned as well as the learning process involved, and reference is made to “understanding” as the basis for acquiring knowledge (The Norwegian referencing group, 2011). In NKR the requirement of what knowledge, skills and general competence a candidate should have, is combined with a description of how the owner of this knowledge, these skills and general competence should demonstrate it.

The descriptor combines a prescription of what something is, with how to measure whether “this” is, that is, the criteria for assessing whether a candidate has an expertise, and how he or she can demonstrate it. Some examples (2.Cycle): “-has advanced knowledge in the field and specialized knowledge in a particular area” (knowledge), but then “-can apply knowledge in new areas in the field” (knowledge) and “-can analyse academic issues based on subject area's history, traditions, character and place in society” (knowledge).

Secondly, several of the descriptors in the Norwegian framework might change label from ‘knowledge’ to ‘general competence’ or ‘to skills’. It may be argued that the descriptor “has insight into relevant academic and professional ethical issues” should be moved from general competence to ‘knowledge’, but there is also argument for leaving the descriptor where it is, as it might be regarded as relevant for normative and ethical-political conduct. But in an Aristotelian framing, having knowledge does not secure right and just acts; you might have knowledge but still not be wise. The descriptor “can plan and carry out varied assignments and projects over time, alone or as part of a group, and in accordance with ethical requirements and principles” (1.cycle, competence), does have clear skill components, but also emphasises the social-ethical aspect, hence it could be under both banners. While the descriptor “can reflect upon his/her own academic practice and adjust it under supervision” (1. cycle, skills) this may also might be placed both as theoretical knowledge and as competence, the same could be said regarding the descriptor “can manage complex interdisciplinary assignments and projects” (3.cycle, general competence), while “can formulate problems, plan and carry out research and scholarly and/or artistic development work” (3.cycle, skills) is much akin to “can participate in debates in the field in international forums” (3.cycle, general competence). It appears to be quite randomly under which banner the descriptors are categorized, and several of the descriptors might without any problem fit into all three categories.

Finally: the utility perspective is dominant, and it seems striking that the description under general competence does not have ethical-political and value-related content (phronesis), but rather technical-practical (techne). Especially the utility aspect is apparent under general competences; there are few reminders of Aristotelian wisdom, and management and communication skills are especially emphasized. Also, there are very few traces of Aristotelian techne and phronesis (as outlined by modern scholars) in the skills- and general competence descriptors; they are almost solely describing cognitive and meta-cognitive abilities related to classical scientific knowl-

edge. All skills and competences are supposed to be articulated by words, and hence describe the cognitive skills. Descriptors supporting the two forms of practical knowledge are lacking.

Concluding reflections

One of the basic ideas of QF is to communicate the qualifications a successful completion of educational programs provides in a transparent way (Kunnskapsdepartementet, 2011a). The Qualification Framework aims at embracing all educational programmes in higher education, both classical disciplines and professional, and this demands a framework with a rich concept of knowledge that can cover both theoretical and practical interests. QF requires of educational institutions clear and well considered descriptions and criteria for assessment to justify that a candidate is certified for the qualification. The NKR has descriptors where it seems to be random under which banner they are posted, which gives a kind of blurred picture.

QF focuses on learning outcomes and serves as the basis for internal discussions on the organization of teaching, learning and assessment methods. Based on the learning outcomes, the faculty is supposed to formulate subject-specific learning outcomes and also consider which are the most appropriate teaching-learning-assessment methods. This means that if the descriptors in the three categories in the Norwegian context were better formulated, these could provide a better basis for fruitful discussions and processes in the various disciplines and programmes in Higher education institutions. This is problematic when aiming at being the basis for all curricula that the different educational programmes in Norway are supposed to draw on. A distinction between knowledge, skills and general competence that are built on both theoretical and practical knowledge forms would be a benefit. It might be a question whether the way NKR is designed helps to reach the goal: to achieve transparency, promote better communication and mobility in higher education. Rather, it hinders the implementation of the framework in individual institutions.

