

**MASTER'S PROGRAMME**

**EDUCATIONAL SCIENCE AND  
TECHNOLOGY**

FACULTY OF BEHAVIOURAL, MANAGEMENT AND  
SOCIAL SCIENCES

UNIVERSITY OF TWENTE

QANU  
Catharijnesingel 56  
PO Box 8035  
3503 RA Utrecht  
The Netherlands

Phone: +31 (0) 30 230 3100  
E-mail: [support@qanu.nl](mailto:support@qanu.nl)  
Internet: [www.qanu.nl](http://www.qanu.nl)

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This report was finalized on 23 May 2017





# REPORT ON THE MASTER'S PROGRAMME EDUCATIONAL SCIENCE AND TECHNOLOGY OF THE UNIVERSITY OF TWENTE

This report takes the NVAO's Assessment Framework for Limited Programme Assessments as a starting point (19 December 2014).

## ADMINISTRATIVE DATA REGARDING THE PROGRAMME

### Master's programme Educational Science and Technology

Name of the programme:	Educational Science and Technology
CROHO number:	60023
Level of the programme:	master's
Orientation of the programme:	academic
Number of credits:	60 EC
Specializations or tracks:	2 (Educational Design and Effectiveness, Human Resource Development)
Location(s):	Enschede
Mode(s) of study:	full time, part time
Language of instruction:	English
Expiration of accreditation:	31/12/2019

The visit of the assessment panel Educational Science to the Faculty of Behavioural, Management and Social Sciences of University of Twente took place on 9 February 2017.

## ADMINISTRATIVE DATA REGARDING THE INSTITUTION

Name of the institution:	University Of Twente
Status of the institution:	publicly funded institution
Result institutional quality assurance assessment:	positive

## COMPOSITION OF THE ASSESSMENT PANEL

The NVAO approved the composition of the panel on 22 August 2016. The panel that assessed the master's programme Educational Science and Technology consisted of:

- Jan Elen, chair
- Regina Mulder, vice-chair
- Dominique Sluijmans, member
- Fleur van Gils, student member

The panel was supported by Renate Prenen, who acted as secretary.

Appendix 1 contains the curricula vitae of the panel members.



## WORKING METHOD OF THE ASSESSMENT PANEL

The assessment of the master's programme Educational Science and Technology of the University of Twente is part of a cluster assessment. From February to April 2017, the panel assessed two Bachelor's and eight master's programmes at seven universities.

The panel consisted of twelve members:

- Prof. dr. Jan Elen (chair)
- Prof. dr. Regina Mulder (vice-chair)
- Dr. Dominique Sluijsmans
- Prof. dr. Bernadette van Hout-Wolters
- Daisy Satijn MA
- Drs. Marcelle Peeters
- Ir. Leenderd van der Deijl
- Prof. dr. med. Martin Fisher
- Drs. Jan Steen
- Tessa Voerman BSc (student-member)
- Fleur van Gils BSc (student-member)
- Janine Wulz MSc (student-member)

A panel of four or five people was appointed for each visit, based on the expertise and availability of each panel member, and taking into account possible conflicts of interest.

Adrienne Wieldraaijer-Huijzer, MA, was the coordinator of the cluster assessments until December 2016. As of January 2017, the coordination was taken over by Peter Hildering, MSc. He was secretary during the visits to the University of Amsterdam and both visits to Maastricht University. He also attended the final discussions of every visit and read and commented on draft versions of each report in order to monitor the consistency of the assessments and the resulting reports. Renate Prenen, freelance worker of QANU, was the panel's secretary during the visits to the University of Twente, Utrecht University, University of Groningen, Open University and Radboud University. Dr. Fiona Schouten acted as second secretary during the visit to the MHPE programme at Maastricht University due to the combined ECA assessment of Internationalization.

### *Preparation*

Before the assessment panel's site visit to the University of Twente, the coordinator received the programme's critical reflection. She sent it to the panel after checking the information for completeness. The panel members formulated questions and preliminary findings after reading it. They also read a selection of fifteen master's theses and their accompanying assessment forms. The selection was made by the panel's chair and secretary from a list of 30 graduates from the last two academic years. The chair and secretary took the distribution of grades into account and ensured the theses showed variation in content and assessors.

The secretary composed a schedule for the site visit, which she adapted after discussing it with the programme's representatives. Prior to the site visit, the programme selected representative partners for the various interviews. Interviews were planned with students, teaching staff, management, alumni, the programme committee and the Board of Examiners. See appendix 5 for the schedule.

### *Site visit*

At the start of the site visit, the panel held a preparatory meeting during which it was instructed regarding the assessment framework. It also discussed its working method and preliminary findings, and reflected on the content and use of the programme's domain-specific framework of reference (appendix 2).

During the site visit, the panel examined additional requested materials. An overview of these materials is given in appendix 6. The panel provided students and lecturers with the opportunity to speak informally with it outside the set interviews, but there were no registrations for this consultation hour.

The panel used the final part of the visit to discuss its findings in an internal meeting. The visit concluded with a public presentation by the panel's chair, in which he expressed the panel's preliminary impressions and general observations.

#### *Report*

After the site visit, the secretary wrote a draft report based on the assessment panel's findings. Subsequently, she sent it to the panel members and the project coordinator for feedback. After processing their feedback, the coordinator sent the draft report to the university to have it checked for factual irregularities. The secretary discussed the ensuing comments with the panel's chair and adapted the report accordingly before its finalisation.

#### *Decision rules*

In accordance with the NVAO's Assessment framework for limited programme assessments, the panel used the following definitions for the assessment of the standards and the programme as a whole.

#### **Generic quality**

The quality that can reasonably be expected in an international perspective from a higher education bachelor's or master's programme.

#### **Unsatisfactory**

The programme does not meet the current generic quality standards and shows serious shortcomings in several areas.

#### **Satisfactory**

The programme meets the current generic quality standards and shows an acceptable level across its entire spectrum.

#### **Good**

The programme systematically surpasses the current generic quality standard.

#### **Excellent**

The programme systematically well surpasses the current generic quality standard and is regarded as an international example.



## SUMMARY JUDGEMENT

### *Intended learning outcomes*

The master's programme Educational Science and Technology targets educational processes and systems at the micro- and meso-levels, and capitalizes on intentional learning in public and private settings. At both levels, themes are addressed from a multidisciplinary perspective that combines insights from psychology, educational design, computer science, and business administration. The programme aims to support the development of educational designers, researchers, and consultants with a strong scientific background and an independent, professional and critical disposition, who are able to contribute to the advancement of the field of educational science in general, and their own area of specialization in particular. In order to reach these goals, the programme has established five intended learning outcomes that cover domain expertise, design competency, research competency, advice competency and academic reflection. Regarding domain expertise, the programme features two focal areas: Educational Design and Effectiveness (EDE) and Human Resource Development (HRD). EDE focuses on curriculum, instructional design and implementation, and school effectiveness; HRD revolves around learning trajectories in organisations. Students can develop domain-specific knowledge in either area (or both) as well as the relevant research, design and advice competencies.

The panel studied the intended learning outcomes and concluded that they are in line with national and international requirements, although the learning outcomes could reflect the master's level more explicitly. It appreciates the technology- and design-based orientation of the programme. This orientation fits the technical characterization of the university and is quite distinctive within the field of educational science. However, the panel also established that the learning outcomes are quite generic and do not reflect this technology- and design-based orientation very clearly. It encourages the programme to elaborate the profile and the learning outcomes so they more adequately reflect the programme's aims and distinct character.

### *Teaching-learning environment*

The panel concludes that the programme, the staff and the programme-specific facilities enable the master's students to realise the intended learning outcomes. It appreciates the two focal areas of the programme, HRD and EDE, and the many electives. They make the programme attractive to students. The panel ascertained that, with the exception of the final project, all intended learning outcomes are cross-matched to the different components of the programme in the critical reflection. Yet it also concludes that it is rather difficult to determine exactly how the intended learning outcomes are realised in the programme. This is partly due to its flexible structure, as the students' choices influence the extent to which the intended learning outcomes are addressed. It is also due to the generic formulation of the relationship between the learning objectives and content of the courses and the overall learning outcomes. The panel advises specifying more clearly how the learning outcomes are realised. It suggests paying extra attention to the linking of the 'Trending topics in educational science and technology' course and the final project with the overall learning outcomes. It also suggests considering whether the design and advice competencies are sufficiently covered by the HRD and EDE focal areas, respectively.

