The professional master standard

Netherlands Association of Universities of Applied Sciences

December 2019

Vereniging Hogescholen

Foreword

In recent years, master programmes have gained a more prominent place in higher professional education, creating added value for the knowledge society. This knowledge society has to deal with increasingly complex issues. Master programmes provided by the universities of applied sciences are professionally oriented, are linked directly to actual practice and train highly educated professionals in dealing with those complex issues. Furthermore, it is important for the institutes that they provide master programmes, in that way the universities of applied sciences can improve their research quality and research culture.

During the Invitational Conference on Master Education held in 2016, the Professional Masters Action Plan[1] drawn up by the National Platform for Professional Masters (LPPM) was presented to the Minister of Education, Culture and Science. In this action plan, the universities of applied sciences announced their intention to boost the number of master programmes they provide. Since then, the number and diversity of professional master programmes has increased steadily. More and more universities of applied sciences provide associate degree-, bachelor- and masterprogrammes. At the same time, the bachelor programmes are being re-profiled and as a consequence the portfolio of bachelor programmes is broadening. The various higher professional education master programmes dovetail with these developments in the professional field and in higher professional education.

As a result of the afore-mentioned developments and in line with the ambition of the Netherlands Association of Universities of Applied Sciences (VH), this document contains an updated description of the professional master standard, based on national and international master's degree standards. The purpose of the higher professional education master standard is to specifically describe the essence of master programmes provided by universities of applied sciences. The standard serves as a guideline in the development of (national) professional oriented profiles and study programme profiles, and for incorporating them into the curricula of the individual study programmes.

The standard has been composed by an LPPM team consisting of relevant experts. They developed the standard in consultation with their own colleagues and in line with the afore-mentioned frameworks. The team presented their initial draft to the seven sectoral advisory boards (SAC's), who provided useful feedback based on their domain perspective. The final version was rewritten and refined on the basis of this feedback and presented to the LPPM. This final version was officially adopted by the General Assembly of the Netherlands Association of Universities of Applied Sciences on 28 June 2019.

[1] http://verenigingh ogescholen.h5mag.com/professionele_masters_201/actieplan_professionele_masters

This standard describes the profile of the professional master and aims to paint an unambiguous and clear picture of the master level within the context of the professional orientation of higher professional education. We wish to take this opportunity to express our gratitude to all those who helped bring this updated standard to fruition.

The master standard team of the National Platform for Professional Master Programmes (LPPM):

- Willie van der Galiën-Roodhardt, Programme director Master programmes, NHL Stenden University of Applied Sciences
- Margreet Riemersma, Staff member Office Education and Research, Hanze University of Applied Sciences, Groningen
- Ellis Visch, Head Quality assurance, HKU University of the Arts Utrecht
- Mirjam Losse, Senior Advisor Research and Education, Saxion University of Applied Sciences
- Lisette Munneke, Professorship of Methodology of Applied Research, HU University of Applied Sciences Utrecht
- Petra Kanters, Education Manager Master programmes, Rotterdam University of Applied Sciences, chair of the National Platform for Professional Master Programmes (LPPM)
- Marianne Kok, Educationalist, Amsterdam University of Applied Sciences
- Hugo Nierstrasz, Programme Manager Master development, Amsterdam University of Applied Sciences
- Jacqueline Kok, Masters Coordinator Saxion Research & Graduate School, Saxion University of Applied Sciences
- Didi Griffioen, Professor (of Applied Sciences) of Higher Education, Research and Innovation, Amsterdam University of Applied Sciences

Supported by:
- Marije Markus, Education Adviser
- Jort Diekerhof, Policy Adviser, Netherlands Association of Universities of Applied Sciences

December 2019

Contents

1 Introduction

In 2012, the higher professional education master standard was defined and adopted by the Netherlands Association of Universities of Applied Sciences. In 2018, the Sectoral Advisory Boards (SAC's) requested the National Platform for Professional Master Programmes (LPPM) of the Netherlands Association of Universities of Applied Sciences to update this standard in the light of the aspirations regarding the master and the new developments. The team "professional master standard up to date" subsequently started working on this task. This document contains the result of this task, i.e., an updated and revised professional higher education master standard: the professional master.

Higher professional education comprises three levels, namely the associate degree (level 5), the bachelor level (level 6) and the master level (level 7). In the Netherlands, universities and universities of applied sciences provide level 7 study programmes. This document describes level 7 within the context of higher professional education. This revised standard describes the typical characteristics of the professional master graduate.

