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Stan Van Ginkel  
*Wageningen University*

Pierre Van Eijl  
*Utrecht University*

Albert Pilot  
*Utrecht University*

John Zubizarreta  
*Columbia College*

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# Honors in the Master's: A New Perspective?

**STAN VAN GINKEL**

**WAGENINGEN UNIVERSITY, THE NETHERLANDS**

**PIERRE VAN EIJL AND ALBERT PILOT**

**UTRECHT UNIVERSITY, THE NETHERLANDS**

**JOHN ZUBIZARRETA**

**COLUMBIA COLLEGE, U.S.**

*The honors master's thesis is the first chapter of a future dissertation.*

*You learn to work together from an interdisciplinary perspective.*

*This program increases your chances on the U.S. labor market.*

*With this master's, you become a scientific practitioner.*

*The successful completion of this program increases your opportunities to win a top internship and career coaching.*

—These quotations have been selected from the websites of honors master's programs.

## INTRODUCTION

In Europe, there is a growing interest in honors education, not only in the bachelor's but also in the master's degree. The Dutch government, for instance, is actively promoting excellence in both bachelor's and master's degrees through honors programs (Siriusteam). Most Dutch universities have honors programs at the bachelor's level or are developing them. Some universities have also recently introduced honors into their master's programs, stimulated by recent publications (van Eijl, Wolfensberger & Pilot). Because honors master's programs are a new phenomenon in higher education and are still exceptional in the United States of America, we have undertaken a research project to study them (van Ginkel & van Eijl).

In our study, an Internet search showed thirty-four examples of honors master's programs from the U.S., Canada, Australia, Germany, Italy, Ireland

and The Netherlands. All of these cases involved special honors programs within master's curricula, some in addition to the regular master's course of study and others as an integral part of it. Our study focused on forming a better understanding of the characteristics of honors programs in the master's and specifically on the mission of the programs, the selection of students, the content, the educational methods, and the program format. These issues are related to the "Basic Characteristics of a Fully Developed Honors Program," according to the National Collegiate Honors Council. The findings may allow us to view the concepts and key characteristics of honors master's programs from an international perspective.

### **THEORETICAL BACKGROUND**

In the literature, we found no studies of honors activities in the master's while a considerable number are available about honors programs at the bachelor's level (cf., van Eijl, Pilot, Wolfensberger, & Schreve-Brinkman). The starting point for much of the research on honors education at the bachelor's level in our European context is often Renzulli's 1978 work on giftedness, with talent as a generalized, multi-dimensional concept that is then related to the development of talent specifically in honors programs (Jenkins-Friedman). Using such earlier work on talent and its relationship to honors education, we developed in 2010 an inventory of the characteristics of honors programs, using a three-windows model (van Eijl, Pilot, & Wolfensberger) that is strongly connected to the Basic Characteristics defined by the NCHC.

Based on our experiences and on the results of our inventories and analyses of the bachelor's honors programs, we will focus on the main characteristics of honors master's programs in The Netherlands, the different profiles of these programs, and student interest in supplemental activities when studying for their master's degrees. We will then discuss the results of the inventory from an international perspective.

As a characteristic example of an honors master's program, we provide a description in Box 1 of the Excellence Master's Track (EMT) at the Faculty of Law, Economics and Governance of Utrecht University in The Netherlands.

### **METHOD**

For this exploratory project, a mixed method approach was used (Creswell & Plano-Clark; van Ginkel & van Eijl) in a study that was carried out at the start of the academic year 2009–2010.

First, an Internet search identified Dutch and non-Dutch honors master's programs. The inventory of Dutch programs was intended to be exhaustive, but the goal of the non-Dutch inventory was to collect a variety of examples

**Box 1. Excellence Master's Track in Law, Utrecht University  
(The Netherlands)**

The EMT is a program of activities that runs as an add-on to three master's programs: "Dutch Law," "International and European Law," and "Business and Law." The activities are planned in parallel with the regular class meetings and are designed for a select group of students, offering them a stimulating environment in which they can both broaden and deepen their academic skills and knowledge and prepare themselves for a professional career. Of the students who apply, only a small portion is admitted. The important criteria for selection include the results of the student's bachelor's degree, being open to innovative thoughts, and creativity. After selection, a student is assigned a professor as his or her supervisor. Over half of the students come from honors programs in their bachelor's institutions (van Gestel et al.). In 2009, thirty students were enrolled in this one-year program.

