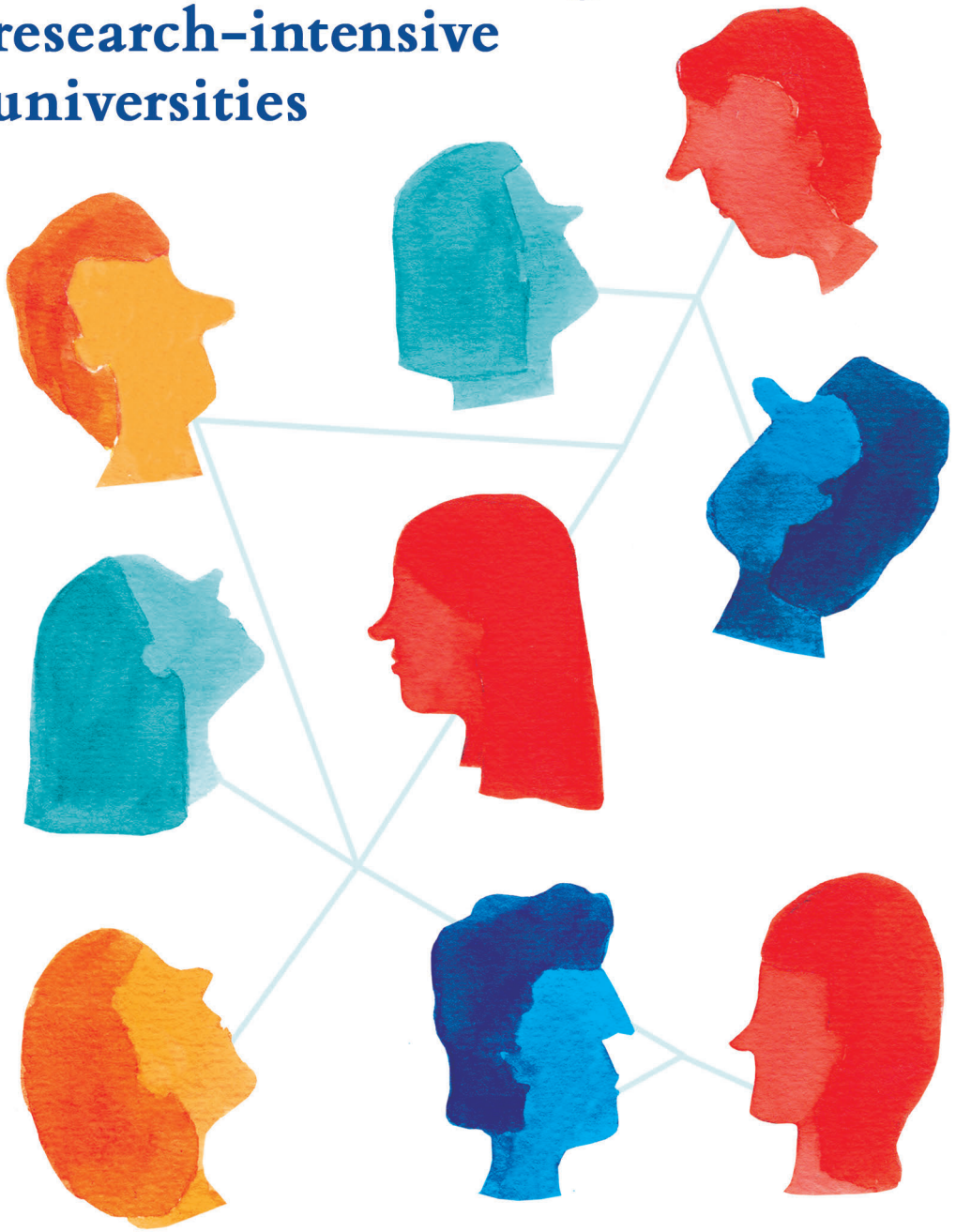
Developing expertise in leadership for educational change in research-intensive universities



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Developing expertise in leadership for educational change in research-intensive universities

Ontwikkelen van expertise in het leiden van onderwijsveranderingen in onderzoeksuniversiteiten

(met een samenvatting in het Nederlands)

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te Leeuwarden

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Chapter 1

Introduction

Introduction

A quarter of a century ago, Utrecht University's student satisfaction about education was very low and the university decided to start a concerted effort to improve its education provision. There was low-hanging fruit to be picked in improving facilities, but the main actions pertained to strengthening teaching quality (Keesen et al., 1996; Pilot, 2007; van de Zande & Halma, 2015). A major policy change in 1996 was to require a teaching qualification of all academics with a teaching role. Just as a PhD counts as a start qualification for research, a teaching qualification was introduced as a start qualification for teaching. Also, senior qualifications for teaching as well as research were developed. From that time onwards, to be appointed as a full professor, candidates needed to have both senior qualifications, for an associate professorship one senior qualification and both junior qualifications were required.

Another major change was the introduction at Utrecht University (UU) of the Utrecht Educational Model (*UU Educational Model*) in 2002, as an implementation of the Bologna agreement about the European Higher Education Area (*Website European Higher Education Area*). At that time, deans of the science faculties of Utrecht University recognised that introducing this new educational model would require of their senior staff even more than what they learned when working towards a senior teaching qualification. The senior academics who would be asked to lead the change process towards the new educational model, in their view, needed sound knowledge of the state of the art in higher education research and of leadership of educational change. These senior academics often had a leadership position at the middle level, for example as programme director or coordinator of an extensive combination of courses, or they had acquired an informal role as initiator of educational innovations. To support the professional development of these senior academics, the Educational Leadership Programme was created in 1999-2000. An initial design of the programme, developed by a small team of educational developers, representatives of the science faculties and the university's central administration, was sent to four expert reviewers outside the university. Although they appreciated the design, they felt the programme had been planned in a too detailed way. They recommended unanimously to respect the prior knowledge and experience of the participants as advanced learners and thus plan the programme only after the prior knowledge and learning needs of the future participants would have been collected. The programme designers indeed then postponed part of the planning.

A first cohort of science faculty members started the programme in 2000. The second cohort of participants consisted of academics from the humanities and social sciences

faculties, and the third and next cohorts had participants from the whole university. At the moment of writing this thesis, the programme has run 15 times for Utrecht University staff and since 2010 it has also been provided 13 times for staff in other research-intensive universities. Some of these universities, after a first provision by facilitators from the UU, developed their own version of the programme. Variations were developed for a Dutch university of applied sciences and one for a London university.

The programme aims at supporting the participants in building knowledge of and experience with challenging change processes leading to improvement of the quality of curriculum, learning environments and student learning in the ever-changing context of higher education. Also, a programme goal was to stimulate participants to create a network of like-minded colleagues. Following the advice of the expert reviewers, the programme is essentially a combination of teaching and learning activities, in which the programme facilitators insert content from state-of-the-art topics in higher education research and research into change processes, based on the interests and projects of the participants. The main activities in the programme are a series of 24-hour residential meetings with guest lecturers, a study tour to foreign universities and an innovative project which is carried out in daily practice. A more extensive description of the programme can be found in Chapters 2 and 3 of this thesis.

The last activity in the programme is a meeting of the participants with the university's Rector Magnificus, in which some cohorts presented their change projects, others engaged with the Rector in discussions, asked the Rector questions about university policies and innovations or presented a manifesto. The participants often asked about possible next professional development steps that might be offered for themselves and other senior academics, and how the teaching – research nexus could become more balanced. As a result, in 2011 a teaching fellow programme was started. Alumni of the Educational Leadership Programme could be nominated by the dean of their faculty if they had a project plan for a faculty-wide innovation of education. When selected for participation, they would get a small grant and two years one day a week time to develop and carry out the innovation project. They were supported through meetings of all fellows and supervision from the university's Centre for Academic Teaching. In 2017 the teaching fellow programme was replaced by the Senior Fellow programme, which offered selected academics the same opportunities as the Teaching Fellow programme, but for a four year period. On top of that, the senior fellows had the prospect of a position as full professor based on their educational merit after their senior fellowship.

Utrecht University was not the only university at which the quality of education has become more important in the last decades. Universities all over the world have recognised that the context of university education was changing, and that their education provision had to change accordingly. In 2005, professor Graham Gibbs of the University of Oxford (UK) initiated a worldwide network of research intensive universities, including Utrecht University, which systematically invested in the quality of education: the Network for the Enhancement of Teaching and Learning in research-intensive universities. Members of this network met regularly to exchange ideas and produced a joint book focusing on initiatives and policies to strengthen teaching and learning at the member institutions (Stensaker, Bilbow, et al., 2017). In 2017, the League of European Research Universities (LERU), of which Utrecht University is also a member, published a report describing the need member universities felt to develop strategies to improve the education experience of students. The report addressed the necessity of recognising and rewarding leadership for education and educational change. Several examples were given of how member universities were already moving in that direction (Fung et al., 2017). In the LERU report was emphasised that for achieving excellence in education, professional development for educational leaders is essential (Fung et al., 2017, p.8, pt 27), but without describing what this professional development should consist of. Few descriptions of such professional development opportunities have been published elsewhere and systematic evaluations of the effectiveness of these opportunities are lacking. This shows it is time for a thorough study of such professional development initiatives. In this thesis we will investigate professional development opportunities for educational leaders and the extent to which these opportunities support educational leaders in developing expertise in leading educational change, in the context of research-intensive universities. We focus specifically on the Educational Leadership Programme at Utrecht University.

In the next section we introduce the target group, senior academics in educational leadership roles, by drawing attention to their position, their tasks and the competencies they need. Then we will introduce the conceptual framework we used and describe the outline of the thesis.

Senior academics in educational leadership roles

Typically, the most direct influence on educational change lies with leaders with a responsibility for education in positions at the middle level, for example associate deans (Floyd & Preston, 2018), heads of studies or programme directors (Milburn, 2010). They

often don't have formal power (Floyd & Preston, 2018), which makes their role in leading educational change complex and challenging (Floyd & Preston, 2018; Milburn, 2010; Preston & Floyd, 2016; Vilkinas & Ladyshewsky, 2012). We will use the term "educational leaders" for leaders with a responsibility for the quality of teaching and learning in both formal and informal positions, and "leaders of educational change" for academics in both formal and informal positions who are conducting a substantial educational change or innovation project.

In several studies educational leaders' tasks have been investigated (e.g., Fung et al., 2017; Gibbs et al., 2008; Milburn, 2010; Vilkinas & Ladyshewsky, 2012; Wolverton et al., 2005). For example, Gibbs et al. (2009, p. 11) list a series of activities performed by educational leaders who work in departments known for their excellent education: "establish credibility and trust, identify teaching problems and turning them into opportunities, articulate a convincing rationale for change, devolve leadership, build communities of practice, recognise and reward excellent teaching and teaching development, market the department as a teaching success, support change and innovation, and involve students". A useful framework for competencies educational leaders need to have was provided by Scott et al. (2008, pp. 18-19). They wrote that, apart from personal, interpersonal, and cognitive capabilities, educational leaders need both generic leadership competencies, such as "being able to establish a collegial working environment", as well as role-specific competencies, such as "being able to successfully implement new initiatives" and "being able to produce significant improvements in learning and teaching quality" (examples from Scott et al., 2008, p. 60). In other words, educational leaders should be knowledgeable about educational topics relevant for learning and teaching quality, such as curriculum building, supporting student learning, developing teaching and assessment and characteristics of productive learning environments (Eraut, 1996; Fullan, 2002; Pearson & Trevitt, 2005; Quinlan, 2014) and knowledgeable about and competent in leadership and change processes (Davis, 1998; Fullan, 2002; Fullan & Scott, 2009; Gibbs et al., 2008; Pearson & Trevitt, 2005).

Conceptual framework

In the previous section we described research on educational leaders' tasks, skills and competencies. For a better understanding of skills and competencies, we chose the conceptual framework of expertise and expertise development as basis for the investigation, because the concept of expertise is better defined than the concept of competency. We will first present the conceptual framework of expertise and the

development of expertise, then look at what is known about effective designs for professional development of educational leaders, and about evaluation strategies. This leads to detailing the aim of the thesis into sub-questions and an outline of the thesis including an overview of the research methods used.

Expertise

Educational leaders often are chosen from the academics within the department, who are experts in their discipline. Expertise research has found that high-level proficiency in one domain hardly transfers to high-level proficiency in another domain, even when the domains seem, intuitively, very similar (Feltovich et al., 2006). Although they may be experts within their own disciplines, beginning educational leaders thus cannot be expected to be also experts in the area of enhancing the education provision in a programme, a faculty or university.

Characteristic for the domain of leading educational change is that the context and tasks are ever-changing and rather unpredictable. Therefore, it is important for educational leaders to be flexible and able to adapt to new situations and demands. In research on expertise a distinction is made between routine experts, who have "consistent high levels of task performance on tasks are representative for the domain" (Ericsson, 2006a), and adaptive experts, who are also be able to deal with change (Hatano & Inagaki, 1986). Adaptive experts find highly feasible solutions for unfamiliar problems (Barnett & Koslowski, 2002; Bohle Carbonell et al., 2014). The skill to act adequately and with high speed in unfamiliar situations, requires flexible use of domain knowledge, an understanding of the principles behind the solutions and an understanding of how to generalise to other unfamiliar problems (Chi, 2011, p. 31) and contexts (Bohle Carbonell et al., 2014, p. 20). Routine experts would understand *how* to execute tasks in their domain with high levels of efficiency and effectivity. Adaptive experts would additionally understand *why* and *when* a routine would be effective and efficient in a certain domain (Bohle Carbonell et al., 2014; Chi, 2011). A review by Bohle Carbonell and her colleagues (2014) showed that, compared with routine experts, adaptive experts' knowledge is more declarative than contextual. Thus, educational leaders would need more declarative knowledge of leading educational change to become adaptive experts who are able to adapt education provision in the ever-changing context of higher education.

For expertise development, experience and deliberate practice are assumed to be the most important factors (Ericsson, 2006a). According to Ericsson, experience, "extended engagement in domain-related activities" (2006a, p. 690) is necessary to achieve expertise, although research outcomes show there is "often not a significant correlation

between the amount of experience or professional training, and performance" (Ericsson, 2014, p. 184). Ericsson (2014, p. 184) found that what is needed to achieve continued improvement is not only experience, but also deliberate practice, which was defined based on research with musicians, who, with instructions and feedback by a teacher, involve in challenging training activities focused on improvement. Several other suggestions for expertise development and the favourable context for that development are found in the literature. Hatano and Inagaki (1986, p. 33) recommend to train with a variety of unpredictable situations in a learning environment in which it is encouraged to experiment and make errors, but Ericsson (2014, p. 191) argues that it is difficult to design a series of increasingly difficult exercises to help professionals develop expertise in daily practice. Chi (2011, p. 32) observes that adaptive experts resemble efficient learners, who reflect on their skills, try to explain to themselves why a solution would have worked, discover the characteristics of a problem and a situation, and in this way accumulate expertise in solving other problems. In addition, Bohle Carbonell et al. (2014, p. 25) concluded that management support is important for developing adaptive expertise, because management can allow professionals to make errors and provide opportunities for feedback and reflection, for example in communities of learning (Wetzel et al., 2015).

Currently the amount and type of deliberate practice needed for developing professional expertise is debated (Ericsson, 2016, 2019; Ericsson & Harwell, 2019; Macnamara et al., 2016; Macnamara et al., 2014). In their meta-analysis, Macnamara et al. (2014) found little support for the need of deliberate practice in education and professions. They found that deliberate practice only accounts for one percent of the variation in expertise development of professionals, possibly, they propose, because in these domains deliberate practice is less well defined. In their reply, Ericsson and Harwell (2019) argued that Macnamara and colleagues used too wide a definition of deliberate practice. They restated that the term deliberate practice was originally based on research with musicians, and that this type of practice hardly happens in other domains. Ericsson and Harwell (2019) identified instead *purposeful practice*, similarly defined as deliberate practice but without a teacher giving feedback, and *structured practice*, defined as engagement in group activities designed by a teacher. In structured practice, activities are not specially designed for improvement of an individuals' performance (Ericsson & Harwell, 2019). In the context of this thesis, the professional development programmes for educational leaders are probably best considered as structured practice rather than deliberate practice.

Effective professional development for educational leaders

We understand effective professional development as professional development in which participants, facilitators and the organisation can achieve their aims. Within the

domain of leading educational change in research-intensive universities, that means that participants become better leaders of educational change through professional development activities. In the case of Utrecht University, effective professional development would need to support participating leaders to develop their expertise in leading educational change.

In the past, competence in leading educational change was at most universities something acquired on the job, through learning by doing. Sometimes academics could ask the help of a mentor or become a member of a support group, but most of the time no support was available (Eraut, 2000; Hart et al., 2005; Holloway, 2004; Marshall et al., 2000; Raines & Alberg, 2003). In the last 20 years this situation has changed and more professional development opportunities have been created (e.g. in Canada, Fields et al., 2019; in Europe, Fung et al., 2017; in the USA, Kalivoda & Jackson, 2003; in Australia, Ladyshewsky & Flavell, 2012).

There has been research into characteristics of effective professional development programmes for academics in teaching roles. Desimone (2009) found five core features of effective teacher professional development, that are related to teachers changing their behaviour as an effect of the training. These features are: (1) content focus, (2) active learning, (3) coherence, (4) duration, and (5) collective participation. Content focus refers to whether the content of a programme is related to the ultimate result the participants must achieve. Active learning refers to inviting participants to be actively involved in discussions, observations, and giving feedback, instead of just listening. Coherence is necessary between the programme and the prior knowledge and beliefs of the participants, and between the policies and strategies of the organisation and what happens in the programme. To achieve intellectual change, a programme needs to be of sufficient duration, which would be at least about 20 hours in a period of a semester. Collective participation of colleagues of the same organisation could establish interaction and peer-learning, create a network of like-minded colleagues that continues even after the programme ends. Desimone's (2009) proposition is that these features can be recognised in descriptions of successful programmes.

Considering expertise development as a form of professional development, two main factors are experience and deliberate practice (Ericsson, 2006a). These two factors should be recognisable in the core features (Desimone, 2009) and indeed they are. For example, in order to increase experience, defined as "extended engagement in domain-related activities" (Ericsson, 2006a), content focus and active learning are visible. Interestingly, two elements important for expertise development are not mentioned explicitly in the five core features: reflection and feedback.

Evaluating professional development programmes

A framework used world-wide to evaluate outcomes of professional development is that of Kirkpatrick and Kirkpatrick (2006). Kirkpatrick and Kirkpatrick's four levels of outcomes are Reaction, Learning, Behaviour and Results. Level 1, reaction, refers to participant's positive and negative comments on the training. At level 2, learning, what participants learned as a result of the programme is evaluated. Level 3, behaviour, refers to the extent to which participants used what they learned in their daily practice and if they changed their behaviour. At level 4, results, the extent to which the organisation's outcomes have changed in the desired direction is studied. Kirkpatrick and Kirkpatrick offer a range of possible evaluation methods to collect data for all four levels (Kirkpatrick & Kirkpatrick, 2007).

Considering the four-level model, it is clear that in most research outcomes of professional development programmes have been evaluated at levels 1 and 2 only and at level 2 usually only through the participants' perceptions of the programme (Reio et al., 2017). This was also true for the evaluation of the UU Educational Leadership Programme until 2004. The main form of evaluation was a questionnaire for participants after each session and a focus group evaluation at the end of the programme, both including mainly level 1 and level 2 outcomes. In the practice of evaluation of the UU programme, these outcomes were discussed between the programme facilitators and the governing board of the programme, a group of respected peers from each of the UU faculties, in order to adapt the programme if necessary. Since the beginning, the programme facilitators had been looking for possible ways to improve the programme. Examples of changes were: adding reflection tasks midway and at the end of the programme and continually and systematically refining these and other tasks to achieve the appropriate results; designing and redesigning learning activities regarding the educational innovation projects; challenging participants to write an educational vision and refining the guiding instructions for conceptualizing and formulating this vision. A systematic and thorough evaluation of the UU programme, beginning with collecting information on outcomes at the other levels, would add significantly to our knowledge of the success of the programme and a start of such an evaluation is reported in chapter 3.

The current thesis

In this thesis we focus on professional development programmes for educational leaders in the context of research-intensive universities and investigate the extent to which these activities support educational leaders in developing expertise in leading educational

change. Since Utrecht University initiated a professional development programme focused on leadership of educational change 20 years ago, other universities have developed their own approaches. In chapter 2 a number of these approaches will be compared. The questions we answer in chapter 2 are:

- What are the main formats of professional development for educational leadership in research-intensive universities?
- What are the perceived gains and challenges of these trajectories?

We chose a multiple case study approach for this study and invited members of the Network for the Enhancement of Teaching and Learning in research-intensive universities (NETL) to participate. For five universities, a portrait was made of the trajectory on offer. These portraits were based on interviews and document analysis, and were member checked. We then compared the five trajectories in a cross-case analysis using the five core features of (Desimone, 2009) as a framework.

In the research described in subsequent chapters we focus specifically on the Educational Leadership Programme of Utrecht University. We performed a thorough evaluation of the Educational Leadership Programme of Utrecht University, starting with collecting information on outcomes at Kirkpatrick's levels 1, 3 and 4 (Kirkpatrick & Kirkpatrick, 2006). It appeared from session evaluations that participants were satisfied with the design and effects of the programme. Similarly, members of the senior management of faculties showed their positive attitude towards the programme in the meetings of the governing board of the programme, but a systematic evaluation had not been carried out until 2004. Chapter 3 fills this gap by providing an extensive description of the design of the programme and a report on the systematic evaluation of the cohorts 2000 until 2008. The questions central in chapter 3 are:

- What effects of the Educational Leadership Programme are perceived by the participants?
- How do former programme participants evaluate the design of the programme and which components are assessed as especially effective?
- How do supervisors of participants (i.e. vice-deans, educational directors or educational managers, and participant's full professors) evaluate the results and the design of the programme?

For this study we used qualitative and quantitative methods. A questionnaire was developed for former participants, and a study was carried out into the views of

participants' supervisors (i.e. vice-deans, educational directors or educational managers, and participant's full professors). The questionnaire for participants was based on interviews with four participants. The first part had 35 statements about perceived effects of participating in the programme. The second part contained detailed questions about the design elements of the programme. Interviews were held with participants' supervisors to evaluate the outcomes and the design of the programme. These interviews were followed up with a questionnaire. In chapter 3, we used a set of four criteria to analyse the Utrecht Educational Leadership programme, covering combinations of the Desimone five core features (Desimone, 2009, see above). Our first criterion was that effective professional development is relevant for participants and allows them to influence content and procedures. Three core features can be identified in this criterion: content focus, active learning and coherence between the programme, and the prior knowledge and beliefs of the participants. Our second criterion in chapter 3 was that an effective programme provides a direct relation between theory (presented in the meetings) and practice (conducting ongoing change processes); here we recognise the Desimone features of content focus and coherence between the programme and the policies and strategies of the organisation. The third criterion was that effective programmes provide opportunities to learn from and with others, referring to the features active learning and collective participation. Finally, our fourth criterion in chapter 3 was that a programme should be realistic in terms of length (a year or more), time, and resources for participants, in which the core feature duration can be distinguished. All five core features are addressed by the four criteria we used in chapter 3.

After this evaluation, it was still unclear how expertise could be measured that educational leaders need to be able to enhance the provision of education. As mentioned before, educational leaders would need domain knowledge of their new domain of leading educational change and be able to use that knowledge in the ever-changing context of higher education. They need adaptive expertise, the expertise to know why and when to use which aspect of their domain knowledge. In order to measure the level of adaptive expertise educational leaders have in these domains, we created an instrument, the Measuring Expertise in Designing Educational Change (MEDEC) instrument. We operationalised the expertise educational leaders need to be able to enhance education provision and chose to focus the instrument on curriculum design expertise and expertise in designing a plan for an educational change project. Chapter 4 reports on the development of this instrument that includes performing a design task for a new education programme and the process of implementation. The question in that study is:

- To what extent is the MEDEC instrument valid and reliable in assessing the level of adaptive expertise of educational leaders in the domains of curriculum design and planning of educational change?

An exploratory approach based on qualitative data analysis methods was used to develop a task, a rubric and a scoring procedure. Reliability and validity were assessed with qualitative and quantitative methods.

In chapter 5 we studied participant's expertise development in the domain of leading educational change as a result of participating in the UU Educational Leadership Programme. This study gave us information about outcomes at Kirkpatrick's level 2, learning. The question answered in this study is:

- To what extent does this professional development programme for middle level educational leaders in research-intensive universities contribute to the participants' adaptive expertise in the area of curriculum design and planning of educational change?

In this final study, the MEDEC instrument was administered before and after participants followed the Educational Leadership Programme. Participants came from five Dutch universities and were participating in four cohorts between 2014 and 2016. The post-test was extended with a questionnaire about perceived changes in domain knowledge and expertise and about context factors, and an interview was held with the participants about their approach to the design task they had to perform in the MEDEC instrument.

Chapter 2

Professional development for educational leadership

This chapter is based on: Grunefeld, H., Prins, F., van Tartwijk, J., van der Vaart, R., Loads, D., Turner, J., Mårtensson, K., Nilsen Gibbons, A. M., Harboe, T., Poder, K., & Wubbels, T. (2017). Faculty development for educational leadership. In B. Stensaker, G. T. Bilbow, L. Breslow, & R. van der Vaart (Eds.), *Strengthening Teaching and Learning in Research Universities: Strategies and initiatives for institutional change* (pp. 73-101). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-56499-9_4

Acknowledgement of author contributions: G, van T, van der V and W designed the study; G collected the data and wrote the portraits; L, T, M, NG, H, P and W provided information about the trajectory at their university, arranged the site visits and checked the portraits of their trajectories; G and van T analysed the portraits; G and van der V drafted the manuscript; G, P, van der V and van T participated in finalising the manuscript; van T, P and W supervised the study.

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Introduction

At most research-intensive universities, academic careers are largely driven and determined by success in the domain of research, and staff members in leadership positions at these universities typically possess strong track records in research (Goodall, 2006; Goodall et al., 2014; Spendlove, 2007). However, these universities are increasingly recognising that academic leadership must be provided not only in research but also in education (e.g. LERU, 2016). Educational leadership requires specific expertise, which, in many research-intensive universities, requires further development for many holding leadership positions. For this reason, universities committed to the enhancement of teaching and learning offer professional development aimed at developing expertise in educational leadership (Fung et al., 2017).

This chapter portrays and compares five examples of professional development trajectories for educational leadership in research-intensive universities, focusing on the nature and effects of the trajectories. We first discuss the concept of 'educational leadership' as an important component of academic leadership in research-intensive environments. We then describe and compare professional development trajectories for educational leadership in five research-intensive institutions: the universities of Edinburgh, Lund, Oslo, Copenhagen and Utrecht. The final sections summarise and discuss the main characteristics and perceived gains and challenges of the professional development trajectories within these five universities.

What is educational leadership?

We refer to leaders in formal positions in universities with responsibility for teaching or research as academic leaders, and to academics in both formal and informal positions with responsibility for leading education as educational leaders (cf. Grunefeld et al., 2015, see chapter 3). Educational leadership is thus not the equivalent of educational management, which encompasses formal positions for resource allocation, logistics, administration, and so on (cf. Bolden et al., 2012). Capably taking the lead in education in research-intensive universities requires a thorough understanding of the typical mix of qualities (in knowledge and research, education, human capital and potential for public service) of a research-intensive university, because educational leaders must possess the capacity to fully mobilise these qualities to enhance the quality of education (Bryman, 2007; Gibbs et al., 2008; Milburn, 2010; Raines & Alberg, 2003; Scott et al., 2008; Vilkinas & Ladyshewsky, 2012; Wolverton et al., 2005). Educational leadership

also requires a thorough awareness of context (such as the development of the field in the wider context of academia and the labour market, or the social impact of science) and of key insights from the educational sciences (Eraut, 2000; Knight & Trowler, 2001), people skills (Spendlove, 2007) and personal characteristics, such as self-control and resilience (Goodall, 2006). Competence in educational leadership is revealed not only through the quality of the design and deliverance of teaching activities and curricula and in their evaluation and analyses but also in the capacity to motivate and involve others (Morrison, 2013). Professional development programmes and courses for educational leadership typically combine these elements of educational competence and leadership skills, in a mix that differs between universities. The expertise required for educational leadership is sometimes labelled the 'scholarship of educational leadership' (SoEL, see: Boyer et al., 1997/2016; Hubball et al., 2015).

The importance of educational leadership

Although many presume that excellent researchers will make excellent teachers, research has not revealed a significant relationship between an academic's research productivity and the quality of their teaching (Marsh & Hattie, 2002; Qamar uz Zaman, 2004). This implies that even in universities with strong reputations for research, attention must be given to teaching quality. The quality of educational leadership has been shown to be crucial for the quality of teaching in research-intensive universities (Gibbs et al., 2008, 2009). Gibbs and colleagues studied the impact of educational leadership in 11 research-intensive universities in eight countries. Nineteen case studies were undertaken to identify the role of leadership in creating and supporting excellent teaching. Educational leadership practices and approaches varied across these cases. In only two of these 19 cases was little evidence found of leadership playing a major role in creating teaching excellence. In all 17 other cases, leadership appeared important, and in many it was pivotal, according to Gibbs and colleagues (2009, p. 2).

Educational leadership should be provided at various levels of an organisation (Bendermacher et al., 2017). Educational leadership within the schools or departments of a university is necessary for bottom-up innovation and improvement of the quality of teaching and learning practices. Moreover, educational leaders in academic departments may be indispensable as change agents, when universities wish to implement strategic institutional policies to raise the quality of teaching and learning (Scott et al., 2008). A study by Mårtensson and Roxå (2016) reveals that leadership in research-intensive universities is enacted in various ways and that educational leadership does contribute to educational development within a faculty. Educational leadership at the university level can stimulate university-wide discussions on quality teaching and stimulate the

development of a culture in which education is accepted as the "core business" of the university (Bendermacher et al., 2017; Mårtensson & Roxå, 2016).

Professional development for educational leadership

Universities that do not offer professional development for educational leadership may assume that academics in leadership positions will simply learn the necessary skills on the job and that this experience, as well as the leadership qualities that staff members demonstrate via research teams or administration, will "automatically" transfer to educational leadership. Research shows, however, that expertise is task and domain specific and that little transfer occurs from high-level proficiency in one domain to proficiency in other domains, even when the domains are very similar (Feltovich et al., 2006). It cannot be expected, therefore, that research or leadership expertise in any academic discipline, which likely includes analytical skills, knowledge of the discipline's deep structure, writing skills and skills in prioritising, self-management and the like, will automatically 'transfer' into educational leadership qualities, when academics land in such positions.

Experience is indeed important for the development of expertise; however, experience alone is not sufficient (Ericsson, 2006a). After an acceptable and stable level of performance has been reached in the first years of practice, for many, it is enough to maintain this level with minimal effort for years or even decades (Ericsson, 2006a, p. 691). This explains the weak correlation of experience and job performance beyond the first years of practice, in both low- and high-complexity jobs (McDaniel et al., 1988). To develop educational leadership expertise, following Ericsson (2006a), individuals must deliberately and systematically improve their performance in relevant tasks through seeking suitable challenges and systematically analysing their own performance, assisted by a coach or mentor. A coach or mentor has an important role in providing feedback on performance and identifying suitable tasks (Ericsson, 2006a, p. 692). Ericsson refers to this process as deliberate practice. Other authors instead use the concept reflection when describing the cyclic process of performance, evaluation, analysis and planning for improved performance (Hatton & Smith, 1995; Korthagen et al., 2001; Mann et al., 2009; Schön, 1983/1991), but in all of these publications, the importance of the systematic and deliberate improvement of performance is emphasised as crucial for continuous professional development and expert performance. From this literature, it can be concluded that if research-intensive universities with strong reputations in research are not satisfied with simply an acceptable and stable level of performance in teaching, they must invest in professional development for teaching and educational leadership.