1.1 Diversity

The educational structure of master programmes in higher professional education variates per sector, the purpose and the target group of the master programme. This is also evidenced by the range of master programmes provided by universities of applied sciences. Various types of master programmes can be distinguished.

Range of types of master programmes:
- *Advancement master*: A master programme that links up directly with the bachelor programme;
- *Post-experience master*: The master diploma broadens the students' knowledge within their own profession. Relevant professional experience is a prerequisite for attending the study programme.

Master programmes are provided as full-time, part-time and as work and study courses.

Variation in orientation:
- *Professional qualification master*: The master's degree is required for practicing a profession (an example here is the increasing number of master programmes in the care sector).
- *Specialist master*: The increasing complexity of the professional practice can lead to far-reaching specialisations in one field of study or sector. A master's degree provides students with more in-depth knowledge and increases the level of the professional practice. New students range from experienced professionals to bachelor graduates.
- *Crossover master*: The increasing complexity of the professional practice often leads to crossovers between fields of study or sectors.

Professional masters can be primarily aimed at national or international target groups. The description of the professional master provided in this document does justice to the afore-mentioned wealth of master programmes.

2 Basic principles

The standard describes the essence of the higher professional education master and can be used as a bench-mark for several purposes. Parties involved in developing or adopting (national) professional oriented profiles and educational profiles can refer to the standard. The master standard is also helpful in developing new professional master programmes and functions as a collective quality framework. The standard can be used as an quality assurance tool, for instance as a reference tool in preparing for an accreditation process by the Accreditation Organisation of the Netherlands and Flanders (NVAO)[2] The professional master standard can also be used to develop a concise profile for the professional master programmes. The standard serves as a set of guidelines with the maxim 'apply or explain'; one can deviate from this standard provided that deviation is substantiated.

The primary purpose of the higher professional education master standard is to indicate the graduation level of professional master graduates. The professional master standard does not take the place of the level descriptions of the Dublin Descriptors, the European Qualifications Framework (EQF), the Dutch Qualification Framework (NLQF) and the Accreditation Organisation of the Netherlands and Flanders (NVAO) standards. These standards were, however, used to validate the professional master standard.

2.1 Description

In the 'Professional Masters of Added Value' action plan[3], the LPPM described the master programmes in higher professional education as follows:

Universities of applied sciences are the institutions where people are trained to be master-level professionals. Whether as a follow-up of a bachelor programme, or as an opportunity to learn for people already on the job market, a master's degree obtained at a university of applied sciences prepares students for an increasingly complex professional world. Our society is changing at an ever faster pace. That applies even more so to professions and organisations, exponentially increasing the complexity of social world and economy.

Consequently, professionals are faced with ever more **challenging issues**, requiring a **solid theoretical** and **research-based**, sometimes even specialist, **knowledge base**, and, if necessary, a **multidisciplinary approach**, beyond the **boundaries** of their own discipline.

Professional master programmes, master programmes that are professionally oriented, provide for this growing need. With their applied research, the universities of applied sciences cater to the professionalisation of occupations for which they train their students. They have become more knowledge intensive and more

[2] Assessment framework of higher professional educational accreditation in the Netherlands 2018 (2018 Framework) (Gazette 29 January 2019 , no. 3198).
[3] Netherlands Association of Universities of Applied Sciences (2016) Professional Masters of Added Value https://www.vereniginghogescholen.nl/system/knowledge_base/attachments/files/000/000/595/original/085_004_HBO_MASTERS_P2__08_.pdf?1468585542

innovative. This is a rapidly progressing development. It is precisely this development that lies at the heart of the professional master. (p.8)”

The context within which graduate professional masters work is complex. Master professionals are professionals who can deal with complex social and sometimes ethical issues at an advanced level. In their professional practice they are expected to contribute to knowledge creation and innovation, two requirements for solving these complex issues. In this respect, they work together with other professionals proceeding from a sound understanding of their own qualities, identity and position. The team composed the following description to define the graduate master professional.

Graduate professional masters work in a professionally oriented context on complex issues related to their professional practice. They do this based on solid theoretical knowledge and research-based methods and attitude. They act professionally on the basis of ethical and moral consciousness and are autonomous and reflective. They have progressed to an advanced level and demonstrate mastery in their discipline. They work independently and collaborate interprofessionally in various networks and contribute to knowledge creation and innovation.