In two weekly meetings, the students deepen their understanding of issues related to their specific master's courses. They also participate in an umbrella course that is largely organized by the students of the Excellence Tracks of all three master's programs. This course consists of a number of meetings in which students participate in academic discussions of current issues and topics that are related to professional practice. Organizations of lawyers, the courts, and government are involved in the EMT as partners, contributing to the umbrella course and offering students high-level internships. In their internships, which last three to six months, students spend four or five days a week on special assignments. Students can also organize internships themselves, focusing on their personal learning goals. Members of the staff at the Law Graduate School help the students to reflect on their goals and ambitions. Students also have the opportunity to write a research paper based on their master's thesis, supported by an experienced teacher and a renowned practitioner.

For the faculty, teaching these students is a challenge. The students readily take initiative, focus on their own questions, and participate openly in discussion. For the final assessment of the EMT, students have to write a reflection paper about what they learned, and this plays an important role in the final evaluation. To be eligible for the EMT diploma, students should have a grade point average (GPA) of at least 3.3 in their regular master's program.

from different countries in the world with a member check for confirmation and specific details.

Second, a literature review facilitated a comparison between Dutch honors master's programs and Dutch honors bachelor's programs.

Third, staff members provided insights into the honors master's within the discipline of law at the University of Utrecht. Interviews with teachers revealed specific information about a representative example of Dutch honors master's courses (Box 1).

Fourth, in line with the interviews, a small quantitative survey yielded an impression of the interest of students in supplemental activities included in the master's stage of their study. Thirty-seven master's students from different disciplines completed the survey.

## **RESULTS: HONORS MASTER'S COURSES IN THE NETHERLANDS**

Based on the inventory of honors master's courses in The Netherlands, seventeen honors programs were found at eight research universities and one collaborative program sponsored by different universities and institutions. The results of our analysis of the basic characteristics of the courses include the following: the missions of the programs; method of selecting students; content; educational methods; and program format.

### **MISSION OF THE PROGRAMS**

Dutch honors master's programs are research-focused or profession-oriented. In some of the programs, students can choose between the two perspectives. Research skills are incorporated into almost all of the honors master's courses. In half of the cases, analytical, academic, and oral-presentation skills are part of the program, and some programs include conversational skills, scientific writing, and a variety of practical skills. A few master's courses explicitly focus on multidisciplinary learning and thinking, critical reflection on the subject matter, debating skills, entrepreneurial skills, and cooperation skills.

### **SELECTION OF STUDENTS**

The range of selection criteria for honors programs is presented in Table 1. In most programs, a letter of motivation and a curriculum vitae are requested. Another selection criterion is the GPA of the student's bachelor's degree, and half of the programs require an interview. In research-oriented programs, written assignments or research proposals are criteria, and some programs require a language test, study plan, or test of knowledge.

Usually, a limited number of students are admitted to the program. This number varies from ten to fifty students in the identified programs, with an average of twenty-five.

## CONTENT

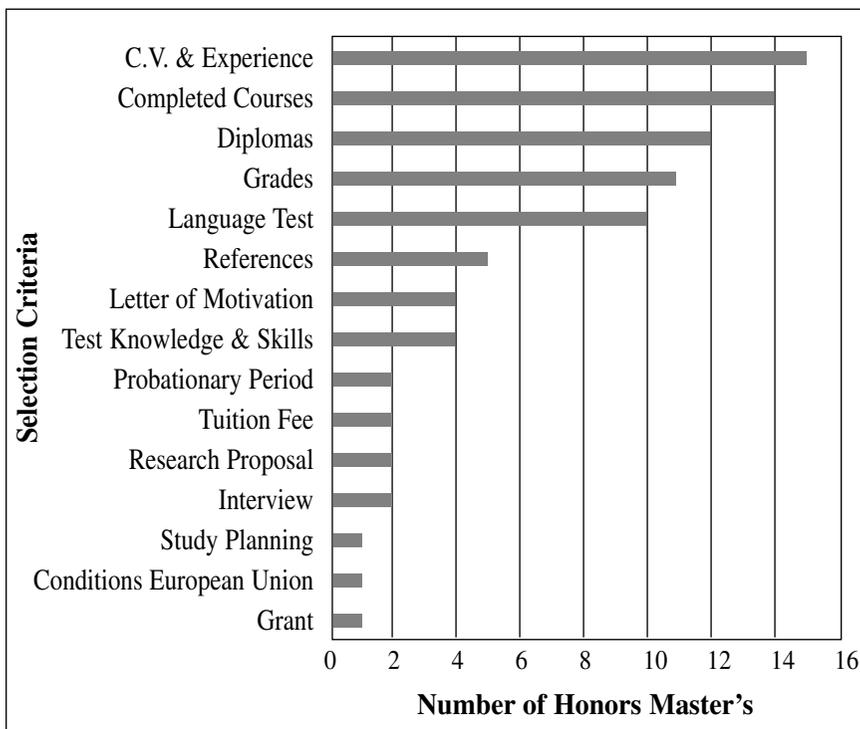
Honors master's courses are found in the fields of humanities, sciences, social sciences, and biomedical sciences. Some are interdisciplinary. Honors master's programs in the fields of humanities and biomedicine typically focus on research, especially in the field of biomedicine.