The framework seems clearly biased towards theoretical-scientific knowledge, that means that vocational and professional education are given a framework that is too restricted and narrow for their needs. The Norwegian descriptors seem to be stuck in a scholastic paradigm, but at the same time to be dominated by an instrumental approach. Episteme, or theoretical-scientific knowledge has traditionally been the dominating form of knowledge in academia, and different policy approaches to strengthen the utility

aspect of higher education has been criticized. The Humboldtian ideal in higher education is strong – to develop knowledge for knowledge’s own sake, free from governmental steering and not being forced to produce what is regarded as useful (Dannelsesutvalget, 2009). The qualification frameworks are in their essence instrumental: they aim at enhancing mobility among students and workers, and at communicating what an educated person “is able to do on the basis of a given qualification”. Cost-benefit and utility perspectives are dominant.

The two European Frameworks seems to allow a broader concept of knowledge than the Norwegian; the descriptors are formulated on a more general level, include both practical and theoretical knowledge and are thus more useful for both classical university studies and vocational and professional education programmes. Important aspects concerning practical knowledge are not included in NKR. The Norwegian Ministry seemed to have overruled their own idea “To avoid the implementation of the framework being a theoretical exercise, there is an emphasis on allowing the institutions to implement this in accordance with their revisions of syllabuses” (my translation). Regarding their own work on NKR, the randomly formulated descriptors and the lack of integrating practical knowledge is a barrier to being a good basis for educational processes in the institutions.

Ambiguity and lack of clarity are not desirable in political texts, and due to this, problematic issues with lots of possible contradictory interpretations might be simplified and presented as if they were unequivocal. This might be a first impression of the frameworks: they seemed transparent, orderly brief and easy to understand. But the surrounding system and political processes that led to the framework has been complicated; several scholars and bureaucrats have been working with the development of the frameworks, and by examining these texts in a historical-epistemological framework we might find that the central concepts that are building bricks in the framework are often already filled with meaning – or put differently – have other definitions than the framework propose. The texts are part of an on-going semiose; the different use and interpretation of the central concepts in this discourse shows us that this is a multi-faceted and complicated issue. Whether the texts have their intended political meaning I will leave to later discussions.

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Attachments

- Attachment 1. FQ/ EHEA, Dublin Descriptors
- Attachment 2. European Qualification Framework (EQF)
- Attachment 3. The Norwegian Qualification Framework (English)
- Attachment 4. Det norske kvalifikasjonsrammeverket for høgre utdanning (NKR) (Norwegian)

Attachment 1. FQ/ EHEA, Dublin Descriptors

Qualifications that signify completion of the higher education short cycle (within or linked to the first cycle) are awarded to students who:

- have demonstrated knowledge and understanding in a field of study that builds upon general secondary education and is typically at a level supported by advanced textbooks; such knowledge provides an underpinning for a field of work or vocation, personal development, and further studies to complete the first cycle;
- can apply their knowledge and understanding in occupational contexts;
- have the ability to identify and use data to formulate responses to well-defined concrete and abstract problems;
- can communicate about their understanding, skills and activities, with peers, supervisors and clients;
- have the learning skills to undertake further studies with some autonomy.

Qualifications that signify completion of the first cycle are awarded to students who:

- have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study;
- can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study;
- have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues;
- can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences;
- have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.

Qualifications that signify completion of the second cycle are awarded to students who:

- have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context;
- can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study;
- have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements;
- can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non specialist audiences clearly and unambiguously;
- have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.

Qualifications that signify completion of the third cycle are awarded to students who:

- have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field;
- have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity;
- have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication;
- are capable of critical analysis, evaluation and synthesis of new and complex ideas;
- can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise;
- can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society.