3 The standard

The following four pillars mark the graduation level of professional master programme graduates:

A. **Mastery;** indicating professional development, learning ability and ethical and moral conduct.
B. **Research competence**; explaining how master professionals have the ability to change the professional practice and reach effect.
C. I**nterprofessional collaboration;** the importance of acting against a broad perspective and collaborating in a multidisciplinary network is a prerequisite for working on a master professional level.
D. **Impact;** describing the master professional's objective. Researching and solving practical issues results in an impact embedded in the professional practice and the broader professional domain.

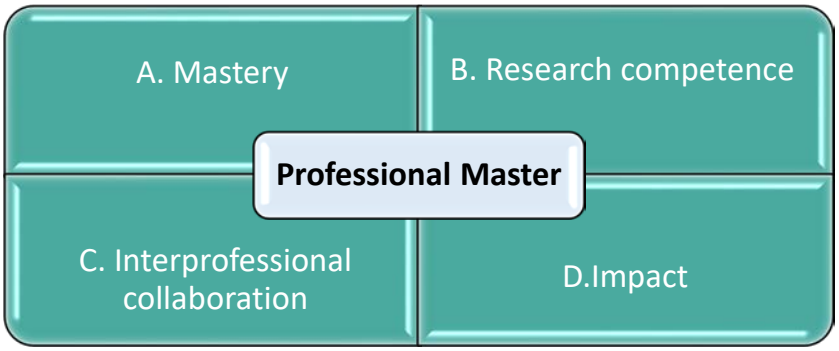

Figure 1 The 4 pillars of the Professional Master

3.A Mastery

Professional development, learning ability and ethical, moral conduct are the essence of the mastery pillar.

Master professionals are reflective and direct their own professional development[4]. Master professionals can assess the degree of complexity of practical issues and determine what in-depth knowledge and support they need from their own network in order to investigate and solve issues.

Master graduates have the ability to critically view their own conduct and the conduct of others based on moral values. Theyare willing to engage in a debate on that conduct with colleagues, clients and other parties. Master professionals thus demonstrate ethical sensitivity and can analyse and compare multiple perspectives. Master professionals are also able to make judgements based on incomplete or limited information. The above requires the ability to reflect, enabling master professionals to surpass their craftsmanship and develop into a master of their professional domain.

3.B Research competence

The essence of the research competence pillar is recognising and analysing complex issues in professional practice and being able to solve those issues in a strategic, tactical and creative manner.

The ability to research and solve these complex practical issues requires research competence[5] enabling master professionals to make enquiries, contextualise (conceptualise and concretise)[6]. Master professionals place practical issues in an international (scientific) conceptual framework and/or applicable discourse and other forms of knowledge, such as know-how and practical knowledge. This is the enquiries and conceptualisation phase. It is subsequently up to the professionals to concretise this and to come up with possible solutions, designs and interventions that contribute to knowledge creation and innovation in the professional domain. This can be an iterative process.

Master professionals make use of applied research when researching and solving practical issues and have the ability to gear the methodology of applied research to the set goals (knowledge, creation, learning and change goals[7]). Master professionals have the ability to deal critically with the variation of different kinds of knowledge and reach a logical and workable synthesis of available knowledge. Master professionals do this on the basis of robust practical theory.

[4] See, for instance, David Schön's work on the reflective practitioner.

[5] As defined by Daan Andriesssen (2014) in his public lecture entitled Praktisch relevant én methodisch grondig? (Of practical relevance and methodically sound?) Dimensies van onderzoek in het hbo. (Dimensions of research in higher professional education.) Utrecht: HU University of Applied Sciences Utrecht).

[6] This terminology is taken from the work of Wenja Heusdens (Heusdens, W. T., Bakker, A., Baartman, L. K. J., & De Bruijn, E. (2015). Contextualising Vocational Knowledge: A Theoretical Framework and Illustrations From Culinary Education. Vocation and Learning , 9 (2), 151 –165).

[7] Andriessen, D. (2019) . Effect of research on complex issues. In K. Montesano Montesori, N., Schipper, M., Andriessen, D. & Greven (Ed.), Bewegen in Complexiteit; Voorbeelden voor onderwijs, onderzoek en praktijk. (Engaging in Complexity; Examples for education, research and actual practice.) Utrecht: HU University of Applied Sciences Utrecht.