In order to strengthen honors master's programs, external partners are often involved. Depending on whether the focus is on research or professional practice, these partners may include research institutes, law firms, accounting firms, government agencies, museums, and banks.

## EDUCATIONAL METHODS

In honors master's programs, classes are small and are usually conducted as seminars with small groups of students and intensive individual

**Table 1. Selection Criteria for 17 Honors Master's Programs in The Netherlands**



coaching by top researchers, teachers, or other professionals. Usually, the honors master's programs are characterized by a curriculum with some degree of choice within the scope of the research program.

### **PROGRAM FORMAT**

In addition to the regular course of study, the extent of an honors master's program can vary annually from ten European credits (six semester hours in the U.S.) to ninety ECTS credits (European Credit Transfer System hours) or roughly fifty-four U.S. semester hours. Some honors programs continue from the bachelor's course of study into the master's program. In order to write their master's thesis, honors students often have the choice in language between English or Dutch.

### **THREE PROFILES OF THE HONORS MASTER'S**

Based on our inventory of honors master's programs, three types of approaches can be distinguished: research-specific, professional, and interdisciplinary (van Ginkel, van Eijl & Pilot).

#### **THE RESEARCH-SPECIFIC HONORS MASTER'S**

This type of honors master's has a clear research focus and is designed for students who aspire to a career in research. In most cases, this type of honors master's program occurs in a biomedical discipline such as medicine or veterinary science. The freedom of choice for a research subject is limited by the research program of the institution. Not surprisingly, the emphasis of such a program lies in developing advanced research skills, with the master's thesis seen as the first stage of a PhD project, and is usually monodisciplinary. Only a few programs extend beyond the (sub)discipline. If collaboration exists during the development and implementation of the program, an external research institute is often involved.

#### **THE PROFESSIONAL HONORS MASTER'S**

The aim of a professional honors master's program is that students prepare themselves for a successful career by completing an internship, which is an important component of this type of program. Professional honors master's courses of study are often situated within the humanities and social sciences, and they are organized in collaboration with external partners such as law firms or international banks. Honors students explore the business culture under the supervision of an external coach and participate in honors seminars where the focus is on debating and entrepreneurial skills. This type of honors master's often extends beyond its (sub)discipline or has an interdisciplinary character. As an example, the honors master's program within law at Utrecht

University is accessible to students from such different subdisciplines as Dutch law, international and European law, and business law. This type of program often has a dual mission, preparing the honors student for a career as a scientific practitioner.

### **THE INTERDISCIPLINARY HONORS MASTER'S**

The core of the interdisciplinary honors master's curriculum consists of a series of meetings with a maximum study load of ten ECTS credits (six U.S. semester hours). A good deal of preparation is necessary for these meetings, including active participation and a presentation for the final assignment. The study background of the participants differs substantially from the other kinds of honors master's students. The interdisciplinary seminars are led by outstanding guest teachers from different disciplines and backgrounds. An example of this type of honors master's is the Hendrik-Muller Seminar from the University of Amsterdam, which is organized in cooperation with the National Board of Social Sciences. During the sessions, the students hold debates about themes related to current issues in society. Input from disciplines such as the social sciences, psychiatry, criminology, geography, and anthropology contributes to the discussions.

In general, interdisciplinary honors master's classes are organized by multiple departments and universities; research institutes and other external organizations also play an important role.

### **THE DIFFERENCE BETWEEN THE HONORS MASTER'S AND HONORS BACHELOR'S**

Honors master's programs seem to be a follow-up to honors bachelor's programs. Both types of programs are characterized by a select group of students who prefer more challenging and complex activities in their studies. However, there are differences between the two: (1) a focus in the master's on career opportunities within a specific research field or profession; (2) a shorter duration at the master's level (a maximum of two years); and (3) a selection process in the master's with a broader set of criteria. There is nevertheless a strong connection between the honors programs at the bachelor's and master's levels; a substantial number of honors graduates from the bachelor's level go on to a research master's program.