The panel is satisfied with the design of the programme. The two focal areas are helpful to students in composing their own study path. However, according to the panel, the coherence could be improved by elaborating the choices and consistency between the courses in the focal areas. The panel is satisfied with the content and design of the individual courses and the variety of teaching methods. It is pleased to note that even after the termination of the bachelor's programme, the master's programme has been able to maintain its intake of students.

Although the panel is convinced that the low success rates are related to the student population and not to any impediments within the teaching and learning environment, it established that there is room for improvement. It is reassured that the programme already has taken some measures, like the introduction of the 'Research Proposal' course. It nevertheless advises continuously monitoring the success rates and, if necessary, taking further steps.

The panel is positive about the scientific and didactical quality of the staff. It noted that the staffing of the HRD focal area is somewhat vulnerable in terms of quantity and experience. However, this is a high priority for the management, and appropriate measures have already been taken. The panel appreciates the informal and open atmosphere at the programme. There are staff meetings held in which organisational and quality aspects of the programme are discussed. Within the Education Advisory Committee, topics are discussed in a constructive manner. The panel found that the different meetings largely focus on short-term and course-oriented issues although they could also be fruitful platforms to discuss and develop a long-term vision for the programme.

#### *Assessment*

The panel concludes that the programme has an adequate assessment system in place. The programme uses various forms of assessment that suit the learning outcomes, content and didactical design of the courses. The content and scientific level of the course assessments are up to standard. Safeguarding the quality of the final project receives sufficient attention, and the panel is satisfied with the transparent and thorough assessment of the final project. It concludes that the Examination Board is sufficiently in control. The Board ensures a properly functioning quality assurance system for individual assessments and final projects. However, the Board could strengthen its role with respect to the quality assurance of the assessment at the programme level. The panel advises examining the assessment system at the programme level, particularly with respect to the achievement of the overall intended learning outcomes.

#### *Achieved learning outcomes*

The panel concludes that the overall quality of the theses is satisfactory, and graduates of the master's programme achieve the required level. It nevertheless found a great variety among the theses studied with respect to subject, size, style and degree of in-depth analysis and reflection. It advises taking a close look at this. In particular, the systematic use of the scientific literature deserves attention. The panel noted that in some cases a thorough theoretical analysis was absent. It also reviewed the job positions of graduates. Although no hard figures are available, it concludes based on the materials provided and the interviews held during the site visit that the programme is a good starting point for the professional careers of its graduates in different roles such as educational designers, researchers and consultants.

The panel assessed the standards from the *Assessment framework for limited programme assessments* in the following way:

#### *Master's programme Educational Science and Technology*

Standard 1: Intended learning outcomes	satisfactory
Standard 2: Teaching-learning environment	satisfactory
Standard 3: Assessment	satisfactory
Standard 4: Achieved learning outcomes	satisfactory
General conclusion	satisfactory



The chair and the secretary of the panel hereby declare that all panel members have studied this report and that they agree with the judgements expressed in it. They confirm that the assessment has been conducted in accordance with the demands relating to independence.

Date: 23 May 2017



Prof. dr. Jan Elen



Drs. R.L. Prenen

# DESCRIPTION OF THE STANDARDS FROM THE ASSESSMENT FRAMEWORK FOR LIMITED PROGRAMME ASSESSMENTS

## *Organization of the programme*

The master's programme Educational Science and Technology (EST) is organized by the Faculty of Behavioural, Management and Social Sciences (BMS). The Faculty is chaired by a dean and has its own Faculty Council that exerts the right of assent and consultation regarding faculty policy matters. The Faculty has various supporting services (e.g. finance, ICT, human resources), which are governed by a managing director. BMS provides bachelor's and master's programmes in psychology, business administration, public administration, communication science, philosophy, industrial engineering and management, teacher training (1st degree), and educational science. These programmes are delivered by staff members from 21 research departments. The EST programme is jointly offered by the Departments of Educational Science (OWK), Instructional Technology (IST) and Research Methodology, Measurement and Data Analysis (OMD) and also includes contributions from the teacher training department (ELAN).

The EST programme falls under the jurisdiction of a programme director, who is responsible for the scientific quality of the curriculum. The programme director is supported by two programme coordinators, a study advisor, and administrative staff, all of whom are housed in the Faculty's Educational Service Centre (OSC), which is run by an education manager. The EST programme has its own Education Advisory Committee consisting of four staff members and four student members. The programme used to have its own Examination Board, but in 2015/2016 the Boards of all BMS faculty programmes merged. Within this general Examination Board there is a special committee for Behavioural Sciences (psychology, communication science, and educational science) with at least one member from EST. EST also shares an Ethics Committee with these programmes, again with one representative from EST. The EST students and graduates have their own joint association (Komma), which is financially supported by the BMS faculty.

### **Standard 1: Intended learning outcomes**

The intended learning outcomes of the programme have been concretised with regard to content, level and orientation; they meet international requirements.

#### **Explanation:**

As for level and orientation (bachelor's or master's; professional or academic), the intended learning outcomes fit into the Dutch qualifications framework. In addition, they tie in with the international perspective of the requirements currently set by the professional field and the discipline with regard to the contents of the programme. Insofar as is applicable, the intended learning outcomes are in accordance with relevant legislation and regulations.

## **Findings**

### *Domain-Specific Framework of Reference*

All programmes involved in the external examination procedure helped compose the Domain-Specific Framework of Reference for academic bachelor's and master's programmes in educational sciences (see Appendix 2). The report published by the Educational Sciences Sector Plan Committee (CSO, 2015) served as a significant source of inspiration. The framework demarcates the field of educational sciences. It outlines the developments in the field and their implications for the required knowledge, skills and attitudes of educational sciences graduates, and for the organisation of the programmes. A distinction is made between bachelor's and master's graduates in terms of level.

According to the framework, the focus of educational sciences is education, i.e. teaching, the teaching and learning processes, and the outcomes, both at the individual and societal level. Educational sciences focus on describing, explaining and optimising all situations related to intentional learning.



They concentrate on processes and systems at the micro-level (processes and educational interventions at the individual and class level), meso-level (teaching organisation, leadership and governance) and macro-level (policy and system). The field covers formal and informal teaching situations, in all contexts in which organised teaching takes place, at every stage of life. These contexts comprise the entire regular education sector, as well as the private education and training sector and on-the-job learning. The panel studied the framework and noted that it provides a set of general requirements for the academic bachelor's and master's programmes in educational sciences. These general requirements correspond with the internationally accepted Dublin descriptors. In terms of content, the requirements also encompass what might be expected of an academic bachelor's or master's programme in educational sciences.

#### *Profile and intended learning outcomes*

As mentioned in the critical reflection, the EST programme targets educational processes and systems at the micro- and meso-levels, and focuses on intentional learning in public and private settings. At both aggregation levels, a combination of fundamental educational themes (e.g. learning and instruction, educational assessment) and contemporary themes (e.g. ICT, workplace learning, adaptive testing) is addressed from a multidisciplinary perspective that combines insights from psychology, educational design, computer science, and business administration.

The programme aims to educate professionals as educational designers, researchers, and consultants with a strong scientific background and an independent, professional and critical disposition, who are able to contribute to the advancement of the field of educational sciences in general, and their own specialization area in particular. In order to achieve this goal, the programme has defined five intended learning outcomes that cover domain expertise, design competency, research competency, advice competency and academic reflection (see Appendix 3). Regarding domain expertise, the programme features two focal areas: Educational Design and Effectiveness (EDE) and Human Resource Development (HRD). EDE focuses on curriculum, instructional design and implementation, and school effectiveness; HRD revolves around learning trajectories in organisations. The students can develop domain-specific knowledge in either area (or both) as well as the relevant research, design and advice competencies. The panel studied the intended learning outcomes and established that they are in agreement with the domain-specific framework. They can also be linked to the international Dublin descriptors for the master's level. The outcomes are therefore in accordance with national as well as international standards. Although the panel is convinced the programme is of an adequate master's level, this is not very clear from the learning outcomes. The panel considers the current learning outcomes to be rather generic. It suggests elaborating them in such a way that they more clearly reflect the academic master's level.