This also means that master professionals are able to strike a proper balance between a methodologically sound research project and still remain sufficiently relevant to the context in which the practical issue presents itself. Master professionals shape the research process in such a way as to ensure impact in the professional practice (see D.).

3.C Interprofessional conduct

The essence of interprofessional conduct is the ability to pinpoint important, complex issues together with and based on different disciplines, stakeholders, perspectives and points of view.

Master professionals have a broad outlook on society and the future in which traditional professional fields will no longer exist and boundaries between sectors, professions and disciplines will become flexible. The globalising world also demands professionals who have an eye for social challenges and who bear social responsibility ensuing from their profession.

Master professionals feel comfortable in an international context and have sufficient intercultural competences to be able to work with others. Master professionals develop and maintain professional networks in (international) professional practice.

Master professionals share knowledge, ideas and analyses with others in a learning network and thereby contribute to the knowledge development of the day to day practices and the profession[8]. Consequently, master professionals have the ability to integrate and bring parties together. This creates new potential practices and perspectives, opening up the possibility of various new forms of cooperation, each based on their own motivation.

Over the years, various terms[9] have been linked to these forms of cooperation:

- *Monodisciplinary*; this relates to the knowledge, experience and methodology of a demarcated field of study or sector.
- *Multidisciplinary*; here, (mono)disciplines work together and address issues in a broader perspective (e.g., in the chain, regional, (inter)national).
- *Interdisciplinary*; knowledge, experience and methodology of various disciplines and sectors are integrated in order to achieve a concerted result.
- *Transdisciplinary*; here, parties form a knowledge entity with shared methodologies, concepts and a transdisciplinary vocabulary.

Master professionals operate in new or unfamiliar circumstances within a broad or multidisciplinary context related to the professional domain. Master professionals are critically aware of complex issues concerning their own field of study and on the interface between various fields of study, and can act on an interprofessional basis and manage multiple processes.

[8] For detailed information, see Markauskaite, M., & Goodyear, P. (2017). Epistemic fluency and professional education: innovation, knowledgeable action and actionable knowledge. Dordrecht: Springer.
[9] OBK network, Werkgroep Competenties Masters (Masters Competences Working Group), Masterprofiel Beeldende Kunst en Vormgeving (Master Profile of the Visual Arts and Design), April 2016.

3.D Impact [10]

The essence of the impact pillar consists of the result brought about by master professionals. The manner in which master professionals take action has an impact on the professional practice and contributes to innovation.

Master professionals contribute to the **innovation** of the professional practice. They are able to share conclusions, motives and considerations in interaction with others and to create (new) knowledge. Master professionals develop new knowledge and procedures and integrate knowledge from various fields of study. They act and communicate beyond the boundaries of their own professional practice[11]. They can deal with unforeseen challenges by using their view of the future to innovate the present.[12]

Master professionals are able to view the knowledge they have gained when working on a complex practical issue from a meta perspective and provide input for possible transfer of that knowledge to other practical situations. This way, innovation in their own work and their own profession leads to insights and practical innovations in the broader professional domain in which the master professionals act. Consequently, the impact also centres on valorisation of knowledge in the professional domain.

Master professionals help to reach innovative, smart solutions to complex practical issues. They bring impact in their professional practice by applying their mastery, research competence and interprofessional conduct.

[10] In 2018, the Netherlands Association of Universities of Applied Sciences presented the report entitled 'Meer waarde met hbo' ('Added value with higher professional education'). In this report, the term effect is used to denote the value of applied research instead of 'valorisation' and 'impact', because those terms give too much of a one-sided picture of the value that research can have for practical situations. In the English version of the master standard also prefers to use the term 'impact' for clarity reasons. For the report go to: https://www.vereniginghogescholen.nl/system/knowledge_base/attachments/files/000/000/961/original/RAPPORT_MEER_WAARDE_MET_HBO.pdf?1537795313

[11] This is called boundary crossing. See Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. Review of Educational Research , 81 (2), 132 –169.

[12] This relates to the so-called futures literacy, a term developed within UNESCO. It refers to the ability of professionals to deal with the unknown future. In this respect, professionals have the ability to use their view of the future to change the present. See Miller, R. (2015) . Embracing complexity and using the future. United Nations Educational, Scientific and Cultural Organization

4 Justification

Relevant sources from the higher professional education sectors were used to validate the professional master standard. The national and international descriptions of the master level as elaborated in the Dublin Descriptors, the EQF and the NLQF were compared in order to position the standard at the correct level. This chapter explains how these national and international master level standards were used to realise the updated professional master standard.