Educational leadership development in research-intensive universities

Although the medical education literature describes several leadership development trajectories (see Steinert et al., 2012), descriptions and evaluations of such programmes in research-intensive universities are scarce. Literature in the area of higher education in general concerns, for example, activities that educational leaders should engage in to achieve excellent teaching (Gibbs, 2009), qualities and competencies educational leaders should possess (Scott et al., 2008) and requirements and preferences that academic leaders have regarding professional development (Scott et al., 2008).

In this chapter, we portray and compare five trajectories for educational leaders that are offered by research-intensive universities in northwest Europe: Utrecht University, Lund University, the University of Oslo, the University of Copenhagen and the University of Edinburgh. The descriptions of the trajectories and the comparison are led by the following primary questions:

1. What are the main formats of professional development for educational leadership in research-intensive universities?
2. What are the perceived gains and challenges of the five trajectories?

Methods

The five trajectories were identified using a short survey to identify interesting practices amongst members of the Network for the Enhancement of Teaching and Learning (NETL), a small, teaching-focused worldwide network of research-intensive universities. More information on NETL and its history can be found in the book by Stensaker, Bilbow, et al. (2017, pp. v-x). Four of the selected practices are substantial dedicated programmes for groups of participants, while a fifth involves a substantial individual approach.

Of each trajectory, a portrait was made. In the portraits, we describe (1) the history and aims of the trajectories, (2) the characteristics of their content and format and (3) evaluations and indications of the effectiveness of the trajectories. The portraits were written based on documentation about each trajectory and site visits to clarify and add information. At each university, a liaison provided documentation about their trajectory, insofar as documentation was available. Based on these documents and a first telephone contact with the liaison, a draft portrait was written, and questions were formulated

regarding missing information. One-day site visits were organised, wherein designers, facilitators and participants of the trajectories were interviewed by the first author, to verify her first impressions in the draft portrait, collect answers to the questions and add information. A detailed overview of obtained documentation, interview schedule and schedule of a site visit (Oslo) can be found in Appendix A. All interviews were recorded, but the recording was only used when interview notes were unclear. No interviews were held at Utrecht University, because the first author herself was one of the designers and facilitators of this trajectory, and an extensive evaluation amongst participants was available (Grunefeld et al., 2015, see chapter 3). The draft portraits were completed immediately after the site visits and member checked with the liaison(s) at the universities. Their comments and corrections were addressed, until the liaisons were satisfied with the portraits of their trajectories. The results of the comparison were also shared with the liaisons to confirm that they were satisfied with how their trajectories were described.

To support the comparative analysis, a matrix was constructed (see Appendix B), with a column for each portrait. The description of the Utrecht programme was adopted as the basis, and cells in the Utrecht column were filled with sentences or parts of sentences that contained specific elements of the programme design. The information from the other portraits was then added to the corresponding rows, and the rows were labelled based on the contents of the cells.

Utrecht University

History and aims

Utrecht University's *Onderwijskundig leiderschap* (Educational Leadership) Programme was developed as of 1999, in the context of the university's policy to systematically invest in the quality of university education, including the quality of teaching. Amongst the other measures taken were the introduction of teaching qualifications for all academic instructors and a career structure, in which esteem for teaching and research was more balanced (Keesen et al., 1996; Stensaker, van der Vaart, et al., 2017). The central level of the university supported the development of the programme, but the initiative was driven by the deans of the science faculties. The programme was designed by a small group comprising educational developers, representatives of the central administrative level of the university and of the science faculties. The deans of the science faculties anticipated major curriculum changes and wanted their senior academics to have sound knowledge of and experience with current higher education pedagogy and leading

curriculum change processes, as well as to build a network with like-minded colleagues. These became the aims of the programme (Ramaekers, 2002). After the first and second editions of the programme, participants were welcomed from throughout the university. Between 2000 and 2016, the programme was offered 13 times, involving about 200 participants in total. Time investment for participants throughout the 14 months of the course is about 200 hours. The two facilitators of the programme are always a professor in educational sciences and an educational developer.

The programme is tailored for academics with leadership roles in teaching: programme leaders, programme coordinators, directors of studies and leaders of curriculum change processes. From the start, the idea was that the educational leadership programme should increase the status of teaching at the university and that academics would regard participation as an honour and a reward for their endeavours to improve teaching and learning. The governing board of the programme (named the Centre of Excellence in University Teaching, or CEUT), which consists of respected professors from all faculties, selects around 16 participants per cohort from a larger group nominated by the deans of the faculties, informed by interviews by facilitators with nominees. The governing board of the programme also monitors the quality of the programme and the development and progress of participants.

Characteristics

The backbone of the programme comprises a series of eight 24-hour off-campus meetings in a conference hotel, at approximately six-week intervals, as well as a final day. The thematic parts of the meetings align with the overall theme of leadership for educational change. Experts in the area of change processes and leadership, as well as of higher education pedagogy, are invited to share their knowledge. The programme is flexible. For each cohort, the topics can differ, as facilitators respond to the needs and questions of participants. Approximately half of the time is reserved for higher education pedagogy topics. Participants are stimulated to adopt active roles in discussions with experts and other participants and to apply this knowledge in their curriculum development projects. Literature is made available via books that can be ordered. An integral part of the programme is a one-week study tour to universities abroad, aimed at placing developments at the home institution in perspective and developing ideas and insights that can be implemented there.

Each participant conducts a curriculum development project in her or his own faculty, department or school. The project should result in a substantial change and be felt as a challenge for the participant, evoking requests and questions for the thematic part of

the programme. The participant has a leading role in a project team within the faculty. Examples of projects include developing and implementing a new postgraduate degree programme, improving and implementing the assessment strategy in an undergraduate degree programme and internationalising the curriculum. Reflection on practice is organised in the peer coaching groups, where groups of six or fewer participants systematically reflect upon and discuss critical incidents that have occurred during the daily practice of group members. Midway through and at the conclusion of the programme, participants write reflections on their learning gains and the results of their projects.

The off-campus meetings, study trip and peer coaching groups provide many opportunities for establishing networks and a community of educational leaders. A yearly dinner meeting for alumni is supported by the university to help in maintaining contacts. Each participant who completes the programme receives a certificate of participation.

Evaluation

Every session of Utrecht University's educational leadership programme has been evaluated by participants with a short questionnaire. Furthermore, a study of the design and effects of the programme (Grunefeld et al., 2015, see chapter 3) was conducted, using a survey amongst programme alumni and interviews with participants' supervisors (i.e. vice-deans, educational directors or educational managers and full professors), to establish the effects of the programme in terms of personal development, teaching practice, network and career, as well as to pinpoint the components considered particularly effective for the development of leadership qualities. The alumni survey was sent to 117 participants of eight cohorts, with a response of 66%. Interviews were held with 20 supervisors, all responsible for nominating or sponsoring participants of the programme.

We summarise the results reported by Grunefeld et al. (2015, see chapter 3). The participants themselves report strong effects of the programme on the development of their knowledge of education and educational change, on the range of activities they are involved in and on the intensity and size of their networks. The programme helped them to develop a broader vision on learning and teaching and to gain an improved overview of what occurs at both Utrecht University and higher education institutions more broadly. They also report having a better overview of developments in education. Participants also report having changed their teaching practices and becoming more involved in curriculum development projects and educational coordination tasks. About

half of the participants report maintaining regular contact with other participants from their cohort of the leadership programme or with other former participants, even long after the programme's conclusion. These effects were recognised by their supervisors. They regard the alumni of the educational leadership programme as colleagues who possess useful knowledge of learning, teaching and curriculum development and as leaders of educational innovation. The innovative projects participants engaged in during the programme were considered successful and were followed up with other innovative activities. The supervisors who nominated the participants also mention that former participants have adopted more formal leadership tasks in education. The proportion of former educational leadership programme participants in positions as director of education of undergraduate or graduate programmes has grown to 50%. Since 2014, it has been a university strategy to recruit—where possible—new directors of education from the pool of alumni of the CEUT educational leadership course.

Former participants regard the opportunity to discuss and exchange experiences with and learn from fellow participants as the most formative element of the course; second are both the study tour abroad and the input by experts during the thematic meetings. The supervisors consider the selective nature of the programme and its connectedness to daily work (through curriculum projects) the most valuable characteristics.

Lund University

History and aims

The Lund University programme for educational leaders was developed in 2008, as a logical next step for academics who had been involved in the many educational development activities in the university, as both participants and leaders. The academic developers had recognised the importance of leadership for the development of teaching and the importance of support for local leaders of teachers and teaching. The Centre for Educational Development designed the course *Ledning av pedagogisk verksamhet* (Leading Academic Teachers). The programme is aimed towards academics with formal leadership roles in programmes and departments: programme leaders, programme coordinators, directors of studies and heads of departments. It aims to support the participants in their work as leaders of educational development, to support the development of university teaching and, with that, of student learning and to collect and document pedagogical leaders' experiences, to substantiate further development. Between 2008 and 2016, the programme was offered five times, with 12 to 14 participants per group. Time investment for participants is about 200 hours. Two academic developers are the designers and facilitators of the programme.

Characteristics

An essential element of the programme is a leadership project. Participants volunteer for the programme, applying individually or in groups, with drafts of projects involving educational development and the improvement of student learning, as well as leadership concerns in their own professional context. These project plans are crucial during the facilitators' selection process. Examples of projects include the following: studying how quality assurance for a department's study programmes could be organised, leading the development of teaching in the department, reorganising a complete curriculum, investigating the role of programme leaders across a faculty, developing academic writing skills across a programme and developing a teaching quality system within a large department.

The group meets on campus, a half day per month, with two full days at the start, over a period of 10 months. Guests who are experienced educational leaders at the department, programme, faculty or national levels are invited to several of the meetings. They share their experiences, participate in discussions and then leave, allowing the participants time to reflect together on the leadership issues that were raised in relation to their own projects and daily practice. Participants work continuously on their projects and make several progress reports and discuss these with their peers. Both during the meetings and in the reports, the emphasis is on reflection upon the leadership projects. The facilitators provide participants with leadership literature that is relevant for their situations and projects. At the end of the year, participants write and peer review final scholarly reports of their projects and present the results in the group. The reports remain available for participants in the programme, as well as for future cohorts, to learn from the experiences of peers.

Characteristic for education development and teacher development at Lund, as well as for this leadership programme, is the emphasis on forming communities of practice (Wenger, 1999). The group of participants functions as a community of learners throughout the programme, in which confidential conversations and collegial support are possible. The programme supports educational leaders in developing their leadership expertise by providing opportunities for reflection and an inventory of examples of how problems can be solved, as well as scholarly literature on relevant leadership issues. About two-thirds of the participants received certificates for completing the programme upon presenting their final reports.

Evaluation
The programme was evaluated shortly after each course conclusion using either online evaluation forms with open questions or written, paper-based based evaluations. These evaluations had 80–90% completion rates.

The participants characterised the results of the programme as increased insight into (theoretical) leadership perspectives that are useful for practice. They gained both self-confidence in their leadership roles and recognition as trained leaders. Elements of the format of the programme perceived as particularly important include the role of the two facilitators (assessed as superb), the secure space and time for reflection the facilitators offered, the guest teachers and discussions in the group and the opportunity to compare experiences with the situations in other universities. It seems that the communities of practice are effective during the programme but not thereafter, except when participants are co-workers within the same department.

University of Oslo

History and aims
The University of Oslo *Utdanningslederprogrammet* (Study Leaders Programme) was developed in 2013 to support leaders of study programmes in their responsibilities for leading teaching and learning. The university wanted to offer an education-focused variant of the very successful Research Leadership Programme. Using information from several focus group meetings with study programme leaders and other stakeholders, as well as the format of the Research Leaders Programme, senior advisers of the central administration unit of the university (human resources) and external consultants (with leadership development expertise) developed the programme.

The programme aims to stimulate participants' efforts to build excellent educational environments and to facilitate good conditions for teaching and collaboration between the administration, students and various academic communities. Between 2013 and 2016, the programme was organised three times, with a total of 70 participants. The designers of the programme also facilitated it.

The programme is aimed at academics and administrative employees with leadership roles in programmes and departments: study leaders, degree programme leaders, degree programme coordinators and directors of studies. Two-thirds of the participants are academics, the others are administrative staff with key roles in education. The facilitators

create a group from lists of candidates provided by the faculties that is heterogeneous with respect to faculties and years of experience in academia. Actual leadership responsibility is required.

Characteristics

Just prior to the start, all participants are interviewed about their expectations and the format of the programme, as well as their current topics of interest and challenges. Participants are asked to write personal development plans. Examples of challenges include reducing drop-out in an undergraduate programme, the politics of a small degree programme in a large department and leadership/process issues concerning the restructuring, reorganisation or development of a study programme. The group meets three times during a period of six to nine months, in off-campus meetings of three, two and two days, respectively. For each meeting, some preparatory work is required. Time investment for participants is about 80 hours.

Characteristic for this programme is the focus on individual development as leaders and the roles of leaders in the development of the university organisation. To perform adequately, leaders must understand themselves, their roles and their influence on the environment. Therefore, the three central themes during the meetings are strategic leadership and visions for study programmes, implementation and management (moving from intention to action) and leadership in educational environments (how to encourage colleagues to perform better). Experienced educational leaders and guests, who offer models and theories that can be used by participants to reflect on their own experiences as leaders, introduce these themes during the sessions.

The reflection process is supported in core groups, or small reflective teams, which comprise a central feature of the design of the programme. The facilitators each lead such a team. Topics include participants' leadership roles, feedback participants have requested and received from colleagues and leadership in change processes. The reflective teams are intended to provide a safe learning environment and an opportunity to learn from each other's insights and experiences. At the end of the programme, all participants receive certificates.

Evaluation

All meetings are evaluated with face-to-face feedback from participants and an online questionnaire. About 90% of the participants from the most recent cohort find the programme useful for the development of their leadership competence. The participants report effects of their participation in the programme on their daily working

environments; they mention increased confidence and clarity as leaders, increased reflexivity and a greater awareness of their scope as leaders. They feel that they are more visible to faculty management and colleagues and that their qualities as leaders are recognised. Participants develop expertise as reflexive leaders. Some of the core groups still meet, and participants contact each other on education topics as desired. One inspiration day every year organised by the facilitators for participants of all cohorts, which stimulates contacts and further cooperation.

University of Copenhagen

History and aims

The University of Copenhagen's *LedelsesUdvikling for studieledere* (Leadership Development for Programme Directors) was developed in 2014, as a specific version of the university's general approach to leadership and leadership skills development. It was part of the university's strategy to invest in education and educational leadership. The programme was developed as a collaboration between the central HR department and the pedagogical units at the faculty level. The programme is aimed at programme directors, for example, heads of study, course coordinators, deputy heads of department for teaching and the like. These are typically leaders in middle management positions with a focus on leading teaching.

While the general leadership programme aims to develop personal leadership skills, the specific programme further aims to develop the knowledge and skills necessary to address challenges regarding leading teaching and curriculum design and development. A third aim is to develop a network of colleagues holding equivalent managerial positions. Between 2014 and 2016, the programme was organised four times, with a total of 50 participants. The designers also facilitate the programme. The programme is strongly recommended for all programme directors, as is the general programme for all other leaders. The HR department invites programme directors from all faculties to participate.

Characteristics

A preliminary interview is held with all participants to discuss the programme, their work and their expectations and desires for the content of the programme. An educational change project or innovation is selected for each participant, to link the programme to daily practice. Examples of these include curriculum change, quality enhancement projects and the development of pedagogical competences amongst staff.

Typical questions posed by participants revolve around ways to involve colleagues in the projects or to align university, faculty and programme strategies.

The programme consists of two two-day retreats, two one-day meetings, five workshops of 2–4 hours each and three additional three-hour learning group meetings interspersed between the meetings. The programme concludes with an optional two-day trip to a foreign university. Time investment for participants is around 80 session hours, plus the study trip, during a period of about six months.

Characteristic for this programme is the combination of leadership and curriculum topics. Personal leadership skills and receiving and reflecting upon 360-degree feedback are planned during the first meetings. Other leadership topics include the structure of a university organisation and leading and managing in a university setting. The education topics focus on curriculum design and development, and they align with relevant educational developments within the university. Guests from senior management and leadership positions are invited to share their experience as leaders and discuss university and faculty strategies, with a focus on education.

The learning groups, or reflective teams, are an important feature to integrate daily practice into the programme and offer an opportunity to build a longer-lasting network. Facilitated by one of the course leaders, one participant presents her or his project and a dilemma or question. The other four or five participants in the group think, discuss and offer their own experiences and strategies to deal with these questions.

The study visit is included to aid in forming a network, finding inspiration in comparing the home system with another system and developing contacts abroad. Participants receive certificates if requested.

Evaluation

The programme is thoroughly evaluated, showing a high degree of satisfaction amongst participants. They report having gained inspiration but also that it can occasionally be difficult to ascertain a complete picture of their management roles. They feel that they have learned a specific language for discussing dilemmas that occur in leadership roles, as well as curriculum design and development issues. A short survey administered to the participants revealed that they feel they have formed a network that meets twice a year for several years after participating in the programme. To receive administrative support in organising these meetings is regarded as essential.

University of Edinburgh

History and aims

The Edinburgh Teaching Award (EdTA) was launched in 2014 as part of the University of Edinburgh's continuing professional development framework for staff involved in learning and teaching. The Institute for Academic Development designed the framework on behalf of the Senate Learning & Teaching Committee in 2012. It was developed as an opportunity for academics at all levels, and at different points in their university careers, to engage with professional development that is directly linked to their tasks enhancing teaching and learning. By focusing on the professional development of teachers, the framework is meant to exert a positive impact on student learning. The EdTA framework is mapped against the UK Professional Standards Framework and accredited by the Higher Education Academy (now Advance HE), which means that achievements are transferable to other universities in the UK.

The EdTA aims to provide all staff involved in teaching and supporting learning with rich opportunities to reflect upon and develop their practice throughout their careers. The EdTA differentiates between four levels of participants. While Levels 1 and 2 focus on teachers near the start of their careers, Levels 3 and 4 focus on experienced academics with leadership or management roles at the course, programme or school levels and include a strong focus on leadership and impact at a strategic level in relation to teaching and learning. In the context of this thesis, we focus on Levels 3 and 4. Participating in the EdTA at these leadership levels involves continuing professional development activities that fit with daily work as academic teachers at a senior level and as educational leaders, with a particular focus on critical engagement in reflection about their practice. Between 2014 and 2016, about 90 participants began at Levels 3 and 4, with new cohorts enrolled twice each academic year. Candidates for the EdTA register for the programme themselves or in response to suggestions from their schools. Participants have between six months and two years to complete one level of the EdTA. The time commitment varies from participant to participant, depending on their prior experience. Staff of the Institute for Academic Development are the designers and primary facilitators of the programme.

Characteristics

Characteristic of the approach at the University of Edinburgh is the combination of an overarching framework of professional development goals for various roles and career stages of university teachers with provisions based around flexible pathways and a broad range of continuing professional development activities to achieve those

goals. Participants choose the activities that best aid in their daily practice. Continuing professional development opportunities for the leadership levels vary, ranging from workshops, courses, secondments, networks and mentoring, to working on curriculum development projects, pedagogic research and evaluation.

Participants work towards a submission to the award panel, who assess the work against the criteria of the chosen level of the framework. The submission can comprise a reflective blog or a presentation and also includes a record of continuing professional development activities, relevant experiences and success and two references. Relevant experiences to reflect upon at the leadership levels could include, for example, leading a learning and teaching enhancement project in the school, involvement in a university-wide initiative to improve assessment and feedback or adopting a role on a review team for a Teaching Programme Review. The most important criterion, however, is not simply which activities participants have completed, but what they have learned. This reflection on practice is supported and encouraged by a mentor, who provides feedback on blogs or accounts of reflection on practice. The mentor meets with the participant either face to face or online. Interactions between mentor and mentee can include, for example, discussions about what leadership or seniority actually entails. The mentor also directs participants to external resources, including educational literature. Mentors are allocated to participants by the Institute for Academic Development and must have been awarded Levels 3 and/or 4, either via the EdTA or directly from the Higher Education Academy.

To introduce and support participants, group meetings are organised with the purposes of providing support and encouragement and sharing experiences, addressing queries and concerns about the practicalities of the EdTA, facilitating reading or discussion activities and offering protected writing time. As the framework is aimed at continuing professional development, participants can meet at the various continuing professional development activities organised by the Institute for Academic Development and in schools. Some Level 3 and 4 participants attend writing retreats and journal clubs.

Evaluation

About 20% of the participants enrolled in Levels 3 and 4 have completed the EdTA within the first two years. The programme was evaluated after two years by an external researcher, using interviews with participants, heads of school and members of staff of the Institute for Academic Development and an online questionnaire for participants.

Participants give positive feedback about the EdTA. They report having gained useful insights and confidence, a deeper understanding of and changes to teaching practices,

benefits of time discussing and sharing practice with a broader range of colleagues and a sense of being valued and supported in the teaching role and continuing professional development. More than half of programme alumni have adopted mentor roles for other EdTA participants. Mentor mediation is considered crucial in the process of reflection on learning.

Some schools are developing school-specific versions of the framework, linked to curriculum development and/or teaching enhancement activities. Schools increasingly build the EdTA into reward, review and recruitment policies. Completion of Levels 3 and 4 is included in evidence of excellence in education for academic promotions.

Comparing the five trajectories

In this section, we compare and discuss the five trajectories for educational leaders described above, with a focus on their history and aims, characteristics of design and achieved effects. The four programmes and one individual approach are summarised in Appendix B.

History and aims of the five trajectories

The Utrecht trajectory was the first new programme for groups of educational leaders. Thirteen years later, Oslo and Copenhagen adapted existing programmes for academic leaders, and Edinburgh created an individual continuing professional development trajectory. These initiatives were initiated by the central administrative level of the universities, and primary motives included creating professional development opportunities for educational leaders, as a step in the direction of fundamentally improving the quality of education and implementation of the universities' teaching and learning strategies. The Lund programme differs, in that the initiative originated from educational developers acting on a perceived need of educational leaders. For Utrecht University, the initial initiative by the deans of science faculties is noteworthy.

Enhancing personal leadership skills and reflection on leadership practice are central in the aims of the Oslo, Copenhagen, Lund and Edinburgh trajectories. The aims of developing knowledge on current topics in higher education research and change processes and designing and successfully implementing solutions for education problems are central in the programmes at Utrecht and Copenhagen. Building a network of like-minded colleagues in equivalent positions is a further aim in Utrecht, Oslo and Copenhagen.

The trajectories are not open for everyone. All are meant for academics with leadership roles in programmes and departments; programme leaders, programme coordinators, directors of studies and heads of departments are welcome in all trajectories. Utrecht and Edinburgh also invite leaders of educational change projects, while Oslo is the only programme to which colleagues in administrative roles are invited.

Core features of the five trajectories

We more closely examine the various formats of the programmes using Desimone's structure of five core features for effective professional development (Desimone, 2009): content focus, active learning, coherence, duration and collaborative practice. While Desimone describes these core features as relevant for the professional development of teachers, we interpret them to also apply to professional development for educational leaders.

Content focus

Content focus refers to whether the content of a programme is related to the ultimate result the participants must achieve (Desimone, 2009), in this case, leadership of education or educational change, with a positive effect on student learning. Within the five trajectories, three content areas are present, with varying emphasis: leadership, change processes and higher education pedagogy and curriculum design.

Leadership refers to both personal leadership and a leadership role within the university and faculty organisation. It is the primary focus of the trajectories in Lund and Oslo, whereas in Utrecht and Copenhagen the focus is on an equal level with educational topics. A variety of methods are used to support educational leadership self-knowledge and development; the 360-degree feedback method (Copenhagen) is one example. Another example, used in Lund, Oslo and Copenhagen, is learning from and discussing leadership with invited experienced leaders from different levels in the university. Oslo's compact summary statement is that educational leaders must understand themselves, their roles and their environment. Understanding the environment is implemented through, for example, discussions about the university's teaching strategy.

The second content area addressed in all programmes is change processes. The trajectories use various activities to address this content area, for example, through inviting experts (Utrecht), reading and discussing literature about change in higher education (Lund) or learning from experienced leaders (Utrecht, Lund, Oslo, Copenhagen). All five universities ask participants to reflect on the leadership of educational change projects that they are conducting in their daily work.

The third primary content area comprises higher education pedagogy and curriculum design. The programmes in both Utrecht and Copenhagen spend about half of the time on topics in these areas. Literature and discussions with guest teachers and amongst the participants are considered important sources for learning about educational change processes. Discussions about the use of these theories in the real-world educational change projects of the participants are aimed to help with application in daily practice.

We can conclude that four programmes, although with differing emphases, focus on the areas that are crucial for the roles of educational leaders. In Edinburgh, the emphasis varies per participant.

Active learning

When participants are invited to be actively involved in discussing, observing and providing feedback, rather than simply listening, we refer to active learning (Desimone, 2009). The key pedagogical feature of all trajectories is reflection on leadership practices. Various methods are used: educational leaders in Edinburgh hold meetings with their mentors. In Lund, reflection is a key activity during group meetings. Utrecht, Oslo and Copenhagen apply a reflective team or learning group approach, in which the group learns, under supervision of a facilitator, a method to reflect deeply on, for example, critical incidents. The reflections can lead to deliberate changes in participants' approaches to the tasks on hand, as they deem appropriate.

Participants in all four group programmes are invited to adopt active roles in discussions with guest teachers and other participants and in reflection and reading tasks. In Edinburgh, this occurs during the workshops that participants enrol in. Participants at Utrecht, Lund and Edinburgh write reflective reports on their learning gains. In Lund, participants write project progress reports and discuss these with peers. The course facilitators and mentors offer suitable theory and activities that help participants in developing leadership roles. Some examples of key activities include the following: in Lund's programme, scholarly reflection using literature on leadership and project peer review is a key activity in the meetings. In Utrecht, a key activity is the study trip. Participants travel to several universities abroad as an inspirational and informative activity. Key in the Edinburgh approach is participants choosing workshops or other activities from the EdTA framework. In summary, all trajectories require participants to take active roles in the learning process.

Coherence

Based on the description given by Desimone (2009), coherence is necessary between the programme and the prior knowledge and beliefs of the participants, as well as between the policies and strategies of the organisation and what occurs during the programme. By asking participants to choose an educational development project in daily practice, as is the case in Utrecht, Lund and Copenhagen, or by selecting participants based on their educational leadership role, as is the case in Oslo, a connection is made between programme and daily practice. In the Utrecht programme, the project also functions as a source for requests for certain topics or for invitations to certain guest teachers in the programme. This provides the participants with knowledge from areas that are education, rather than discipline, specific. In all trajectories, the most important feature seems to be not what the daily practice is but what participants learn from it: their reflection on practice (Schön, 1983/1991).

Duration

According to Desimone (2009), to achieve intellectual change, a programme must be of sufficient duration, which she defines as at least about 20 hours over a period of a semester. The duration of the individual trajectory at Edinburgh differs per participant. In Utrecht, Lund, Oslo and Copenhagen, participants are asked to invest time during a period of six to 14 months. Oslo and Copenhagen have programmes that last around 80 hours, while Utrecht and Lund have programmes lasting 200 hours. Furthermore, the two-day meetings of the Utrecht, Copenhagen and Oslo programmes are organised off campus, which intensifies the opportunities for discussions and socialisation. In summary, the duration of these four trajectories should be enough to achieve their aims.

Collective participation

The final core feature in Desimone's model is the collective participation of colleagues from the same organisation, which could lead to continued interaction and peer learning, even after the programme ends. In contrast to the four group-taught programmes, Edinburgh's individual approach is not aimed at bringing colleagues together, while in the programmes of Utrecht, Oslo and Copenhagen, building a network throughout the university is an explicit aim. The four group programmes generally are targeted at academics in one university. Continued interaction and peer learning are indeed occurring in Utrecht and Copenhagen, but less so in Lund and Oslo. Some of the reflective teams or peer learning groups continue to exist. Evaluations in Utrecht and Copenhagen show that about half of the participants continue to meet and learn with and from each other, even across faculty boundaries. In Lund, continued contact exists primarily between colleagues working within the same department. Follow-up activities

are organised in Utrecht as a yearly dinner for alumni, in Oslo as a yearly inspiration day and in Copenhagen as semi-annual network meetings.

In summary, although participants come from the same institutions, building networks that continue to exist after the programmes end does not follow automatically.

Main formats of professional development for educational leaders

The first question asked in this study of five educational leadership development trajectories is "What are the main formats of professional development for educational leadership in research-intensive universities?" We found three main formats of professional development for educational leadership in our comparison. The first format originates at the central administrative level of the university, with involvement from the Human Resources department. The programmes in Oslo and Copenhagen are examples of this format. An important driver is the aspiration to enhance the quality of leadership in the university and to offer academics in leadership positions the opportunity to develop their leadership skills in the university context. The university teaching and learning strategy, particularly the need to improve the status of teaching compared to research, adds to the drive to develop a programme, particularly for educational leaders as an activity parallel to the already existing 80-hour programmes for academic leaders. These programmes focus on leadership skills, citing Oslo's example: "Leaders need to understand themselves, their role and their influence on the environment". To accommodate the specific tasks of educational leaders, parts of the programme are tailored to the university's teaching and learning strategies, and, as in the Copenhagen programme, topics in the area of curriculum design and curriculum development have been added.

The second format originates from the recognition of the need for professional development for educational leaders, to support their work in curriculum development and leading educational change. In this format, the content focuses more on leading educational innovations. The Utrecht and Lund programmes are examples of this format. Educational leaders in these programmes are required, and apparently willing, to invest significantly more time than in the other programmes, at least 200 hours. Their roles as change agents are central to the programmes. The Lund programme emphasises learning about leadership, while Utrecht focuses on the knowledge and inspiration needed for educational innovation.

A third format is Edinburgh's individual continuing professional development approach, which was driven by a national development, the UK Professional Standards Framework,

that was embraced by the central level of the university. Participants prepare, supported by mentors, submissions for assessment by an award panel. Time investment differs per individual. The primary difference from the two other formats is that participants are not brought together in a group to form a community of learners, although participants can join in any professional development activities offered by the university or others.

The preceding descriptions are formulated in very general terms, and as such, more overlap may exist between the programmes than is visible here.

Perceived gains and challenges

The second question in this study is "What are the perceived gains and challenges of these trajectories?" According to the available evaluations, all five trajectories are received positively within the universities. Participants are excited about what they have gained from partaking, such as increased authority as educational experts with their colleagues, confidence, inspiration and skills for being better leaders and a network of like-minded colleagues. For some trajectories, impact on the quality of education and continued innovation of teaching and learning has been reported, and HR policies have changed.

We have seen that all five core features (Desimone, 2009) have been attended to in the design of the programmes. Desimone claims that formats with these features result in effective professional development programmes. The formats of the educational leadership programmes in Utrecht, Lund, Oslo and Copenhagen share the same characteristics, except for duration: the aims of the programmes align with the concerns held by participants in their daily practice; they use a reflective approach; they provide the participants with input and feedback from experts and experienced leaders; they invite and expect active involvement from participants; and they are embedded in the university organisations. Most of these characteristics also apply to the individual approach at Edinburgh.