During the site visit, the panel spoke with the management about the programme's profile and intended learning outcomes, also in relation to the technical signature of the university and the domain-specific framework of reference. As explained by the management, since the previous programme assessment in 2012, the main change has been the termination of the bachelor's programme, so currently only a master's programme is offered. Efforts were made to maintain the technology- and design-based nature of the programme. At this moment, in line with the policies of the faculty and the university, the management is evaluating the programme to ensure that technology is adequately represented. It holds the opinion that the focus on technology could be strengthened, especially in the HRD focal area. It is also working on strengthening the connection to the professional field and on reinforcing the international component by extending collaborations with partners abroad. The latter effort will result in a double degree with Ludwig Maximilian University in Munich, for example. The panel appreciates these initiatives that fit in well with the main focus areas and priorities of the faculty and university. However, it also observed that the intended technology- and design-based orientation of the programme is not very visible in the various documents it studied, such as the critical reflection. It is also not very apparent in the learning outcomes. According to the panel, the technology and design orientation of the programme fits the technical characterization of the university and is quite distinctive within the field of educational sciences. It

recommends adapting the profile and intended learning outcomes so they reflect the technology- and design-based orientation more explicitly.

### **Considerations**

According to the panel, the intended learning outcomes of the master's programme Educational Science and Technology are in line with national and international requirements, although they could reflect the master's level more explicitly. The panel values the technology- and design-based orientation of the programme. This orientation fits the technical characterization of the university and is quite distinctive within the field of educational sciences. However, the panel established that the learning outcomes are rather generic and do not reflect this technology- and design-based orientation very clearly. It recommends elaborating the profile and developing learning outcomes that more adequately reflect the programme's aims and distinct character.

### **Conclusion**

The panel assesses Standard 1 as 'satisfactory'.

#### **Standard 2: Teaching-learning environment**

The curriculum, staff and programme-specific services and facilities enable the incoming students to achieve the intended learning outcomes.

#### **Explanation:**

The contents and structure of the curriculum enable the students admitted to achieve the intended learning outcomes. The quality of the staff and of the programme-specific services and facilities is essential to that end. Curriculum, staff, services and facilities constitute a coherent teaching-learning environment for the students.

### **Findings**

The structure of the one-year programme is presented in Appendix 4. The programme consists of 60 EC and is offered in a full-time and part-time variant. Part-time students follow the same programme as full-time students, but differ with regard to the pace of studying and their study load per quartile. Students can enter the programme in September and February. The programme comprises two compulsory core courses, a series of electives and a final project. The compulsory courses are 'Trending topics in educational science and technology' and 'Research proposal'. Students can follow electives exclusively from either the EDE or HRD focal area, or combine courses from both areas. Moreover, they may choose a maximum of two courses from a set of four courses from the related master Business Administration – Human Resource Management track and from the research master Methodology and Statistics (Behavioural, Biomedical and Social Sciences). Students complete their studies by conducting a 25 EC final project.

#### *Programme: content and coherence*

During the site visit, the panel reviewed the content and structure of the programme, including the intended learning outcomes. It examined a table in the critical reflection that showed the relation between the courses and the intended learning outcomes. It also studied course descriptions and materials and discussed the content and design of the programme with the management, teaching staff, students and relevant committees. It noted that the table was drawn up on a general level. The course descriptions, including learning goals, were rather generic. Both provided little insight into the exact contributions of the different courses to the intended learning outcomes. According to the panel, the relationship between the 'Trending topics in educational science and technology' course and the overall learning outcomes was particularly unclear. This 10 EC course covers several contemporary developments in both the EDE and HRD domains and is being adjusted every year. The final project was not included in the table and not explicitly linked to the overall learning outcomes.



The panel remarked that the programme offers many electives which are highly appreciated by the students. As mentioned by the interviewed students, these electives give them ample opportunities to deepen their knowledge and skills and/or to specialize within the broad field of educational sciences. The panel confirmed the benefits of the electives in the programme. Yet, it also observed that the extent to which the intended learning outcomes are addressed in the curriculum of students depends on their choices. It ascertained that if students choose courses mainly within the EDE focal area, their advice competency remains somewhat underexposed. Similarly, within the HRD focal area, less attention is paid to the design competency. The panel therefore wondered whether all students are able to meet all the requirements at the end of the programme. The management explained that the above-mentioned table doesn't show all levels of detail, just the main intended learning outcomes per course. In practice, all courses contribute more or less to all of the intended learning outcomes. The management also clarified that the obligatory course 'Trending topics in educational science and technology' involves several assignments that give students the opportunity to strengthen their design and advice competencies. Moreover, most final projects contain a design and/or advice component. Although the management acknowledges that there are differences in mastery level between students, it is convinced that all students meet the requirements at the end of the programme. Based on the final theses studied (see Standard 4), the panel sees no reason to question this. Nevertheless, in order to better guarantee the intended levels of competencies at the end of the programme, the panel advises making the relationship between the learning objectives and content of the courses and the overall learning outcomes more explicit. The connection of the 'Trending topics in educational science and technology' course with the overall learning outcomes deserves extra attention. Considering the annual adjustments of this course, it is important to assure that the course content fits the intended learning outcomes. The final project should also be linked to the learning outcomes. The panel recommends taking a close look as to whether the design and advice competencies are sufficiently covered by the HRD and EDE focal areas, respectively.

The panel is satisfied with the content and design of the individual courses. The various books and other literature used are of an adequate level. The panel is also pleased with the scientific orientation of the programme. In the 'Trending topics in educational science and technology' course, contemporary research findings are shared with students. Other courses, like the mandatory course 'Research proposal', offer students ample opportunities to develop their research skills. As mentioned before, the staff is striving to improve the link to the professional field. For example, they intend to invite more guest lecturers and increase the use of real-life cases and assignments. An internship is not part of the plan, due to time restrictions, but students are encouraged to do their final project in a professional organisation other than the university. Some interviewed students added that they would appreciate more opportunities for excursions and contact with prospective employers. The panel strongly supports the different initiatives to improve the link to the professional field. In its opinion, they will contribute to a better preparation for the future careers of graduates.

With respect to the coherence of the programme, the panel observed that there are two clusters of courses. One cluster focuses on HRD, the other on EDE. These two focal areas could function as learning paths, but this depends on the choices students make in their electives. Based on the interviews, the panel established that when the bachelor's programme was terminated, the programme management decided to reduce the three master's tracks to two focal areas. The two focal areas are explicitly linked to the strengths of the programme and expertise of the teaching staff. The panel appreciates these focal areas. As students explained, they help them to make informed choices in their electives. However, the panel also remarked that the rationale behind the establishment of the two clusters of courses is not very clear. There does not seem to be a clear explanation of why specific courses are part of a focal area and how these courses interrelate. The panel advises elaborating on the choices and consistency between the courses in the focal areas. In its opinion this would increase the coherence of the programme and give more guidance to teachers with regard to the content, including literature, and design of individual courses.

*Programme: teaching methods*

The panel is positive about the teaching methods used. They are well aligned with the objectives and content of the different courses and stimulate active and profound learning by the students. The critical reflection described the use of active teaching methods as self-evident for courses targeting skills development, but also the more theoretical courses enable students to engage in hands-on and problem-solving activities. The number of lectures is reduced in favour of tutorials in which students work on in-class assignments to actively process domain-specific knowledge under the guidance of the teachers. The interviewed students confirmed this. They were very positive about the variety of teaching methods. They especially appreciated the fact that there is plenty of room in the courses for creativity and experimenting with new methods.