Three frameworks were used in the analysis to fill the descriptions of the standard with terminology suiting the degree of difficulty attached to level 7. The following sections contain several examples taken from the various frameworks so as to provide an insight into how they relate to the standards.

4.1 The Dublin Descriptors

The member states of the European Union adopted the Dublin Descriptors[13] in order to establish the universal graduation level of master programmes in the context of the Bologna Process. These descriptors are used to determine the graduation level of the higher professional education study programmes. Four cycles apply here[14], namely PhD (third cycle), master (second cycle), bachelor (first cycle) and the associate degree (short cycle)[15]. The following table pertains to the second cycle.

	Second cycle - Master's level	
1	knowledge and understanding	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;
2	applying knowledge and understanding	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;
3	making judgements	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
4	communications skills	can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and nonspecialist audiences clearly and unambiguously;
5	learning skills	have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.

Figure 2 Dublin Descriptors Master

[13] http://ecahe.eu/w/index.php/Dublin_Descriptors
[14] http://www.ehea.info/pid34438/three-cycle-system.html
[15] Kort en Goed? (Short but Sweet?) report, exploration and implementation of short higher professional education programmes, drawn up by CINOP, in collaboration with smets+hover+adviseurs of the Dutch Ministry of Education, Culture and Science.

4.2 The EQF and the NLQF in the Dutch education system

In 2008, the European Qualifications Framework (EQF) was formulated in order to enable a comparison between the various education systems and the exit qualifications of study programmes in Europe. The EQF covers the entire education system and comprises eight levels. The highest levels are based on the Dublin Descriptors that describe the graduation levels of higher education study programmes. All EU countries have translated the EQF into their own level descriptions. In the Netherlands, the EQF has been translated into the NLQF[16]. The following semi-circle diagram shows the various types of education in the Netherlands clustered around the NLQF and the EQF. The master level is shown under level 7 of both the EQF and the NLQF.