Challenges remain at the programme and organisational levels. A first challenge is the duration of the trajectories; the required time investment for participants differs widely between the five. It is surprising that some programmes (Utrecht, Lund) require 200 hours (and more), while other programmes (Oslo, Copenhagen) restrict the time investment to 80 hours. One explanation may be the motivation of participants. In Utrecht, it is considered an honour to be nominated and selected for the programme, whereas in Lund, participants volunteer. Another explanation may lie in the contents of the programmes and the roles of facilitators. Utrecht participants value the input of the experts, the study trip and particularly the many opportunities to learn from

fellow participants. Evaluations of the Lund programme mention the superb role of the facilitators and the secure space for reflection they provide.

A second challenge is that continued interaction after the programme ends does not occur naturally in all programmes. When participants work in the same faculty or department, continued interaction occurs more naturally than across faculty boundaries (Trowler, 2008). What seems to work is a high intensity of interaction during programmes. The reflective team method used in Utrecht, Oslo and Copenhagen aims at forming communities of learners (Brown, 1994); it is plausible that the more these teams operate during the programme, the stronger the community becomes, and the more the participants feel the desire to maintain contact with each other. A relatively long duration of a programme provides many opportunities for participants to get to know each other, which makes continued interaction after the programme concludes more likely. Other possible strategies could include increasing the number of opportunities for building relationships, for instance, in off-campus meetings, or after the programme ends with alumni meetings or formalised meetings that bring former participants together based on their roles. In a study of academic middle managers' experiences of organisational working conditions at the University of Copenhagen, Harboe and colleagues (Harboe et al., 2016) report that a category of leaders experience a feeling of being overloaded and isolated. These leaders had not been participating in a network with other leaders, or in a leadership development course, which could have provided them with tools to tackle the pressures (Harboe et al., 2016). From the examples in Utrecht and Copenhagen, we learn that administrative support for organising network meetings appears essential.

A further challenge involves programme evaluation. Programmes have primarily been evaluated at the first of the four levels of evaluation of training programmes: satisfaction of participants (Kirkpatrick & Kirkpatrick, 2006). The other levels of evaluation are learning, behaviour and results. The evaluation of the Utrecht programme has also addressed the levels of behaviour and results (Grunefeld et al., 2015, see chapter 3). More thorough evaluation of the effects of the programmes and, particularly, of the processes that lead to these effects could help us better understand if and why these formats work. Desimone (2009) and others (e.g. Steinert et al., 2012; van Driel et al., 2012; Wayne et al., 2008) propose seeking a theory of change underlying the programmes. van Driel et al. (2012) specifically recommend examining the roles of facilitators, which indeed could be interesting, because in some of the trajectories, participants evaluate them particularly favourable.

A final challenge that deserves further research is the actual learning that occurs, the evaluation Level 2 of Kirkpatrick and Kirkpatrick (2006). For example, the effects of the reflective activities must be investigated. Other questions include the following: have programmes contributed to an increase in the knowledge and skills of the participants, and if so, do they apply their new knowledge? Furthermore, do participants continue to seek opportunities to improve their performance?

Conclusion

This chapter has described how, in five research-intensive universities, professional development trajectories support educational leaders in their leadership and work towards enhancing teaching and learning. We have seen overlap as well as substantial differences in content, format and duration. The three content areas considered crucial for educational leaders are personal leadership skills, change processes and higher education pedagogy and curriculum design, and these are emphasised to differing degrees by the five programmes. Some design choices in programme format are clearly similar: key activities include reflection in peer groups, exchanging experiences and learning from experienced leaders and experts. Some key activities clearly differ: study trips (Utrecht, Copenhagen), a scholarly approach to the projects (Lund) or reflection on personal leadership skills (Oslo). It is remarkable that durations of both 80 and 200 hours are suitable for reaching certain aims.

The evaluations available demonstrate that investment in professional development for teaching and educational leadership is regarded by participants to have positive effects. We have seen that in the five universities in our study, the drive to strengthen educational leadership leads to different formats of professional development trajectories. The challenge for other research-intensive universities is to choose their own formats to establish trajectories for educational leaders.

Chapter 3

Design and effects of a professional development programme on leadership for educational change

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Abstract

This chapter describes and assesses the design and effects of one of the first professional development programmes in a research-intensive university on Educational Leadership. The participants are senior academics, involved in leadership of teaching and learning. We report on an evaluation using a mixed-method approach employing a self-report questionnaire administered to former participants, and interviews with their supervisors (i.e. vice-deans, educational directors or educational managers, and participant's full professors), followed by a questionnaire. Both groups agreed on the positive programme impact on teaching and learning in the university and on their career. The main programme aspects contributing to these effects were the way the programme catered to participants' needs as advanced learners by giving them influence on the content, and addressed their practice, the study tour abroad, and the opportunities for discussions with colleagues.

Introduction

In the past, at most universities competence in educational leadership was something acquired on the job. Sometimes this was done with the help of a mentor or a support group for new department chairs or academic leaders, sometimes by participating in management development programmes, but most of the time without any form of support (Eraut, 1996; Hart et al., 2005; Holloway, 2004; Marshall et al., 2000; Raines & Alberg, 2003). In the last 20 years, however, this has changed and more professional development opportunities have been created (e.g. Kalivoda & Jackson, 2003; Wolverton et al., 2005).

In this chapter, we describe and analyse the design of an educational leadership programme in a research-intensive university and evaluate this programme. The evaluation was carried out not only with the former participants but also with vice-deans, educational directors or educational managers and participant's full professors, to augment the self-report information of the participants with a more distant view. The programme's distinctive design lies in the emphasis on the relationship between the programme and daily practice. A variety of methods were implemented to promote transfer between the programme and the workplace, based on research on effective methods in teacher training programmes for secondary education (Korthagen et al., 2001). The designers assumed that the participants were advanced learners who could work in a high learner-controlled set-up of the programme (Kirschner et al., 2011).

The programme described in this chapter was aiming specifically at senior academics leading educational change in the university. Educational change was seen as necessary, to solve problems in this university such as low student satisfaction and high drop-out rates, and to adapt the degree programmes to the new structure proposed in the Bologna-agreement. The university recognised that to perform better in the future and to implement the necessary programme revisions, strategic development of teaching and learning was needed, based on a consistent educational model and university-wide implementation. Senior academics in all faculties would conceive and implement the new degree programmes. An educational leadership programme had not only to offer these senior academics the knowledge and tools for developing new degree programmes, but also to create a network of leaders in educational innovation for sharing insights and good practices across the university. The programme was developed by a team of educational developers and academic leaders. The programme had three general aims. At the end of the programme, participants should:

1. have a theoretically sound and practical vision of both student learning and university education,
2. be able to design and successfully implement solutions for education problems, aimed at improving student learning experiences, using state-of-the-art insights in education and in change processes,
3. be in a position to network with like-minded colleagues throughout the university, involved in innovation in assessment, teaching, and learning.

Theoretical framework

The term "academic leaders" is usually used for deans, provosts, pro-vice chancellors, department chairs, programme directors, or programme facilitators in formal or informal leadership positions at the university and with responsibilities for research as well as teaching, (e.g.Scott et al., 2008). The term "educational leaders" is usually used to refer to school principals (Fullan, 1998) and more in general to leaders with a specific responsibility for the quality of teaching and learning. In this chapter, we refer to leaders in formal positions in universities with a responsibility for teaching as academic leaders, and to academics in both formal and informal positions with a responsibility for leading educational change as educational leaders.

The programme design as of 1999, was to a large extent based on literature on teacher training in secondary education. Literature about leadership development in higher education was at that moment relatively scarce and often aimed at academic and not educational leaders (Knight & Trowler, 2001; Ramsden, 1998). Programmes for academic leaders are often focused on administrative and managerial themes, leadership styles, human resources management, and finance (Jongen, 2005). However, educational leaders, like school leaders in secondary education, should also be knowledgeable on educational topics such as curriculum building, supporting student learning, developing teaching and assessment, and productive learning environments (Eraut, 1996; Fullan, 2002; Marshall et al., 2000; Pearson & Trevitt, 2005) and on topics such as leadership and change processes (Davis, 1998; Fullan, 2002; Fullan & Scott, 2009; Gibbs et al., 2008; Pearson & Trevitt, 2005). These topics were the focus for the content of our programme.

Several authors have investigated the needs of academic leaders for the design of training or development programmes. For example, Scott et al. (2008) summarised literature about academic leaders' preferred learning modes and derived key components for effective ways of learning from research into adult learning, professional learning, and higher education student learning. They conclude:

> the same flexible, responsive, role-specific, practice-oriented and just-in-time, just for-me learning methods that we are advocating for use with higher education students in order to engage them in productive learning and retain them apply just as well to learning leadership in higher education. (Scott et al., 2008, p. 91)

This result is consistent with earlier results for the design of successful professional development opportunities for teachers and for educational leaders, for example described in (Clarke & Hollingsworth, 2002), Eraut (1996), and Korthagen et al. (2001). Clarke and Hollingsworth suggested that a change environment should include a community of colleagues as part of the development programme, with whom to share experiences with experimentation and find encouragement to try new approaches (Clarke & Hollingsworth, 2002). Eraut writes that the 'significance of a management course for head teachers will depend on the degree to which it can enhance the on-going off-course learning process' (Eraut, 1996, p. 75). Therefore, we implemented a variety of methods to promote transfer between the programme and the workplace. Eraut further reports that typical components in the design of an effective course should include: 'course meetings with opportunities for discussion and learning from others, learning on the job, resources (e.g. guest speakers), reflection and feedback, and transfer to daily practice' (Eraut, 1996, p. 75). Hawley and Valli (1999) add that effective professional development is also information-rich and aimed at theoretical understanding, addresses learning needs, uses collaborative problem solving, and is part of an ongoing change process in the organisation. Garet and colleagues (Garet et al., 2001) mention that the time span of a course should be a year or more to achieve sustainable effects. Guskey (2003) and Davis (1998) add the provision of sufficient time and resources as a factor for effective professional development for teachers. Steinert et al. (2012) combine the advice above in their conclusion that "Features contributing to positive outcomes included the use of: multiple instructional methods within single interventions; experiential learning and reflective practice; individual and group projects; peer support and the development of communities of practice; mentorship; and institutional support" (p. 484). As academic leaders are experienced academics who know what they would like to learn and on what they want to spend time, a programme for this group of advanced learners should provide opportunities for learner control (Kirschner et al., 2011). Summarising the literature, successful professional development for educational leaders should:

- be relevant for the participants and allow them to influence the content and procedures,
- have a direct relation between theory (meetings) and practice (ongoing change process),

- provide opportunities to learn from and with others, and
- be realistic in terms of length, time, and resources for participants.

The programme design

The programme for educational leaders on leading educational change was developed in 2000. In the following, we describe the content and the design of this programme.

The content was built around two main themes: (1) teaching, learning, and assessment at a curriculum level in higher education, and (2) leading change processes. The content for the programme has not been articulated in much more detail, to be able to respond to participants' learning needs that in each cohort advanced with the development of teaching and learning at the university. Each year the activities, concrete content, and guest lecturers were selected by the programme facilitators (a professor in higher education and an educational developer), to accommodate the preferences and needs of the actual participants and the recent developments in higher education. While the content was not prescribed in detail, the main components of the programme have stayed the same since the start. These components were chosen in line with the aims of the programme and the design characteristics and are described below.

Nomination and selection procedure

Academics wishing to participate in the programme have to be experienced staff members involved in research as well as teaching. As a prerequisite candidates should possess the University Teaching Qualification (Keesen et al., 1996). To be selected, candidates must have responsibility for a considerable part of a degree programme, a role in the coordination of such a programme, and a role in the innovation of education. Performing such a role was deemed necessary to enable participants to implement changes in university teaching and learning as a result of participating in the development programme. The dean of the faculty nominates potential participants, thus demonstrating the positive expectations the faculty leadership has of these staff members. At the same time, the dean must ensure that participants have time set aside to attend and engage fruitfully with the programme. The governing board of the programme, consisting of respected peers appointed by the deans of the faculties, selects 15–17 participants on the basis of a curriculum vitae and an account of a selection interview held by the programme facilitators and addressing the criteria mentioned above (specifically, whether their motivation and learning needs fit within the aims of the programme, and they have the possibility for executing an innovative project in relation to the programme's aims).

Thematic sessions

The programme provides eight residential meetings in the course of an academic year, planned from Thursday afternoon until Friday afternoon. These meetings are held in a conference hotel at some distance of the university to give participants the opportunity to literally step outside urgent everyday business and to provide them with ample opportunities for discussions and reflection over lunch, dinner, and drinks. Each meeting starts with peer coaching, has a thematic section with an expert as guest lecturer, and includes activities aimed at the transfer of learning to and from daily practice. During each meeting, books and other resources are provided, and participants can order these to form their own collection of literature on educational development, innovation, and research.

The thematic parts of the meetings align with the overall theme leadership for educational change. The programme facilitators choose the themes of the first few meetings, matching the interests and questions of the participants mentioned in the selection interviews as closely as possible. The specific guest lecturers for later meetings are invited only after participants have had the opportunity to express their interests in group discussions. In every edition of the programme, guest lecturers (mostly academics) have been invited on leadership, understanding change processes, trends and developments in higher education, curriculum development, students and their characteristics, competencies and generic skills, assessing students, quality improvement, and strategic planning and finances of the university. The programme facilitators lead the sessions and discussions, and they have always asked the guest lecturers to include small group assignments and discussions within the sessions.

Innovative project

The transfer of learning from the programme to daily practice, and vice versa, has a prominent place in the programme. Participants all select and carry out an innovative project in their own faculty. This project should include work on curriculum development, should result in a substantial change, and participants should have—at least for the duration of this project—a leading role in a project team within the faculty. The criteria for such a project were established at the outset of the programme to help ensure that the project provides sufficient opportunities for the participants to apply what they learn in the programme meetings to their own practices, and to raise questions along the way for the guest lecturers and other participants. All participants have opportunities to present their projects during one of the meetings to the group and to ask for suggestions and feedback. Examples of projects include: integration of research skills training in the first year of a Psychology programme, improving assessment methods including

self-assessment for academic skills in a sequence of modules in Geosciences, developing quality enhancement processes for a Health Sciences programme, and developing a new Liberal Arts degree programme.

Group-based peer coaching
In the eight meetings, time is assigned for peer coaching in groups of four to six. Participants work together in these groups to discuss critical incidents from their daily practice, using the so-called incident method. During peer coaching, possible problems related to incidents under discussion are clarified in a systematic process of questioning of the participant who brought up the incident. After problem clarification, ideas for potential solutions are suggested, experiences exchanged and discussed with fellow participants (Hendriksen, 2000).

Reflection
Reflection on practice (Schön, 1983/1991) is stimulated in several ways. One way is the group-based peer coaching method mentioned above. A second way is by asking participants early in the programme to formulate a vision on student learning and university education and to discuss, revise, and add to this text during the programme (Schönwetter et al., 2002). Thirdly, at the beginning of the programme participants are asked to write their personal goals and through a midterm and end-point evaluation they are expected to reflect on the development of their vision and how they have grown as leaders of educational innovations (Korthagen et al., 2001).

Study tour abroad
A study tour to foreign universities is an integral part of the programme, aimed not only at developing new insights and ideas that might be worthwhile to implement, but also at becoming more aware of the characteristics of the study programmes in their own university. By observing practices elsewhere, what is common at home can become more prominent. To reflect participants' specific interests and concerns, during the meetings the itinerary for the study tour to foreign universities is designed in collaboration between the programme facilitators and the participants. In the past, visits have been made to universities in the UK, Scandinavia, Switzerland, the USA, Canada, and Australia.

With these components of the programme, the main effects mentioned earlier should be achievable: formulating a vision on student learning and university education, designing and successfully implementing solutions for education problems, and forming a network of like-minded colleagues involved in innovation of teaching and learning.

Methods

In 2005, when four cohorts had finished the programme, a first comprehensive evaluation was carried out and this was repeated and extended in 2009 for cohorts five to eight. The research questions for this evaluation were:

1. What effects of the Educational Leadership Programme are perceived by the participants?
2. How do former programme participants evaluate the design of the programme? Which components are assessed as especially effective?
3. How do vice-deans, educational directors or educational managers, and participant's full professors (hereafter *supervisors*) evaluate the results (3a) and the design (3b) of the programme?

To answer research questions 1 and 2, we developed a questionnaire for the former participants of the programme, based on four interviews with former participants. This questionnaire can be found in Appendix C. To answer research question 3, we interviewed participants' supervisors (i.e. vice-deans, educational directors or educational managers, and participant's full professors) and followed these up with a short questionnaire.

To develop the questionnaire for former participants, we used the first and second research questions as a basis for semi-structured interviews with four former participants, one from each cohort, two men and two women, and from different faculties. After these interviews, we phrased the perceived effects of the programme in the words of the participants, which resulted in 35 statements about possible effects in four categories: on participants personally, on their teaching practice, on their network, and on their career. As the first, second, and third category correspond with the aims of the programme, we were satisfied with the face validity of this part of the questionnaire.

The 35 statements had to be answered on a five point Likert-scale with 1 = strongly disagree and 5 = strongly agree. The four effects covered in the statements were used as scales, for which Cronbach's alphas were calculated (see Table 3.1). The total effect was calculated as well. Cronbach's alpha was reasonable to good (.67–.84).

The scale Personal effects contains nine items, varying from "My vision on teaching and learning has broadened' to "I have a better overview on educational developments" and "I still use the books". The scale Teaching practice effects contains 10 items, varying from "I have become more creative in the design of my courses", to "The programme has had an influence on the degree programme", and "My project has been followed up

by other projects". The scale Network effects contains nine items, varying from "With other participants I share a language and framework", "If I have a problem, I ask other participants for advice and ideas" to "I know better what goes on in other Faculties". The scale Career effects concerns both formal and informal career changes. The seven items varied from "I became a member of the steering committee for the degree programme" to "More often colleagues ask me about my opinion on teaching and learning matters".

To complement rating the closed statements, three open questions were used to explore the actual network that participants had after the programme. Two other open questions explored possible other and negative effects and a last question in this section asked respondents to list the three most important effects.

To answer research question 2, a set of evaluative questions about the design of the programme was developed, using the theoretical framework, the results from the four interviews, and conversations with the designers of the programme. The 38 closed items of this questionnaire had to be answered on a five point Likert-scale with 1 = strongly disagree and 5 = strongly agree. The questions covered all components of the programme, including the guest lecturers. Because the list of guest lecturers differed for each cohort, the questionnaire was different for each cohort. One of the open questions requested that respondents list the three most important components of the programme. The answers to this question (by 63 of 78 respondents) were listed, categorised, and the frequencies calculated.

The questionnaire was returned by 42 of the 55 participants (76%) of cohort 1–4 and 36 of 62 participants of cohorts 5–8 (58%). The results of these questionnaires were combined for the analysis, resulting in 78 respondents.

Table 3.1 Effect categories, number of items, mean, standard deviation and Cronbach's α.

Effect categories	Items	*M*	*SD*	*α*
Personal	9	3.8	0.4	.67
Teaching practice	10	3.5	0.5	.75
Network	9	3.5	0.6	.77
Career	7	3.4	0.9	.83
Total	35	3.6	0.4	.84

To answer research question 3, interviews were conducted with 20 supervisors from faculties and departments where participants were based. They were selected because they were responsible for nominating participants and for acting as sponsors for the innovative projects implemented by the participants. The semi-structured interview

was piloted with two respondents, and then used with a few clarifications for the 18 remaining respondents. Each interview lasted for about one hour, was audio-taped and transcribed. The themes addressed in the interviews were results of the programme in the areas of educational change, network of participants, professional development in the workplace, and factors influencing the results. The interview data were categorised according to these themes. The number of supervisors and the number of utterances in each category were counted. The interviews were followed by a short questionnaire aimed at finding the level of agreement between the interviewees and to improve validity and reliability of the results. The response to the questionnaire was 90%.

Results

Research question 1: effects according to former participants

Table 3.1 presents the mean scale scores, where 1 can be interpreted as no or hardly any effect and 5 as a considerable effect. For all four scales, the participants on average agreed that there was an effect. The means for personal effects, related to the first aim of the programme to formulate a vision on student learning and university education, teaching practice effects, related to the second aim to find and to successfully implement solutions for education problems, and network effects, related to the third aim of forming a network of like-minded colleagues involved in innovation of teaching and learning, were all similar. The career effects with a mean of 3.4 had a larger standard deviation than the other scales. The strongest effects measured with single items (mean score of 4.0 and higher), were:

- "My vision on teaching and learning has broadened".
- "I have a better overview of educational developments".
- "I know better what goes on in other faculties".
- "I have used elements from the contributions of guest lecturers".
- "I am deliberately looking for ways to stimulate active involvement of students".
- "I am involved in curriculum development".

The most mentioned negative effects (an open question) were the additional workload and the availability of time needed for participating. On the open questions about their network, more than half of the respondents indicated that they still meet with about a third of the participants in their cohort, a few times per year, sometimes even very long after the programme's end.

The total effect of the programme is 3.6 according to former participants. An analysis of variance shows no significant difference between the cohorts ($F = 1.21$, $df = 7$, $p = .31$). We can conclude that, according to the participants, the aims of the programme have been achieved.

Research question 2: design of the programme
In this section the results of the questionnaire about the design of the programme are summarised, including the components that were assessed as especially effective.

Being nominated was often the result of participants' own initiative and had then been talked through with a dean or head of department.

For about one third of the respondents, the thematic meetings were the most important component of the design, mainly because the input of guest lecturers had been interesting and useful. The meetings had provided many opportunities for discussions and exchange of experiences with colleagues from across the university, who share the same enthusiasm for and interest in education. Participants remembered ideas from many guest lecturers and applied elements from their contributions in their own practice. During the intake interview, most candidates did not yet have a clear idea of their learning goals, but participants were positive about the alignment of the programme to their increasingly clearer interests and questions (scores between 3.9 and 4.2). The score on the question about the influence they had on the choice of themes and guest lecturers was lower than expected (3.2). The innovative project was for 16 out of 78 participants one of the main results of the programme and had been experienced as was intended, as a means for transfer between programme and daily practice. Participants valued the opportunity to receive feedback on their projects.

Group-based peer coaching was mentioned by 14 of the 78 participants as an important component of the design. For some of the participants, the process led to changes in their daily practice. Nine participants mentioned reflection as one of the most important components of the design, while the development of an informed view on teaching and learning was for about one third of the respondents one of the main results of the programme.

The study tour was in the top three most important components of the design according to the participants. The study tour was interesting, informative, and provided many opportunities for discussion and comparisons with the home university.

Although there was not always sufficient time set aside for participating, participants regarded the intensity and the time investment as positive aspects.

Research question 3: evaluation by supervisors
The third research question was: how do supervisors evaluate the results and the design of the programme for the organisation?

The most important result for the organisation, according to the supervisors, is the professional development of the staff. According to most supervisors, the participants had developed their knowledge of teaching, learning, and assessment, and curriculum development; had become generalists looking over boundaries between faculties; and were better prepared to find support for educational change. The participants were regarded as leaders of educational innovation and were more often asked for help on education matters by their colleagues. Another result was, according to most of the supervisors, that participants took on more tasks in the coordination and development of teaching and learning.

In the area of educational change, the respondents found that many of the innovative projects were successful and had useful results. When speaking about the work of 51 participants, they mentioned 59 successful projects including follow-up activities. The supervisors did not see an increase in cooperation and networking between faculties initiated by the participants. This cooperation could, for example, have taken the form of exchanging experiences from the projects or developing projects together.

Being nominated to take part in the programme was considered a reward for the participant. The supervisors did not see results in terms of improving the status of teaching compared to research or improved career perspectives, which could have encouraged more senior academics to take part in the programme. One problematic aspect, according to the supervisors, was that budgets did not allow for sufficient reduction of participants' teaching load to compensate for their time investment in the programme and in initiating and maintaining contacts with colleagues and networks.

In general, the supervisors valued the programme as a means to improve university education. They mentioned two factors specifically, that influenced the programme's value positively: the selective character; and the way the programme connects with daily practice through innovative projects.

Conclusions and discussion

In the following we summarise and analyse the results, first regarding the effects of the programme (research questions 1 and 3a), then the design of the programme (research questions 2 and 3b). We conclude that the effects of this programme were in line with the aims and that supervisors agreed to a large extent with the participants about the effects of the programme. The programme has led to a broader vision on teaching and learning in higher education (first aim); participants have used the knowledge gained in the programme to improve their own courses and in the innovative projects that were in general successful; participants were seen by supervisors as leaders of educational innovation and were more often asked for help on education matters by their colleagues (second aim); and the network of the participants widened (third aim), although the supervisors had expected even more networking activities. The outcomes of the programme are comparable with the outcomes of Steinert et al.'s review (2012) of leadership programmes in the medical education field. The participants of these programmes also reported changes in attitudes, knowledge, and skills, as well as some changes in behaviour and in the organisation.

Our conclusion regarding the design of the programme is that the former participants and supervisors value the design of the programme. We use the characteristics of effective professional development mentioned in the theoretical framework of this chapter (relevance, transfer, learning from and with others, realism) to analyse the components of the programme that contribute to its perceived success. The components of the programme that might affect relevance for the participants and give them, as advanced learners, influence on the content, were especially the choice of lecturers, projects, and the study tour. The evaluation results showed that participants valued the input of guest lecturers and the study tour as especially effective components of the design, and that they experienced the programme as relevant and aligned to their questions, which became clearer in the course of the year. However, we had expected a higher score on the question about the influence they felt they had on the programme, because the programme facilitators explicitly stimulated learner control (Kirschner et al., 2011) by asking, throughout the sessions, for ideas for relevant themes and names for guest lecturers. As the control of participants on the content and methods is one of the defining design characteristics of the programme, perhaps the programme facilitators should flag up the opportunity for learner control.

Transfer between programme and daily practice was implemented in several ways: through the innovative project, the opportunity to present and discuss the project, the reflection assignments, and the opportunity to bring in questions from the workplace to

the guest lecturers. As supervisors regarded many of the projects as successful, transfer has been achieved. We cannot, however, interpret this as a direct effect of the programme, because we did not control for the experience participants had as innovators when they joined the programme. The model for faculty development research (O'Sullivan & Irby, 2011) that places a faculty development community within a workplace community or the perspective of boundary crossing (Akkerman & Bakker, 2011) might be helpful in describing the potential of projects on the transfer of the course content to the daily practice. To what extent the programme has had long-term effects on the practice of the participants, in other words, whether lasting transfer has occurred (Holton III & Baldwin, 2003), could be a question for further research.

The third characteristic of successful professional development was learning from and with others. We conclude that much of the time in the meetings, including the peer coaching, and during the study tour was, according to participants, fruitfully used for discussions and learning with colleagues. It was one of the especially effective design components. The fourth characteristic, realism, refers to the time investment of the participants, which often exceeded the available compensation. However, the majority of remarks showed that the programme can be regarded as realistic. The programme facilitators should make candidates better aware of the time investment needed before the programme starts.

The results of this study suggest that the advice on effective professional development observed in the theoretical framework has been rather successfully followed in this programme's design, and that an intensive programme as described in the eyes of the participants and their supervisors indeed developed leadership for educational change and is successful in enhancing teaching and learning at the university.

Chapter 4

An instrument to assess educational leaders' expertise in designing and planning educational change in higher education

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Abstract

Expertise in curriculum design and planning of educational change is important in the work of educational leaders in higher education. In this chapter, we describe the development and testing of the Measuring Expertise in Designing Educational Change Instrument (the MEDEC instrument). This instrument consists of a design task, a rubric and a scoring procedure, assessing adaptive expertise: the ability to use expertise flexibly in the ever-changing context of higher education. The task includes designing a curriculum plan and a project plan for its implementation. The rubric has five criteria to assess the quality of the curriculum plan and six for assessing the quality of the project plan. The MEDEC instrument was tested by assessing the plans of five experienced educational leaders as well as 57 participants and four facilitators of an educational leadership programme located at a research-intensive university. The interrater reliability (Spearman's r_s) was .86 for the assessment of the curriculum plan and .83 for the project plan. The instrument differentiated between the proficiency levels of the respondents. The results show that the MEDEC instrument can be used to assess adaptive expertise in designing and planning educational change in a research-intensive university.

Introduction

Leaders in research-intensive universities recognise that the education they provide must be enhanced to address the many challenges in their environment (Fung et al., 2017, p. 3). Often, educational leaders, such as heads of education and programme directors, are appointed and made responsible for leading these changes. Such educational leaders' tasks and development needs have been investigated in several studies (Fung et al., 2017; Gibbs et al., 2008; Milburn, 2010; Vilkinas & Ladyshewsky, 2012; Wolverton et al., 2005). These leaders are often experts within their own disciplines, but they cannot be expected to also be experts in enhancing the education provision of an institution. A useful framework to summarise the expertise educational leaders need is provided by Scott et al. (2008, pp. 18-19). They write that, apart from personal, interpersonal, and cognitive capabilities, educational leaders need both generic leadership expertise, such as 'establishing a collegial working environment', and role-specific expertise, such as 'successful implementation of new initiatives' and 'producing significant improvements in learning and teaching quality' (examples from Scott et al., 2008, p. 60). To be able to knowledgeably enhance education provision, educational leaders need, as part of their competences, role-specific expertise, for example in the areas of higher education curriculum design (to improve learning and teaching quality) and planning of educational change (to successfully implement improvements). However, exactly how much and what expertise educational leaders need in these domains to enhance education provision is unknown and measuring the level of expertise educational leaders have in these domains is difficult. Often, educational leaders' expertise is approximated with interview methods or referees' reports (Scott et al., 2008, p. 111), which are susceptible for bias. In this chapter we want to address the question of how to measure in a less biased way the type and level of expertise educational leaders have in these domains.

Starting from the theoretical framework of expert performance, we developed an instrument to measure expertise of educational leaders in the areas of curriculum design and planning educational change. Expert performance researchers are advised to identifiy experts by their reproducible superior performance on representative tasks that capture the essence of a domain (Ericsson, 2006b, p. 3). This theoretical framework provides relevant characteristics of tasks that can be used to assess someone's level of expertise. We focus on expertise of educational leaders in two relevant role-specific domains: curriculum design and planning of educational change.

In the development stage of the process to develop a valid and reliable instrument (Kane, 2013), we used expert performance research to infer characteristics of tasks that would

be suitable to assess expertise, and we used these characteristics to define task and assessment criteria to capture expert performance. Then, in the appraisal stage (Kane, 2013), we developed a rubric and a scoring procedure to assess the products of the task. We named our instrument the Measuring Expertise in Designing Educational Change Instrument (MEDEC instrument). The instrument consists of a representative task which is to be carried out, a rubric describing success in task performance at various levels, and a scoring procedure. This chapter reports on the development of the instrument and on evidence for the validity and reliability of the MEDEC instrument.

Measuring expertise

When measuring expertise, decisions must be made about the design of a task and about the assessment method. Good examples of representative tasks that capture the essence of a domain are work samples (Ericsson et al., 2009, pp. 5-7). To capture expert performance, work samples should be challenging and non-routine and concern critical situations, in which an immediate action needs to be taken. This action can then be assessed (Ericsson et al., 2009, pp. 5-7).

In many professions, the character of tasks and the context in which these tasks are to be carried out change over time. To perform well, professionals need adaptive expertise (Hatano & Inagaki, 1986), the ability to be flexible and adapt to new situations. Different from routine experts, adaptive experts not only understand how to carry out a task effectively and efficiently, but they also understand why a routine for carrying out a task is effective and efficient in a certain domain or situation (Bohle Carbonell et al., 2014; Chi, 2011). Compared to routine experts, adaptive experts display high speed and accuracy in solving unfamiliar problems, and the solutions they propose have better feasibility (Bohle Carbonell et al., 2014). A work sample for measuring adaptive expertise should be authentic and represent a realistic and novel situation (Bohle Carbonell et al., 2014).