### **DUTCH HONORS MASTER'S PROGRAMS: RESEARCH OR PROFESSIONAL ORIENTATIONS**

Disciplinarity, research focus, and professional orientation vary across the different honors master's programs (see Table 2).

## HONORS IN THE MASTER'S: A NEW PERSPECTIVE?

Table 2 shows that about half of the programs have a single disciplinary focus. The other half of the programs are interdisciplinary or cross-(sub)disciplinary. More than half of the programs have a focus on professional practice.

The programs that are research-oriented are mostly monodisciplinary while the programs focused on professional practice usually have an interdisciplinary or cross-(sub)disciplinary character. Only one program is both strongly research-oriented and interdisciplinary: the Exchange Honours Program Master's in Neuroscience. This program has been organized by two universities and a research institute, focusing on various subspecialties (neuroscience, neurophysiology, and neuro-genomics) that fit the central research theme of neuroscience. While working on their studies, research students receive personal guidance. The participants in this program also take courses that are taught by leading international researchers and professors from the partner institutions. The program requires 66–72 ECTS credits, of which at least six should be acquired at each participating university. The selection of students is based on excellent performance in the bachelor's and master's programs, a curriculum vitae, written support from their supervisors, and an interview. An important objective of the program is to select master's students who have the potential to complete a PhD program.

### THE INTERNATIONAL INVENTORY OF HONORS IN A MASTER'S CURRICULUM

In addition to the Dutch honors master's programs, a worldwide inventory revealed another seventeen honors master's programs in the U.S.,

**Table 2. Disciplinarity, Research Orientation and Professional Orientation in 17 Honors Master's Programs (The Case of The Netherlands)**

	Interdisciplinary		
Research-Oriented	1	7	Profession-Oriented
	6	3	
	Monodisciplinary		

Canada, Australia, Germany, Italy, and Ireland. The inventory was not exhaustive, but this collection of programs can illustrate the variety found worldwide in this type of program. Short descriptions of an Italian and an American honors master's program are described in Boxes 2 and 3.

**Box 2. Telecommunications Engineering, University of Trento, Italy**

The goal of this honors program is to learn specific research skills, taking into account a future career as a researcher in business or as a student in a PhD program. This program is carried out in cooperation with Scuola Superiore Sant'Anna in Pisa. The master's program consists of a two-year academic master's with a co-curriculum. For the successful completion of the program, the student must obtain at least 132 ECTS credits. The master's is taught entirely in English, and coaching is customized as the research tasks are carried out. At the start of the honors master's, the student proposes a study plan during his or her consultation with the tutor. Six months of this program are reserved for an internship in a company.

**Box 3. Graduate Honors Program, George Wythe University, U.S.**

This university in Salt Lake City offers a multidisciplinary honors program for both undergraduate and graduate students and professionals in the field during the period from January to May. It is scheduled to parallel the regular program. In 2009, the program was called "Political Economy: Shaping the Modern World." The idea behind the program was that many professionals lack knowledge about the basic principles of the underlying current economic structures and patterns in the world. To become a "successful leader" in the 21st century, students must understand these principles by studying eight "masterpieces" written by academic scholars. During the meetings, participants in the program read about and discuss central themes. In addition, each student or professional receives personal counseling which is offered to help him or her in achieving personal goals. Within the personal study project, specific literature is selected in accordance with personal interests. Different skills are developed during the program to help the participants achieve personal goals such as "learning a language" or "public speaking." The selection for the program is based on answering questions on the registration form.

## **DIFFERENCES BETWEEN HONORS MASTER'S PROGRAMS WORLDWIDE AND THE NETHERLANDS**

Some notable differences between Dutch and non-Dutch honors programs are the following:

- Non-Dutch honors master's programs often have a strong international focus. The policies of the universities are often aimed at attracting talented students from other countries.
- The Dutch honors master's programs are usually taught in English but are less active in terms of recruiting international students;
- Non-Dutch honors master's programs often use a wider range of selection criteria, probably to provide clarity for international students wishing to apply to such a program;
- Some non-Dutch honors master's programs are not programmed in parallel with the regular master's but continue beyond it.