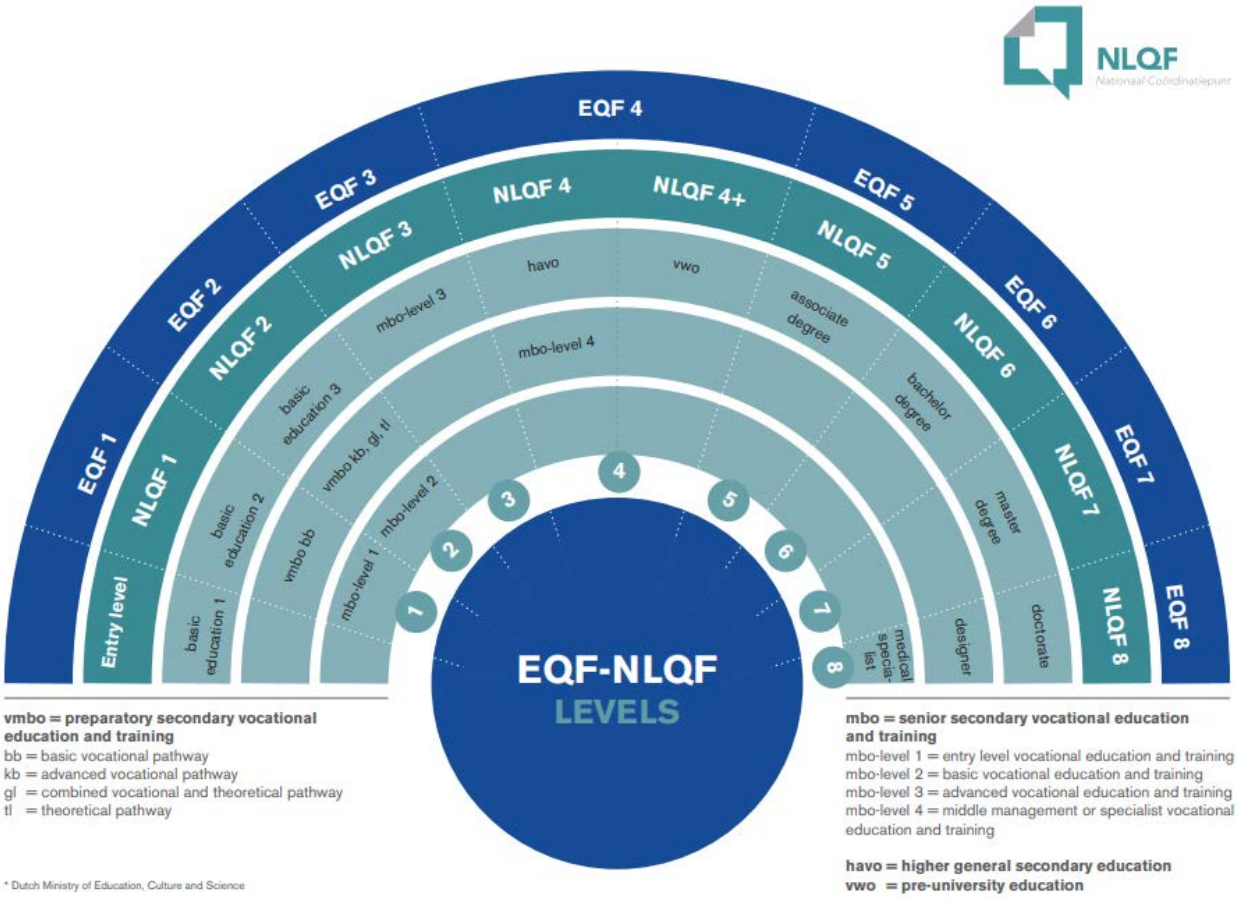

Figure 3EQF, NLQF and Dutch education system

[16] Advies NLQF2011 CINOP - terminology page 3 -

4.3 The EQF and the NLQF

The EQF and the NLQF differ in structure and execution. The EQF is structured by knowledge, skills and responsibility, and autonomy. The NLQF specifies the skills in more detail and defines the context in which the learning outcomes are achieved. The following table contains the description of the learning outcomes and the various classifications.

Level 7			
Dutch Qualifications Framework (NLQF)		**European Qualifications Framework (EQF)**	
Context	• An unfamiliar, changeable and highly uncertain living and working environment, also internationally.		
Knowledge	• Possesses exceptionally specialised and advanced knowledge of a profession, knowledge domain and scientific area and on the interface between various professions, knowledge domains and scientific fields. • Possesses a critical understanding of a range of theories, principles and concepts, including the primary ones associated with a profession, knowledge domain and scientific area. • Possesses extensive, detailed knowledge and critical understanding of some important current topics and specialisms associated with the profession or knowledge domain and scientific areas.	• Very specialist knowledge that is partially highly advanced in a professional or educational area, as a basis for original ideas and/or research. • Critical awareness of knowledge problems in a profession and on the interface between various professions.	Knowledge
Skills Knowledge application	• Reproduces, analyses, integrates and applies knowledge, also in other contexts and handles complex matter. • This knowledge shapes the foundation for original ideas and research. • Uses the acquired knowledge at a higher abstraction level. Thinks conceptually. Creates and deepens argumentation.	• Specialised skills in problem solving, that are required in the context of research and/or innovation for the development of new knowledge and procedures and integration of knowledge from various fields of expertise.	Skills

	• Uses methodological knowledge to succeed independently at fundamental research. • Provides an original contribution to the development and application of ideas, often in a research context. • Identifies limitation of existing knowledge in professional practice and in the knowledge domain on the interface between various professional practices and knowledge domains and takes action. Analyses complex professional and scientific tasks and executes them.		
Problem-solving skills	• Recognises and analyses complex problems in professional practice and in the knowledge domain and solves them in a tactical, strategic and creative way. • Contributes in the professional practice and in the knowledge domain to the (scientific) solution of complex problems by identifying and using data,		
Learning and development skills	• Develops independently for the most part.		
Information skills	• Collects and analyses broad, in-depth and detailed scientific information about a range of theories, principles and concepts of and associated with, a profession or knowledge domain in a responsible, critical way, as well as information about some important current topics and specialisms associated with the profession and knowledge domain and conveys this information.		
Communication skills	• Focused communication with peers, specialists, non-specialists, superiors and clients based on conventions that apply to the context and professional practice.		
Responsibilities and Autonomy	• Works together with specialists and non-specialists, peers, superiors and clients. • Bears responsibility for results of own work and study and the result of the work of others. • Bears responsibility for managing complex processes	• Managing and transforming complex and unpredictable professional or educational contexts that require new strategic approaches. • Taking responsibility for contributing to the professional knowledge and working methods and/or to critically	Responsibilities and Autonomy

	and the professional development of individuals and groups. • Formulates assessments based on incomplete or limited information and takes social, scientific and ethical responsibilities associated with the application of one's own knowledge and assessment into account.	evaluate the strategic performance of teams.	