Attachment 2. European Qualification Framework (EQF)

EQF Descriptors (EU)	Knowledge	Skills	Generic competences
EQF 5 th cycle	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	<ul style="list-style-type: none"> - Exercise management and supervision in contexts of work or study activities where there is unpredictable change - Review and develop performance of self and others
EQF 6 th cycle	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	<ul style="list-style-type: none"> - Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts - Take responsibility for managing professional development of individual and groups
EQF 7 th cycle	<ul style="list-style-type: none"> - highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research - critical awareness of knowledge issues in a field and at the interface between different fields 	<ul style="list-style-type: none"> - specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields 	<ul style="list-style-type: none"> - manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches - take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
EQF 8 th cycle	<ul style="list-style-type: none"> - knowledge at the most advanced frontier of a field of work or study and at the interface between fields 	<ul style="list-style-type: none"> - the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice 	<ul style="list-style-type: none"> - demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Attachment 3. The Norwegian Qualification Framework (English)

A candidate who has completed his or her qualification should have the following learning outcomes defined in terms of knowledge, skills and general competence:

Level 6: Bachelor (1. cycle)

Knowledge	Skills	General competence
<ul style="list-style-type: none"> - has broad knowledge of important topics, theories, issues, processes, tools and methods within the academic field - is familiar with research and development work in the field - can update his/her knowledge in the field - has knowledge of the history, traditions, distinctive character and place in society of the academic field 	<ul style="list-style-type: none"> - can apply academic knowledge and relevant results of research and development work to practical and theoretical problems and make well-founded choices - can reflect upon his/her own academic practice and adjust it under supervision - can find, evaluate and refer to information and scholarly subject matter and present it in a manner that sheds light on the problem - masters relevant scholarly tools, techniques and forms of communication 	<ul style="list-style-type: none"> - has insight into relevant academic and professional ethical issues - can plan and carry out varied assignments and projects over time, alone or as part of a group, and in accordance with ethical requirements and principles - can communicate important academic subject matters such as theories, problems and solutions, both in writing and orally, as well as through other relevant forms of communication - can exchange opinions and experiences with others with a background in the field, thereby contributing to the development of good practice - is familiar with new thinking and innovation processes

Level 7: Master (2. cycle)

<ul style="list-style-type: none"> - has advanced knowledge within the academic field and specialized insight in a limited area - has thorough knowledge of the scholarly or artistic theories and methods in the field - can apply knowledge to new areas within the academic field - can analyze academic problems on the basis of the history, traditions, distinctive character and place in society of the academic field 	<ul style="list-style-type: none"> - can analyze and deal critically with various sources of information and use them to structure and formulate scholarly arguments - can analyze existing theories, methods and interpretations in the field and work independently on practical and theoretical problems - can use relevant methods for research and scholarly and /or artistic development work in an independent manner - can carry out an independent, limited research or development project under supervision and in accordance with applicable norms for research ethics 	<ul style="list-style-type: none"> - can analyze relevant academic, professional and research ethical problems - can apply his/her knowledge and skills in new areas in order to carry out advanced assignments and projects - can communicate extensive independent work and masters language and terminology of the academic field - can communicate about academic issues, analyses and conclusions in the field, both with specialists and the general public - can contribute to new thinking and innovation processes
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Level 8: Ph.d. (3. cycle)

<ul style="list-style-type: none"> - is in the forefront of knowledge within his/her academic field and masters the field's philosophy of science and/or artistic issues and methods - can evaluate the expediency and application of different methods and processes in research and scholarly and/or artistic development projects - can contribute to the development of new knowledge, new theories, methods, interpretations and forms of documentation in the field 	<ul style="list-style-type: none"> - can formulate problems, plan and carry out research and scholarly and/or artistic development work - can carry out research and scholarly and/or artistic research work of a high international standard - can handle complex academic issues and challenge established knowledge and practice in the field 	<ul style="list-style-type: none"> - can identify new relevant ethical issues and carry out his/her research with scholarly integrity - can manage complex interdisciplinary assignments and projects - can communicate research and development work through recognized Norwegian and international channels - can participate in debates in the field in international forums - can assess the need for, initiate and practice innovation
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**Attachment 4. Det norske kvalifikasjonsrammeverket for høgre utdanning (NKR)
(Norwegian)**