Besides these differences, many similarities exist between Dutch and non-Dutch programs:

- The design and programming of activities are diverse.
- Honors master's students often work with partners from the government, industry, or external research institutes.
- In a number of honors master's courses of study, the value of the honors certificate in terms of a job in research or in industry is explicitly stated.
- The development of advanced academic skills is important.
- Honors master's programs are present in humanities, social sciences, hard sciences, and biomedical sciences.
- Monodisciplinary and subdisciplinary as well as multidisciplinary programs exist, and these programs are research- or practice-oriented or both.

However, no internationally organized honors master's programs were found. One can imagine that such a program, organized by universities in different countries, would be able to create unique opportunities.

## **WHAT STUDENTS WANT**

A small survey at Utrecht University gave an impression of the students' interest in the supplemental activities in their master's course work. Data were collected with a questionnaire, which was administered to thirty-seven master's students from different disciplines. One of the most important findings was that all of the respondents expressed the wish to learn more than

the information provided in their own master's programs. The students welcomed opportunities to enhance the variety and level of their academic and professional skills.

A second outcome referred to the desire for a "deeper exploration of relevant developments within the discipline" (van Ginkel, van Eijl, & Pilot, 59). The students also asked for more focus on the relation between the current master's programs and their future career opportunities. Finally, when the students were asked about how the extra activities or courses should be programmed within the curriculum, they preferred the integration of the extras into the regular master's program. Almost seventy percent of the students would have chosen an honors program if it was available at the start of their master's.

The students also opted for small-scale lectures/meetings, intensive individual coaching, and teamwork. In addition, seventy percent of the respondents considered "motivation" to be the most important selection criterion for access to an honors master's program. According to the students, the honors program should consist of 7.5 to 15 ECTS credits (4 to 8 semester hours).

## LIMITATIONS OF THE STUDY

This study had four limitations:

- The information about honors master's courses on universities' websites is limited. In the data collection and the analysis process, this study focused on five basic characteristics: the program's mission, student selection process, content, educational methods, and format. Data about the numbers of students or the teachers or evaluations were not included in the inventory.
- In our Internet search, the following keywords were used: "honors," "honours," "honors program," "master," "master class," "excellence," and "honors track." Some honors master's programs may be missing in our research because of our selected terms.
- Only English and Dutch terms were used for the Internet search.
- The study was carried out at the start of the academic year 2009–2010, and the development of honors master's programs has now gained momentum. Many universities in different countries may have launched new honors master's programs in the meantime. Therefore, this inventory can be considered as an overview of only the programs that existed at the time of the study.

## DISCUSSION

The development of honors master's programs is relatively new (van Eijl, Pilot & Wolfensberger). However, from the initial experiences and

discussions in this study, some key questions have been formulated that can be relevant if an honors master's program is introduced at a university.

### **HONORS MASTER'S PROGRAM OR HONORS DESIGNATION?**

The Internet search revealed that a substantial number of universities have a special honors program in addition to or after the regular program, requiring students to complete specified curricular or co-curricular outcomes beyond standard components of the master's degree. Some have an integrated full-time honors master's program. On the basis of information from the Internet, we omitted master's courses of study which are awarded "with honors" only as recognition of particular merit on the diploma rather than designating completion of an organized, programmatic "honors" enhancements to teaching and learning. A more elaborate approach with questionnaires and interviews may reveal more detailed features and differences between the ways the term "honors" is used in master's programs.

### **WHAT ARE THE CHARACTERISTICS OF THE EXISTING HONORS MASTER'S PROGRAMS ACROSS THE WORLD?**

Honors master's programs in different countries have some common characteristics. They are programs that exist in addition to the regular master's program, and the expectation is that international exchange and cooperation with external partners will be a valuable component.

### **DISCIPLINARY OR INTERDISCIPLINARY?**

Many honors master's programs are discipline-oriented. Scientific breakthroughs, however, often happen at the interface between different branches of science or between the sciences and other fields of knowledge. An interdisciplinary honors master's program is a better way to educate future innovative professionals and scientists. An emphasis on multidisciplinary instead of a focus on one specific discipline can add value to these programs.

### **SELECTION BY ZEAL OR CREATIVITY?**

A high GPA and motivation seem to be important criteria for selecting students for an honors master's program. Factors such as creativity and initiative, which are important for productive and creative professionals/scientists (Renzulli; Jenkins-Friedman; Friedman & Jenkins-Friedman), are only occasionally and indirectly addressed. For instance, a demand for extracurricular activities, community service, and publications was not found in the description of criteria. However, many good students are intrinsically motivated and more interested in learning content than in simply achieving high grades.