As authentic tasks can be complex and time-consuming, Sonnentag et al. (2006) suggested measuring expertise in these domains using tasks that take two hours or more. A representative and realistic task could be, for example, a design task with multiple possible results which is substantial and requires speedy decision making. In such a task, respondents could show their domain knowledge, application of their knowledge to a novel situation and strategic knowledge.

Expertise of educational leaders

In our study, we were interested in measuring expertise among a specific group of professionals operating in a specific domain: educational leaders in higher education. To operationalise the expertise of these educational leaders, we now define the task domain of these professionals.

Educational leaders in higher education need expertise in developing and implementing effective higher education learning programmes (Scott et al., 2008). This expertise involves proficiency in curriculum design and planning of educational change. For proficiency in curriculum design, *constructive alignment* is a key concept. It is accepted by accreditation organisations in Europe as a standard for identifying effective education (*Standards and guidelines for quality assurance in the European Higher Education Area (ESG)*, 2015, section 1.2 and 1.3). The concept of constructive alignment was introduced by Biggs and Tang (Biggs, 1996, 2014; Biggs & Tang, 2011) and refers to alignment of intended learning outcomes, teaching and learning activities, and assessment. Constructive alignment resonates with the principles for effective curriculum design which were provided as early as 1949 by Ralph Tyler in his short book 'Basic Principles of Curriculum Design and Instruction' (Tyler, 1949/2013). His principles are formulated as four questions: (1) What are the educational purposes towards which the programme should guide the participating students?, (2) What educational experiences can be provided that are likely to attain these purposes?, (3) How can these educational experiences be effectively organised?, and (4) How can we determine whether these purposes are being attained? We follow both Tyler and Biggs and Tang in regarding knowledge of *constructive alignment* between intended learning outcomes, teaching and learning activities, and assessment as essential domain knowledge for educational leaders.

Expertise in planning educational change also requires knowledge of factors which determine the success of educational change projects. Major educational changes require many communicative activities throughout the change process (Gibbs et al., 2008, 2009). Havelock and Huberman (1977, p. 9), who evaluated educational change projects in developing countries, identified three main success factors for educational change. The first success factor is *infrastructure*, which refers to the practical side of implementing an innovation. The next two factors are related to the political side of educational change. *Authority*, the second factor, refers to influencing the decision makers who are hierarchically placed above the change agent. *Consensus*, the third factor, refers to influencing colleagues and others hierarchically equal to or lower than the change agent. The importance of these factors increases when the scale of the project increases. We follow both Gibbs and Havelock and Huberman in regarding knowledge

about communicative activities and the success factors infrastructure, authority and consensus as essential domain knowledge for educational leaders.

Educational leaders would need knowledge of these theories of curriculum development and leading educational change and need to be able to use that knowledge in the ever-changing context of higher education; that means they need to have adaptive expertise.

Designing an instrument for measuring expertise of educational leaders

After defining the domain, we designed a task that educational leaders typically need to be able to fulfil, a rubric describing levels of task performing proficiency, and a scoring procedure.

The task

The task for our study was based on realistic projects carried out by university educational leaders: We asked educational leaders to write a proposal for a new degree programme and a project plan for the change process towards its implementation. This design task, displayed in Box 4.1, is very close to reality and can be approached in multiple ways. It asks respondents to show knowledge of curriculum design and of how to plan a change process. To give respondents the opportunity to think and write on the one hand and to limit working time on the other, the maximum available time was set at two hours.

Design of a rubric and a scoring procedure

We regarded the quality of the curriculum plan and the project plan as an indication of the level of proficiency. To assess levels of proficiency, Sadler (2013, p. 19) suggested using a holistic approach which requires competent assessors. We chose educational developers as assessors (Miles et al., 2013, p. 42). Their domain knowledge and experience with curriculum design and educational change processes was necessary to decide what information to consider when evaluating the quality of the design.

A rubric was developed to help the assessors rank the documents according to the level of proficiency (Jonsson & Svingby, 2007; Prins et al., 2017). The rubric was developed to assess the quality of both the curriculum plan and the project plan. The criteria within the rubric were formulated as questions which were derived from the literature on higher education (Biggs, 1996, 2014; Biggs & Tang, 2011; Gibbs et al., 2008; Havelock & Huberman, 1977; Tyler, 1949/2013) and which were illustrated with descriptions of the kind of information that should be present in the documents for each of the judgements (Prins et al., 2017).

Box 4.1 Task

The request
Suppose: The Executive Board of your university requests plans for new degree programmes and offers a grant that covers start-up costs. The new programme should start in one year from now, at the start of the new academic year, and the decision about awarding grants will be made two weeks from now. The faculty senior management asks you to write a proposal for a new programme in your domain. You will be the head of education for this programme. The proposal should comprise 1) a curriculum plan, and 2) a project plan for the design and implementation phase.

Intended outcomes
The curriculum plan describes the new programme—the 'what'. The project plan describes the 'how'—how the programme will be developed, the process of design and the actual implementation of the programme in the coming year.

NB: Design a new plan; do not use an existing plan. Make your own assumptions about aspects of the situation or circumstances that are not described above.

Judgements could be given in the form of grades on a scale from 1-10, or 0 when information was not available at all. To assist the assessors, the scale was divided in four levels: 1–2 meant that hardly any information was available about the concept or aspect; 3–4–5 meant that something was written about that aspect but incomplete and not aligned with/related to other parts of the plan; 6–7–8 meant that information was available but not yet usable; and 9–10 meant that rich information was given and ready to use when implementing the plan. The resulting rubric and the description of the 9–10 level (translated from Dutch) are presented in Appendix D.

For the process of developing the scoring procedure, we used an exploratory approach based in qualitative data analysis methods (Miles et al., 2013). Participants and facilitators in four cohorts of an educational leadership programme for senior academics with educational leadership responsibilities at research-intensive universities were asked to carry out the task. Two researchers (the first author and another specialist in educational design and innovation) used a first version of the rubric to assess 17 documents which were produced by participants and four which were produced by facilitators. They discussed their approach and acknowledged that information about each criterion could be found everywhere in the document. Overlooking relevant information turned out to be a main source of disagreement. To address this issue, a coding procedure was developed in which the parts of a text relevant for assessing a criterion were coded using protocol coding (Miles et al., 2013, p. 78) with NVivo. The coding procedure required two

rounds. In the first round, units of the text were coded in two categories as 'to be taken into account when assessing' the curriculum design and the project plan respectively. Units of text could be coded in one of these categories, coded in both categories or not coded. In the second round, subcodes were assigned to the 'curriculum plan' units based on Tyler's rationale—Purposes, Experiences, Assessment—and to the 'project plan' units based on Havelock and Huberman's model: Infrastructure, Authority, and Consensus. Assessors were instructed to highlight the information connected with one of the codes and then assess the corresponding criterion. Examples from several of the documents were added to the rubric to illustrate the criteria and levels.

The task, the rubric and the scoring procedure together are referred to in this chapter as the MEDEC instrument. In the following section, we report on our study of the validity and reliability of this instrument.

Study of the validity and reliability of the MEDEC instrument

Research question

The overall research question is: To what extent is the MEDEC instrument valid and reliable in assessing the level of adaptive expertise of educational leaders in the domains of curriculum design and planning of educational change?

Validity refers to the trustworthiness of the interpretation of the scores obtained from a test (Kane, 2013; Messick, 1995). In this chapter, we approached validity in three ways. In the previously described development stage of the instrument, we focused on content validity: We selected the task and the assessment criteria for the products of the task in the rubric representing relevant domains for educational leaders. In the appraisal stage to be described below, we focused on reliability, meaning that the scoring procedure can be applied consistently by various competent assessors, and on construct validity: we formulated expectations about how scores on the MEDEC instrument would differentiate between levels of proficiency of specific groups of respondents. One expectation was that when executing the task, someone with extensive knowledge of curriculum design, for example someone with an educational sciences background, would address all four of Tyler's (1949/2013) principles of curriculum design and earn higher scores than participants of an educational leadership programme. Secondly, we expected that facilitators of the educational leadership programme would earn higher scores than participants on all criteria. The facilitators have extensive experience in analysing project plans for curriculum innovation, and therefore, they should have a

good idea of what should be addressed in such plans. Facilitators would thus use more domain knowledge (Chi, 2006) than the participants of the programme. Thirdly, we expected that experienced educational leaders would have considered all three success factors—Consensus, Authority, and Infrastructure—in their project plan (Havelock & Huberman, 1977) and would earn higher scores than participants of an educational leadership programme.

As content validity was addressed during the design of the MEDEC instrument, the remaining research question can be divided in two sub-questions:

1. Is the scoring procedure reliable?
2. Does the MEDEC instrument differentiate in levels of proficiency between:
    a. participants in an educational leadership programme with an educational sciences background, who should do better on the curriculum plan, and other participants?
    b. facilitators of an educational leadership programme who have advised and worked on many educational change projects, and participants who are not very experienced?
    c. experienced educational leaders, who have experience with educational change projects, and other participants of an educational leadership programme?

Method

Participants

In total, 66 participants from four cohorts of an educational leadership programme for senior academics with educational leadership responsibilities at five research-intensive universities were invited to participate in this study. They were asked to work on a task for two hours preceding their programme. We received documents from 57 participants, which is a response rate of 86% (see Table 4.1). At the end of their programme, all 66 participants were again invited to complete the task, resulting in an additional 31 documents, 30 of these were by participants who already completed the task preceding the programme. Of these 57 participants, 49 provided information about their educational background and position. Participants had a variety of backgrounds and positions within their universities; four participants had a background in educational sciences. Four facilitators of this educational leadership programme completed the task, one of whom was the first author of this chapter.

We found experienced educational leaders by doing a network search (Hoffman & Lintern, 2006) in two parts. First, we listed names of five people whom we considered experts in the field of educational leadership. Second, an e-mail was sent to 48 educational leaders in our university, with the request to suggest names of people whom they 'regard as expert in leading educational change; colleagues who have experience and good results with educational innovation'. We received six replies and nine suggested names. All names were mentioned just once. From the combined list of names, seven people were approached across a range of disciplines, and five agreed to participate. All of them had been participants in the educational leadership programme several years before.

The total number of available documents was 97; see Table 4.1. All participants were informed about the use of their documents for this study and agreed to have these included. Each response, a document with a curriculum plan and a project plan, was assigned a random number between 1 and 100, and author names were removed. All documents were analysed in a random order.

Table 4.1 Respondents

Respondents	Invited for participation	Response	
		n	%
Participants of an educational leadership programme	66	53	86%
Participants with an educational sciences background		4	
Facilitators	4	4	
Experienced educational leaders	7	5	71%
Alumni of the programme	66	31	47%
Total available documents:		97	

Procedure and analyses

To test the reliability of the coding procedure, we worked with 97 documents. We computed Cohen's kappa for randomly selected documents that were coded independently by two assessors (the first author and another specialist in educational design and innovation). The other documents were then coded by the first author. The final rubric was tested by assessing 10 documents, randomly selected from 97 documents, by specialist assessors (curriculum plan by the first author and another educational scientist, project plan by the first and second author). We used Spearman's rank-order correlation r_s as the measure for interrater agreement. All other documents were then assessed by the first author.

To investigate whether the MEDEC instrument distinguished between levels of proficiency of the groups, we excluded the 31 documents made by alumni of the programme. We first explored whether it was possible to combine the educational scientists and the facilitators in one group because all facilitators have an educational science background. Such a combination would increase the power of the statistical tests for comparing different groups of respondents. Based on a Wilcoxon-Signed-Rank test on the series of means for two groups (educational scientists versus facilitators, see Table 4.2), we concluded that on all criteria together the two groups did not differ significantly, $T = 26.5$, $p = .562$ and the effect size $r = -0.12$. We then used Mann-Whitney U-tests to compare both groups on each criterion. The results can be found in Table 4.2. This test also showed no significant differences between the facilitators and the educational scientists, and therefore we combined them in one group, named Educationalists.

To answer the second research question, we then compared the three remaining groups. First we tested differences between the three groups on all criteria together with a Friedman's ANOVA test using the series of means of the three groups (see Table 4.4). As follow-up we used Wilcoxon-Signed-Rank tests for pairwise comparisons between groups with Bonferroni corrections for the *p*-values. Then we tested each of the criteria separately, using Kruskal-Wallis tests. Follow-up analyses were performed for each of the criteria where the groups differed significantly, with pairwise comparisons between groups and Bonferroni correction for the *p*-values. Effect sizes *r* were computed as $r = z/\sqrt{N}$; *N* is the number of observations in each pair of comparisons. All statistical tests were performed in SPSS 25.

Results

Task

There was variation in the respondents' interpretation of the task. Most respondents wrote a plan for a specific new programme, but a few respondents made a list of topics to be covered in curriculum plans and project plans in general. Interestingly, many mentioned spontaneously that they liked the task and found it useful for their own practice to carry it out. Some of the participants mentioned afterwards that it gave them an opportunity to spend two hours working on a plan they already had in mind. Participants spent between 45 minutes and two hours on this maximum-two-hour task.

Table 4.2 Means and SDs, and results of the Mann-Whitney test per criterion, for facilitators (N=4) versus educational scientists (N=4)

	Educational Scientists		Facilitators		Mann-Whitney U-test		
Criteria	*M*	*SD*	*M*	*SD*	U	*z*	*p*
Curriculum plan							
Purposes-students	7.75	1.26	5.50	1.29	14.500	1.899	.057
Purposes-learning objectives	7.50	1.29	7.00	1.83	9.500	0.441	.686
Experiences-curriculum	8.00	0.82	7.25	1.50	10.500	0.749	.486
Experiences-role of teachers	6.50	2.65	5.00	4.62	9.000	0.298	1.00
Assessment	6.00	2.58	7.75	2.22	4.500	-1.029	.343
Project plan							
Urgency	6.00	1.16	4.50	2.38	11.000	.899	.486
Consensus among colleagues	6.75	1.26	7.75	0.96	4.500	-1.084	.343
Consensus among others	5.25	2.36	6.00	2.94	6.000	-0.581	.686
Authority	7.00	1.63	7.25	2.22	6.500	-0.441	.686
Infrastructure-efficient process	7.00	0.82	7.25	1.26	7.500	-0.155	.886
Infrastructure-organisation of the programme	6.50	1.73	6.25	1.89	9.000	0.292	1.00

Reliability of the scoring procedure

We tested the reliability of the scoring procedure. The interrater agreement (Cohen's kappa) of the first round of coding with seven documents was .87 for curriculum plan codes and .80 for the project plan codes. For the interrater agreement of the coding in the second round, we computed kappa for three sub codes of the curriculum plan and three sub codes of the project plan. These kappa's ranged from .68 to .84. We regarded the reliability of the two-round coding process as sufficient.

The subcoded units were then used to assess the documents with the rubric. The interrater agreement Spearman's r_s for the assessment of 10 documents is reported in Table 4.3. We computed the interrater agreement for each of the five curriculum plan criteria, with values ranging between .66 and .97. The mean r_s for the curriculum plan criteria was .86, with p <.000, which we regarded as good. We computed Spearman's r_s for the project plan criteria, for which values ranged between .78 and .89. The mean r_s for all six project plan criteria was .83, with p<.000, which we regarded as good.

Table 4.3 Interrater reliability of the assessment of 10 documents

Curriculum plan	r_s	p	Project plan	r_s	p
Purposes-students	.66	.037	Urgency	.78	.008
Purposes-learning objectives	.93	.000	Consensus among colleagues	.79	.006
Experiences-curriculum	.74	.015	Consensus among relevant others	.84	.002
Experiences-role of teachers	.95	.000	Authority	.89	.001
Assessment	.97	.000	Infrastructure-efficient process	.79	.006
			Infrastructure-organisation of the programme	.89	.000
Total	.86	.000	Total	.83	.000

Note: r_s is Spearman's rank correlation coefficient.

Levels of proficiency

Table 4.4 shows the means and standard deviations for all criteria and for the three groups to be included in the Friedman's ANOVA test. This test showed that on all criteria together the three groups differed significantly (c^2 = 11.455, df = 2, p = .003). Wilcoxon-Signed-Rank tests were used for the follow-up analysis. Pairwise comparisons showed that the Experienced Educational Leaders did not differ significantly from the Participants ($T_{EEL\text{-}Participants}$ = 0.273, p = 1, effect size r = 0.14), but that the other two combinations did differ significantly, respectively ($T_{EEL\text{-}Educationalists}$ = -1.364, p = .004, r = -0.68) and ($T_{Participants\text{-}Educationalists}$ = -1.091, p = .031, r = -0.55). We concluded that the MEDEC instrument differentiates between two levels of proficiency, the Educationalists on the one hand and the Experienced Educational Leaders and the Participants on the other hand.

To answer the subquestions of research question 2 regarding the separate 11 criteria, we then compared the three subgroups for each criterion with Kruskal-Wallis tests (see Table 4.5). These Kruskal-Wallis tests showed significant differences in the scores for 8 of the 11 criteria, for which we performed follow-up analyses with pairwise comparisons and Bonferroni correction for the p-values. For research questions a and b, we found differences between educationalists and the participants in the expected direction. The differences were significant for the following six criteria: both Purposes criteria, Consensus among colleagues, Authority and both Infrastructure criteria. The effect size of these differences ranged between 0.33 and 0.41, which represents a medium effect (Cohen, 1988).

Table 4.4 Means and SDs for the three groups (total N=66)

	Participants (n=53)		Experienced Educational Leaders (n=5)		Educationalists (n=8)	
Criteria	*M*	*SD*	*M*	*SD*	*M*	*SD*
Curriculum plan						
Purposes-students	4.00	2.28	2.60	2.41	6.63	1.69
Purposes-learning objectives	5.21	2.08	7.00	2.00	7.25	1.49
Experiences-curriculum	5.98	1.90	4.60	2.70	7.63	1.19
Experiences-role of teachers	3.77	3.26	1.00	1.73	5.75	3.58
Assessment	4.34	2.50	4.20	3.03	6.88	2.42
Project plan						
Urgency	5.45	2.06	5.60	1.52	5.25	1.91
Consensus among colleagues	5.38	2.01	6.00	2.92	7.25	1.17
Consensus among others	4.58	2.13	4.00	2.92	5.63	2.50
Authority	4.23	2.21	4.00	2.35	7.13	1.81
Infrastructure-efficient process	5.02	1.89	5.20	1.92	7.13	0.99
Infrastructure-organisation of the programme	4.38	1.82	3.00	2.45	6.38	1.69

For research question c, contrary to our expectation, we found no significant differences based on project plan criteria between the experienced educational leaders and the participants.

Discussion

In this study we developed the MEDEC instrument to assess educational leaders' role-specific expertise in a novel situation. The MEDEC instrument consists of a design task, a rubric, and a scoring procedure. In the development stage, to achieve content validity, we chose a task that captures an essential part of educational leadership competence in the areas of curriculum design and planning of an implementation project. This task is a non-routine work sample, it could be a realistic request for educational leaders, and it requires them to take immediate action in an unexpected situation. The task would require participants to use adaptive expertise.

Table 4.5 Results of the Kruskal-Wallis H-test per criterion, and of the follow-up analyses

	H	*p (adj)*	Pairs with significant differences*	*z*	*p (adj)*	*r*
Curriculum plan						
Purposes-students	10.536	.005	E vs EEL	-2.897	.011	-0.80
			E vs P	2.870	.012	0.36
Purposes-learning objectives	9.140	.010	E vs P	2.593	.029	0.33
Experiences-curriculum	6.910	.032	E vs EEL	-2.480	.039	-0.69
Experiences-role of teachers	6.733	.035	E vs EEL	-2.587	.029	-0.72
Assessment	5.925	.052				
Project plan						
Urgency	0.156	.925				
Consensus among colleagues	7.142	.028	E vs P	2.657	.024	0.34
Consensus among others	1.824	.402				
Authority	10.178	.006	E vs P	3.134	.005	0.41
Infrastructure-efficient process	9.383	.009	E vs P	3.063	.007	0.39
Infrastructure-organisation of the programme	9.843	.007	E vs EEL	-2.940	.010	-0.82
			E vs P	2.592	.029	0.33

Notes: degrees of freedom *df* = 2, level of significance is 5%. Pairwise comparisons with Bonferroni correction for the *p*-values. The three groups are Participants of an educational leadership programme (P, n=53), Experienced Educational Leaders (EEL, n=5), and Educationalists (E, n=8).

In the appraisal stage of our study, we established that the task generates documents that can be reliably assessed by competent assessors using the rubric we developed. We also found that, based on this rubric, higher and lower scores for the criteria could be assigned.

As expected, the MEDEC instrument differentiates between respondents whom we regarded as experts and participants at the start of an educational leadership professional development programme. The experts, facilitators of the educational leadership programme and participants with an educational science background, scored significantly higher than inexperienced participants on all criteria together, and specifically on the two criteria of the curriculum plan that focus on Purposes (Tyler, 1949/2013) and on four criteria of the project plan: Consensus among colleagues, Authority, and both Infrastructure criteria (Havelock & Huberman, 1977). No significant

differences were found on the other five criteria, which means that we could not ascertain the validity of these criteria. Bearing in mind the content validity and the support for the validity of the overall test and of six criteria, we consider these results as support for the construct validity of the instrument.

We found no significant differences between the scores of five experienced educational leaders and those of the participants. The group of five was small, which renders the power of the analysis low.

We found that even the highest mean MEDEC instrument scores were not at the upper end of the scale. The educationalists achieved scores between 7.5 and 8.0 on a scale of 0–10 (with 10 as the highest possible score). Possible interpretations are that they are not 'masters' in this domain (Dreyfus, 2004), or that in a simulated situation this task might be more difficult than in a real-life situation because context is missing (Chi, 2006). If this had been a real request from the executive board of a university, more information and criteria would likely have been available that could have been used to structure the plans.

The validity of the instrument is related to the use of the instrument (Kane, 2013). Based on our results, we assume that it is valid to use the MEDEC instrument in a variety of low-stakes situations. Educational leaders could, for example, use the instrument to determine their level of proficiency and to decide how to develop their expertise. Similarly, higher education institutions could use the MEDEC instrument for diagnosing the level of expertise of participants when providing professional development programmes for their educational leaders. A higher-stakes use would be to employ the instrument as part of a selection procedure for educational leadership positions; however, in such a case, we recommend using a broader collection of evidence for expertise, and this evidence would need to meet appropriate quality criteria (e.g. Berk, 2005; Braskamp & Ory, 1994). Another low-stakes use could be assessment of the quality of ideas and plans for new degree programmes and provision of feedback on these plans, as part of an educational leadership course or in a competition for funding. For educational leaders or prospective educational leaders who need to design and plan educational change, this instrument could serve as both a framework and a checklist for these tasks.

Conclusions and implications

The research question of this chapter was: To what extent is the MEDEC instrument valid and reliable in assessing the level of adaptive expertise of educational leaders in the domains of curriculum design and planning of educational change?

We developed the instrument based on role-specific expertise educational leaders would need and used the framework of expert performance research to build the task and criteria. We developed and tested the reliability of the scoring procedure, with positive results. We tested expectations that the instrument would distinguish between levels of proficiency, and we found that facilitators and educational scientists indeed had a higher level of adaptive expertise than beginning educational leaders. For high-stakes use, we recommend combining this instrument with other measures, but there is strong enough support for low-stakes use of the instrument.

Chapter 5

Development of educational leaders' adaptive expertise in a professional development programme

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Abstract

This study considers the extent to which a professional development programme for educational leaders in research-intensive universities contributes to participants' adaptive expertise in the domain of leading educational change. We evaluated the programme by asking participants to execute an authentic task at the beginning and end of the programme and compared the outcomes with participants' self-reported learning gains. Results show that participants find that they have substantially learned from participating, but according to the task scores, there is no significant progress in the development of adaptive expertise. Suggestions are offered to include more purposeful practice and more reflective activities in the programme.

Introduction

Enhancement of the educational provision of institutions for higher education is necessary to prepare students for a changing world (Fung et al., 2017). In order to achieve such improvements, universities are, for example, developing new and enhanced educational strategies, working towards curriculum change and innovation, introducing technology for delivering the curriculum (Marshall, 2018), and building learning spaces and other facilities to support student learning (Bonem et al., 2019; Clinton & Wilson, 2019). Typically, achieving educational changes such as these is considered to be a complex process involving many different groups of people, substantial budgets and long periods of time. The cooperation of busy academics is also needed to effect each change and thus leadership is essential (Fullan, 2002).

The task of achieving necessary changes has been assigned to leaders at all management levels of the university organisation (Blackmore & Kandiko, 2012, p. 136; Bolden, 2011; Bolden et al., 2009). Leaders at the middle level with a responsibility for education, such as associate deans (Floyd & Preston, 2018), heads of studies, or programme directors (Milburn, 2010), may have the most direct influence on curriculum change. Their tasks and responsibilities differ across universities, but they often lack formal power (Floyd & Preston, 2018), which makes their role in leading educational change processes more complex and challenging (Floyd & Preston, 2018; Milburn, 2010; Preston & Floyd, 2016; Vilkinas & Ladyshewsky, 2012).

Fung and colleagues found that universities have begun to offer opportunities for academic staff to develop expertise for leading educational change (Fung et al., 2017). Grunefeld and colleagues (2017, see chapter 2) compared five trajectories for professional development and noted a frequent lack of rigorous evaluations of these programmes' outcomes. This study evaluates one programme's contribution to the development of adaptive expertise of middle-level educational leaders.

Adaptive expertise for leading educational change

Expertise research focuses on what constitutes expert performance in various domains and on individual differences in how people acquire expertise. Among the main findings is that experience and deliberate practice are most important for achieving reproducible high levels of performance and continued improvement (Ericsson, 2006a, 2009). However, Ericsson (2014, p. 184) referred to research outcomes showing that there

is "often not a significant correlation between the amount of experience or professional training, and performance". According to Ericsson, deliberate practice is necessary to achieve an expert level, and he defines deliberate practice as practice with the intention of improving performance and perfecting specific skills, guided by a mentor or teacher (Ericsson, 2014). This topic has been well-researched for domains such as music, chess, sports, and air traffic control (Ericsson, 2009; Ericsson et al., 2006; Ericsson et al., 1993). What these domains share is a relatively stable context and predictable tasks, which does not apply to the domain of educational leadership. Leaders of educational change are professionals managing novel problems daily in the complex higher education environment. It is often their responsibility to solve planning problems, contribute to university or faculty policies in areas of education and educational change, or develop and implement solutions for educational problems, both large and small, that are likely to differ every time.

To perform well, these professionals need to be able to adapt to changing circumstances and demands and need what Hatano and Inagaki (1986) referred to as adaptive expertise, which the authors distinguished from routine expertise. Individuals with high levels of routine and adaptive expertise exhibit high levels of task performance. The difference between routine and adaptive expertise becomes clear once individuals are confronted with an unfamiliar situation: "while individuals with routine expertise struggle with the new demands, adaptive expertise allows for easily overcoming the novelty and quickly regaining a high level of performance" (Bohle Carbonell et al., 2014, p. 15).

Professional development for adaptive expertise

This study concerns the development of adaptive expertise in middle-level educational leaders in research-intensive universities as a goal of a professional development programme. The literature suggests that any professional development aimed at enhancing adaptive expertise should provide participants (1) the opportunity to acquire knowledge and skills relevant to the domain (Bohle Carbonell et al., 2014), (2) the opportunity to gain experience with dealing with change and novel tasks (Bohle Carbonell et al., 2014), and (3) multiple opportunities for deliberate practice in the domain (Ericsson, 2006a). The first characteristic addresses the domain knowledge that every routine and adaptive expert should have; the second adds training for adaptive expertise by focusing on change and novel tasks; and the third characteristic, deliberate practice, is regarded as an essential element to achieve expert performance (Ericsson, 2006a). However, Ericsson (2014, p. 194) recognised that it is difficult to design deliberate

practice for professionals, or in other words, to find a series of novel tasks that intently increase in difficulty. He also noted that professionals often have limited opportunities to receive feedback and time to practice (p. 191). In a review study (Bohle Carbonell et al., 2014) and a meta-analysis, (Macnamara et al., 2014) no substantial support was found for the necessity of deliberate practice for developing adaptive expertise. However, Ericsson and Harwell (2019) observed that deliberate practice was originally defined to describe how (individual) musicians develop their expertise when coached by a mentor, and that in other professions this type of deliberate practice does not exist and could be better referred to as purposeful practice, meaning deliberate practice without the support of a mentor. Often, only naïve practice is possible in professions, which is simply executing the job without the expectation of intentionally developing performance (Ericsson & Harwell, 2019, p. 5).

Macnamara and colleagues and Ericsson agree that other factors also are important to explain individual differences in professionals' expertise (Ericsson, 2016; Macnamara et al., 2016) both in the work environment and in training design. In the work environment, it is important to have a supportive work climate in which supervisors encourage professionals to develop their domain knowledge and allow them to make errors (Bohle Carbonell et al., 2014; Hatano & Inagaki, 1986). Work as well as professional development programmes could offer a variety of tasks to allow professionals to gain experience in terms of dealing with change. A variety of tasks stimulates the flexible usage of domain knowledge, discovery of commonalities, and description of problems regarding deep structures rather than surface details (Barnett & Koslowski, 2002, p. 261, summarising earlier research). Ward and colleagues (2018, pp. 43-46) also stressed the need for a variety of training tasks that allow practicing required skills for solving complex problems, and noted that another important factor is the opportunity for feedback and reflection. Because professionals often lack performance feedback on a daily basis (Ericsson, 2014), they have to personally monitor and reflect on their progress, choose suitable next steps (van Gog et al., 2005), and develop their own solution strategies for authentic tasks (Bohle Carbonell et al., 2014, p. 26). Researchers have found that participating in a learning community could be useful when the community encourages reflection on experiences and errors (Wetzel et al., 2015); such a community could be part of a work situation or group-based professional development programme.

In this study, we evaluated the extent to which a professional development programme for groups of middle-level educational leaders, focused on leading educational change, contributed to participants' adaptive expertise in the area of curriculum design and planning of educational change. The programme is described in the next section.

A professional development programme at Utrecht University

In 2000, a programme was designed at Utrecht University that focused on leading educational change for senior academics in middle-level educational leadership roles. The programme has currently run 15 times, and, since 2010, it has been provided 13 times for cohorts in other research-intensive universities. The programme aims at supporting participants in building knowledge of and experience with challenging change processes that lead to improving the quality of curriculum and learning environments in the ever-changing context of higher education.

In the programme, topics in the areas of higher education pedagogy and leading change processes are introduced by guest lecturers in eight residential 24-hour meetings over a period of 15 months. Ample literature connected to these subjects is provided, and a week's study tour to foreign universities is also arranged. A substantial aspect of the programme is that each participant leads a novel-to-them complex educational change project in their own department or faculty, which provides them opportunities to test new knowledge and ideas from the programme. Topics are chosen in interaction between programme facilitators and participants and provide theory and opportunities for practicing on a just-in-time basis. In this way, the programme facilitators play a mentor role for the whole group, which thus functions as an informal learning community, as multiple opportunities for reflection and feedback are provided throughout the programme, such as through group peer review and discussions around the projects. A more extensive description of the programme can be found in Grunefeld et al. (2015, see chapter 3).

Focus of this study

The current study focused on adaptive expertise in curriculum design and planning a successful change process in a university. Knowledge in these areas is essential for middle-level leaders working towards improving the quality of education or developing a new programme (Scott et al., 2008).