*Programme: intake and feasibility*

The number of students entering the programme varies between 40 and 70 per year. The panel is pleased to note that since the termination of the bachelor's programme, the master's programme has been successful in finding new ways to increase student numbers. For example, arrangements have been made with Saxion University of Applied Science to enable their teacher training (Pabo) students to complete the pre-master's programme as part of their regular curriculum. The programme appeals to international students and students from Dutch universities of applied sciences. Most of them have to enter the pre-master's programme first. The programme management indicated that they are proud of the incoming students. The panel gained a positive impression of the students during the site visit and considered them very active and highly motivated. It agrees with the management that the programme should make the necessary effort to at least maintain but preferably increase the student intake, whereby the growth opportunity primarily lies in attracting more international students. The panel also sees a challenge, as the management pointed out in its conversation with the panel, in benefitting more from the diverse student population. Students can learn a lot from the different backgrounds, experiences and perspectives of their fellow students.

The panel studied the success rates in the critical reflection and observed that they are rather low. Currently, 20-30% of the students graduate after one year and around 60-70% after two years; around 75% of the students have received their diploma after three years. Yet, based on the interviews with students, alumni and teaching staff, the panel established that the programme is feasible within the nominal study time. The study load is equally spread over the programme, and there are no detectable stumbling blocks. As described in the critical reflection, the delay is mostly caused by the fact that the students have very diverse backgrounds and often combine their study with a job, young family, another master's programme, etc. The number of students combining their studies with other activities and/or obligations increased after the bachelor's programme was terminated. Some students who are officially registered as full-time in fact follow a part-time mode, for all kinds of individual reasons. The interviewed students and alumni confirmed this. Additionally, some of them mentioned that they deliberately take more time to do extra courses, an internship and/or other study-related activities. According to the management, the low success rates can also be explained by the fact that a lot of students choose to do an external practice-oriented final project. Besides an empirical research part, these projects often encompass a design and/or an advice component that usually takes more time to finish. The management emphasized that they look very closely at the students' individual needs and wishes. If students decide themselves to postpone their study trajectory, they will not be pressured. For the management, the dropout rates, which are fairly low, are of greater concern than the success rates.

Like the management, the panel is convinced that the low success rates are related to the student population and not to any impediments within the teaching and learning environment. Indeed, the delay often seems to be a sign of extra interest and motivation. The panel remarked that the programme, with its many electives, is very attractive to students. The downside, however, is that the programme is not guiding study progress. The panel believes, like the previous accreditation committee, that the success rates should be improved. It understood from the critical reflection that, partly in response to the comments of the previous committee, the 'Research proposal' course was



introduced to shorten the study duration. At this moment steps are being planned to further streamline this course and to explore the possibility of introducing intermediate common feedback sessions in the thesis trajectory. The panel is positive about these measures. It advises monitoring the effect of these measures carefully and, if necessary, considering further actions.

#### *Teaching staff*

There are 23 staff members involved in the master's programme, with a total amount of 2.10 FTE in the 2015–2016 academic year. The panel established that there is currently an acceptable staff-student ratio of 1:27.

The panel studied an overview of the staff members, their position, degree, and expertise, and the courses they teach. It recognised the staff's scientific quality, academic reputations, and teaching quality and experience. The staff consists of five full professors, five associate professors, eight assistant professors and five junior lecturers (e.g. PhD students, postdocs). All staff members are domain experts in the field of educational sciences and play an active role in the research community. Almost all staff members hold a doctoral degree or are working on a PhD project. The panel also ascertained that 15 of the 23 staff members have been teaching at university for more than ten years. Some 53% of the teachers have earned their basic teaching qualification whereas another 24% was exempt from this obligation based on more than twenty years of teaching experience. The students and alumni the panel interviewed during the site visit were enthusiastic about the staff. They described the teachers as committed, easily accessible and approachable. They were also very positive about the open and informal atmosphere and the guidance and support they received from teachers.

During the site visit the panel had an extensive discussion with the management about the composition of the staff. It had observed an imbalance regarding the available expertise in the two focal areas. In particular, the staffing in the field of HRD seemed vulnerable to the panel. The management explained that in the past few years, they had been confronted with many personnel changes. At this moment, the situation is more stable. The management was pleased it was able to attract talented and dynamic new staff members, particularly in the field of HRD, who are well equipped for future challenges. It also mentioned that recently one assistant professor HRD had been promoted to associate professor and considers to start a procedure for hiring a new full professor HRD. Moreover, it remarked that the staffing will be considered in a wider perspective, as part of a faculty-broad reorganization plan. In that process, they will look thoroughly at what expertise is needed to cover the field. The panel is positive about these developments and expresses its confidence for the future.

During the site visit the panel also spoke about the cohesion and cooperation of the teaching staff. Based on the interviews with the teachers and management, the panel established that the teaching staff meets on a regular basis to discuss the programme. In addition, every month a so-called 'brown bag lunch' is organised for all staff involved. Before the start of each quartile, a lunch meeting of all teachers from that quartile is held in which information about the courses is exchanged. The panel appreciates these initiatives, which clearly contribute to a smooth coordination and tuning of the courses. Yet, it also noted that the discussions among staff members focus on short-term and course-oriented issues to a considerable extent. With major challenges in the field ahead, as described in the domain-specific framework of reference, the panel suggests using the various meetings to discuss and develop a long-term vision for the programme.

#### *Programme-specific services and facilities*

The panel considers the programme-specific services and facilities to be adequate. The master's programme has a support staff consisting of a programme director, a programme coordinator, a study advisor and administrative staff. The administrative staff is employed at the faculty level and may support different programmes. All material resources such as lecture rooms, hardware, project spaces and design lab are also shared with other programmes within the university or faculty. The students the panel interviewed were very positive about the services and facilities. The teaching staff

is also satisfied, although some mentioned they would appreciate more technical and organisational support staff.

With respect to the programme-specific quality assurance, the panel ascertained that there are clear formal assurance procedures. As mentioned in the critical reflection, every course is formally evaluated by the participating students. The results are sent to the teacher(s) of the course and the programme director. The latter then talks to the teacher(s), who documents the outcomes of this discussion in an 'improvement plan'. This improvement plan is published on a dedicated website that is accessible to students. Progress with the improvement plans is checked in the quartile meeting of the subsequent year.

The evaluation results, as well as other sources of information like the National Student Evaluation (NSE), are discussed by the Education Advisory Committee. During the site visit, the panel spoke with a dedicated Education Advisory Committee, consisting of four staff members and four student members. Based on that conversation, the panel concluded that the committee is functioning adequately. Yet, it also believes the committee could play a more proactive role. At this moment, the committee has an important signaling task, and its findings and recommendations are being heard and followed up. In the opinion of the panel, the committee could also be a fruitful platform for teachers and students to discuss programme developments, challenges and opportunities from a broader perspective. In this way, it could become an important source of inspiration for the programme management.

### **Considerations**

The panel concludes that the programme, the personnel and the programme-specific facilities enable the master's students to realise the intended learning outcomes. It appreciates the two focal areas of the programme, HRD and EDE, and the many electives. They make the programme very attractive to students. The panel ascertained that, with the exception of the final project, all intended learning outcomes are cross-matched to the different components of the programme in the critical reflection. It also concluded that it is quite difficult to determine exactly how the intended learning outcomes are realised in the programme. This is partly due to the flexible structure of the programme, as the students' choices influence the extent to which the intended learning outcomes are addressed. It is also due to the generic formulation of the relationship between the learning objectives and content of the courses and the overall learning outcomes. The panel advises defining explicitly how the learning outcomes are realised. It suggests paying extra attention to the link of the 'Trending topics in educational science and technology' course and the final project with the overall learning outcomes as well as the extent to which the design and advice competencies are sufficiently covered by the HRD and EDE focal areas, respectively.

The panel is satisfied with the design of the programme. The two focal areas help students to compose their own study path. However, according to the panel, the coherence could be improved by elaborating the choices and consistency between the courses in the focal areas. The panel is also satisfied with the content and design of the individual courses. It appreciates the variety of teaching methods and the ample opportunities for experimenting with new teaching methods.

The panel is pleased to note that the master's programme has been able to maintain its intake of students despite the termination of the bachelor's programme. With respect to the success rates, the panel established that there is room for improvement. It is satisfied that the programme has already taken some measures, like the introduction of the 'Research Proposal' course. Yet, it advises continuously monitoring the success rates and, if necessary, taking further steps.