En kandidat med fullførte kvalifikasjoner skal ha følgende totale læringsutbytte definert i kunnskap, ferdigheter og generell kompetanse		
Kunnskap	Ferdigheter	Generell kompetanse
Bachelor (1. syklus)		
<ul style="list-style-type: none"> - har bred kunnskap om sentrale temaer, teorier, problemstillinger, prosesser, verktøy og metoder innenfor fagområdet - kjenner til forsknings- og utviklingsarbeid innenfor fagområdet - kan oppdatere sin kunnskap innenfor fagområdet - har kunnskap om fagrådets historie, tradisjoner, egenart og plass i samfunnet 	<ul style="list-style-type: none"> - kan anvende faglig kunnskap og relevante resultater fra forsknings- og utviklingsarbeid på praktiske og teoretiske problemstillinger og treffe begrunnede valg - kan reflektere over egen faglig utøvelse og justere denne under veiledning - kan finne, vurdere og henvise til informasjon og fagstoff og framstille dette slik at det belyser en problemstilling - kan beherske relevante faglige verktøy, teknikker og uttrykksformer 	<ul style="list-style-type: none"> - har innsikt i relevante fag- og yrkesetiske problemstillinger - kan planlegge og gjennomføre varierte arbeidsoppgaver og prosjekter som strekker seg over tid, alene og som deltaker i en gruppe, og i tråd med etiske krav og retningslinjer - kan formidle sentralt fagstoff som teorier, problemstillinger og løsninger både skriftlig, muntlig og gjennom andre relevante uttrykksformer - kjenner til nyttenkning og innovasjonsprosesser
Master (2. syklus)		
<ul style="list-style-type: none"> - har avansert kunnskap innenfor fagområdet og spesialisert innsikt i et avgrenset område - har inngående kunnskap om fagrådets vitenskapelige eller kunstfaglige teori og metoder - kan anvende kunnskap på nye områder innenfor fagområdet - kan analysere faglige problemstillinger med utgangspunkt i fagrådets historie, tradisjoner, egenart og plass i samfunnet 	<ul style="list-style-type: none"> - kan analysere eksisterende teorier, metoder og fortolkninger innenfor fagområdet og arbeide selvstendig med praktisk og teoretisk problemløsning - kan bruke relevante metoder for forskning og faglig og/eller kunstnerisk utviklingsarbeid på en selvstendig måte - kan analysere og forholde seg kritisk til ulike informasjonskilder og anvende disse til å strukturere og formulere faglige resonnementer - kan gjennomføre et selvstendig, avgrenset forsknings- eller utviklingsprosjekt under veiledning og i tråd med gjeldende forskningsetiske normer 	<ul style="list-style-type: none"> - kan analysere relevante fag-, yrkes- og forskningsetiske problemstillinger - kan anvende sine kunnskaper og ferdigheter på nye områder for å gjennomføre avanserte arbeidsoppgaver og prosjekter - kan formidle omfattende selvstendig arbeid og behersker fagrådets uttrykksformer - kan kommunisere om faglige problemstillinger, analyser og konklusjoner innenfor fagområdet, både med spesialister og til allmennheten - kan bidra til nyttenkning og i innovasjonsprosesser
Ph.d. (3. syklus)		
<ul style="list-style-type: none"> - er i kunnskapsfronten innenfor sitt fagområde og behersker fagrådets vitenskapsteori og/eller kunstneriske problemstillinger og metoder - kan vurdere hensiktsmessigheten og anvendelsen av ulike metoder og prosesser i forskning og faglige og/eller kunstneriske utviklingsprosjekter - kan bidra til utvikling av ny kunnskap, nye teorier, metoder, fortolkninger og dokumentasjons-former innenfor fagområdet 	<ul style="list-style-type: none"> - kan formulere problemstillinger for, planlegge og gjennomføre forskning og faglig og/eller kunstnerisk utviklingsarbeid - kan drive forskning og faglig og/eller kunstnerisk utviklingsarbeid på høyt internasjonalt nivå - kan håndtere komplekse faglige spørsmål og utfordre etablert kunnskap og praksis på fagområdet 	<ul style="list-style-type: none"> - kan identifisere nye relevante etiske problemstillinger og utøve sin forskning med faglig integritet - kan styre komplekse tverrfaglige arbeidsoppgaver og prosjekter - kan formidle forsknings- og utviklingsarbeid gjennom anerkjente nasjonale og internasjonale kanaler - kan delta i debatter innenfor fagområdet i internasjonale fora - kan vurdere behovet for, ta initiativet til og drive innovasjon