The research question was as follows: To what extent does this professional development programme for middle-level educational leaders in research-intensive universities contribute to participants' adaptive expertise in the area of curriculum design and planning of educational change? The research question was divided into four subquestions, with two addressing the difference in expertise before and after programme participation and two addressing the characteristics of the programme and work context that might be conducive to developing adaptive expertise:

1. What was the change in adaptive expertise between the beginning and end of the programme?
2. How did participants perceive the change in their knowledge between the beginning and end of the programme?
3. Which knowledge addressed in the programme was used by participants in completing the task?
4. Did participants experience a work climate and task variety in educational change that can be viewed as conducive to developing adaptive expertise?

Methods

A one-group pre-test post-test design was used. This test design utilised a mixed methodology with three instruments, including both quantitative and qualitative measures.

Participants

The investigation included 30 educational leaders from five universities in four cohorts of the educational leadership programme conducted over a period of three years. In total 57 (of 66) educational leaders participated in a pre-test, 30 of whom also participated in a post-test, resulting in a post-test response rate of 53% (see Table 5.1).

Table 5.1 Response

Cohort	N pre-test	N post-test	% Response
1	17	6	35%
2	15	8	53%
3	14	9	64%
4	11	7	64%
Total	57	30	53%

Instruments

We used the MEDEC instrument (Grunefeld et al., 2020, see chapter 4) before and after the programme for the first subquestion. This instrument consists of three parts: an authentic and representative task to capture adaptive expertise (Ericsson, 2014) in the domain "curriculum design and planning of educational change", a rubric, and a scoring procedure. The task was to design new curriculum and project plans in the role of an informal educational leader, which required a degree of adaptive expertise, since it concerned an unexpected,

challenging, and novel-to-them task (Ward et al., 2018), and participants needed to apply knowledge of the domain. The rubric focused on applying domain knowledge of curriculum design using the concept of constructive alignment (Biggs & Tang, 2011; Tyler, 1949/2013) and on applying knowledge of educational change in the project plan using the success factors identified by Havelock and Huberman (1977) and Gibbs et al. (2008). Constructive alignment was detailed using five criteria and the success factors for educational change using six. The scores (scale 0–10) on the 11 criteria represented the extent to which domain knowledge was used in the areas of curriculum design and educational change process design. The validity of this instrument was demonstrated for all criteria together and for two of the curriculum plan criteria and four of the project plan criteria (Grunefeld et al., 2020). We chose to use all 11 criteria in this study, and differences between the pre- and post-tests were analysed using a repeated-measures MANOVA approach.

Using the second instrument, two short online questionnaires, self-reported data were gathered for answering the second and fourth subquestions. After performing the task, participants were immediately asked to retrospectively grade their knowledge before and after participating in the programme on six areas derived from the goals of the programme. Differences were analysed using a repeated-measures MANOVA approach, and questions were asked about aspects of the work climate, such as supervisor support, and about participants' experience with educational change by asking about time spent on educational innovation projects. Later, in an additional online questionnaire questions were asked about participants' educational background and leadership role.

To answer the third subquestion, the third instrument used was a semi-structured interview that was conducted with each participant after completing the MEDEC task for the second time. All 30 participants were interviewed; however, four interviews were excluded due to recording problems. Participants were asked to reflect on their approach to solving the task, design steps and reasoning, and use of knowledge acquired in the programme. The interviews were coded with a focus on three topics in the area of domain knowledge and skills: the extent to which any theory and models were used in designing the curriculum and project plan, whether and which examples were used, and whether participants remembered how they had performed this task a year earlier in the pre-test. In addition, all references in the interview to participating in the programme or learning in the past year were coded, which was performed by the first author. An audit trail (Akkerman et al., 2008) was conducted by the second author to assess the acceptability (trustworthiness) of the coding; a description of the audit process and the final auditor report can be found in Appendix E. Using this approach, a quantitative measurement (MEDEC) was complemented by two qualitative measurements (questionnaire and interview).

Results

Subquestion 1, changes in expertise measured with the MEDEC instrument
The scores on the 11 criteria of the MEDEC instrument can be found in Table 5.2.

Table 5.2 Scores on the MEDEC instrument

Criteria	Pre-test		Post-test	
	M	*SD*	*M*	*SD*
Criteria curriculum plan				
Purposes 1: Who will follow the programme, and what do we know about the characteristics of the target group when they arrive?	4.6	2.43	3.83	1.97
Purposes 2: What are the learning objectives and educational purposes for the programme as a whole?	5.43	2.51	5.57	2.14
Experiences 1: What are the educational experiences provided by the curriculum?	6.43	1.87	6.43	1.79
Experiences 2: What will be the role of teachers, supervisors, counsellors, and mentors with respect to the learning experiences of students during the programme?	3.5	3.42	4.1	3.29
Assessment: Which assessment methods (formative and summative) are explicitly proposed to determine whether the purposes are being attained? Are they aligned with the purposes and experiences?	4.8	2.3	4.6	2.99
Criteria project plan				
Urgency: Which argumentation could foster a sense of urgency; which reasons are proposed that could (help) convince relevant parties to agree with the problem/objectives and the way the project should be carried out?	5.27	1.95	5.2	1.63
Consensus among colleagues: How is agreement/consensus achieved among colleagues (= teaching/research staff) maintained? Which activities are described that contribute to achieving and maintaining consensus?	4.93	2.07	5.47	2
Consensus among others: How is agreement/consensus achieved and maintained among relevant others (e.g., students, professional field, support staff, colleagues in other faculties)? Which relevant others are mentioned, and which activities are planned that contribute to achieving and maintaining consensus?	4.5	2.1	5.57	1.87
Authority: Who are the authorities and leaders (i.e., the people in power and control) who can ensure the project will be successful, and how are they kept in the loop about the progress of the project?	4.83	2.52	4.77	2.37
Infrastructure 1: Is it an efficient and effective process that leads to the realisation of the new programme?	5.07	1.98	5.2	1.88
Infrastructure 2: Are all necessary elements of the organisation of the new programme developed or created?	4.27	1.68	4.43	1.52

Note: scale 0–10, 0 = no information, 10 = rich information about this criterium.

Using a repeated-measures MANOVA approach, we tested whether the scores of the post-test were significantly different from the equivalent scores on the pre-test. The assumption of sphericity was not an issue, as this study had only two levels (pre-test and post-test), and the test with all 11 criteria resulted in Pillai's Trace $V = 0.43$, F (11, 19) = 1.311, $p = .291$, while the partial eta squared was 0.43.

Subquestion 2, changes in knowledge as perceived by participants

When answering the online questionnaire immediately after performing the post-test, participants estimated that their expertise at the end of the programme, operationalised as level of knowledge, had significantly improved since the beginning for all six areas of knowledge (see Table 5.3).

Table 5.3 Participants retrospectively estimated knowledge before and after the programme

	Before		After	
Knowledge of …	*M*	*SD*	*M*	*SD*
1. Course design (e.g., teaching methods, assessment methods)	7.4	0.85	8.1	0.51
2. Curriculum design (e.g., learning objectives, coherence, assessment programme)	7.0	1.26	8.1	0.68
3. Solutions for educational problems	6.6	1.10	8.0	0.74
4. Educational developments	6.3	1.34	8.0	0.74
5. Organisation and finances of degree programmes	6.2	1.52	7.4	1.25
6. Change processes	6.4	1.19	7.7	0.80

Note: scale 1–10, 1: no knowledge, 10: expert.

To test whether the scores before and after the programme were significantly different, a repeated-measures MANOVA resulted in Pillai's Trace $V = 0.86$, F (6, 24) = 25.281, $p = 0.000$, the partial eta squared was 0.86, and all univariate differences were also significant (tested with Bonferroni correction). In addition, two more questions were asked about participants' estimation of their level of expertise in designing a new curriculum and writing a project plan for an educational innovation project. The scores followed a similar pattern, with a 6.2 and 6.1 before the programme and a 7.8 and 7.6 after the programme.

Subquestion 3, which knowledge addressed in the programme was used?

The leading question for analysing the interviews was "Which knowledge and examples that were addressed in the programme did participants use in the task?" Participants were asked about the extent to which any theory and models from the programme were used in designing the curriculum plan and project plan.

Twenty interviewees (of 26) mentioned topics related to participating in the programme. They used concepts such as "stakeholder analysis" when working on their project plan (13 times), and, while working on the curriculum plan, 10 interviewees (of 26) used constructive alignment or related concepts. Seven interviewees used other project planning-related topics, 15 referred to other curriculum models, and four to curriculum design approaches. Examples of these ideas and theory include using a hybrid teaching and learning model; the concepts of constructive and destructive friction; the strategic value of stakeholder analysis and the importance of having conversations with all people involved; and that it is acceptable to begin with a project plan, as ideas for the content of a curriculum can arise later. Four (of 26) interviewees mentioned that they had not considered specific examples to help them with the task, while the others used examples from their own experience or from other participants in the programme or thought of examples encountered during the study tour or from guest lecturers or books.

Interviewees were asked whether they remembered the design they developed in the pre-test and whether they approached the task differently in the post-test. Fifteen interviewees (of 26) did not remember the previous task, and one of them reflected: "I see now that, although the programme introduces several models, when confronted with a complex request, it's easy to fall back on knowledge and experiences from before participating in the programme". The comments of the other participants were ordered into three categories: Five interviewees said they had a better structure now compared with the pre-test, five had a better idea of how an effective curriculum should be designed, and five thought they had a better idea of the process leading towards a new curriculum. Some examples of their statements showing the perceived difference between completing the pre-test and post-test tasks were as follows (see Table 5.4).

Table 5.4 Examples of statements showing perceived difference between pre-test and post-test

	Statements expressed just after the post-test
Structure	"This time, I started with the stakeholder analysis, and I see now that at this stage in the process, it is the design phase, and planning for the implementation phase is hardly necessary at this stage."
	"Then, my approach was much more unfocused."
Curriculum	"Then, I thought more of how to convince the senior leadership; now I thought more of the content of the programme."
	"Then, I had no idea of balance in a curriculum."
Process	"Then, I had no idea of what the process towards a new programme would be."
	"Now, I'm less concerned with bureaucratic issues, I am thinking more about engaging people in the process."

In addition, we selected the participants who had made the most substantial progress between the pre-test and post-test scores of the MEDEC instrument. In order to find these, we calculated the total scores for the pre- and post-tests for each participant (the sum on the 11 criteria), and we then ranked the participants based on the difference between the pre- and post-tests. Fifteen participants made progress with on average nine points more on the post-test, while nine participants had lower scores on the post-test with on average 13 points less than on the pre-test. We analysed the interviews of the three participants with the greatest positive difference, whose post-test scores were on average 22 points higher than the pre-test scores.

The three participants with the most substantial progress were aware that they approached the task in the post-test differently from the pre-test, and they said that they now better understand the design process. All three remembered and used important theory or methods or examples from other participants or from the study tour. For example, stakeholder analysis was mentioned by all three and constructive alignment by two of them, and two mentioned that they now better understand the context and organisation of the programme and have a different stance on designing education. These results show not only that their scores on the MEDEC instrument substantially improved but also that the programme made a difference in their domain knowledge and expertise.

Subquestion 4, other factors related to development of adaptive expertise

The prevalence of two conditions that might have influenced the development of adaptive expertise was investigated. Regarding work climate, participants rated the support by supervisors for normal tasks at 6.7 on a scale of 0–10 (see Table 5.5). We thus regard the work climate on average as supportive, which might have facilitated expertise development. There is a significant positive Pearson correlation (r = .44, p = .037), showing that supervisors who are rated as supportive for normal tasks are also rated as supportive for a project in which they were not involved.

Table 5.5 Work climate: (scale 1–10, 1 = no support, 10 = excellent support).

	M	*SD*	Min	Max
How do you rate the support of your **supervisor** regarding your normal tasks?	6.7	2.09	1	9
How do you rate the support of your **supervisor** regarding your innovative project? (NB. Only answer this question if your supervisor and your client are different persons)	4.8	3.08	1	9
How do you rate the support (approachable, encourages people, organises help) of the **client** of your innovative project?	7.3	1.35	4	10

Secondly, in the past year, these leaders spent on average a third of a fulltime week load (between 0.03 fte and 1 fte; $M = 0.32$ fte, $SD = 0.28$) on a variety of educational innovation questions and projects, where the mean number of projects was 15.6 ($SD = 15.9$). We regard this level of variety of tasks as presenting sufficient opportunity to gain experience for practicing required skills.

Conclusions and discussion

The research question was "To what extent does this professional development programme for middle-level educational leaders in research-intensive universities contribute to participants' development of adaptive expertise in the area of curriculum design and planning of educational change?" We investigated this question in two ways. We asked participants to rate their level of knowledge before and after the programme, and they estimated that they had made significant improvement in all areas. This self-report measure was complemented by the MEDEC instrument, to provide a less biased measurement. The MEDEC instrument detected no significant differences in adaptive expertise. Possible explanations for this unexpected contrast are discussed next.

A first explanation for the contrast, more specifically for the limited progress on the MEDEC instrument, could be that participants did develop adaptive expertise, but that this was not revealed by the MEDEC instrument. It might be that the task, although deemed relevant, was not representative for the work package of educational leaders. However, we do not consider this a plausible explanation, because as described in chapter 4 the task was carefully selected and captures an essential part of the domain. Factors in the workplace that are conducive to expertise development (work climate and variety of tasks) appeared to be at an acceptable level, and earlier evaluative research showed that the programme contributed to forming a learning community (Grunefeld et al., 2015). We therefore do not consider these factors to account for the lack of progress on the MEDEC instrument.

A second explanation for this unexpected difference could be a halo effect (Feeley, 2002) of participants' enthusiasm for the programme as a whole (Grunefeld et al., 2015, see chapter 3), and a third, that participants, at the moment of performing the task, as was indicated by a comment made by one of the participants, did not have the appropriate domain knowledge available. When this third explanation is valid, it suggests that new domain knowledge had not been learned well enough to function and that adaptive expertise had not been developed sufficiently.

This leads to a fourth explanation, that the programme failed to support development of adaptive expertise by not providing sufficient opportunity for deliberate practice to improve individual performance in tasks in the domain of curriculum design and planning of educational change. The practice organised in the programme could probably be classified as *structured practice*, which consists according to Ericsson and Harwell (2019) of group activities designed by a coach or teacher, which are not tailored to enhance participant's individual level of adaptive expertise. Assuming this explanation is true, what advice can be found in the literature to improve the programme? As Ericsson (2014) indicated, what matters is not only the amount of deliberate practice but also the specificity of the training tasks. One way to improve the programme may be implementing case-based learning (Mumford et al., 2009), which should encourage considering and developing mental models for leadership problems and solutions. This should be performed with sufficient intensity, as Mumford and colleagues observed that in most leadership training programmes at that time, case-based learning lacked depth of analysis, or the number and quality of the cases was not sufficient to cover the domain. Another suggestion is to increase the depth of reflection by using, for example, a "reflection prompt protocol", as proposed by Wetzel et al. (2015), to train adaptive expertise by inviting critical dialogue about cases and experiences. A further option was proposed by Ward et al. (2018), who presented a model for leadership expertise that might be useful for the professional development of education leaders. The model describes the "mental modelling processes" that leaders engage in when dealing with unexpected and challenging situations. Ward et al. (2018) describe detailed principles for training these processes that would need interpretation when applied to the programme under investigation. The above suggestions to improve the programme by increasing the number of cases to be analysed and by performing deeper reflection on cases and experience would increase the time-on-task and thereby probably the resulting learning outcomes (Chickering & Gamson, 1987). The duration of the programme could alternatively be extended, and existing forms of practice could be strengthened, for example through continued reflective activities such as action learning sets, workshops, or mentoring.

The outcomes of this study call for a redesign of this programme and other comparable professional development programmes for leaders in higher education by, for instance, following the suggestions mentioned above. However, such redesign might be interpreted as aiming at "teaching to the test" and thereby limit opportunities for learner control and realisation of other desirable outcomes of a programme. Such redesign should in any case consider all of the desirable outcomes of such a programme as well as reliable and valid methods of measuring the achievement of these outcomes.

Chapter 6

Summary and general discussion

Introduction

The research project which we reported about in this thesis, set out to investigate the extent to which professional development opportunities for educational leaders in research-intensive universities, support them in developing expertise in leading educational change. We focused on the Educational Leadership Programme that has been organised by Utrecht University (UU) for 20 years. This programme aims at professional development for educational leaders in formal and informal roles, to develop their expertise in leading educational change and to create a network of like-minded colleagues. The main activities in the programme are a series of 24-hour residential meetings with guest lecturers, a study tour to foreign universities, and an innovative project which is carried out by the participants in their daily practice.

In this thesis we reported first on a comparison of the UU programme with four other trajectories for educational leaders in research-intensive universities in North-west Europe, using the five core features of effective professional development distinguished by Desimone (2009), which are content focus, active learning, coherence, duration and collective participation. Furthermore, we collected information on outcomes of the UU programme at four levels of evaluation, reaction (level 1), learning (level 2), behaviour (level 3) and results (level 4) (Kirkpatrick & Kirkpatrick, 2006). We combined this information with an analysis of the programme design to find out what contributed to these outcomes and to see how the programme could be improved. For the evaluation at level 2, learning outcomes, we operationalised expertise educational leaders need to be able to enhance education provision, choosing as our focus curriculum design expertise and expertise in designing a plan for an educational change project. The required expertise can be regarded as adaptive expertise (Hatano & Inagaki, 1986): the ability to use expertise flexibly in the ever-changing context of higher education. We created an instrument to measure the level of adaptive expertise in this domain, and then used that instrument to measure the participants' level of adaptive expertise before and after participating in the UU Educational Leadership Programme.

The main aim of this thesis was to study professional development activities for educational leaders in the context of research-intensive universities and the extent to which these activities support educational leaders in developing expertise in leading educational change. In this chapter we summarise the four studies and share our reflections on developing adaptive expertise and on the design of professional development for educational leaders. The chapter concludes with a reflection on the context and generalisation of the outcomes, and on opportunities for further research.

Summary of the studies

The question central in the first study (chapter 2) was: Which formats are used for professional development opportunities offered to educational leaders, and what are perceived gains and challenges of these formats? Using a case study approach, with case and cross case analyses, the first study portrays and compares trajectories at five European research-intensive universities in Utrecht, Lund, Oslo, Copenhagen and Edinburgh. We found three main formats. Two formats were professional development programmes for groups of educational leaders. The programmes at the universities of Oslo and Copenhagen represent the first format, as adaptations for educational leaders of their generic academic leadership programmes to include topics from higher education research. These programmes last typically around 80 hours, have off-campus and on-campus meetings, and focus on leadership skills and topics from higher education research, necessary for the implementation of the university's teaching and learning strategy. The programmes at Utrecht and Lund represent the second format, as specifically designed programmes for leaders of educational change, with the aim to support them in their role as change agent in leading educational change. These programmes last typically around 200 hours. The Lund programme emphasises learning about leadership, while the Utrecht programme focuses on inspiration, forming of a network with other educational leaders and knowledge needed for educational innovation. A third format, at the University of Edinburgh, was an individual trajectory being adapted to each individual academic, with content and activities chosen by the participant and his or her mentor, and leading up to a nationally recognised award. The duration of this individual trajectory varied per participant.

We analysed the three formats using the five core features of effective professional development (Desimone, 2009), content focus, active learning, coherence, duration and collective participation. For each of the formats, we could find that practically all core features had been attended to, which would mean that these formats should be effective (Desimone, 2009; Desimone & Pak, 2017). Three content areas were covered with different emphasis in all three formats: leadership, change processes and higher education pedagogy and curriculum design. Active learning methods were used in the first and second format and a specific form of reflective learning was offered for small groups of participants, in which they reflect together on critical incidents in daily practice. In the third format, participants reflect together with their mentor on their progress and next steps. Coherence between programme and prior knowledge of participants, and between programme and daily practice was aimed for through reflection on practice and via participants' innovative projects. The duration of the programmes in the first and second

format was substantially longer than the minimal duration suggested by Desimone, which was at least 20 hours throughout a semester. Lastly, all programmes were aimed at educational leaders of the same institution (collective participation). Evaluations among the participants, where available, showed that they regarded the programmes as effective.

The second study's purpose, reported in chapter 3, was to describe in detail and to systematically evaluate the effects of the Educational Leadership Programme at Utrecht University as perceived by the 2000-2008 participants and their supervisors (i.e. vice-deans, educational directors or educational managers, and participant's full professors).

A questionnaire was developed to measure the effects of the programme as perceived by the participants, based on interviews with four participants. They mentioned possible effects in four categories: on participants personally, on their teaching practice, on their network, and on their career. Eight cohorts of participants (n=78, 66%) completed this questionnaire. On a Likert scale (1-5, with 1 no effect, 5 strong effect), the overall mean effect was 3.6. The four subscales had scores between 3.4 and 3.8. The strongest effects were: broadening the educational vision (personal effect), using elements from the presentations by guest lecturers, building a network and getting to know better what goes on in other faculties and being more involved in curriculum development in the faculty.

The second part of the questionnaire included questions about the components of the programme. The elements that the participants considered as especially effective were: the thematic meetings, because of the input of guest lecturers and opportunity for discussions with other participants; the innovative project, because of the transfer between programme and daily practice; the study trip, again because of ample opportunities for discussions with other participants during the week of the study trip and because the visits to other universities invite reflection on practice at the home university.

To complement the participants' viewpoints, we asked vice-deans, educational directors or educational managers and full professors about their perception of the work and development of the staff members from their faculties and departments who participated in the programme. They saw participants becoming more knowledgeable; noticed that participants operated more as generalists and looked over faculty boundaries; and were more involved in educational innovation and coordination of education. In their opinion especially effective components of the programme were: the projects, because they were successful and had led to follow-up initiatives; the required selection of participants, because the selection process made participating in the programme a way of rewarding the staff member.

This study established mainly outcomes of the professional development programme at level 1 (reaction), level 3 (behaviour) and level 4 (results) (Kirkpatrick & Kirkpatrick, 2006). Participants and their supervisors were highly satisfied with the programme, they believed that the participants had changed and used what they had learned in their daily practice. Furthermore, participants and their supervisors had noted changes in the teaching approach and curriculum offerings at the university.

One type of outcome from the Kirkpatrick and Kirkpatrick (2006) framework, the actual learning outcomes (level 2), had been evaluated in chapter 3 only by the perceptions of participants and their supervisors. In the third study, reported in chapter 4, we developed an instrument to measure a subset of the intended learning outcomes in a less biased way. We also examined the validity and reliability of this new instrument. The programme aimed at supporting educational leaders to develop their expertise in leading educational change and to create a network of like-minded colleagues. We focused on the level of adaptive expertise in leading educational change. As no instruments were available that we could immediately use for a pre- and post-test study on the effectiveness of the Educational Leadership Programme, we developed a new instrument. Using insights from expert performance research as a starting point (Ericsson et al., 2006), we chose an authentic and substantial design task within the domain of leading educational change, that captures an essential part of educational leadership competence in the areas of curriculum design and planning of an innovation project. This task is a non-routine work sample, it could be a realistic request for educational leaders, and it requires them to take immediate action in an unexpected situation. The task required adaptive expertise. Respondents were asked to design a curriculum plan for a completely new curriculum and a project plan for the implementation of that curriculum. To assess the products generated by the respondents (curriculum plan and project plan), a rubric and a scoring procedure were developed. The criteria of the rubric were derived from theoretical insights from the domain, while indications of the levels of expertise and examples were drawn from a sample of the products of the task. Task, rubric and scoring procedure together were named the Measuring Expertise in Designing Educational Change (MEDEC) instrument.

We established the validity and reliability of the MEDEC instrument using the products made by participants in four cohorts of the Educational Leadership Programme, and by two groups of experts who were also asked to perform the task. Reliability of the scoring procedure was tested with a subset of all products. The scoring procedure includes a preparation phase with two coding steps with good interrater reliability (Cohen's kappa for the coding was between .68 and .87), followed by an assessment phase also with

good interrater reliability (Spearman's rho was .86 for the assessment of the curriculum plan and .83 for the project plan). Validity was tested by comparing the products of two groups of experts with those participants made at the start of the Educational Leadership Programme, using Wilcoxon-Signed-Rank, Mann-Whitney, Friedman's ANOVA and Kruskal-Wallis tests. We concluded that the MEDEC instrument as a whole differentiates between two levels of proficiency, the level of experts with an educational sciences background on the one hand and the level of experienced educational leaders and participants on the other hand. Significant differences also were shown between the three groups on separate criteria. The participants had, as expected, lower scores than experts with an educational sciences background for all 11 criteria separately and for 6 of 11 criteria these differences were significant. Contrary to our expectation, the third group, experienced educational leaders, did not differ significantly from participants. We concluded that this instrument can be used for low stakes purposes and decided to use the instrument in the fourth study.

The purpose of the fourth study (chapter 5) was to investigate the extent to which the UU Educational Leadership Programme for educational leaders contributed to the development of their adaptive expertise in leading educational change. A study was performed with a one-group pre-test post-test design using changes on the MEDEC instrument as an outcome measure, with 30 participants from five Dutch universities in four cohorts of the Educational Leadership Programme. In addition, we asked participants in an online questionnaire to estimate their own knowledge and expertise at the end, and in retrospect, at the start of the programme: a self-report outcome measure. Furthermore, in this questionnaire and in interviews with all respondents immediately after the post-test, questions were asked about factors found in the literature that could be regarded as supportive for the development of adaptive expertise.

Comparing the participants' estimation in the questionnaire of their pre- and post-test domain knowledge and expertise in designing a new curriculum and writing a project plan for an educational innovation project, we concluded that the participants thought that they had improved significantly on these outcome measures. The interviews showed that participants had used concepts and examples that were addressed in the programme, and that they now had a better idea of how a curriculum should be structured and of the process to be initiated towards a new curriculum. Contrary to our expectation however, we detected no significant differences between the pre-test and the post-test with the MEDEC instrument for the entire group. We asked additional questions about factors in the workplace that could be beneficial for developing adaptive expertise, such as work climate, supervisor support and task variety. The answers on the questions showed that

the workplace could be regarded as supportive for the development of adaptive expertise. We concluded that to achieve an increase of adaptive expertise for all participants, the programme needs to be adjusted. We will address these adjustments when we reflect on development of adaptive expertise.

Reflections

Effectiveness of the UU Educational Leadership Programme

In this thesis we studied the UU Educational Leadership Programme as an example of a professional development approach to support educational leaders in "*building knowledge of and experience with challenging change processes that lead to improving the quality of curriculum and learning environments in the ever-changing context of higher education*" (see chapter 1). The aims of the UU programme as listed in chapter 3 were, (1) that participants would acquire a theoretically sound and practical vision of both student learning and university education, (2) that they would be able to design and successfully implement solutions for education problems, aimed at improving student learning experiences, using state-of-the-art insights in education and in change processes, and (3) that they be in a position to network with like-minded colleagues throughout the university, involved in innovation in assessment, teaching, and learning.

We have seen that participants and their supervisors agreed that the UU programme was highly successful and yielded results in terms of impact on participant's personal effectiveness, careers and network, and impact on the university. As these results are among the aims of the programme, we concluded in chapter 3 that the programme was effective. This conclusion was in line with an analysis of the programme using core features of effective professional development (Desimone, 2009), which all could be recognised in the programme's design. However, one aspect had not been evaluated in this process in chapter 3 other than through perceptions of the participants and their supervisors: the learning outcomes of the programme in terms of the development of expertise. In chapter 4 we described that educational leaders need adaptive expertise in the area of leading educational change, rather than routine expertise, because they work in an ever-changing context and need to be flexible and deal with unexpected situations. We developed a new instrument to measure adaptive expertise in the area of one specific aim of the programme, specifically "to design and successfully implement solutions for education problems" (reported in chapter 4). We regarded this task as capturing an essential part of educational leadership competence. The Measuring Expertise in Designing Educational Change (MEDEC) instrument was used to perform a pre-test

and post-test of participant's adaptive expertise, however, an increase could not be ascertained, see chapter 5. So, while the participants, who can be regarded as highly specialised scientists in their field, said they had learned much and had observed effects of the programme in their professional life, they still had not enhanced their adaptive expertise. We will reflect on this from the perspective of research into (developing) adaptive expertise and from the perspective of effective design of professional development programmes.

Adaptive expertise

We have evaluated the level of adaptive expertise of educational leaders with the MEDEC instrument, as we reasoned that the description of adaptive expertise fitted best to the kind of expertise educational leaders need: they need to be flexible, deal with unexpected situations in an ever-changing context and need to make quick strategic decisions. The task we defined as part of the MEDEC instrument was designed to simulate an authentic request that was representative of what educational leaders might need to do, so that we could measure in an ecologically valid way the level of adaptive expertise of the educational leaders in our sample and later also the development of that level. The MEDEC instrument was newly developed for this goal. The authenticity of the task was confirmed by participants and educational leaders who reacted positively to the task. They mentioned that it was an interesting task and useful for their work.

Our results might be interpreted similar to the results of the study of the development of adaptive expertise by Barnett and Koslowski (2002). These authors compared the problem-solving performance of two kinds of experts and a group of novices, asking expert business consultants, expert restaurant managers and novice business students to solve problems concerning hypothetical events that might affect the success of a restaurant. They were surprised that the business consultants, although they did not achieve the maximum scores, outperformed the restaurant managers, and that restaurant managers performed only slightly better than the students. Barnett and Koslowski (2002, p. 244) suggest that the business consultants' expertise was better transferable to novel situations than the restaurant managers' expertise. In others words: the consultants have developed adaptive expertise, whereas the restaurant managers have developed routine expertise. In our case, we compared the performance on the MEDEC task of educationalists (educational scientists and facilitators of the Educationalleadership Programme), experienced educational leaders and participants in an educational leadership programme. Our findings follow a similar pattern: just like the consultants, the educationalists scored best, although not the maximum scores. Just like the scores of restaurant managers and the students, the scores of the experienced educational

leaders and the participants were significantly lower and were close to each other. The conclusion would then follow that the experienced educational leaders have developed routine expertise in leading educational change.

In a follow-up study, reported in the same paper, Barnett and Koslowski examined the reasoning process of the three groups. They found (p. 255) that the business consultants had shown more evidence of theory-based reasoning than the other two groups. They concluded that in order to find expert solutions, one would need to be able to use theoretical reasoning, or have abstract knowledge about the problem at hand. Similarly, in our case it can be hypothesised that the educationalists, because of their educational sciences background, were better in theory-based reasoning than the other two groups.

In a third study reported in the same paper, Barnett and Koslowski found that the main characteristic of business consultants that explained the differences with the restaurant managers was consulting experience (pp. 257-258). Relevant consulting experience included experience with addressing a variety of strategic problems and the need to explain decisions or advice to others. The work experience of business consultants, who were applying their knowledge to many different contexts, had helped them to build decontextualised abstract knowledge, which is typical for an adaptive expert (Barnett & Koslowski, 2002, p. 260; Chi, 2011). Other authors also mentioned the value of having experience in a variety of contexts and with a variety of problems as relevant for (developing) adaptive expertise (Bohle Carbonell et al., 2014; Chi, 2011; Hatano & Inagaki, 1986). Our finding that the experienced educational leaders did not have high scores might be explained from this perspective. They probably have not had experience or training in solving educational problems with the intensity that educational scientists have had and probably would not have had incentives in their work context to invest in extending this knowledge base. We did not use the same research design as Barnett and Koslowski, but asked participants to indicate the extent of task variety and the amount of time they were spending on relevant tasks for the domain of leading educational change. We found that our participants in the same period that they participated in a professional development programme, had worked in an environment that could be viewed as conducive to developing adaptive expertise (Bohle Carbonell et al., 2014). That their scores on the MEDEC instrument did not improve implies that an encouraging working environment is not enough to develop adaptive expertise.