The panel is positive about the scientific and didactical quality of the staff. It noted that the staffing of the HRD focal area is somewhat vulnerable in terms of quantity and experience. This is a known high priority for the management, which has already taken appropriate measures. The panel appreciates the informal and open atmosphere. Staff meetings are held in which organisational and quality aspects of the programme are discussed. Within the Education Advisory Committee, topics



are discussed in a constructive manner. The panel remarked that the different meetings largely focus on short-term and course-oriented issues, although they could be fruitful platforms to discuss and develop a long-term vision for the programme.

### **Conclusion**

The panel assesses Standard 2 as 'satisfactory'.

#### **Standard 3: Assessment**

The programme has an adequate assessment system in place.

#### **Explanation:**

The tests and assessments are valid, reliable and transparent to the students. The programme's examining board safeguards the quality of the interim and final tests administered.

### **Findings**

#### *Assessment system*

The critical reflection confirmed that courses within the programme employ a variety of assessment methods. The choice for a particular method is made by the examiner based on the learning outcomes and course content. As a result, authentic skill-based forms of assessment prevail, such as design report, management summary and research proposal. Students' topical knowledge and understanding are either inferred from these products or evaluated separately by written exams, sometimes in addition to a skill-based assessment. At the beginning of each quartile, the teachers of courses in this quartile meet to fine-tune the type and timing of assessments in that quartile. The Examination Board approves the assessment method(s) of each course annually as published in the Education and Exam Regulations. This information is also available in the UT's online education catalogue. Additional details about the nature of an assignment, assessment criteria and grading can be found on the Blackboard site for each course. Written exams can be taken twice a year. Assignments have to be submitted in the final week of the quartile or, in the case of part-assignments, before the start of a new part-assignment.

During the site visit, the panel examined several assessment documents of different courses and spoke with students, teachers and representatives of the Examination Board about the assessment system. Based on these conversations and the materials studied, the panel learned that there is an overall assessment policy – although this is not mentioned in the critical reflection – which serves as a guide for examiners. The panel could also ascertain that the assessment methods are in line with the learning outcomes, content and didactical design of the courses. It concluded that the assessment system is satisfactory in terms of scientific level and content. The students explained that, in general, they are well informed about the tests and criteria and receive adequate feedback with respect to their results and performance.

The students complete their studies with a 25 EC final project. These final projects can capitalize on research, design or advice and can be conducted internally or in an organization outside the UT. In all cases, the project should include empirical work. Students select a topic or theme of interest, and elaborate a rough project idea under the guidance of the thesis coordinator of one of the focal areas or a potential supervisor. The topic or theme should be related to the content of the courses in the master's programme and match the expertise of a teaching staff member so as to ensure expert guidance. The 'Research proposal' course provides support in writing a proper project proposal. The interviewed students mentioned that while the teachers provide ample suggestions for topics, students may also propose a topic themselves.

The two thesis coordinators, one for EDE and one for HRD, link supervisors to students. Each student has a first and second supervisor who guide the final project and determine the grade. If applicable, an external supervisor can join this committee as an advisory member. A graduation guide informs

students about the supervision process as well as the assessment criteria and their relative weights. The panel noted that the assessment form has been adjusted, partly in response to comments from the previous accreditation panel. The current form encompasses four assessment criteria, namely: content (50% of the final grade); written report (20% of the final grade); process/functioning of the student (20% of the final grade); and oral presentation and defense (10% of the final grade). The first three aspects are jointly assessed by both internal supervisors before the final presentation; the presentation itself is assessed right after the session. Feedback is given orally after the defense. Additional comments can be written down on the assessment form. The panel is satisfied with the setup and assessment of the final project. It ascertained that the procedures and criteria are transparent and contribute to a thorough final assessment. The interviewed students confirmed this. They also mentioned being very satisfied with the guidance they received from their supervisors during their project.

#### *Examination Board*

The Examination Board of Behavioural Sciences is an overall examination board for five bachelor's and master's programmes at the Faculty of Behavioural, Management and Social Sciences, including the master's programme Educational Science and Technology. It was formed by the merger of the Examination Board of Educational Science and Technology and the Examination Boards of Psychology and Communication Science. It consists of five members, with one member representing Educational Science and Technology. Advisory members include the programme director, the programme coordinator and the study advisor. The Examination Board meets once a month, eleven times a year. Advisory members can attend these meetings upon request, to inform the Board about individual student requests.

As described in the critical reflection, one of the core tasks of the Examination Board is to warrant the quality of assessments in order to ascertain whether students meet the conditions described in the Education and Exam Regulations (EER) regarding the knowledge and skills required to earn a master's degree. Quality assurance is embedded in the Examination Board's annual cycle of activities and consists of three recurring actions: establishing the assessment system of courses (assessment methods and examiners), screening course assessments, and screening the theses. In addition, the Board takes or decides on occasional measures regarding the programme (e.g., curriculum changes, transition arrangements), handles requests from individual students, and acts as a legal body in case of alleged fraud. The issues discussed and decisions taken are documented in an annual report.

During the site visit, the committee spoke with representatives of the Examination Board about its role in monitoring the quality of assessment. It became clear that the Examination Board has been active in its current composition since September 2015. In the last year, the Board has worked on adapting and attuning its quality assurance procedures. The core tasks and responsibilities are still the same, but the way some activities are carried out have been or will be changed. This is most apparent in the procedures for screening the quality of course assessments and final projects. The actual screening is no longer done by the Examination Board itself, but instead by the programme under the Board's mandate. However, in both cases, the Board designs the working methods, assessment forms and quality standards, checks whether screenings are appropriate and fair, and draws conclusions and implications. The Board continues to select courses and theses for the annual screening but now the university's Educational Support Centre is involved in screening the course assessments. This screening focuses on the validity, reliability, objectivity and difficulty of the assessment. The theses are being screened in a 'teaching staff carousel', in which thesis supervisors evaluate the theses of other supervisors against the same criteria. The assessment forms are compared, and if the grades differ by more than one point, further action is taken by the Examination Board. This involves a second screening by another staff member and a discussion with the responsible supervisor.

The representatives of the Examination Board emphasized that the merging of the three Boards was an intensive process. Each Board had its own culture and procedures. The Board members are satisfied with what they have achieved so far. The panel is also positive about the functioning of the



Board of Examiners. It appreciates the Board's various activities in the area of quality assurance. Yet, it also notes that these activities mainly focus on quality aspects of individual assessments and theses. In its opinion, the Board could strengthen its position and also take an active role in the quality assurance of assessment on the programme level, particularly with regard to ensuring the achievement of the programme's intended learning outcomes. The panel encourages the Board to work on an explicit vision and policy for the quality assurance of assessment on the programme level.

### **Considerations**

The panel concludes that the programme has an adequate assessment system. The programme uses various forms of assessment that suit the learning outcomes, content and didactical design of the courses. The content and scientific level of the course assessments are up to standard. Safeguarding the quality of the final project receives sufficient attention, and the panel is also satisfied with the transparent and thorough assessment of the final project. It concludes that the Examination Board is sufficiently in control. The Board ensures a well-functioning quality assurance system for individual assessments and final projects. Yet, it could strengthen its role with respect to the quality assurance of assessment on the programme level. The panel advises examining the assessment system on the programme level, particularly with respect to the achievement of the overall learning outcomes.

### **Conclusion**

The panel assesses Standard 3 as 'satisfactory'.

#### **Standard 4: Achieved learning outcomes**

The programme demonstrates that the intended learning outcomes are achieved.

#### **Explanation:**

The level achieved is demonstrated by interim and final tests, final projects and the performance of graduates in actual practice or in post-graduate programmes.

### **Findings**

The panel assessed the achieved learning outcomes by inspecting a selection of the final theses including the assessment forms completed by the supervisors (see Appendix 6), 15 in total. Consideration in selecting the theses was given to the grading (a range of low, average and high grades). Members of the panel read the theses and assessed their presentation of the problem and review of the literature, methods and justification, conclusion and discussion, structure, legibility and verification.