Figure 4 The NLQF and EQF at level 7

5 Explanation

The following sections explain how the Dublin Descriptors, the EQF and the NLQF were used to validate the professional master standard. Several highlighted examples help to explain how the level description of a learning outcome contained in the above tables has been incorporated in the professional master standard.

5.1 Context and description

The context and description of the professional master are partly based on what the Dublin Descriptors group under "making judgements". The level of the context is expressed aptly here as it concerns new or unfamiliar circumstances as well as the broader perspective.

> Dublin Descriptors – Making judgements –
> Has the ability to apply knowledge and understanding and problem solving abilities in new or **unfamiliar** circumstances within **broader** (or multidisciplinary) contexts that are related to their field of study; has the ability to **integrate** knowledge and handle **complexity**.

5.2 The standard

5.2.1 A Mastery

Mastery contains the elements of lifelong learning and of ethical and moral conduct. These elements are included in the "Learning and development skills" of the NLQF and in the Dublin Descriptors under "Applying knowledge and understanding".

The text mentions mastery of "Social, ethical and moral conduct whereby they can debate with others in the network". This interpretation of mastery is inspired by the following Dublin Descriptor.

> Dublin Descriptors – Applying knowledge and understanding
> Have the ability … and take **social and ethical** responsibilities associated with the application of their own knowledge and judgements into account.

Mastery can be considered as the superlative of expertise and assumes knowledge acquisition at a more in-depth level. This text therefore quotes the text in the NLQF under the heading of Knowledge.

> NLQF
> Master graduate professionals possess advanced knowledge of a profession, knowledge domain and scientific area and on the interface between various professions, knowledge domains and scientific areas.

> The elements of self-management and the ability to work in an autonomous working environment are mentioned under mastery. They are also included in the NLQF under "Learning and development skills". NLQF -Learning and development skills- Develops independently for the most part.

5.2.2 B Research competence

In the Dublin Descriptors, research competence falls under “Knowledge and understanding” which refers to “research context”. The research competence pillar is best described in the NLQF. Only the category in which the research competence is placed differs.

> Dublin Descriptors – Knowledge and Understanding –
> Possesses knowledge and understanding that is founded upon the knowledge and understanding that is associated with a Bachelor’s level, and that provides a basis or opportunity for **originality** in developing and/or applying ideas, often within a research context;

> NLQF – Problem-solving skills –
> Recognises and analyses **complex problems** in professional practice and in the knowledge domain and **solves** them in a tactical, strategic and creative way.

The NLQF refers under “Knowledge application” to fundamental research. This does not fit in the context of the professional master. The research method suited to a professional master is expressed better in the “Problem-solving skills” category.

> NLQF – Knowledge application –
> Identifies limitation of existing knowledge in **professional practice** and in the knowledge domain on the interface between various professional practices and knowledge domains and takes action. **Analyses** complex professional and scientific tasks and executes them.

5.2.3 C Interprofessional practice

Interprofessional practice relates to the ability to take a cross-border and broad approach to researching, analysing and solving issues. Level descriptions in the Dublin Descriptors, the EQF and the NLQF mention this.

> Dublin Descriptors – Knowledge application –
> Has the ability to apply knowledge and understanding, and problem solving abilities in new or unfamiliar environments within **broader** (or **multidisciplinary**) contexts related to their field of study; has the ability to **integrate** knowledge and handle complexity.

> EQF – Knowledge –
> Critical awareness of knowledge problems in a profession and on the **interface** between various professions.

> NLQF – Responsibilities and Autonomy
> Formulates assessments based on incomplete or limited information and takes **social**, scientific and ethical responsibilities associated with the application of one’s own knowledge and **assessment** into account.

The NLQF also establishes, under the same description, a link to the mastery pillar. The first part under interprofessional practice is used to indicate the level. It relates to situations in which insufficient or limited information is available and yet the master professional is required to express an opinion.

5.2.4 D Effect

The elaborations of the level with respect to effect can partly be found in the Dublin Descriptors under "Communication" and especially in the EQF under "Skills" and in the elaborated "Responsibilities and Autonomy".