Based on this reflection using the findings of Barnett and Koslowski, an important conclusion is that the Educational Leadership Programme of Utrecht University, and probably also similar professional development programmes, would need to be changed

if a goal is to help educational leaders develop adaptive expertise. They would need to extend their knowledge base and the ability to use that knowledge in a variety of contexts (Barnett & Koslowski, 2002; Chi, 2011). How this could be achieved is a topic of the next section.

Developing adaptive expertise

Research into expertise development suggests that in order to develop expertise, people need to engage in deliberate practice, developing their expertise through a series of increasingly difficult exercises (Ericsson, 2014, p. 191), for which thorough reflection and feedback on performance by a mentor is needed. These increasingly difficult exercises should be specifically designed for improving of the level of expertise (Ericsson & Harwell, 2019). Specific for adaptive experts and what distinguishes them from routine experts, is that they use an analytical approach to their practice, which should be used in these exercises. Adaptive experts reflect on their skills, and while trying to explain why a solution would have worked, aim to discover the characteristics of a problem and a situation. This would make their knowledge available for solving other problems (Chi, 2011, p. 32).

The UU Educational Leadership Programme aims at developing the level of adaptive expertise, and it could be hypothesised that if the programme would induce more emphatically such an analytical approach in the participants, with a strong focus on understanding the mechanisms for leading educational change, the participants would develop more adaptive expertise in the domain. Following this line of thought, changing several elements of the programme design could probably help improve the outcomes. For example, based on what we mentioned in the previous section, more emphasis on acquisition of knowledge in the area of leading educational change would be necessary. Programme facilitators, taking a mentor role for the group, could for example offer participants more access to theory and appropriate scientific literature in the domain, and involve them in systematically discussing and comparing these theories and their application in the professional practice of participants. Other suggestions, also mentioned in chapter 5, are to include more in-depth case discussions (Mumford et al., 2009), which also should invite participants to use their knowledge base in a wider variety of situations and contexts. These activities, meant to achieve adaptive expertise development, could be described as focused on just-in-time acquisition of a specific knowledge base (Boshuizen, 2009; Korthagen et al., 2001). The need for learning opportunities that intentionally increase in complexity should be emphasised.

Changes in the programme design should also include more reflective activities (Wetzel et al., 2015) related to the educational innovation projects, for example reflection on participant's approaches to the change process, more structured reflection on their leadership competencies, and reflection on the quality of the educational aspects of the project. In these reflective activities use of appropriate theory should be emphasised. To reach the level of abstraction needed to develop more adaptive expertise, it would be advisable to discuss variations of the problems addressed in the projects, or programme facilitators and peers could suggest alternatives to the chosen approach in the change process on hand, and, using the relevant theory, advantages and disadvantages of these alternatives could be discussed. Essential elements would be discussion of mechanisms and characteristics of problems and solutions, and the systematic referral to applicable theoretical knowledge. A last suggestion for improving the outcomes is to offer more support in the work environment for carrying out the project, thus, to provide better opportunities for learning-on-the-job. One example is to include in project teams an educational developer who could just-in-time share their knowledge of leading change processes and educational science. This would provide participants with extra opportunities for feedback, reflection and learning in the workplace.

As mentioned before, an important aspect in expertise development is the role of a mentor or coach, who can assess someone's performance and create individualised training activities for solitary practice (Ericsson & Harwell, 2019). In professional development programmes of longer duration for educational leaders, this role could be taken by the facilitators of the group. To achieve adaptive expertise development in all participants, facilitators would ideally need to design and organise the training tasks, reflection and feedback to address the needs of each individual participant. Activities of individual participants could be for example taking part in group activies during meetings or doing individual home exercises. However, it is not easy to differentiate group activities so that each participant can develop based on their individual level of prior knowledge and experience. To achieve this in facilitating a group of participants, much could be learned from teachers in primary and secondary education, who would use differentiation as a teaching strategy (Algozzine & Anderson, 2007; Dixon et al., 2014).

In chapter 1 we characterised the Educational Leadership Programme as structured practice, defined by Ericsson and Harwell as group training with a facilitator, but not individualised (Ericsson & Harwell, 2019, p. 6). The programme is and should remain group-based because it has broader aims than expertise development, including forming a network across the university. If the programme changes to include more differentiated,

individualised, training of adaptive expertise, the expression "structured practice" does not apply anymore. Following the structure of the descriptions in Ericsson and Harwell (2019), we propose to use *differentiated structured practice* to describe the type of practice needed in professional development programmes as the Utrecht University Educational Leadership Programme; this is individualised practice in a group setting, designed and guided by a facilitator. In differentiated structured practice, participants would engage in group activities designed by a teacher or facilitator, and many of these activities have individualised variations, tailored to participants' level of skill and aimed at providing them with opportunities to improve specific aspects of their current performance. Facilitators and peers are involved in reflection and giving feedback on performance.

Features of effective professional development

Participants in the five trajectories we analysed in chapter 2 evaluated the trajectories as positive and reported positive learning outcomes. The UU Educational Leadership Programme, evaluated in chapter 3, also had positive reactions of participants. According to participants and their supervisors, the programme resulted in changing participants' behaviour and teaching practice, and had an effect on the organisation. It is therefore disappointing that the UU-programme, in which the five core features described by Desimone (2009) could be recognised (chapter 2), was not effective in supporting participants in increasing their level of adaptive expertise in leading educational change (chapter 5). This asks for an analysis of the core features of effective professional development.

Desimone's core features (content focus, active learning, coherence, duration and collaborative practice) describe necessary conditions for programme designs that result in changes in participant's knowledge and teaching practice, but they are probably not sufficient conditions for identifying programme designs that are effective in developing adaptive expertise. In more recent reviews listing similar core features, specification has been added, although it was recommended that even more precise operationalisation is necessary (van Veen et al., 2012). Two more recent lists already include references to expertise development. In literature reviews by Steinert and colleagues (2016; 2006; 2012), several features of the design of effective professional development initiatives aimed at enhancing teaching effectiveness in the domain of medical education were identified (Steinert et al., 2016, p. 780). These features are related to high satisfaction among participants and to changes in knowledge and educational practice (Steinert et al., 2016, p. 779), and, interestingly, they correspond largely with Desimone's core features. These are the key features listed by Steinert et al. (with Desimone's core features in brackets): the relevance of the content (content focus), a variety of instructional methods,

experiential learning and reflective practice, opportunities for practice and application in multiple individual and group projects (active learning/collective participation), peer support and the development of communities of practice (collective participation), institutional support (coherence) and longitudinal programming (duration). Another list of seven features of effective teacher professional development was presented by Darling-Hammond et al. (2017). In their review study of factors in teacher professional development connected to an increase in student achievements, seven design elements emerged, expanding on the five core features defined by Desimone (2009). The seven features are: (effective professional development) is (1) content-focused, (2) incorporates active learning strategies, (3) engages in collaboration, (4) uses models and/or modelling, (5) provides coaching and expert support, (6) includes time for feedback and reflection, and (7) is of sustained duration. Some of these seven design elements remind intuitively of expertise development literature, for example the fourth, use of models and modelling, could be a way of studying theory and mechanisms (Barnett & Koslowski, 2002; Chi, 2011) and cases (Mumford et al., 2009), and coaching and expert support (the fifth) and feedback and reflection (the sixth) remind of conditions for expertise development (Ericsson & Harwell, 2019).

Both Steinert and Darling-Hammond and colleagues expand the active learning and collaborative practice features to include more specific types of activities and reflection and feedback. The suggestions we presented in chapter 5 to enhance the programme design, including extended training with a strong analytical approach to theory and mechanisms (Chi, 2011), and analysing case studies (Mumford et al., 2009; Ward et al., 2018), could be seen as implementation of some of Darling-Hammond and colleagues' design elements. Inspired by the suggestions we presented in chapter 5 for improving the UU Educational Leadership programme we propose a new list of core or key features for effective professional development programmes for research-intensive university educational leaders, building on the core and key features lists of Desimone (2009); Steinert et al. (2016) and Darling-Hammond et al. (2017), and linking these explicitly to expertise development research. Use of this extended and specified list of features as frame of reference for the design of professional development programmes, might lead to effective designs aimed at strengthening the participants' level of adaptive expertise. While keeping the two core features *Coherence* and *Duration*, we propose the following changes; we adapt three core features and add one.

Content focus should include emphasis on an analytical approach using appropriate theory, and discussions of mechanisms and characteristics of problems and solutions (Barnett & Koslowski, 2002; Chi, 2011), which is necessary to achieve higher levels of adaptive expertise.

Active learning strategies should include in-depth project and case discussions (Mumford et al., 2009; Ward et al., 2018); and in complexity increasing learning opportunities (Ericsson, 2014) should make use of models of effective practice (Darling-Hammond et al., 2017; Ward et al., 2018).

The core feature *Collaborative practice* should be extended with: *and individualised training*. This core feature needs to address the different effects group and solitary activities have on expertise development. Teacher and leader professional development activities in Desimone's and Steinert's reviews are often group activities, led by facilitators. Individualised training is essential for expertise development (Ericsson & Harwell, 2019), and hence should be included as a core feature of effective professional development.

A new, separate core feature should be *Coaching, reflection and feedback*, as Darling-Hammond and colleagues propose: programme facilitators should provide coaching and expert support and organise reflection in the group and feedback on individual performance (Ericsson, 2006a; Wetzel et al., 2015).

Our view in the previous section was that if these suggestions would be implemented for the Utrecht Educational Leadership Programme, the programme would probably help participants better developing a higher level of adaptive expertise. However, the programme would also be more demanding of individual participants and would require extra motivation (Ericsson, 2006a), and it is uncertain whether participants and their employers are prepared and willing to invest more than they already do.

Context: research-intensive universities

In this thesis we studied professional development programmes for educational leaders at research-intensive universities. It was a convenience choice in the sense that a network was used of research-intensive universities of which Utrecht University is a member. At research-intensive universities leadership of research is often seen as more important than leadership of education, or at least, it is studied more (Quinlan, 2014). For example, a recent literature review about leadership development in higher education (Dopson et al., 2019) does not even mention leadership of education.

Research-intensive universities are a context in which research and teaching are competing for time and attention. Van Schalkwyk and colleagues found that in a research-intensive university "academics are torn in different directions" and subsequently make their own choices for prioritising research, teaching, administration or professional

development (van Schalkwyk et al., 2015). This might explain why not all trajectories we studied resulted in continued interaction between the participants after the programme ended (chapter 2); academics might have felt required to prioritise other tasks. This time pressure is also relevant when considering duration or intensity of professional development programmes. Above we mentioned that participants will experience a higher demand on their time and motivation when more activities consistent with the core features are added to an existing professional development programme to achieve adaptive expertise development. The issue here for the UU Educational Leadership Programme is to which extent the current outcomes (networks have been formed and participants and their supervisors report that much has been learned) are felt to be sufficient or that further development of adaptive expertise needs to be pursued.

One of the aims of the Utrecht programme was that participants should form a network of educational leaders throughout the university (chapter 3), because together, if they continue to meet in a variety of formations, the participants might be able to influence culture change at their institution (Bendermacher et al., 2017; Steinert et al., 2016; Trowler, 2008). In many research-intensive universities, increased attention for teaching and educational change has probably changed the research-teaching balance (Fung et al., 2017; Gibbs et al., 2009; Stensaker, Bilbow, et al., 2017). For example, Dutch knowledge institutions and research funders recently have jointly published proposals to reduce the workload of academics by changing the recognition and reward structures, in a publication titled "Room for everyone's talent" (VSNU, 2019). One of the effects these proposals could have is enhanced opportunities for academics choosing to prioritise education and spend time on related professional development. Based on the above, universities aiming at a more balanced appreciation of research and teaching should unreservedly support networks of leaders of educational change and organise follow-up activities for alumni of educational leadership programmes.

Further research

Generalisation of our study results to other contexts or to other sectors of education is not self-evident. Although workload might be high in all kinds of contexts, organisational structures, roles of educational leaders and priorities differ between educational sectors. These factors will probably influence responsibilities, tasks, and ambitions of participants in an educational leadership programme, which should in turn certainly influence the content focus of a programme. For example, for educational leaders with mainly managerial tasks, the focus on leading educational change might be too restricted and content regarding educational management should be added.

It would be interesting to see whether results of our fourth study (chapter 5), that participants' adaptive expertise had not been enhanced significantly, also apply to the other programmes included in our comparison (chapter 2). The programme in Lund has more emphasis on theory about leadership of educational change than the UU programme, and the Edinburgh trajectory focuses on individuals guided by a mentor rather than on groups of participants, which both might have effect on expertise development. Applying the MEDEC instrument in these trajectories in combination with detailed investigation of the design of activities in these trajectories could add insights about how the core features of effective professional development need to be operationalised and implemented.

We identified several possible sources of bias. In the four studies in this thesis a variety of methods was used, and we have done our best to mitigate as well as possible the disadvantages and biases of these methods. In chapter 3 we complemented the perceptions of participants with the views of their supervisors on the effects of the UU programme. In chapter 5, we complemented the perceptions of participants of their learning gains with a less-biased measurement using the MEDEC instrument. Another type of bias is important to mention here, researcher confirmation bias, because it was one we heeded since the start of the project. Of the four researchers involved in the project, two have been programme facilitator, one has been guest lecturer, and one has been participant in the UU programme. Additionally, the research was carried out within our own institution, which also might hinder unbiased observation. We have been as watchful as possible, by constantly reminding ourselves to step back and take an as much as possible objective stance, to ascertain that our interpretations, analyses, conclusions and discussions would be accurate and reproducible. Notwithstanding our efforts, some bias will undoubtedly still exist.

Further research could improve the quality of the MEDEC instrument, because the validity of some of the criteria has not been confirmed. The MEDEC instrument could benefit also from broadening the range of possible representative tasks (work-samples) in the domain of leading educational change.

We also propose to do evaluative research in other research-intensive universities into the actual learning outcomes of professional development programmes for educational leaders in the domain of leading educational change. There are more variations of the UU Educational Leadership Programme now than when we started our project. It is important to know which design elements contribute to expertise development to be able to further add to the literature on characteristics of effective professional development.

If the UU decides to change the Educational Leadership Programme to stimulate the development of adaptive expertise in the participants, thorough evaluation using a design based research approach (McKenney & Reeves, 2019) would be advisable.

Furthermore, the proposed additional task for facilitators, providing individualised feedback and tailored training tasks in a group setting, is probably difficult. It would require that they are, in a sense, experts themselves, following the thoughts in *It takes expertise to make expertise* (Bransford & Schwartz, 2009), in both the expertise domain and the domain of facilitating and coaching of expertise development. Research into the important role of facilitators in professional development programmes is scarce (O'Sullivan & Irby, 2011; Steinert et al., 2016; van Driel et al., 2012), but essential. A possible direction is research into facilitator expertise, for example around the person of the facilitator, as expert. Research in this line could aim at describing the expertise domain, investigating what distinguishes expert facilitators from novices, or exploring how facilitator expertise develops. Further research could aim at comparing facilitator expertise and teacher expertise, or at investigating how school teachers differentiate and adapt their teaching to individual students, and how this could be translated to differentiation in professional development programmes for (for example) educational leaders.

Final thoughts

The central question for this thesis was how educational leaders can be supported effectively in developing their expertise in leading educational change in research-intensive universities. We have found that the UU programme is an example of a successful approach resulting in, according to participants and their supervisors, increased knowledge, changes in daily practice and educational change outcomes for the organisation. Valuable elements of the UU approach are the theoretical input during the eight meetings and the study tour, addressing participant's questions and tasks in daily practice, and the multiple opportunities for interaction between the participants. Participants could probably achieve even more outcomes, including adaptive expertise, if the programme offered more opportunities for *differentiated structured practice*, individualised practice in a group setting, where participants would engage in group activities with variations tailored to participants' level of skill, designed and guided by a facilitator, to develop adaptive expertise in leading educational change.

References

Akkerman, S. F., Admiraal, W., Brekelmans, M., & Oost, H. (2008). Auditing quality of research in social sciences. *Quality & Quantity, 42*(2), 257-274. https://doi.org/10.1007/s11135-006-9044-4

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132-169. https://doi.org/10.3102/0034654311404435

Algozzine, B., & Anderson, K. M. (2007). Tips for teaching: Differentiating instruction to include all students. *Preventing School Failure: Alternative Education for Children and Youth, 51*(3), 49-54. https://doi.org/10.3200/PSFL.51.3.49-54

Barnett, S. M., & Koslowski, B. (2002). Adaptive expertise: Effects of type of experience and the level of theoretical understanding it generates. *Thinking & Reasoning, 8*(4), 237-267. https://doi.org/10.1080/13546780244000088

Bendermacher, G. W. G., Oude Egbrink, M. G. A., Wolfhagen, I., & Dolmans, D. (2017). Unravelling quality culture in higher education: a realist review. *Higher Education, 73*(1), 39-60. https://doi.org/10.1007/s10734-015-9979-2

Berk, R. A. (2005). Survey of 12 strategies to measure teaching effectiveness. *International journal of teaching and learning in higher education, 17*(1), 48-62. http://www.isetl.org/ijtlhe/pdf/IJTLHE8.pdf

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*(3), 347-364. https://doi.org/10.1007/BF00138871

Biggs, J. (2014). Constructive alignment in university teaching. *HERDSA Review of Higher Education, 1*(1), 5-22. http://herdsa.org.au/herdsa-review-higher-education-vol-1/5-22

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university.* McGraw-Hill International.

Blackmore, P., & Kandiko, C. (2012). *Strategic curriculum change: Global trends in universities*. Routledge.

Bohle Carbonell, K., Stalmeijer, R. E., Könings, K. D., Segers, M., & van Merriënboer, J. J. G. (2014). How experts deal with novel situations: A review of adaptive expertise. *Educational Research Review, 12*, 14-29. https://doi.org/10.1016/j.edurev.2014.03.001

Bolden, R. (2011). Distributed leadership in organizations: A review of theory and research. *International Journal of Management Reviews, 13*(3), 251-269. https://doi.org/10.1111/j.1468-2370.2011.00306.x

Bolden, R., Gosling, J., O'Brien, A., Peters, K., Ryan, M. K., Haslam, S. A., Longsworth, L., Davidovic, A., & Winklemann, K. (2012). *Academic leadership: changing conceptions, identities and experiences in UK higher education*. Leadership Foundation for Higher Education. https://www.lfhe.ac.uk/en/research-resources/publications-hub/index.cfm/Bolden3.4

Bolden, R., Petrov, G., & Gosling, J. (2009). Distributed leadership in higher education: Rhetoric and reality. *Educational Management Administration & Leadership, 37*(2), 257-277. https://doi.org/10.1177/1741143208100301

Bonem, E. M., Fedesco, H. N., & Zissimopoulos, A. N. (2019). What you do is less important than how you do it: the effects of learning environment on student outcomes. *Learning Environments Research*, 1-18. https://doi.org/10.1007/s10984-019-09289-8

Boshuizen, H. P. (2009). Teaching for expertise: Problem-based methods in medicine and other professional domains. In K. A. Ericsson (Ed.), *Development of professional expertise: Toward measurement of expert performance and design of optimal learning environments* (pp. 379-404). Cambridge University Press. https://www.researchgate.net/profile/Jan_Maarten_Schraagen/publication/320564117_Development_of_Professional_Expertise/links/59edef204585158fe534800b/Development-of-Professional-Expertise.pdf

Boyer, E. L., Moser, D., Ream, T. C., & Braxton, J. M. (1997/2016). *Scholarship reconsidered: Priorities of the professoriate*. John Wiley & Sons.

Bransford, J. D., & Schwartz, D. L. (2009). It takes expertise to make expertise: Some thoughts about why and how and reflections on the themes in Chapters 15-18. In K. A. Ericsson (Ed.), *Development of professional expertise: Toward measurement of expert performance and design of optimal learning environments* (pp. 432-448). Cambridge University Press. https://www.researchgate.net/profile/Jan_Maarten_Schraagen/publication/320564117_Development_of_Professional_Expertise/links/59edef204585158fe534800b/Development-of-Professional-Expertise.pdf

Braskamp, L. A., & Ory, J. C. (1994). *Assessing faculty work: enhancing individual and institutional performance*. Jossey-Bass.

Brown, A. L. (1994). The advancement of learning. *Educational researcher, 23*(8), 4-12. https://doi.org/10.3102/0013189X023008004

Bryman. (2007). Effective leadership in higher education: A literature review. *Studies in Higher Education, 32*(6), 693-710. https://doi.org/10.1080/03075070701685114

Chi, M. T. H. (2006). Two approaches to the study of experts' characteristics. In *The Cambridge handbook of expertise and expert performance* (pp. 21-30). Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Chi, M. T. H. (2011). Theoretical perspectives, methodological approaches, and trends in the study of expertise. In Y. Li & G. Kaiser (Eds.), *Expertise in mathematics instruction* (pp. 17-39). Springer. https://doi.org/10.1007/978-1-4419-7707-6_2

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE bulletin, March*, 3-7. https://files.eric.ed.gov/fulltext/ED282491.pdf

References

Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and Teacher Education, 18*(8), 947-967. https://doi.org/10.1016/S0742-051X(02)00053-7

Clinton, V., & Wilson, N. (2019). More than chalkboards: Classroom spaces and collaborative learning attitudes. *Learning Environments Research, 22*, 325–344. https://doi.org/10.1007/s10984-019-09287-w

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute. https://www.oregonrti.org/s/NO_LIF1.PDF

Davis, C. (1998). Professional development for leaders of a large teaching team: A dual role. *The International Journal for Academic Development, 3*(1), 12-17. https://doi.org/10.1080/1360144980030103

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational researcher, 38*(3), 181-199. https://doi.org/10.3102/0013189X08331140

Desimone, L. M., & Pak, K. (2017). Instructional coaching as high-quality professional development. *Theory into practice, 56*(1), 3-12. https://doi.org/10.1080/00405841.2016.1241947

Dixon, F. A., Yssel, N., McConnell, J. M., & Hardin, T. (2014). Differentiated instruction, professional development, and teacher efficacy. *Journal for the Education of the Gifted, 37*(2), 111-127. https://doi.org/10.1177/0162353214529042

Dopson, S., Ferlie, E., McGivern, G., Fischer, M. D., Mitra, M., Ledger, J., & Behrens, S. (2019). Leadership development in Higher Education: A literature review and implications for programme redesign. *Higher Education Quarterly, 73*(2), 218-234. https://doi.org/10.1111/hequ.12194

Dreyfus, S. E. (2004). The five-stage model of adult skill acquisition. *Bulletin of Sscience, Technology & Society, 24*(3), 177-181. https://doi.org/10.1177/0270467604264992

Eraut, M. (1996). *Developing professional knowledge and competence.* Falmer.

Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology, 70*(1), 113-136. https://doi.org/10.1348/000709900158001

Ericsson, K. A. (2006a). The influence of experience and deliberate practice on the development of superior expert performance. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 683-703). Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Ericsson, K. A. (2006b). An introduction to Cambridge handbook of expertise and expert performance: its development, organization, and content. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 3-19). Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Ericsson, K. A. (2009). *Development of professional expertise: Toward measurement of expert performance and design of optimal learning environments*. Cambridge University Press. https://www.researchgate.net/profile/Jan_Maarten_Schraagen/publication/320564117_Development_of_Professional_Expertise/links/59edef204585158fe534800b/Development-of-Professional-Expertise.pdf

Ericsson, K. A. (2014). Adaptive expertise and cognitive readiness: A perspective from the expert-performance approach. In H. O'Neil, R. Perez, & E. Baker (Eds.), *Teaching and measuring cognitive readiness* (pp. 179-197). Springer. https://doi.org/10.1007/978-1-4614-7579-8_10

Ericsson, K. A. (2016). Summing up hours of any type of practice versus identifying optimal practice activities: Commentary on Macnamara, Moreau, & Hambrick (2016). *Perspectives on Psychological Science, 11*(3), 351-354. https://doi.org/10.1177/1745691616635600

Ericsson, K. A. (2019). Towards a science of the acquisition of expert performance in sports: Clarifying the differences between deliberate practice and other types of practice. *Journal of sports sciences, 38*(2), 159-176. https://doi.org/10.1080/02640414.2019.1688618

Ericsson, K. A., Charness, N., Feltovich, P. J., & Hoffman, R. R. (2006). *The Cambridge handbook of expertise and expert performance*. Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Ericsson, K. A., & Harwell, K. (2019). Deliberate practice and proposed limits on the effects of practice on the acquisition of expert performance: Why the original definition matters and recommendations for future research. *Frontiers in psychology, 10*, 2396. https://doi.org/10.3389/fpsyg.2019.02396

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological review, 100*(3), 363-406. http://projects.ict.usc.edu/itw/gel/EricssonDeliberatePracticePR93.PDF

Ericsson, K. A., Perez, R. S., Eccles, D., Lang, L., Baker, E., Bransford, J., VanLehn, K., & Ward, P. (2009). The measurement and development of professional performance: an introduction to the topic and a background to the design and origin of this book. In *Development of professional expertise: Toward measurement of expert performance and design of optimal learning environments* (pp. 1-26). Cambridge University Press. https://www.researchgate.net/profile/Jan_Maarten_Schraagen/publication/320564117_Development_of_Professional_Expertise/links/59edef204585158fe534800b/Development-of-Professional-Expertise.pdf#page=19

References

Feeley, T. H. (2002). Evidence of Halo Effects in Student Evaluations of Communication Instruction. *Communication Education, 51*(3), 225-236. https://doi.org/10.1080/03634520216519

Feltovich, P. J., Prietula, M. J., & Ericsson, K. A. (2006). Studies of expertise from a psychological perspective. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 41-67). Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Fields, J., Kenny, N. A., & Mueller, R. A. (2019). Conceptualizing educational leadership in an academic development program. *International Journal for Academic Development, 24*(3), 218-231. https://doi.org/10.1080/1360144X.2019.1570211

Floyd, A., & Preston, D. (2018). The role of the associate dean in UK universities: distributed leadership in action? *Higher Education, 75*(5), 925-943. https://doi.org/10.1007/s10734-017-0178-1

Fullan, M. (1998). Breaking the bonds of dependency. *Educational Leadership, 55*(7), 6-10.

Fullan, M. (2002). The Change Leader. *Educational Leadership, 59*(8), 16-20.

Fullan, M., & Scott, G. (2009). *Turnaround leadership for higher education*. John Wiley & Sons.

Fung, D., Besters-Dilger, J., & van der Vaart, R. (2017). *Excellent education in research-rich universities* (Vol. 2019). LERU. https://www.leru.org/files/Excellent-Education-in-Research-Rich-Universities-Full-paper.pdf

Garet, M. S., Porter, A. C., Desimone, L. M., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*(4), 915-945. https://doi.org/10.3102/00028312038004915

Gibbs, G. (2009). Developing teaching in research-intensive environments: implications for teaching-intensive universities. *Assessment, Teaching & Learning Journal, 5*, 13-15. http://eprints.leedsbeckett.ac.uk/1128/1/Developing%20teaching%20in%20research-intensive%20environments.pdf

Gibbs, G., Knapper, C., & Piccinin, S. (2008). Disciplinary and contextually appropriate approaches to leadership of teaching in research-intensive academic departments in higher education. *Higher Education Quarterly, 62*(4), 416-436. https://doi.org/10.1111/j.1468-2273.2008.00402.x

Gibbs, G., Knapper, C., & Piccinin, S. (2009). *Departmental leadership of teaching in research-intensive environments-Final report*. Leadership Foundation for Higher Education. https://www.advance-he.ac.uk/knowledge-hub/departmental-leadership-teaching-research-intensive-environments-final-report-0?CFID=50c10af1-c3dd-45e5-9320-8b0d943c843d&CFTOKEN=0

Goodall, A. H. (2006). Should top universities be led by top researchers and are they? A citations analysis. *Journal of documentation, 62*(3), 388-411. https://doi.org/10.1108/00220410610666529

Goodall, A. H., McDowell, J. M., & Singell, L. D. (2014). *Leadership and the research productivity of university departments*. IZA Discussion Paper. http://www.amandagoodall.com/MasterJune192015.pdf

Grunefeld, H., Prins, F., van Tartwijk, J., van der Vaart, R., Loads, D., Turner, J., Mårtensson, K., Nilsen Gibbons, A. M., Harboe, T., Poder, K., & Wubbels, T. (2017). Faculty development for educational leadership. In B. Stensaker, G. T. Bilbow, L. Breslow, & R. van der Vaart (Eds.), *Strengthening teaching and learning in research universities: Strategies and initiatives for institutional change* (pp. 73-101). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-56499-9_4

Grunefeld, H., Prins, F., van Tartwijk, J., & Wubbels, T. (2020). *An instrument to assess educational leaders' expertise in designing and planning educational change in higher education*. [Manuscript submitted for publication]. Utrecht University.

Grunefeld, H., van Tartwijk, J., Jongen, H., & Wubbels, T. (2015). Design and effects of an academic development programme on leadership for educational change. *International Journal for Academic Development, 20*(4), 306-318. https://doi.org/10.1080/1360144X.2015.1068779

Guskey, T. R. (2003). What makes professional development effective? *Phi Delta Kappan, 84*(10), 748-750. http://www.kappanmagazine.org/content/84/10/748.abstract

Harboe, T., Østerberg Rump, C., Seiden Hyldegård, J., & Bruun, J. B. (2016). *Tracing a hidden management reform within academic middle management?* [Paper presentation]. ASHE Conference, Columbus, Ohio, United States. http://www.ashe.ws/files/ASHE2016FINAL.pdf

Hart, G., Austen, G., Cochrane, T., Daniel, R., Thelander, N., & Tweedale, R. (2005). Relevance, challenge and motivation: The ingredients of a novel managerial development program. *International Journal for Academic Development, 10*(1), 47-57. https://doi.org/10.1080/13601440500099993

Hatano, G., & Inagaki, K. (1986). Two courses of expertise. *Research and Clinical Center for Child Development, Annual Report, 6*, 27-36. http://hdl.handle.net/2115/25206

Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education, 11*(1), 33-49. https://doi.org/10.1016/0742-051X(94)00012-U

Havelock, R. G., & Huberman, A. M. (1977). *Solving educational problems: the theory and reality of innovation in developing countries*. Unesco. http://hdl.handle.net/2027/mdp.39015071885797

Hawley, W. D., & Valli, L. (1999). Essentials of effective professional development. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 127-150). Jossey-Bass.

Hendriksen, J. (2000). *Begeleid intervisie model, Collegiale advisering en probleemoplossing* [Supervised peer coaching model: collegial support and problem solving]. Nelissen.

Hoffman, R. R., & Lintern, G. (2006). Eliciting and representing the knowledge of experts. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 203-222). Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Holloway, J. H. (2004). Mentoring new leaders. *Educational Leadership, 61*(7), 87-88.

Holton III, E. F., & Baldwin, T. T. (2003). *Improving learning transfer in organizations*. John Wiley & Sons.

Hubball, H., Clarke, A., Chng, H. H., & Grimmett, P. (2015). The scholarship of educational leadership in research-intensive university contexts: Implications for promotion and tenure supervision. *Asian Journal of the Scholarship of Teaching and Learning, 5*(2), 92-107. http://www.ajsotl.edu.sg/issues/volume-5-number-2-june-2015/

Jongen, H. (2005). *De waarde van de leergang 'Onderwijskundig Leiderschap' voor de faculteiten aan de Universiteit Utrecht [The value of the programme 'Educational Leadership' for the faculties of Utrecht University].* [Master thesis]. Utrecht University.