In general, the panel agreed with the grades awarded by the supervisors. The grading seemed fair and reflected the differences in the students' work. One comment the panel would like to make is that the studied assessment forms contain little or no written feedback from the supervisors involved. Therefore, they provide little insight into the considerations that led to the final grades. Though the panel ascertained that the theses are quite diverse with respect to content and quality, it concluded that their overall quality was satisfactory, and graduates of the master's programme did achieve the required level. All theses had an empirical research part, usually based on a questionnaire. However, they varied in terms of subject, size, style and degree of in-depth analysis and reflection. The panel advises having a close look at this variation. In particular, the systematic use of the literature deserves more attention. The panel noted that in some cases a thorough theoretical analysis was absent.

The committee reviewed the results of the National Alumni Survey 2015 in the critical reflection, which painted a positive picture of the graduates' entry into the labour force. The majority found a job within one month after graduation. Graduates primarily occupy positions in their own discipline of Educational Sciences or a related discipline, and most are quite positive about the preparation they received during their studies. During the site visit, the panel spoke with a few alumni who have

good careers like educational designer or junior researcher. The alumni valued the programme as a sound basis to enter the job market.

### **Considerations**

The panel concludes that the overall quality of the theses was satisfactory, and graduates of the master's programme did achieve the required level. However, there was a great variety among the theses. The panel advises paying attention to this, especially with respect to the systematic use of the scientific literature. It also reviewed the job positions of graduates. Although no hard figures are available, it concludes based on the materials provided and the interviews held during the site visit that the programme is a good starting point for the professional career of its graduates.

### **Conclusion**

The panel assesses Standard 4 as 'satisfactory'.

## **GENERAL CONCLUSION**

The panel ascertained that the intended learning outcomes of the master's programme Educational Science and Technology are in line with national and international requirements. It also concluded that they are rather generic and could reflect the master's level as well as the technology- and design-based orientation of the programme more clearly. It is positive about the content and design of the programme as well as the individual courses. It values the two focal areas of HRD and EDE as well as the large number of electives. It also appreciates the variety of teaching methods. One point deserving attention is that it is difficult to determine exactly how the intended learning outcomes are realised in the programme, partly due to the generic formulation of the learning outcomes and the flexible programme structure. According to the panel, this should be elaborated further. The panel also suggests clarifying the rationale of the two focal areas with respect to the choices and consistency between the courses in the two clusters. This would benefit the programme's coherence. Another concern is the low success rates.

The panel is positive about the scientific and didactical quality of the staff members and the open and constructive manner in which they consult with each other. It also appreciates the functioning of the Education Advisory Committee and Examination Board. Nevertheless, it concludes that the focus of the staff meetings as well as the Education Advisory Committee and Examination Board could be broadened. It notes that the programme is confronted with various short- and long-term challenges and opportunities. It advises the programme to clarify its profile and aims for the future. This will contribute to a clear roadmap with which opportunities can be exploited.

Finally, the panel established that the programme has an adequate assessment system in place and that the quality of the course assessments as well as of the thesis is satisfactory. It concludes that graduates of the master's programme achieve the required level.

### **Conclusion**

The panel assesses the *master's programme Educational Science and Technology* as 'satisfactory'





## APPENDICES





## APPENDIX 1: CURRICULA VITAE OF THE MEMBERS OF THE ASSESSMENT PANEL

**Jan Elen** is full professor at the University of Leuven. He is connected to the Center for Instructional Psychology and Technology of the Faculty of Psychology and Educational Sciences. His research focuses on the domain of educational technology and teacher's education. He was previously head of the educational support team of the University of Leuven. He was also co-founder and coordinator of the Expertise Network of the School of Education, Association University of Leuven. He was vice-dean of Education at the Faculty of Psychology and Educational Sciences and has been member of the university's Educational Council for over ten years. He was coordinator of the Special Interest Group Instructional Design of the European Association for Research on Learning and Instruction. He teaches introductory and advanced courses on educational psychology and educational technology. He is currently senior editor of 'Instructional Science'.

**Regina H. Mulder** is full professor in Pedagogy/Educational Sciences (University of Regensburg, Germany) since 2004, where she has held several positions (Dean, vice chair of the Senate and member of the University Council). She acquired her MA degree in Sociology (RUG) and doctorate degree in Social Sciences (EUR) in the Netherlands, and was vice director of RISBO (EUR). She researches and publishes on topics in 'Vocational Education and Training' and on 'Learning in Organisations', such as the design and evaluation of VET, innovative work behaviour, feedback, learning from errors, informal learning at work, learning of older workers, team learning, diversity in teams, leadership and research methods. She was EARLI SIG Coordinator of the SIG 'Learning and Professional Development'. She has co-edited books, is a member of several editorial boards (e.g. 'Educational research review', 'HRDQ'), and reviews for other journals (e.g. 'Vocations and Learning').

**Dominique Sluijsmans** studied Educational Science at Radboud University and received a PhD in 2002 from the Open University on her thesis 'Student involvement in assessment', which focused on training students' teachers in peer assessment skills. She was assistant professor at the Open University and lector at the HAN University of Applied Sciences. As of 2012, she is lector Professional Assessments at the Zuyd University of Applied Sciences, and has an unpaid appointment as associate professor at Maastricht University. Her research interests are professional assessment, curriculum design and student involvement in assessment.

**Fleur van Gils** graduated in 2016 from the Bachelor's programme ALPO (Academische Lerarenopleiding Primair Onderwijs) of Utrecht University and University of Applied Sciences Utrecht. She is currently a student of the Research Master Educational Sciences of Utrecht University. She has experience as a student-auditor at the IPABO University of Applied Sciences (2015).



## APPENDIX 2: DOMAIN-SPECIFIC FRAMEWORK OF REFERENCE

### Introduction

This document presents a frame of reference for the education in the Educational Sciences<sup>1</sup> discipline for the benefit of an external review of the university Bachelor's and academic Master's degree programmes in 2016/2017<sup>2</sup>. The report published by the Educational Sciences Sector Plan Committee (CSO, 2015) served as a significant source of inspiration for the framework. This is partly because staff representing programmes from various universities sat on the CSO, ensuring that the CSO report was widely supported within the programme departments. In this domain-specific frame of reference, we first outline the knowledge domain of educational sciences before considering developments in the field, the professional practice of educational scientists and the teaching. The developments mentioned have implications for the required knowledge, skills and attitudes of educational science graduates, and for the organisation of the programme curricula, for example with regard to the internationalisation and the pedagogical model. The framework specifies the objectives, level, orientation and arrangement of the programmes in educational sciences, and finishes with an overview of the knowledge, insight and skills required of educational sciences graduates. A distinction is made between Bachelor's and Master's graduates in terms of level.

### The educational sciences domain

The description of the educational sciences knowledge domain is taken from the description given by the CSO (2015): "The subject of educational sciences is education, i.e. teaching, the teaching and learning processes and the outcomes, both at individual and societal level. Educational sciences focus on describing, explaining and optimising all situations relating to intentional learning, in other words, with the prior objective of attaining specific (to a greater or lesser extent) learning objectives. The emphasis is on optimising, and therefore helping to improve, the quality, effectiveness, efficiency, appeal and innovation of educational practice and policy.

Educational sciences concentrate on processes and systems at micro level (cognitive, affective, social and motivational processes and educational interventions at individual and class level), meso level (teaching organisation, leadership and governance) and macro level (policy and system). The field covers formal and informal teaching situations, in all contexts in which organised teaching takes place, at every stage of life. These contexts comprise the entire regular education sector (from early childhood education to university education), as well as the private education and training sector (such as company training programmes, company section training, training courses for professional associations, education provided by societal organisations and cultural institutions) and on-the-job learning.

Educational sciences is a multidisciplinary field. In addition to general and domain-specific educational sciences and teaching methodology, several other disciplines (including psychology, special education, sociology, economics, public administration and organisational sciences, cognitive sciences, neurosciences, philosophy and law) also go to make up the educational sciences field, in as far as they relate to education and/or contribute to optimising education by imparting knowledge about, or improving, teaching itself, the way it is organised or the conditions under which it is

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<sup>1</sup> We refer to educational sciences because the Educational Sciences Sector Plan Committee (CSO, 2015) recommends changing the name of the programmes in education (onderwijskunde) to programmes in educational sciences (onderwijswetenschappen).

<sup>2</sup> The review does not cover the research Master's programmes, which is why they are not included in this framework.

provided, and all the teaching and learning processes this entails. The complexity of problems in education demands a strategy that transcends the boundaries of disciplines and fields of academia.”