> Dublin Descriptors – Communication –
> Can **communicate** clearly and unambiguously their **conclusions**, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously;

> EQF – Skills –
> Specialised skills in problem solving, that are required in the context of research and/or innovation for the development of **new knowledge** and procedures and integration of knowledge from various fields of expertise.

The contribution to knowledge creation in the professional domain is expressed here.

> EQF – Responsibilities and Autonomy
> Managing and transforming complex and unpredictable professional or educational contexts that require new strategic approaches.

As a level description, the ability to manage and transform contexts that call for new approaches describes in broad outlines the effect that master professionals have on professional practice.

5.3 The distinguishing principle between the frameworks

One distinguishing principle is the criterion that applies to each level and changes in relation to a previous level[17]. Distinguishing principles are "autonomy" and "complexity"[18]. This relates to the extent of autonomy that is expected of the student and the degree of complexity of the context and the assignment. The ZelCom model is still included in the appendix as a tool for relating the level to "complexity" and "autonomy". Other distinguishing principles are **the degree to which acquired knowledge is shared**, the **degree of ambiguity** of the issue, the reach of the solution and the import and scope.

[17] Description of the Ad level version 5 .0 , (2018). Netherlands Association of Universities of Applied Sciences, National Associate Degree Platform. http://www.deassociatedegree.nl/wp-content/uploads/181001-Beschrijving-niveau-5-v5.0-2018_.pdf

[18] Saxion University of Applied Sciences, Education Development & Quality Assurance Department, Education & Student Office (2011). Manual for higher professional education level, manual for researching, realising and justifying the higher professional education level.

Appendix

ZelCom Model

Level: HIGH Complexity and LOW Autonomy	Level: Average Complexity and Autonomy	Level: LOW Complexity and HIGH Autonomy
Complexity: high • A variety of assignments is to be carried out in varying situations. • Activities are complex, unfamiliar and lack structure. • The problems are to be analysed. • The required data is to be collected. • There is no standard approach; new procedures are to be developed. • Sophisticated specialist knowledge and skills are required as well as knowledge and skills that transcend the profession. • New technologies are to be applied. • New knowledge and skills are to be developed. • The situations are unfamiliar, dynamic and non-transparent. • The organisation is large and there are many rules that must be taken into account. • Time pressure is high. • The activities have a large impact. • Several parties and political sensitivities must be taken into account.	**Complexity:** • Several assignments are to be carried out in one specific situation, or one assignment in varying situations. • Activities are diverse, complex and structured. • The problem is partially familiar, and is still to be analysed in part. • The required data is to be collected. • Standard procedures are in place that must be adapted to varying situations. • Specialist knowledge and skills are required. • The situation is unfamiliar but transparent. • The organisation is of an average size and there are rules that must be taken into account. • Time pressure applies. • The impact and/or the political content of the activities is reasonably high. • Several parties must be taken into consideration.	**Complexity: low** • One assignment is to be carried out in one specific situation. • Activities are simple and structured. • The problem is familiar. • The required data is known. • Standard procedures are in place. • Basic knowledge and basic skills are required. • The organisation is small and few rules apply. • Time pressure is low. • The impact and political content of the activities are low. • Few parties are involved.

Autonomy: low Students or professionals: • Are instructed, coached and/or supervised; • Act upon orders/instructions, not on their own initiative; • Are coached in their own development process; • Do not make decisions on their own; • Call in help in unforeseen circumstances; • Have an operational role; • Have an assisting, supporting or operational role; • Are responsible for carrying out their own activities correctly.	**Autonomy: average** Students or professionals: • Receive interim coaching or remote coaching or on call coaching; • (Also) act on their own initiative; • Employ their own • development process largely independently; • For parts of the assignment make their own choices and make decisions on their own; • Anticipate (within limits) unforeseen circumstances; • Have a tactical role; • Have an operational, advising or organising role; • Are responsible for performing their own duties properly; • Stimulate others; • Coach others.	**Autonomy: high** Students or professionals: • Receive little guidance and coaching; • Act on their own initiative; • Independently employ their own development process; • Reflect independently on their own activities and role; • Make their own choices and make decisions on their own; • Anticipate unforeseen circumstances; • Usually have a strategic role; • Have an advisory, organising, managerial or policymaking role; • Are largely responsible for their own job and for the results of teams/ projects; • Stimulate others; • Train others; • Manage others.