## **DO PROGRAMS WITH STRONG RELATIONSHIPS WITH EXTERNAL PARTNERS INTERFERE WITH INDEPENDENT RESEARCH IN ACADEMIA?**

Many honors master's programs cooperate with external partners such as banks, insurance companies, and research institutes. This cooperation may be a "window to the world," but to what extent does it lead to researchers' being dependent on their external partners? To what extent can the institution guarantee the supervision of learning activities, the quality of results, and the assessment of students?

### **WHAT TYPE OF COMMUNITY-BUILDING?**

Community-building was identified as an important characteristic of the honors bachelor's programs (van Eijl, Pilot, & Wolfensberger). Both students and teachers mentioned frequently the importance of community for the main aims of programs, and observations showed productive interactions within communities of students, teachers, and external experts. Will honors master's students form their own honors community, or will they merge with an academic or professional community? What are the main characteristics of a community within the honors master's course? Guidelines and criteria for the successful development of an honors community are important because, in many honors programs, students represent different disciplines and often work with external partners in an international context.

### **CONCLUDING REMARKS**

Our search revealed the existence of different kinds of honors master's programs not only in The Netherlands (our primary focus) but also in the U.S., Canada, Australia, Germany, Italy, and Ireland. These honors master's programs are found in the humanities, social sciences, hard sciences, and professional schools. The programs are diverse with respect to content, focus, and scheduling, and they are, as far as we could trace, very new. Several points of discussion are still open and can be used as springboards for further research. The emergence of honors master's programs shows a new focus on promoting excellence in university teaching and learning not only among undergraduates but now also at the master's level.

### **REFERENCES**

- Creswell, J.W. & Plano-Clark, V.L. (2007). *Mixed Methods Research*. California: Sage Publications Inc.

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- Friedman, P.G. & Jenkins-Friedman, R.C. (1986). Implications for Fostering Excellence. *New Directions for Teaching and Learning*, 25, 109–114.
- Jenkins-Friedman, R.C. (1986). Identifying Honors Students. *New Directions for Teaching and Learning*, 25, 99–108.
- NCHC Executive Committee (2010). Basic Characteristics of a Fully Developed Honors Program. Accessed 15 February 2010: <<http://www.nchchonors.org/>>.
- Renzulli, J.S. (1978). What Makes Giftedness? Reexamining a Definition. *Phi Delta Kappan*, 60, 3, 180–184.
- Siriussteam (2009). *Advies Sirius Programma. Over de tweede ronde aanvragen gericht op excellentiebevordering in de bachelorfase van het Nederlands hoger onderwijs*. (Sirius Advice Program. On the second round of applications aimed at promoting excellence in bachelor's programs of Dutch higher education) Den Haag: OCW.
- van Eijl, P.J., Pilot, A., & Wolfensberger, M.V.C. (2010). *Talent voor morgen*. (Talent for tomorrow) Groningen: Noordhoff Uitgevers.
- van Eijl, P.J. Pilot, A., Wolfensberger, M.V.C. & Schreve-Brinkman, E.J. (2010). Talentontwikkeling met honoursprogramma's. (Development of talent in honors programs) *Tijdschrift voor Hoger Onderwijs (Journal of Higher Education)*, 28(4), 182–198.
- van Eijl, P.J., Wolfensberger, M.V.C., van Tilborgh, P. & Pilot, A. (2005). Honoursprogramma's in Nederland. Resultaten van een landelijke inventarisatie in 2004. (Honors programs in The Netherlands. Results of a national inventory) IVLOS, Universiteit Utrecht, *Mededeling* 77, 1–26.
- van Gestel, M., Rijpkema, P., Ten Berge, J., van Eijl, P.J. & Scager, K. (2008). Het Utrecht Law College, na drie ontwikkeljaren. (The Utrecht Law College, after three years of development) IVLOS, Utrecht University, The Netherlands.
- van Ginkel, S.O. & van Eijl, P.J. (2010). Honours in de master. Inventarisatie van honoursprogramma's in de masterfase. (Honors in the master. Inventory of honors programs in the master) IVLOS, Universiteit Utrecht, *Mededeling* 94, 1–61.
- van Ginkel, S.O., van Eijl, P.J. & Pilot, A. (2010). Honoursmaster: nieuw perspectief voor excellentiebevordering? (Honors master's programs: a new perspective for promoting excellence) *Thema*, 5, 54–60.

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The authors may be contacted at

[stan.vanginkel@wur.nl](mailto:stan.vanginkel@wur.nl).