### **Developments in academia, the job market and education**

Some of the *themes in educational sciences* have been around since the 1970s. These include learning and teaching, the curriculum, tests and assessments, domain-specific aspects of education and teaching methodology, training and professional development of teachers, tackling inequalities, addressing learning difficulties and the social context of education. They have been supplemented by new themes in recent decades, such as IT and education, digitisation and online education, life-long learning, on-the-job learning, adaptive education and attention for neurosciences and cognitive sciences. The erosion of the European borders and increasing globalisation have increased the relevance of international comparative research. The character of a lot of the themes has changed. Current research into educational reform, for example, focuses on an evidence-informed approach to innovation and improvement in education and the impact on performance and pass rates, while the focus of research into the training and professional development of teachers has shifted to training in the school situation.

Aside from the developments in specific parts of the educational sciences domain, several other more general *academic developments* also have implications for the programmes. The body of knowledge has increased dramatically, largely due to multidisciplinary research and technological advancement. Education is a complex field, and so research has always been multidisciplinary by nature. New information builds on new and existing insight into various disciplines relevant to educational sciences, such as brain sciences and cognitive sciences. The social relevance of academic research is also becoming more important (SEP, 2014) and educational scientists are expected to contribute to innovations and improvements in education (CSO, 2015). Educational research that is relevant to the practice of teaching is based on designated research methods whereby researchers, teachers from the professional field and students work together to improve and study education. Finally, ethics and integrity now play a greater role in science. It is essential to make sure that research is verifiable, meticulous, reliable, independent and impartial.

With regard to the *employment market for educational scientists*, the CSO (2015) thinks that the requirements for future educational scientists will be different and probably more stringent. Educational scientists will have to work in an increasingly international, multicultural context, just like other professionals. They must therefore be able to look beyond the boundaries of their field, work together and communicate with professionals from various disciplines, while also coping with social and technological developments, such as the universal availability of information and increasingly dominant role that the internet plays in social interaction. Educational scientists work in different locations (in teaching, work organisations, research), so programmes must prepare students for different areas within the profession (CSO, 2015).

The *education on which educational scientists work* is increasingly characterised by innovation and evidence-informed working, with an emphasis on complex skills (21st-century skills), insight, creativity and application, and on the integration of subjects, theory and practice. Life-long learning has become essential to sustainable employability. Developments like these demand specific, tailored learning environments and links between school and out-of-school learning, and on-the-job learning. Teaching institutes will have to work ever more closely with societal institutions and industry. The teaching must be geared to the needs of the different target groups in terms of level, pedagogy and teaching methods.

### **Aims, level, orientation and arrangement of the programmes**

The aim of the Bachelor's and Master's degree programmes being assessed in the external review of Educational Sciences is to give students a basic (Bachelor's) or advanced (Master's) academic training in the field of educational sciences. Graduates are able to work as professionals in the education sector, helping to solve specific educational problems and contributing to educational



sciences in general. During the programme, students acquire the very latest knowledge and insight in the field of educational sciences, as well as subject-based and general academic skills.

The programmes cover research paradigms, the most common theories, research designs and methods within the various relevant disciplines (including applied research), codes of conduct in research and their application in educational research, and the practical relevance of research. The students become familiar with the characteristics and value of academic research and the importance of theory and methodology; they learn to express themselves at an academic level orally and in writing; they are given a framework in which they can place the knowledge and insight they acquire in order to apply it in an adequate manner. The programmes also try to turn students into academics who are able to reflect upon the principles of their field and their own professional actions. English scholarly literature and communication are standard elements of the programme, and the learning community is highly diverse, thanks to international lecturers (and guest lecturers) and students. The programmes prepare students to work in a team and communicate with professionals from various disciplines, cultures and countries, for example by taking part in international projects, work placements or graduation projects. The pedagogy of the programmes for educational scientists aim to experiment with innovative teaching modules, which then form a testing ground for the educational developments mentioned above.

The programmes prepare students for a career in society or in academia, for which they can put the knowledge and skills they acquire during their studies into practice in the professional field. This means adopting an academic attitude and acquiring the academic skills that may be required in a range of academic jobs, as well as knowledge and understanding of the field.

The Bachelor's programme provides a broad-based education and gives students a basic academic training. One of the aims of the Bachelor's phase is to make students eligible for, and capable of, a Master's programme. The Master's programme offers specialisation and more in-depth knowledge. It trains students to carry out academic research independently and prepares them for their future working environment, which may include educational institutes or other teaching institutes, government, industry or the research sector.

### **Learning outcomes: the knowledge, insight and skills of educational science graduates**

Graduates of the *Bachelor's programme* in educational sciences are expected to have acquired knowledge and an understanding of educational sciences and its applications, learned to form judgements, and acquired communication and teaching skills at a basic academic level. Graduates of the *Master's programme* in educational sciences are expected to have acquired knowledge and an understanding of educational sciences and its applications, learned to form judgements, and acquired communication and teaching skills at an advanced, more specialised academic level. The learning outcomes are the same as or exceed the criteria set down for educational sciences graduates by the professional field.

The difference between the basic (Bachelor's) and advanced (Master's) level is the degree of autonomy required to formulate research questions and apply knowledge, theories and research methods, the degree of complexity of the questions being dealt with and the extent to which graduates can transpose knowledge and skills onto new situations. In addition, Master's graduates have in-depth knowledge of one (or more) of the sub-domains of educational sciences. These can vary per programme.

The learning outcomes in this domain-specific framework are specified under the Dublin descriptors as 'knowledge and insight' and 'applying knowledge and insight'. Where relevant, the learning outcomes that apply specifically to the Master's level are indicated as such. The outcomes concerning the Dublin descriptors 'forming judgements', 'communication' and 'learning skills', are seen as the criteria set for academic graduates in general. They are not included separately in the domain-specific requirements, but should nonetheless be mastered at the basic or advanced level as applicable. With

regard to communication, it should be noted that graduates are expected to be able to work in an international context, independently or as part of a team.

### *Knowledge and insight*

Graduates have knowledge of, and insight into:

- current educational issues and the social and technological developments relevant to the field;
- curriculum theories (curriculum concepts; strategies for curriculum development);
- instruction theories (progress of learning processes and how they are influenced; instruction design; role of the teacher; evaluation and assessment; use of IT);
- organisation and innovation theories (implementation of change; school development);
- (theories and methods from) existing and new disciplines relevant to educational sciences (educational theory, psychology, neurosciences, sociology, philosophy, philosophy of science, ethics);
- relevant characteristics of education systems and policy (including international comparison) and the Dutch system and policy, particularly in terms of its history;
- methods and techniques of social science research;
- research designs ((quasi-)experimental, correlational, descriptive, case studies, design research);
- qualitative and quantitative methods of data collection and analysis;
- codes of conduct relating to research integrity;
- professional practices in which educational scientists play a role.

At Master's level, advanced knowledge of these fields is required, in addition to knowledge of and insight into:

- specific issues in one or more sub-domains of educational sciences.

### *Applying knowledge and insight*

Graduates are able to:

- evaluate research findings in terms of relevance and usefulness to research practice;
- report and present research results in a clear fashion;
- analyse educational science-based problems in school and work organisations, devise solutions to them in collaboration with relevant stakeholders (e.g. management, teaching staff or trainers);
- contribute to innovations and improvements in education;
- work together with professionals from various disciplines with diverse cultural and national backgrounds.

At Master's level, advanced ability to apply knowledge in these fields is required, as well as the ability to:

- translate problems from professional practice into research questions;
- conduct research into a sub-area of educational sciences in an independent and academically responsible manner, by applying knowledge of methodology and substantive knowledge;
- translate and apply research findings for the benefit of education;
- reflect on research from a philosophical and ethical perspective;
- resolve design problems, taking implementation and evaluation into account.