Jonsson, A., & Svingby, G. (2007). The use of scoring rubrics: Reliability, validity and educational consequences. *Educational Research Review, 2*(2), 130-144. https://doi.org/10.1016/j.edurev.2007.05.002

Kalivoda, P., & Jackson, W. K. (2003, 16-19 June). *Promoting teaching excellence* [Paper presentation]. The 28th International Conference on Improving University Teaching, Växjö University, Sweden.

Kane, M. T. (2013). Validating the interpretations and uses of test scores. *Journal of Educational Measurement, 50*(1), 1-73. https://doi.org/10.1111/jedm.12000

Keesen, F., Wubbels, T., van Tartwijk, J., & Bouhuijs, P. A. J. (1996). Preparing university teachers in the Netherlands: Issues and trends. *International Journal for Academic Development, 1*(2), 8-16. https://doi.org/10.1080/1360144960010202

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating training programmes: The four levels* (3rd ed.). Berrett-Koehler.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2007). *Implementing the four levels: A practical guide for effective evaluation of training programs*. Berrett-Koehler. http://books.google.nl/books?id=hy5uMtUugqAC

Kirschner, P. A., Ayres, P., & Chandler, P. (2011). Contemporary cognitive load theory research: The good, the bad and the ugly. *Computers in Human Behavior, 27*(1), 99-105. https://doi.org/10.1016/j.chb.2010.06.025

Knight, P. T., & Trowler, P. R. (2001). *Departmental leadership in higher education*. Open University Press.

Korthagen, F. A. J., Kessels, J., Koster, B., Lagerwerf, B., & Wubbels, T. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*. Lawrence Erlbaum Associates.

Ladyshewsky, R. K., & Flavell, H. (2012). Transfer of training in an scademic leadership development program for program coordinators. *Educational Management Administration & Leadership, 40*(1), 127-147. https://doi.org/10.1177/1741143211420615

LERU. (2016). *LERU mission*. http://www.leru.org/index.php/public/about-leru/mission/

Macnamara, B. N., Hambrick, D. Z., & Moreau, D. (2016). How important is deliberate practice? Reply to Ericsson (2016). *Perspectives on Psychological Science, 11*(3), 355-358. https://doi.org/10.1177/1745691616635614

Macnamara, B. N., Hambrick, D. Z., & Oswald, F. L. (2014). Deliberate practice and performance in music, games, sports, education, and professions: A meta-analysis. *Psychological science, 25*(8), 1608-1618. https://doi.org/10.1177/0956797614535810

Mann, K., Gordon, J., & MacLeod, A. (2009). Reflection and reflective practice in health professions education: a systematic review. *Advances in health sciences education, 14*(4), 595-621. https://doi.org/10.1007/s10459-007-9090-2

Marsh, H. W., & Hattie, J. (2002). The relation between research productivity and teaching effectiveness: Complementary, antagonistic, or independent constructs? *Journal of Higher education, 73*(5), 603-641. http://www.jstor.org/stable/1558435

Marshall, S. J. (2018). *Shaping the university of the future: Using technology to catalyse change in university learning and teaching*. Springer. https://doi.org/10.1007/978-981-10-7620-6

Marshall, S. J., Adams, M. J., Cameron, A., & Sullivan, G. (2000). Academics' perceptions of their professional development needs related to leadership and management: What can we learn? *International Journal for Academic Development, 5*(1), 42-53. https://doi.org/10.1080/136014400410097

Mårtensson, K., & Roxå, T. (2016). Leadership at a local level–Enhancing educational development. *Educational Management Administration & Leadership, 44*(2), 247-262. https://doi.org/10.1177/1741143214549977

McDaniel, M. A., Schmidt, F. L., & Hunter, J. E. (1988). Job experience correlates of job performance. *Journal of Applied Psychology, 73*(2), 327-330. https://doi.org/10.1037/0021-9010.73.2.327

McKenney, S., & Reeves, T. C. (2019). *Conducting educational design research* (2nd ed.). Routledge.

Messick, S. (1995). Standards of validity and the validity of standards in performance asessment. *Educational measurement: Issues and practice, 14*(4), 5-8. https://doi.org/10.1111/j.1745-3992.1995.tb00881.x

Milburn, P. C. (2010). The role of programme directors as academic leaders. *Active Learning in Higher Education, 11*(2), 87-95. https://doi.org/10.1177/1469787410365653

Miles, M. B., Huberman, A. M., & Saldana, J. (2013). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage.

Morrison, A. R. (2013). Educational leadership and change: structural challenges in the implementation of a shifting paradigm. *School Leadership & Management, 33*(4), 412-424. https://doi.org/10.1080/13632434.2013.813462

Mumford, M. D., Friedrich, T. L., Caughron, J. J., & Antes, A. L. (2009). Leadership development and assessment: Describing and rethinking the state of the art. In K. A. Ericsson (Ed.), *Development of professional expertise: Toward measurement of expert performance and design of optimal learning environments* (pp. 84-107). Cambridge University Press. https://www.researchgate.net/profile/Jan_Maarten_Schraagen/publication/320564117_Development_of_Professional_Expertise/links/59edef204585158fe534800b/Development-of-Professional-Expertise.pdf

O'Sullivan, P. S., & Irby, D. M. (2011). Reframing research on faculty development. *Academic Medicine, 86*(4), 421-428. https://doi.org/10.1097/ACM.0b013e31820dc058

Pearson, M., & Trevitt, C. (2005). Alignment and synergy: Leadership and education development. In K. Fraser (Ed.), *Education development and leadership in higher education: Implementing an institutional strategy.* (pp. 88-107). Routledge. http://library.smaratungga.web.id/repository/[Kym_Fraser]_Education_Development_and_Leadership_(BookFi.org).pdf

Pilot, A. (2007, 9-10 March). *The teacher as a crucial factor in curriculum innovation-the case of Utrecht University* [Paper presentation]. Teaching and learning according and after Bologna, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland. https://dspace.library.uu.nl/handle/1874/26060

Preston, D., & Floyd, A. (2016). Supporting the role of associate dean in universities: An alternative approach to management development. *Higher Education Quarterly, 70*(3), 264-280. https://doi.org/10.1111/hequ.12099

Prins, F. J., de Kleijn, R., & van Tartwijk, J. (2017). Students' use of a rubric for research theses. *Assessment & Evaluation in Higher Education, 42*(1), 128-150. https://doi.org/10.1080/02602938.2015.1085954

Qamar uz Zaman, M. (2004). *Review of the academic evidence on the relationship between teaching and research in Higher Education*. Department for Education and Skills. https://www.researchgate.net/profile/Kenneth_Feldman2/publication/225266128_Research_Productivity_and_Scholarly_Accomplishment_of_College_Teachers_As_Related_to_Their_Institutional_Effectiveness/links/553917880cf2239f4e7c643f.pdf

Quinlan, K. M. (2014). Leadership of teaching for student learning in higher education: what is needed? *Higher Education Research & Development, 33*(1), 32-45. https://doi.org/10.1080/07294360.2013.864609

Raines, S. C., & Alberg, M. S. (2003). The role of professional development in preparing academic leaders. *New Directions for Higher Education*(124), 33-39. https://doi.org/10.1002/he.128

Ramaekers, S. (2002). Vraaggestuurde professionalisering van universitaire docenten: ervaringen in het Center of Excellence in University Teaching. *TH&MA, 9*(2).

Ramsden, P. (1998). *Learning to lead in higher education*. Routledge.

Reio, T. G., Rocco, T. S., Smith, D. H., & Chang, E. (2017). A critique of Kirkpatrick's evaluation model. *New Horizons in Adult Education and Human Resource Development, 29*(2), 35-53. https://doi.org/10.1002/nha3.20178

Sadler, D. R. (2013). Making competent judgments of competence. In S. Blömeke, O. Zlatkin-Troitschanskaia, C. Kuhn, & J. Fege (Eds.), *Modeling and measuring competencies in higher education*. (pp. 13-27). Sense. http://link.springer.com/book/10.1007%2F978-94-6091-867-4

Schön, D. (1983/1991). *The Reflective Practitioner: How professionals think in action*. Ashgate.

Schönwetter, D. J., Sokal, L., Friesen, M., & Taylor, K. L. (2002). Teaching philosophies reconsidered: A conceptual model for the development and evaluation of teaching philosophy statements. *International Journal for Academic Development, 7*(1), 83-97. https://doi.org/10.1080/13601440210156501

Scott, G., Coates, H., & Anderson, M. (2008). *Learning leaders in times of change: Academic leadership capabilities for Australian higher education*. http://research.acer.edu.au/higher_education/3

Sonnentag, S., Niessen, C., & Volmer, J. (2006). Expertise in software design. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 373-387). Cambridge University Press. https://pdfs.semanticscholar.org/69d2/33b61d0101c14b2ef1cbb9e9673420247c7e.pdf

Spendlove, M. (2007). Competencies for effective leadership in higher education. *International Journal of Educational Management, 21*(5), 407-417. https://doi.org/10.1108/09513540710760183

Standards and guidelines for quality assurance in the European Higher Education Area (ESG). (2015). European Association for Quality Assurance in the European Higher Education Area. https://enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf

Steinert, Y., Mann, K., Anderson, B., Barnett, B. M., Centeno, A., Naismith, L., Prideaux, D., Spencer, J., Tullo, E., & Viggiano, T. (2016). A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. *Medical Teacher, 38*(8), 769-786. https://doi.org/10.1080/0142159X.2016.1181851

Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., & Gelula, M. (2006). A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Medical Teacher, 28*(6), 497-526. https://doi.org/10.1080/01421590600902976

Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. *Medical Teacher, 34*(6), 483-503. https://doi.org/10.3109/0142159X.2012.680937

Stensaker, B., Bilbow, G. T., Breslow, L., & van der Vaart, R. (2017). *Strengthening teaching and learning in research universities: Strategies and initiatives for institutional change*. Palgrave Macmillan. https://doi.org/10.1007/978-3-319-56499-9

Stensaker, B., van der Vaart, R., Solbrekke, T. D., & Wittek, L. (2017). The expansion of academic development: The challenges of organizational coordination and collaboration. In *Strengthening teaching and learning in research universities: Strategies and initiatives for institutional change* (pp. 19-41). Palgrave Macmillan https://doi.org/10.1007/978-3-319-56499-9_2

Trowler, P. (2008). *Cultures and change in higher education: Theories and practices*. Palgrave Macmillan.

Tyler, R. W. (1949/2013). *Basic principles of curriculum and instruction*. The University Of Chicago Press.

UU Educational Model. Retrieved January 2020 from https://www.uu.nl/en/education/education-at-uu/the-educational-model

van de Zande, L., & Halma, A. (2015). Zoeken naar een nieuwe balans. Docentkwaliteit in een researchuniversiteit [Searching for a new balance. Teacher quality in a research university]. *TH&MA*(5), 53-57.

van Driel, J. H., Meirink, J. A., van Veen, K., & Zwart, R. C. (2012). Current trends and missing links in studies on teacher professional development in science education: a review of design features and quality of research. *Studies in Science Education, 48*(2), 129-160. https://doi.org/10.1080/03057267.2012.738020

van Gog, T., Ericsson, K. A., Rikers, R. M. J. P., & Paas, F. (2005). Instructional design for advanced learners: Establishing connections between the theoretical frameworks of cognitive load and deliberate practice. *Educational Technology Research and Development, 53*(3), 73-81. https://doi.org/10.1007/BF02504799

van Schalkwyk, S., Leibowitz, B., Herman, N., & Farmer, J. (2015). Reflections on professional learning: Choices, context and culture. *Studies in Educational Evaluation, 46*, 4-10. https://doi.org/10.1016/j.stueduc.2015.03.002

van Veen, K., Zwart, R. C., & Meirink, J. A. (2012). What makes teacher professional development effective? A literature review. In M. Kooy & K. van Veen (Eds.), *Teacher learning that matters: International perspectives.* (pp. 3-21). Routledge.

Vilkinas, T., & Ladyshewsky, R. K. (2012). Leadership behaviour and effectiveness of academic program directors in Australian universities. *Educational Management Administration & Leadership, 40*(1), 109-126. https://doi.org/10.1177/1741143211420613

VSNU. (2019). *Room for everyone's talent* https://www.vsnu.nl/en_GB/news-items/nieuwsbericht/555-the-dutch-research-council-nwo-and-universities-are-implementing-measures-to-reduce-pressure-on-the-academic-community.html

Ward, P., Gore, J., Hutton, R., Conway, G. E., & Hoffman, R. R. (2018). Adaptive skill as the conditio sine qua non of expertise. *Journal of applied research in memory and cognition, 7*(1), 35-50. https://doi.org/10.1016/j.jarmac.2018.01.009

Wayne, A. J., Yoon, K. S., Zhu, P., Cronen, S., & Garet, M. S. (2008). Experimenting with teacher professional development: Motives and methods. *Educational researcher, 37*(8), 469-479. https://doi.org/10.3102/0013189X08327154

Website European Higher Education Area. Retrieved january 2020 from http://www.ehea.info/

Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.

Wetzel, A. P., De Arment, S. T., & Reed, E. (2015). Building teacher candidates' adaptive expertise: engaging experienced teachers in prompting reflection. *Reflective Practice, 16*(4), 546-558. https://doi.org/10.1080/14623943.2015.1064380

Wolverton, M., Ackerman, R., & Holt, S. (2005). Preparing for leadership: What academic department chairs need to know. *Journal of Higher Education Policy and Management, 27*(2), 227-238. https://doi.org/10.1080/13600800500120126

Appendices

Appendix A. Example: development of Oslo portrait

This appendix illustrates the process of developing a portrait.

January 2016

A1. Short survey to NETL members, Oslo's answer by Björn Stensaker

September 2016

A2. Contact with Anne Marthe Nilsen Gibbons. I received several documents describing aspects of the programme, with this index provided by Anne Marthe Nilsen Gibbons.

A3. Draft portrait with questions (Oslo)

A4. Meeting schedule for site visit 21 September 2016 (participant names removed)

A5. Specific questions for former participants

A1. Survey

From: Utrecht University, Rob van der Vaart, Jan van Tartwijk, Theo Wubbels, Hetty Grunefeld
Date: January 4, 2016
To: NETL – Network for the Enhancement of Teaching and Learning in research-intensive universities - NETL joint book project
Regards: Questionnaire for NETL members – results will be included in the Utrecht book chapter about faculty development programmes for educational leadership

FACULTY DEVELOPMENT PROGRAMMES FOR (or including a substantial component of) EDUCATIONAL LEADERSHIP

1. This questionnaire was filled in by:
   Name: Bjørn Stensaker
   Job Title: Professor
   University: University of Oslo

2. Does your university offer a faculty development programme uniquely aiming at developing educational leadership? (Leadership in the development, change, innovation and/or management of teaching and learning). If your answer is yes, then please add the name of the programme / course plus a web link to or attachment about the programme course.

   Yes, we actually offer two. One is given by the central administration (Human resource dept), and one by the Academic development group which I belong to. The difference between the programs is that the former is more focused on "leadership" issues, while the latter is more focused on "program development". The programs will probably merge as a result of recent conversations.
   Here is the link to the central admin program: weblink is unfortunately only in Norwegian.
   http://www.uio.no/for-ansatte/kompetanse/lederutvikling/utdanningslederprogram/

3. Does your university offer a faculty development programme that includes a substantial component of developing educational leadership? If your answer is yes, then please add the name of the programme / course plus a web link to or attachment about the programme course.

Here is a link to our general leadership course programme: http://hr.ku.dk/strategi_og_projekter/ledelsesudvikling-paa-ku/leadership-development/.
The special study leader courses are only announced on our intra web for staff.

If you have mentioned more than one programme under questions 2 and 3, then please answer all remaining questions for the one programme that is most focused on educational leadership.

If the answers to any of the following questions are evident in the web links or attachments that you have provided, then just answer "see attachment'.

4. Who / what department or institute is responsible for the programme / course?

   Department / institute: Central administration
   Programme leader: Anne Marthe Gibbons

5. How would you describe the target group of the programme / course, in terms of academic seniority, roles in their departments, et cetera?

   The program is aimed at those having an explicit responsibility for program leadership at all faculties within the university.

6. Since when has the programme / course been operational (a), how many times per academic year is it offered (b), and what is the average size of a course group (c)?

   (a) In operation since: 2013
   (b) Courses per year: 1
   (c) Group size: 20

7. What is the format of the course? Think of aspects such as subject matter and number and of meetings, types of activities and assignments, et cetera. Please elaborate or refer to web link or attachment.

   The course run for a full year, but is split into three workshops of 2-3 days each. Participants expected to work between each workshop (essays, projects etc.)

8. How much time are participants supposed to spend on the course (estimate)?

   Difficult to say. Approx 9 full days + "homework"

9. Does the programme / course relate theory (of leading educational change) to practice? If so, how is this done?

   No, although the course is touching upon issues related to educational change, it is not especially focused on theories of educational change/educational research

10. What is the nomination and selection procedure for participation in the educational leadership programme / course? Please make the correct options bold.

    Nomination: by (Head of) department / no nomination by others / other (please explain)
    Faculty nominate people to participate
    Selection of candidates: yes, candidates are selected / no selection procedure
    Yes, candadates are selected (basd on their profile)
    If there is selection: based on academic CV / based on recommendations / based on motivation / based on perceived leadership potential (more than one option possible)
    If there is selection: selection is done by …profile and existing responsibility
    Further details about nomination and selection (if any): …

11. Does your university have any evidence about the effects / outcomes of the educational leadership programme / course, for the participants (a) as well as for the institution (b)?

    a. Observed outcomes for participants: No
    b. Observed outcomes for institution: No
    Participants are asked to evaluate the course, but there has not been a formal evaluation wrt effects and outcomes.

Thank you very much!
Please email the completed questionnaire (plus attachments, if applicable) both to Hetty Grunefeld (h.grunefeld@uu.nl) and to Rob van der Vaart (r.j.f.m.vandervaart@uu.nl). It would be great if you could send it before January 26!
If you have any questions about the survey, then please contact Hetty Grunefeld.

A2. Index of information about the UiO Educational Leadership programme (ULP)

Title	What
00 Invitasjon - påmelding ULP3.pdf	Information to faculties/departments about the third educational leadership programme at UiO
01 Informasjon om ULP3.pdf	Information the faculties/departments should provide to potential participants about the third educational leadership programme at UiO
02MAL Selvpresentasjon ULP3.doc	We make a participants catalogue with information about each participant – this is the template they are given to provide information about themselves
03preparatory assignment.doc	Description of the assignment participants are expected to bring with them to the first event/workshop
10 ULP3-1 dreiebok.docx	The course team's planning tool for the first event/workshop
11 ULP3-1 deltakerprogram.docx	Programme for first event/workshop
12 ULP3-1 - assignment for event 2.pptx	Description of home assignment between event 1 and 2
13 ULP3-1 presentasjon evaluering.pptx	Participants' evaluation of the first event/workshop
20 ULP3-2 dreiebok.docx	The course team's planning tool for the second event/workshop
21 ULP3-2_deltakerprogram.docx	Programme for second event/workshop
22 ULP3-2 assignment for event3	Description of home assignment between event 2 and 3
23 ULP3-2 presentasjon evaluering.pptx	Participants' evaluation of the second event/workshop
30 ULP3-3 Dreiebok endelig.docx	The course team's planning tool for the third event/workshop
31 ULP3-3 Deltakerprogram endelig.docx	Programme for third event/workshop
33 ULP3-3 og helhet presentasjon evaluering.pptx	Participants' evaluation of the last event/workshop and of the third ULP-programme as a whole
151027 Utdanningskomiteeen.pptx	A presentation given to the UiO Education commitee (the «owners» of the programme»
171014 Euraxess- ULP.pptx	A presentation given in 2014 to an EU-panel reviewing UiO in connecttion with its Charter&Code accreditation
ULP3 participant information.docx	Various emails sent to the participants before each event/workshop

A3. Oslo draft case description: Utdanningslederprogrammet (ULP)

Date: 19 september 2016
Sources: survey NETL chapter jan 2016, several docs from Anne Marthe.

History, motivation to develop the programme, organizational support
The University of Oslo *Utdanningslederprogrammet* (Study Leaders programme) was developed in 2013, to support leaders of study programmes in their responsibility for leading teaching and learning. The university's strategic plans included changes in study programmes in the direction of more interdisciplinarity. The need for quality enhancement and a higher pressure on student throughput were put on the shoulders of study leaders. …. *Creation of value takes place at the professional level, below department management.*

- ⇨ How is the programme embedded in the university's education resp human resources strategy? How is institutional support (*authority*) organized?
- ⇨ The other programme Bjørn referred to….. Why two, and why merge (if that is still the plan)?
- ⇨ What are the purposes, who formulated them, what are the purposes for the institution and for the participants?

The purposes for the programme were from the beginning (??) to create value at the professional level, below department management.

- ⇨ What would you say is typical (or characteristic) for this programme: for example personal leadership development, preparing/supporting leaders for/in educational development, convincing leaders of the strategic aims of the university, something else?

Target group, nomination/selection, essential elements of the programme
The programme is aimed at academics and administrative employees with leadership roles in programmes and departments: study leaders, programme leaders, programme coordinators, and directors of studies.

> *operative faglige eller administrative utdanningsledere som innen kursstart har ansvar for et eller flere studieprogram eller emnegrupper/emner med særlig stort koordineringsbehov. Eksempler på aktuelle roller/funksjoner er programledere, programrådsledere, studieledere, semesterledere, studiekoordinatorer og undervisningsledere, både på institutt- og fakultetsnivå.*

Since 2013, the programme has been offered three times with 24 participants per group. The group is heterogeneous with respect to faculties, and years of experience in the academy. Real leadership responsibility is required. *The programme was developed by ??????* and is facilitated by the designers and two external experienced educational leaders.

- ⇨ Selection (no??), intake process: an interview (45 min) about expectations and about what current topics of interest are for the participants (based on current experiences and how someone sees her/himself as a leader).
- ⇨ How is support from superiors organized? Via the costs…?

The group meets three times in the course of a half year, in three off-campus meetings of respectively 3, 2 and 2 full days.

- ⇨ The time investment for participants is circa ?? hours.
- ⇨ Is the duration, number of meetings, spacing, hours, important for the design? Why did you choose this set-up?
- ⇨ Is a project part of the design? I did not see that in the materials. How would you say that the course is connected with work in daily practice?

The three central themes during the meetings are Strategic leadership and visions for study programmes, Implementation and management, moving from intention to action, and Leadership in educational environments, how to encourage collegues to best performance.

Discussions, theoretical input, sharing of experiences, reading (?), working on cases and other exercises are the methods used to address these themes. A personal leadership thread is woven through the programme, where participants can reflect on these themes in relation to their own practice in smaller groups (laeringsgruppene/core groups) with one of the facilitators as supervisor.

- ⇨ How do you plan the agenda for the meetings? Do you plan activities for example for development of specific leadership skills, community forming, knowledge development in certain areas, development of adaptive expertise, etcetera?
- ⇨ How can participants influence what happens at meetings?
- ⇨ What is the role of the guests in the programme? What do you ask them to do, and how do you choose who to invite?
- ⇨ How do you view your role as facilitators? How do you implement your role?
- ⇨ Do participants meet in between? Do you meet with them in between meetings, is some mentoring or coaching organized?
- ⇨ Do you suggest or require literature? How is the literature chosen?

At the end of the programme…...

⇨ How ends the programme? Is there a certificate (and what does that mean for participants)?

Empirical evidence of the effectiveness of Oslo's programme
All meetings are evaluated with the participants. The satisfaction is very high, 90% of the participants of the most recent cohort finds the programme useful for their own leadership development.

The results of the evaluation are discussed in several groups, (why??)

⇨ How is the programme evaluated: methods, topics? Results?
⇨ What will be the next step? Collaboration plans??

A4. University of Oslo: Meeting schedule Wednesday September 21st

Meeting room 3 on level 10 of Lucy Smith Building, campus Blindern

Time	Who	What	
8-9	Hetty, Lene and Anne Marthe	· about the history of the programme, · how it came into existence - Bjørn mentioned in the survey that the two programmes, the central programme and a program development program in Bjørn's group, may merge. · About the ideas behind the programme, and how it is implemented (intended and implemented curriculum – vdAkker 2003): the intended learning outcomes, instructional methods, tasks and feedback and assessment; and about the tasks that contribute to development of adaptive expertise.	Lene has to leave 08.55
9-10	Hanne, Hetty og Anne Marthe	The same as above + · Also I hope to identify what to mention in the table with the core features (content focus, active learning, coherence, duration and collaborative practice; Desimone, 2009), as preparation for the analysis of all four programmes. · How was the programme evaluated and what are the results? · about the role the facilitator has in the programme (implemented curriculum – vdAkker) and about facilitation of deliberate practice and feedback	Skype-meeting
TBD		Lunch	
1 2 - 12.55	Hetty and <participant 1>	Interview with programme participant. <link to employee information page> 1. I would like to talk about how they perceived the programme (attained curriculum – vd Akker) and about the outcomes (as illustration of the evaluation results). 2. I would like to know something about their background, motivation, and about their experiences, their reflections on outcomes, their reflections on the programme (what worked), perhaps see some products for assignments, project reports. Perhaps you have asked them some of these questions already in an evaluation?	

Time	Who	What
13-14	Hetty and <participant 2>	Interview with programme participant: <link to employee information page>
??	Hetty and Anne M	Summing up (exact time for meeting to be decided)
16:30		Metrotrain from Blindern to Jernbanetorget
17:00		Airport Express train from Oslo S (Metro: Jernbanetorget)
17:30		Estimated arrival at Oslo Airport 17.30
19.25		Return Flight

A5. Agenda for meeting with participants

(version: 20 september 2016)

Introduction

Context: Book chapter about professional development for educational leaders.
Lund has had a programme since 2008, would like to understand what happens here, to be able to write a good case description and to be able to compare the programmes.
About myself: educational consultant at UU, and since 2002 facilitator of the Utrecht programme; I have been to Lund twice to visit with a group of this programme. Currently also involved in a PhD project around this same topic.
Aim of this interview: to understand the Lund programme & outcomes from the perspective of participants.

Your background, motivation

- When did you participate; what was your position then, your tasks? What kind of support did you get from superiors and colleagues in your department?
- Your background, had you participated in other leadership programmes?
- Your motivation, what did you want to learn? More than Katarina's ILO's?

Experiences with the programme

- Enrollment in the programme, how did you learn of the programme, was it difficult/ easy to get in?
- What was your project, was it well defined when you started, did it change during the year? How often did you talk & write about your project, what kind of help, coaching did you receive?
- I understand that you have read quite a lot of literature, to relate to your project and use in reports. Tell me about your experience with this. Would you say that carrying out the project is central in the course, or reflecting on it or something else?
- Why was the programme successful, what worked for you, and why? Differences between participants?
- How do you look back on the meetings, the activities, the guest teachers, and the preparatory work? Were the topics relevant for your personal situation? Was it possible to have influence on the programme.
- How do you look back on the group, the other participants, their role, contribution to what and how you learned?
- Feedback and assessment, how was it organized and how do you look back on this?
- What were for you the most important themes and activities of the whole programme?

The outcomes and your daily work

What were important outcomes for you? (E.g. personal, teaching practice, network, career)

- Did you change personally, do you think that your colleagues notice something about you?
- In what way was the course important for your daily practice? Could you apply in daily practice what you learned during the programme, examples?
- Do you still meet – as a group, or part of the group? Also with participants from other cohorts? How often and what do you do?
- Has something changed in your tasks, responsibilities?
- Your experience in general: what has taking part brought you and how does that compare to your motivation to participate?
- Time investment, was it worth the time?

Thank you!

Can I call you if I have additional questions?