## APPENDIX 3: INTENDED LEARNING OUTCOMES

### *Master's programme Educational Science and Technology*

The EST Master programme aims to deliver educational designers, researchers, and consultants with a strong scientific background and an independent, professional and critical disposition, who are able to contribute to the advancement of the field of educational sciences in general, and their own specialization area in particular. In order to reach this goal, the programme has established the following intended learning outcomes:

#### *Domain expertise*

Graduates have a solid and broad overview of the field of educational sciences and its constituent subject areas, as well as specific expertise in one of these areas, that can be used productively and creatively in various related professional contexts.

#### *Design competency*

Graduates are able to systematically analyse, design, develop, evaluate, and implement learning environments in various educational and training contexts.

#### *Research competency*

Graduates are able to systematically collect, analyse, and interpret research findings, draw conclusions from this data, and recommend or decide on possible alternatives and activities to be conducted, in particular in a design context.

#### *Advice competency*

Graduates are able to advise (educational) organisations, in part based on the three competencies mentioned above, with regard to the implementation of (re)designed learning environments and organisational as well as policy-related arrangements for teaching and learning.

#### *Academic reflection*

Graduates are able to critically reflect on processes, resulting products, and obtained outcomes from systematic and well-chosen scientific, social-cultural, and ethical perspectives. Such a reflection contributes to the continuing professional development of the graduate him-/herself, and can lead to a deepening or broadening of the field of educational sciences.

## APPENDIX 4: OVERVIEW OF THE CURRICULUM

The diagrams below present a specific programme overview, tailored to the different modes of study (full-time or part-time) and intake moments (September or February).

### Legend

 Core course – obligatory	 Research proposal – obligatory
 Elective courses HRD	 Final project – obligatory
 Elective courses EDE	 Extra – elective courses from preferred partners, approved by the Examination Board (max. 2 to be taken by a student)

### Full time mode (September intake)

QUARTILE 1A	QUARTILE 1B	QUARTILE 2A	QUARTILE 2B
Trending topics in educational science and technology 201200034 (10 EC)			
Team learning at work 201500010 (5 EC)	HRD & technology in a live context 201600126 (5 EC)	Regulation and facilitation of workplace learning 201200031 (5 EC)	Leadership and organisational change 201200032 (5 EC)
Designing learning & performance support 191970340 (5 EC)	Assessing, monitoring and improving student and school performance 201300001 (5 EC)	Innovative technology-based learning environments 201400002 (5 EC)	Teacher learning and development 201200027 (5 EC)
Learning and instruction 192914040 (5EC) (1 <sup>st</sup> run)		Learning and instruction 192914040 (5EC) (2 <sup>nd</sup> run)	
	Research proposal EST 201200035 (5 EC)		
		Final project EST 201200036 (25 EC)	
Global talent management 201500086 (5 EC)		HRM and innovation 201500087 (5 EC)	
Educational measurement 201500149 (5 EC)		HRM and technology design 201500088 (5 EC)	



### Full-time mode (February intake)

QUARTILE 2A	QUARTILE 2B	QUARTILE 1A	QUARTILE 1B
Trending topics in educational science and technology 201200034 (10 EC)			
Regulation and facilitation of workplace learning 201200031 (5 EC)	Leadership and organisational change 201200032 (5 EC)	Team learning at work 201500010 (5 EC)	HRD & technology in a live context 201600126 (5 EC)
Innovative technology-based learning environments 201400002 (5 EC)	Teacher learning and development 201200027 (5 EC)	Designing learning & performance support 191970340 (5 EC)	Assessing, monitoring and improving student and school performance 201300001 (5 EC)
Learning and instruction 192914040 (5EC) (1 <sup>st</sup> run)		Learning and instruction 192914040 (5EC) (2 <sup>nd</sup> run)	
	Research proposal EST 201200035 (5 EC)		
		Final project EST 201200036 (25 EC)	
HRM and innovation 201500087 (5 EC)		Global talent management 201500086 (5 EC)	
HRM and technology design 01500088 (5 EC)		Educational measurement 201500149 (5 EC)	

### Part-time mode

Part-time students have the exact same programme, but differ from full-time students with regard to the pace of studying and their study load per quartile. The EST programme offers part-time students ample freedom to compose a study program that matches their personal situation. Prior to their start in the programme, part-time students fill out a study plan form with help of the study advisor to select the elective courses of their interest and the point in time when they will take these courses. All part-time students take the core course 'Trending topics in educational science and technology' in their first semester, and spend at least their last semester on their final project. The choice and timing of the remaining courses is up to the student.

## APPENDIX 5: PROGRAMME OF THE SITE VISIT

<b>9 February 2017</b>			
08.15	08.45	Arrival	Closed
08.45	10.00	Preparatory meeting	Closed
10.00	10.45	<b>Management</b>	Prof.dr. A.J.M. (Ton) de Jong (opleidingshoogleraar) Drs. Y.C.H. (Yvonne) Luyten-de Thouars (studieadviseur/ onderwijscoördinator) J.M.J. (Jan) Nelissen (onderwijscoördinator)
10.45	11.45	<b>Students and alumni</b>	J.T.A, (Jaella) Klink (student) R.A. (Randy) Möwes MSc (alumna) C.D. (Cosima) Patzak (student) P.J. (Pieter) Smits MSc (alumnus) M.J.M. (Marlou) Stinenbosch (student) V. (Vasileia) Vassou (student)
11.45	12.30	<b>Teachers</b>	Dr. M.D. (Maaïke) Endedijk (docent – HRD / afstudeercoördinator HRD) T. (Tim) Hirschler MSc (docent – HRD) Dr. A.M.G.M. (Marcella) Hoogeboom (docent – HRD) Dr. B.J. (Bas) Kollöffel (docent – EDE/HRD) Dr. H.(Hans) van der Meij (docent – EDE / afstudeercoördinator EDE) Prof.dr. A.J. (Adrie) Visscher (docent – EDE)
12.30	13.15	Internal meeting and lunch	Closed
13.15	13.45	<b>Open hour</b>	Registration mandatory
13.45	14.30	<b>Education Committee</b>	<b>Advisory</b> Dr. M.R.M. (Martina) Meelissen (voorzitter) M.S. (Mascha) Assen (student-lid) Dr. M.D. (Maaïke) Endedijk (docent-lid) B. (Brenda) de Laat (student-lid) Dr. A.J. (Ard) Lazonder (docent-lid) M.A.B. (Meike) Overkamp (student-lid) Dr.ir. H.J. (Hans) Vos (docent-lid) E.T.M. (Eline) Wientjens (student-lid)
14.30	15.15	<b>Examination Board</b>	Dr. M.E. (Marcel) Pieterse (voorzitter) Dr. J. (Judith) ter Vrugte (lid) Drs. T.L.C. (Tom) Mulder (procesbegeleider)
15.15	15.45	Preparation final meeting management	Closed
15.45	16.30	<b>Final meeting management</b>	Prof.dr. A.J.M. (Ton) de Jong (opleidingshoogleraar) Drs. Y.C.H. (Yvonne) Luyten-de Thouars (studieadviseur/ onderwijscoördinator) J.M.J. (Jan) Nelissen (onderwijscoördinator) Prof. dr. T.A.J. (Theo) Toonen (decaan)
16.30	17.45	Discussing assessment	Closed
17.45	18.00	<b>Oral presentation</b>	Public



## APPENDIX 6: THESES AND DOCUMENTS STUDIED BY THE PANEL

Prior to the site visit, the panel studied the theses of the students with the following student numbers:

1090216	1338412	1384996
0137502	1527681	1143387
1427326	1407988	1568833
1075357	0086401	1010700
0163910	1326694	1580345

During the site visit, the panel studied, among other things, the following documents (partly as hard copies, partly via the institute's electronic learning environment):

- Minutes and annual reports (last 3 years) of the Examination Board;
- Education and Examination Rules (including programme-specific appendices, and rules and regulations of the Examination Board);
- Minutes and annual reports (last 3 years) of the Education Advisory Committee;
- Literature, course manuals and examples of exams and/or assignments of the following courses:
  - Research Proposal
  - Trending Topics in Educational Science and Technology
  - Learning and Instruction
  - Regulation and Facilitation of Workplace Learning
  - Team Learning at Work
  - Designing Learning & Performance Support
  - Teacher Learning and Development
- Results of the student course evaluations (most recent versions);
- Rules on fraud and academic hitchhiking;
- EST programme Assessment Plan.