Appendix B. Matrix comparing five trajectories

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Name	Onderwijskundig leiderschap (Educational leadership)	Ledning av pedagogisk verksamhet (Leading Academic Teachers)	Utdanningslederprogrammet (Study Leaders programme)	LedelsesUdvikling for studieledere (Leadership development for programme directors)	Edinburgh Teaching Award (EdTA)
Developed in	1999	2008	2013	2014	2014
Context	The university's policy to systematically invest in the quality of university education including the quality of the teaching. Among the other measures taken were the introduction of teaching qualifications for all academic teachers and a career structure in which esteem for teaching and research was more balanced	As a logical next step for academics who had been involved in the many educational development activities in the university, as participants and as leaders.	To support leaders of study programmes in their responsibility for leading teaching and learning.	As a specific version of the university's general approach to leadership and leadership skills development.	Part of the University of Edinburgh's continuing professional development framework for staff involved in learning and teaching. (...) The framework, including the Award, is mapped against the UK Professional Standards Framework and accredited by the Higher Education Academy, which means that achievements are transferable to other universities in the UK. The EdTA differentiates between four levels of participants, for this thesis focus on level 3 and 4.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Initiative	The central level of the university supported the development of the programme, but the initiative was taken by the deans of the science faculties.	The academic developers had recognized the importance of leadership for the development of teaching and the importance of support for local leaders of teachers and teaching.	The University wanted to offer an education-focused variant for the very successful Research Leadership Programme.	It was part of the university strategy to invest in education and educational leadership.	On behalf of the Senate Learning & Teaching Committee in 2012
Designers	Designed by a small group of educational developers, representatives of the central university administration and of the science faculties.	The Centre for Educational Development designed the course	Using information from several focus group meetings with study programme leaders and other stakeholders and using the format of the Research Leaders Programme, senior advisors of the central administration unit of the university (human resources) and external consultants (with leadership development expertise) developed the programme.	The programme was developed as a collaboration between the central HR department and the pedagogical units at the faculty level.	The Institute for Academic Development designed the framework on behalf of the Senate Learning & Teaching Committee in 2012

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Aims	The deans anticipated major curriculum changes and wanted their senior academics to have sound knowledge of and experience with, current higher education pedagogy and leading curriculum change processes and to build a network with like-minded colleagues.	TO support the participants in their work as leaders of educational development, to support the development of university teaching and with that of student learning and to collect and document pedagogical leaders' experiences, in order to substantiate further development.	To stimulate the participants' efforts to build excellent educational environments and to facilitate good conditions for teaching and collaboration between the administration, students and different academic communities	While the general leadership programme aims to develop personal leadership skills, the specific programme adds the aim to develop the knowledge and skills necessary to address challenges regarding leading teaching and curriculum design and development. A third aim is to develop a network of colleagues in the same managerial positions	It was developed as an opportunity for academics at all levels in the university to engage with professional development at different points in their career and to be directly linked to what they do to enhance teaching and learning. By focusing on the professional development of teachers, the framework should have a positive impact on student learning.
First cohort	2000	2008	2013	2014	2014
# cohorts (-2016), #Participants	13x; 200 participants in total	5x; 12-14 per cohort	3x; 70 participants total	4x; 50 participants total	90 participants in total; new cohorts twice each academic year
Duration, time investment	14 months, 200 hours	200 hours; over a period of ten months.	For each meeting, some preparatory work is required. Time investment for participants is about 80 hours	80 session hours, plus the study trip, in a period of about six months	Between six months and two years to complete one level of the EdTA. The time commitment varies from participant to participant depending on their prior experience

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Facilitators	The two facilitators of the programme are always a professor in educational sciences and an educational developer	Two academic developers are the designers and facilitators of the programme.	The people who designed the programme also facilitate it.	The designers also facilitate the programme.	Staff of the Institute for Academic Development are the designers and main facilitators of the programme
Target group	Academics with leadership roles in teaching: programme leaders, programme coordinators, directors of studies and leaders of curriculum change processes	Academics with formal leadership roles in programmes and departments: programme leaders, programme coordinators, directors of studies and heads of departments	Academics and administrative employees with leadership roles in programmes and departments: study leaders, degree programme leaders, degree programme coordinators and directors of studies. Two-thirds of the participants are academics, the others are administrative staff with key roles in education. Actual leadership responsibility is required.	Programme directors, for example heads of study, course coordinators, deputy heads of department for teaching and the like. These are typically leaders in middle management positions with a focus on leading teaching	Levels 3 and 4 focus on experienced academics with a leadership or management role at course, programme or School level and include a strong focus on leadership and impact at a strategic level in relation to teaching and learning
HR-policy	From the very beginning, the idea was that the educational leadership programme should add to the status of teaching at the university and that staff would regard participation as an honour and as a reward for their endeavours to improve teaching and learning.				Aims to provide all staff involved in teaching and supporting learning with rich opportunities to reflect on and develop their practice throughout their careers. While levels 1 and 2 aim at teachers near the start of their career,

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Other	Programme board (named Centre of Excellence in University Teaching or CEUT), consisting of respected professors from all faculties				
Nomination and selection	Programme board selects about sixteen participants per cohort from a larger group nominated by the deans of the faculties	Participants volunteer for the programme and apply individually or in groups with a draft of a project involving educational development and improvement of student learning and involving leadership concerns in their own professional context. The plans for this project play an important role in the selection process by facilitators.	The facilitators create a group from lists of candidates provided by the faculties, a group that is heterogeneous with respect to faculties and years of experience in academia. Actual leadership responsibility is required.	The programme is strongly recommended for all programme directors, as is the general programme for all other leaders. The HR department invites programme directors from all faculties to participate in the programme.	Candidates for the EdTA register for the programme themselves or in response to suggestions from their School
Intake process	Selects about sixteen participants per cohort from a larger group nominated by the deans of the faculties, informed by interviews by the facilitators with the nominees	Participants volunteer for the programme and apply individually or in groups with a draft of a project. The plans for this project play an important role in the selection process by facilitators.	Just before the start all participants are interviewed about their expectations and the format of the programme, about their current topics of interest and current challenges. Participants are asked to write a personal development plan.	A preliminary interview is held with each participant, to discuss the programme, their work and their expectations and wishes for the content of the programme.	
Format/ characterisics					

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Meetings	Series of eight 24-hour meetings, with approximately six-week intervals; the study tour of one week and 1 final day	One half day per month, with two full days at the start, over a period of ten months.	The group meets three times during a period of six to nine months, in off-campus meetings of respectively three, two and two days.	Two two-day retreats, two one-day meetings, five workshops of 2-4 hours and three extra learning group meetings of three hours each in between the meetings. The entire programme is completed with an optional two-day trip to a foreign university	The mentor will meet with the participant face to face or online. Interactions between mentor and mentee will for example include discussions about what leadership or seniority actually entails. The mentor will also point participants to external resources including educational literature. The mentor is allocated to a participant by the Institute for Academic Development and will have been awarded Level 3 and/or Level 4, either via the EdTA or directly from the Higher Education Academy.
Location	Away from campus in a conference hotel	On-campus	Off-campus meetings	Retreats	The mentor will meet with the participant face to face or online

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Content: themes & guests	The programme is flexible. For each cohort the topics can be different, about half of the time for higher education pedagogy topics, as facilitators respond to the needs and questions of participants. Participants are stimulated to take an active role in discussions with experts and other participants and to apply knowledge on their curriculum development projects. Literature is made available via books that can be ordered.	Time to reflect together on leadership issues that were raised in relation to their own project and daily practice.	Characteristic for this programme is the focus on individual development as a leader and the role of leaders in the development of the university organization. To perform adequately, leaders need to understand themselves, their role and their influence on the environment. Therefore the three central themes during the meetings are strategic leadership and visions for study programmes, implementation and management (moving from intention to action) and leadership in educational environments (how to encourage colleagues to perform better).	Characteristic for this programme is the combination of leadership and curriculum topics. Personal leadership skills and receiving and reflecting on 360-degree feedback are planned in the first meetings. Other leadership topics are the structure of a university organization and leading and managing in a university setting. The education topics focus on curriculum design and curriculum development and align with relevant educational development within the university.	Taking part in the EdTA at the leadership levels 3 and 4 involves continuing professional development activities that fit with daily work as an academic teacher at a senior level and as an educational leader, with a particular focus on critical engagement in reflection about their practice. (...) Characteristic of the approach is the combination of an overarching framework of professional development goals for different roles and career stages of university teachers, with provision based around flexible pathways and a broad range of continuing professional development activities to achieve those goals. Participants choose those activities that help them best with their daily practice.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Guests	Experts in the area of change processes and leaderschip and in the area of higher education pedagogy are invited to share their knowledge.	Guests, who are experienced educational leaders at department, programme, faculty and national level, are invited to several of the meetings. They share their experience, participate in discussions and then leave,	Experienced educational leaders and guests, who offer models and theories that can be used by participants to reflect on their own experiences as leaders, introduce these themes during the sessions.	Guests from senior management and leadership positions are invited to share their experience as leaders and to discuss university and faculty strategies with a focus on education.	
Other methods	Integral part of the programme is the study tour of one week to universities abroad, aimed at placing developments at the own institution in perspective and at developing ideas and insights that can be implemented in the home institution	The programme supports educational leaders in developing their leadership expertise by providing opportunities for reflection and by providing an inventory of examples of how problems can be solved as well as scholarly literature on relevant leadership issues.			The continuing professional development opportunities for the leadership levels vary from workshops, courses, secondments, networks and mentoring, to working on curriculum development projects, pedagogic research and evaluation.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Project	Each participant is carrying out a curriculum development project in her or his own faculty, department or school. The project should result in a substantial change and be felt a challenge for the participant, evoking requests and questions for the thematic part of the programme. The participant has a leading role in a project team within the faculty. Examples of projects are developing and implementing a new postgraduate degree programme, improving and implementing the assessment strategy in an undergraduate degree programme, internationalizing the curriculum.	An essential element of the programme is a leadership project. (...) individually or in groups, involving educational development and improvement of student learning and involving leadership concerns in their own professional context. Examples of projects are: studying how quality assurance for a department's study programmes could be organized, leading development of teaching in the department, reorganising a complete curriculum, investigating the role of programme leaders across a faculty, developing academic writing skills across a programme, developing a teaching quality system within a big department.	Examples of challenges are reducing drop-out in an undergraduate programme, the politics of a small degree programme in a large department, or leadership/ process issues concerning the restructuring, reorganization or development of a study programme.	An educational change project or innovation is selected to be used as a means to link the programme to daily practice. Examples of the educational change/ innovation projects are curriculum change, quality enhancement projects and the development of pedagogical competences among staff. Typical questions that participants have revolve around ways to involve colleagues in the project, or ways to align university, faculty and programme strategies.	

Continued.

Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
	Participants work continuously on their projects, make several progress reports and discuss these with their peers. The facilitators provide participants with leadership literature that is relevant for their situation and their project. The reports remain available for participants in the programme, as well as for future cohorts, to learn from experiences of peers.			To introduce and support participants, group meetings are organized. The purposes are always to provide support and encouragement and to share experiences, to address queries and concerns about the practicalities of the EdTA, to facilitate a reading or discussion activity and to offer protected writing time. As the framework is aimed at continuing professional development, participants can meet at the various continuing professional development activities organized by the Institute for Academic Development and in Schools. Some level 3 and 4 participants attend writing retreats and journal clubs.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Peer coaching groups	Reflection on practice is organised in the peer coaching groups, where groups of maximum six participants reflect on and discuss in a systematic way critical incidents that have happened in the daily practice of group members.	Participants make several progress reports and discuss these with their peers. During the meetings and in the reports, the emphasis is on reflection on the leadership projects.	The reflection process is supported in core groups, or reflective teams, which is a very central feature of the design of the programme. The facilitators each lead such a small reflective team. Topics are participants' leadership roles, feedback participants have asked and received from colleagues and leadership in change processes. The reflective teams are intended to provide a safe learning environment and an opportunity to learn from each other's insights and experiences.	The learning groups, or reflective teams, are an important feature to bring daily practice into the programme and to offer an opportunity to start a longer-lasting network. Facilitated by one of the course leaders, one participant presents her or his project and a dilemma or question. The other four or five participants in the group think along, discuss, offer their own experiences and ways to deal with these questions.	
Communities	The off-campus meetings, the study trip and the peer coaching groups provide many opportunities for establishing networks and a community of educational leaders.	Characteristic for education development and teacher development at Lund and also for this leadership programme, is the emphasis on the forming of communities of practice. The group of participants functions as a community of learners throughout the programme, in which trustful conversations and collegial support are possible.		The study visit is included to help forming a network, to find inspiration in comparing the home system with another system and to find contacts abroad.	

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Reflection on learning outcomes of the programme	Midterm and at the end of the programme, participants write a reflection on their learning gains and the results of their project.	At the end of the year, participants write and peer-review final scholarly reports of their projects and they present the results in the group.			The most important criterion is not just which activities people have done, but what they have learned. This reflection on practice is supported and encouraged by a mentor, who gives feedback on blogs or accounts of reflection on practice.
Assessment & Certificate	All participants who complete the programme receive a certificate of participation	About two-thirds of the participants received a certificate for completing the programme with the presentation of their final report.	At the end of the programme all participants receive a certificate.	Participants receive a certificate if they ask for one.	Participants work towards a submission to the Award Panel, who assess the work against the criteria of the chosen level of the framework. The submission could be a reflective blog or a presentation and includes also a record of continuing professional development activities, relevant experiences and success and two references. Relevant experiences to reflect upon at the leadership levels could be for example leading a learning and teaching enhancement project in the School, or involvement in a University-wide initiative to improve assessment and feedback, or taking a role in a review team for a Teaching Programme Review.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Evaluation method	The programme board monitors the quality of the programme and the development and progress of participants. Every session was evaluated with a short questionnaire to participants. Furthermore, a study of the design and effects of the programme (Grunefeld et al., 2015) was carried out, using study of the design and effects of the programme used surveys among alumni of the programme and interviews with department chairs, (vice) deans or directors of education of participants, in order to establish the effects of the programme in terms of personal development, teaching practice, network and career and to find the components that are seen as especially effective for the development of leadership qualities. The alumni survey was sent to 117 participants of eight cohorts, with a response of 66%. Interviews were held with twenty academic leaders ((vice-)deans, heads of department, directors of education), all responsible for nominating or sponsoring participants of the programme.	The programme was evaluated shortly after each course ended, using an online evaluation form with open questions or written, paper-based based evaluations. These evaluations had an 80-90% completion rate	All meetings are evaluated with face-to-face feedback from the participants and with an online questionnaire.	All parts of the programme are being thoroughly evaluated; … A short survey administered to the participants	The programme was evaluated after two years by an external researcher, using interviews with participants, Heads of School and members of staff of the Institute for Academic Development and an online questionnaire for participants.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
	programme board monitors the quality of the course and the development and progress of participating academics.				
Evaluation outcomes: participants about effects	Participants themselves report strong effects of the programme on the development of their knowledge of education and educational change, on the range of activities they are involved in and on the intensity and size of their network. The programme helped them to develop a broader vision on learning and teaching and to gain a better overview of what is going on at Utrecht University and in higher education institutions more broadly. They also report having a better overview of developments in education. Participants had also changed their teaching practice and became more involved in curriculum development projects and educational coordination tasks. About half of the respondents report still being in contact regularly with other participants of their cohort of the leadership programme or with other former participants, even long after the programme ended	The participants characterized the results of the programme as increased insight in (theoretical) leadership perspectives that are useful for practice. They gained self-confidence in their leadership roles and recognition as trained leaders.	About 90% of the participants of the most recent cohort find the programme useful for the development of their leadership competence. The participants report effects of their participation in the programme on their daily working environment; they mention increased confidence and clarity as a leader, increased reflexivity and a higher awareness of their scope as leaders. They feel that they are more visible for Faculty management and colleagues and that their qualities as leader are recognized. Participants develop expertise as reflexive leaders.	Showing a high degree of satisfaction among the participants. They report to have gained inspiration, but also that from time to time it can be difficult to get a complete picture of their management role. They feel that they have learned a language to discuss dilemma's that occur in leadership roles and to discuss curriculum design and development issues.	Participants give positive feedback about the EdTA. They reported to have gained useful insights and confidence, a deeper understanding of and changes to teaching practices, benefits of time discussing and sharing practice with a broader range of colleagues and a sense of being valued and supported in the teaching role and continuing professional development. Mentor mediation was seen as crucial in the process of reflection on learning.

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Evaluation outcomes: others	The effects were recognised by the academic leaders. They see the alumni of the educational leadership programme as colleagues with useful knowledge of learning, teaching and curriculum development and as leaders of educational innovation. The innovative projects they engaged in during their participation in the programme were seen as successful and were followed up with other innovative activities. The academic leaders also mention that former participants take on more formal leadership tasks in education. The proportion of former participants of the educational leadership programme in positions as director of education of undergraduate or graduate programmes has grown to 50%. Since 2014 it has been a university strategy to recruit – where possible – new Directors of Education from the pool of alumni of the CEUT educational leadership course.				Some schools are developing school versions of the framework, linked to curriculum development and/or teaching enhancement activities. Schools increasingly build the EdTA into reward, review and recruitment policies. Completion of levels 3 and 4 is included in evidence of excellence in education for academic promotions

Continued.

	Utrecht	*Lund*	*Oslo*	*Copenhagen*	*Edinburgh*
Evaluation outcomes: format	Former participants see the opportunity to discuss and exchange experiences with and learn from fellow participants as the most formative element of the course. Second is the study tour abroad and at the same level the input by experts during the thematic meetings. The academic leaders, who nominated candidates, consider the selective nature of the programme and its connectedness to daily work (through curriculum projects) as the most valuable characteristics.	Elements of the format of the programme perceived as especially important are the role of both facilitators (assessed as superb), the secure space and time for reflection they offered, the guest teachers and discussions in the group and the opportunity to compare experiences with the situation in other universities.			Mentor mediation was seen as crucial in the process of reflection on learning.
Continued contact/ network	About half of the respondents report still being in contact regularly with other participants of their cohort of the leadership programme or with other former participants, even long after the programme ended. (...) A yearly dinner meeting for alumni is supported by the university to help maintaining contacts	It seems that the communities of practice are effective during the programme but not thereafter, except when participants are co-workers in the same department.	Some of the core groups still meet and participants contact each other on education topics when wanted. One inspiration day every year organized by the facilitators for participants of all cohorts, stimulates contacts and further cooperation.	they felt they have formed a network that had meetings twice a year, for some years after participating in the programme. To have administrative support in organizing these meetings was felt to be essential.	More than half of the completers have taken up a mentor role for other EdTA participants.

Appendix C. Questionnaire for past participants

April 2005, original version in Dutch, translation by Hetty Grunefeld

Confidentiality

For proper data processing we need to link some personal data (not your name) to the answers. However, all answers and explanations provided by you will be handled with strict confidentiality. The report will no longer be traceable to individuals.

Instruction

The questionnaire has been sent to you in a paper format but filling it in in the digital format emailed to you is easiest for data processing.
The questionnaire consists of three parts. The first and second part consist primarily of phrases that can be answered on a scale of "strongly disagree" to "strongly agree". The meaning of the grading is as follows:

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

Please fill in the grade of the intended answer in the box following the question. An explanation of the answer is highly appreciated. An explanation can be filled in behind the answer in the same box.

The third part consists of two open questions where you will be asked to provide advice. Filling in this questionnaire takes about an hour.

Thank you for your participation!

Part 1. What do you view as the most important outcomes of your course?

Indicate with a mark of 1 to 5 how strongly you agree or disagree with the following phrases, with 1 = strongly disagree and 5 = strongly agree.

1. I have become more creative in designing courses (teaching methods, assessment methods)
2. I have become more confident.
3. The course has expanded my horizon.
4. The course has influenced the organisation of the programme.
5. Partly because of the course, I have had my pay grade increased.
6. I discuss more with colleagues about coordination between our courses.
7. It has become easier to establish interdisciplinary teams.
8. I have become a member of the board of the programme.
9. I more often look to others for solutions to educational problems.
10. I have become more involved with "supra-educational" work (for instance faculty educational innovation, interdisciplinary programmes, Onderwijsparade, etc.).
11. I feel that my project is a success.
12. Our peer coaching group still keeps in touch.
13. I more often take time to take a step back and reflect on what I want for education programmes.
14. I share ways of tackling educational problems with other past participants.
15. My opinion on education is often asked for.
16. The course has influenced the curriculum of the programme.
17. My role in the coordination of education has strengthened.
18. I have used elements from the contributions of the guest lecturers.
19. I have noticed that I have a better grasp on educational developments.
20. The course has influenced the university.
21. My project has had a usable result.
22. I have been appointed a leading role in education.
23. I ask other past participants for advice and ideas about handling certain problems.
24. I have learned to think about what is important in education.
25. I have used the peer coaching method after the end of the course.
26. It is easier to find one another.
27. I still use the books often.
28. I more consciously look for ways of stimulating active student participation.
29. Partly because of this course I have gotten my Senior Teaching Qualification.

30. My project resulted in one or more follow-up projects.
31. I have used elements from the study trips.
32. I have gained and kept new social contacts through the course.
33. I am involved in curriculum innovation.
34. I can better support my choices for course design.
35. I have gained better insight in what happens in other faculties.
36. You share a common frame of reference (language) with other past participants.

Finally, as conclusion of part one

1. With how many of the past participants (not direct colleagues) do you estimate are you still in contact? (Answer options: 0-5, 6-10, 11-20, >20)
2. How often do you contact the person you least contact? (Answer options: weekly, monthly, a few times per year, less often)
3. How often do you contact the person you most often contact? (weekly, monthly, a few times per year, less often)
4. Are there any other results you would like to mention? (open question)
5. Are there any negative consequences to the course? (open question)
6. Indicate which results are the most important for you. (top three)

Part 2. How do you look back on the programme?

To what degree does the following apply to you?
Unless otherwise indicated, the answer options in part 2 are on a scale of 1- 5, with 1 = strongly disagree and 5 = strongly agree

Nomination and intake

1. The nomination was a complete surprise to me.
2. The director of education (or dean) asked me if I was interested.
3. I have put myself forward for a nomination.
4. I found the intake conversation useful.
5. During the intake conversation I gained a comprehensive understanding of what the course entailed.
6. During the intake conversation I already had a clear idea of which themes I wanted to see in the course.
7. During the intake conversation I already had a clear idea of a project I wanted to do.

The format of the meetings

(NB. Thursday learning from each other, Friday morning thematic deepening, Friday afternoon reflection and translation to project)

8. The number of meetings (8 + final day) was good.
9. A meeting is a moment of rest in the daily rush.
10. I appreciated the choice of hotels outside of Utrecht.
11. I appreciated the global structure of the meetings.
12. The Friday afternoon should be spent differently.

If you agree, please explain……..

13. More could have been done with the books during the programme.

Course content

The following table provides space for sharing memories you have of the separate meetings and a possibility to compare the meetings.

Example	How do you now look back on this meeting?	Did the theme match your interests and the questions you had?
Session X <name of guest lecturer>	(NB. A row for each session)	

(continuation: course content)

14. I have started the course without preconceptions.
15. I trusted in the expertise of the programme facilitators for the course design.
16. The choice of guest lecturers and themes was broader than the questions I then had.
17. As the course went on, I increasingly better understood what I would like to learn.
18. I had enough influence on the choice of themes and guest lecturers.
19. The order of the meetings was good. (Yes or No)

If you disagree, please explain ……..

20. The most important meetings for me were: (top three)

Role of other participants

21. You can only do this in a group, you learn from each other.
22. The participants together formed a stimulating group.
23. It was great to have a group of participants from all over the university.

Please provide an explanation ……..

24. It was great to have other group members who had the same problems.

Please provide an explanation ……..

25. I have learned much from the experiences of the other participants.

Please provide an explanation ……..

Peer feedback

26. I had previously had experience with peer feedback.
27. The peer coaching was very helpful.
28. As a result of the peer coaching I have changed how I do things.
29. The procedure for forming groups was good.

If you disagree, please explain ……..

30. The way we learned to work with a peer coaching method was good.

If you disagree, please explain ……..

31. In our group we have experimented with the method.

Project

32. My project functioned as a focus during the sessions with the guest lecturers: what can I do with what they had to share.
33. The project produced questions for the meetings and/or the study trips.
34. In my project I have used the contributions of one or more guest lecturers.
35. There was enough opportunity to get feedback on your project.

If you disagree, please explain ……..

36. I have gotten useful feedback on my project.

Study trip

37. I have participated in the trip organised by the programme facilitators to <country>: (Yes or No)

If no, why not?

a. Could not be planned due to educational duties
b. Possible other reasons: ….

If yes:

c. I found the trip educational.
d. The trip contributed to a broadening of my vision.
e. A drawback was that the themes were very general.
f. Could you list one or two new ideas that you have gained during this trip?

38. I have made a second study trip (organised by ourselves): (Yes or No)

If no, why not?

a. I did not have the time
b. I could not find any fellow travellers.
c. It was not possible to find a suitable time with the fellow travellers.
d. Other reasons: ….

If yes:

e. Making contacts was easy.
f. The second trip was more useful than the organised trip. Please explain: ……
g. Could you list one or two new ideas that you have gained during this trip?

Conclusion

39. I find it useful that I have been asked to reflect on the course at the end of the programme.
40. It was useful to organise the final day with the other participants.
41. It was not clear what the role of the programme facilitators was during the final day.

Finally, as conclusion of this second part

42. Are there other memories of the course that you would like to mention? (open question)
43. Indicate which parts of the course are most important to you. (top three)
44. Is this a suitable form of learning for you? Please explain: what is it that makes this course (un)suitable? (open question)

Part 3. Advice

45. Do you have any advice for the programme facilitators regarding the structure and content of the course? (open question)
46. Which type of colleague would you recommend or discourage from participating? (open question)

Thank you for your participation!

Appendix D. MEDEC instrument, the rubric criteria

The actual criteria used were in Dutch. The description of the 9-10 level is in *italics*.

	Curriculum plan
Purposes – students	Who will follow the programme, and what do we know about the characteristics of the target group when they arrive? *Four categories of target group characteristics are described: their prior education or prior knowledge and skills; their motivation for joining the programme; their interests, wishes and ideas about the programme; their ambitions for their future (work, role in society).*
Purposes – learning objectives	What are the learning objectives and educational purposes for the programme as a whole? *A coherent set of learning objectives is described. There is also an elaborate description of possible future jobs, roles or follow-up education, and/or what students will develop during the programme. Together with the learning objectives, this information is enough to guide development of the curriculum.*
Experiences – curriculum	What are the educational experiences provided by the curriculum? *The description of the curriculum is systematic and balanced, with a focus on what students will experience. A comprehensive variety of learning experiences is described that is appropriate for the starting position of the students. Curriculum elements and experiences reiterate (continuity) and build upon each other (sequence), encourage transfer (integration) and are aligned with the objectives. Per objective, a variety of learning experiences is described, and per experience, a variety of outcomes is described, giving students the opportunity to gain and experience competence aligned with the learning objectives. The level of detail is high and consistent, and most decisions are explained.*
Experiences – Role of the teachers	What will be the role of teachers, supervisors, counsellors and mentors with respect to the learning experiences of students during the programme? *Elaborate information about the role and tasks of teachers and other staff, with a focus on how they help students to develop understanding and achieve the purposes of the programme (alignment).*
Assessment	Which assessment methods (formative and summative) are explicitly proposed to determine whether the objectives are being attained? Are these methods aligned with the purposes and experiences? *Assessment (formative and summative) is designed explicitly, for all or most courses and modules, with a clear explanation of what students and assessors should do and why, and aligned with the purposes and experiences.*

	Project plan
Urgency	Which argumentation could foster a sense of urgency? Which reasons are put forward that could (help) convince relevant parties to agree with the problem/objectives and the way the project should be carried out? *Four or more elaborated reasons.*
Consensus among colleagues	How is agreement/consensus among colleagues (= teaching/research staff) achieved and maintained? Which activities are described that contribute to achieving and maintaining consensus? *Describes a comprehensive and diverse set of concrete activities, with explanation, aimed at obtaining and maintaining consensus among colleagues. The best plans explicitly explain the objectives of the set of activities and measures to obtain and retain consensus.*
Consensus among relevant others	How is agreement/consensus achieved and maintained among relevant others (e.g., students, professional field, support staff, colleagues in other faculties)? Which relevant others are mentioned, and which activities are planned that contribute to achieving and maintaining consensus? *Describes a comprehensive and diverse set of concrete activities, with explanation, aimed at obtaining and maintaining consensus among relevant others. The best plans explicitly explain the objectives of the set of activities and measures to obtain and retain consensus.*
Authority	Who are the authorities and leaders (i.e. the people in power and control) who can ensure the project will be successful, and how are they kept in the loop about the progress of the project? *Describes a comprehensive and diverse set of concrete activities, with explanation, aimed at obtaining and retaining stable political support of decision makers. The best plans take into account foreseeable political difficulties and describe adequate measures to prevent or solve these difficulties.*
Infrastructure – efficient process	Is it an efficient and effective process that leads to the realisation of the new programme? *An efficient organizational structure is described, and the planning is systematic, balanced and efficient. There is an explanation of the approach, in line with needs. The level of detail is high throughout the plan.*
Infrastructure – organization of the programme	Are all necessary elements of the organization of the new programme developed or created? *The plan mentions (almost) all elements in the six groups listed below, in a systematic and balanced way, and it explains what needs to be organized and how it is in line with needs. The level of detail is high throughout the plan. Six groups of elements:* 1. *Information for prospective students, marketing, applications process, numerus clausus, selection process.* 2. *Information and facilities for current students, e.g., study information, IT facilities, time schedules, rooms/space.* 3. *Relevant roles and committees, e.g., coordination roles, exam and advice boards.* 4. *The process leading to an accreditation request and quality assurance procedures.* 5. *Personnel: hiring, task descriptions.* 6. *Finances: a budget for regular operation is put forward.*

Appendix E. Report of the audit trail

Date: March 2, 2020
Phase: after data analysis
Purpose: assessment of the acceptability of the transcription and coding of the interviews
Assessment criteria: acceptability of the transcription and coding of the interviews
Auditor: second author
Auditee: first author

Stage 1 and 2 Orientation to audit procedure (1) and to study (2)

- The auditee and supervisors decided which part of the study would be audited. The audited part included the analytic procedure (transcription and coding procedure) for the interview data.
- The auditee provided all relevant documents: the raw data (interview recordings), nvivo files, coding books, the manuscript, and explained the documents to the auditor.
- Auditor and auditee discussed the assessment criteria.

Stage 3 Determination of the auditability

Auditor and auditee determined together whether the audit trail was complete and understandable.

Stage 4 Negotiation of the contract

Auditor and auditee agreed to conduct a summative assessment on the documents of the audit trail.

Stage 5 Assessment

The auditor followed the trail as presented by the auditee, trying to verify:

Acceptability of the decisions for transcription of parts of the interviews

- Did the researcher select and transcribe all relevant parts of the interviews, according to the code book?
- Are decisions explained?

Acceptability of the coding of the transcribed parts of the interviews

- Did the researcher code the transcribed parts of the interviews, according to the code book?
- Are decisions, descriptions and explanations clear and understandable?

Stage 6 Renegotiation

The auditor presented his findings to the auditee. The auditee agreed with the conclusion and the auditor finalised the report.

Stage 7 Final auditor report

The auditor reports the following regarding the two assessment criteria:

Audit trail components	Assessment
Acceptability of the decisions for transcription of parts of the interviews	
- Did the researcher select and transcribe all relevant parts of the interviews, according to the code book?	After listening to five randomly chosen audiofiles, my conclusion is that the researcher selected the relevant sections for transcription and coding. In general, the majority of the audiofile was selected and unselected parts were rather small, and the researcher asked the interview questions according to the topic list. The researcher did not ask explicitly whether participants used content of the programme for executing the task. In one of the five audiofiles, at the very beginning, a short utterance about the way this particular participant executed the task the year before was not selected but should have been selected. However, the content of this utterance was also addressed in the selected parts, so no information was overlooked.
- Are decisions explained?	Decisions were not explained but it was very straightforward why parts of the audiofiles were not selected (unselected parts were off topic)
Acceptability of the coding of the transcribed parts of the interviews	
- Did the researcher code the transcribed parts of the interviews, according to the code book?	For deciding whether the coding of the transcribed parts were according to the code book, I focused in particular on the sub codes. I looked at the coding in Nvivo in two ways: (1) was the coding of the selected parts correct, that is, did the researcher select the right sub code for each transcibed part of the audiofile, and (2) were sub codes overlooked. My conclusion is that coding was correct, with only one occasion in which A3 could also have been A4, and one occasion in which the sub codes A1 and B7 were assigned to the same utterance and are maybe hard to distinguish. This, however, has no consequences for the way the results of the coding are described in the results section of the study.
- Are decisions, descriptions and explanations clear and understandable?	The vast majority of the sub codes were clear and needed no specific interpretation (sub codes were pretty straightforward). The researcher occasionally added a comment to explain why a specific sub code was chosen, which made the choice clear.

Samenvatting in het Nederlands

Ontwikkelen van expertise in het leiden van onderwijsveranderingen in onderzoeksuniversiteiten

Een kwart eeuw geleden was de studententevredenheid over het onderwijs aan de Universiteit Utrecht (UU) erg laag. Kwaliteitsverbetering begon onder andere met aandacht voor docentkwaliteit, waarbij van docenten gevraagd werd om een basiskwalificatie onderwijs te halen, vergelijkbaar met een doctoraat als basiskwalificatie voor onderzoek. Ook werden seniorkwalificaties voor onderwijs en onderzoek geformuleerd. Een andere belangrijke verandering was de introductie van het Utrechtse Onderwijsmodel in 2002 met bijbehorende veranderingen in de studieprogramma's. Vooruitlopend hierop vonden decanen van de Bètafaculteiten van de UU dat hun seniordocenten, die het veranderingsproces naar het nieuwe onderwijsmodel zouden gaan leiden, gedegen kennis zouden moeten hebben van de stand van zaken van onderwijsonderzoek in het hoger onderwijs en van leidinggeven aan veranderingsprocessen. Deze seniordocenten waren bijvoorbeeld opleidingsdirecteur of ze hadden een informele rol als initiator van onderwijsinnovaties.

In 2000 is de eerste leergang onderwijskundig leiderschap van start gegaan. Op het moment van afronden van dit proefschrift is het programma 15 keer uitgevoerd voor medewerkers van de UU en sinds 2010 ook 13 keer voor andere universiteiten. De doelen van de leergang zijn, in het kort, deelnemers te ondersteunen bij het opbouwen van kennis van onderwijsproblemen en oplossingen en van ervaring met het leiden van veranderingsprocessen die leiden tot verbetering van onderwijskwaliteit. Een ander belangrijk doel is dat de leergang bijdraagt aan het vormen van een netwerk van gelijkgestemde collega's. De belangrijkste onderdelen van het programma zijn een reeks van acht 24-uurs bijeenkomsten buiten de universiteit rond een thema dat van belang is voor onderwijskundig leiderschap. Deelnemers werken in opdracht van een facultaire senior onderwijsleider aan een onderwijsinnovatief project dat in de eigen praktijk wordt uitgevoerd. Bovendien is er een gezamenlijke studiereis naar buitenlandse universiteiten. Karakteristiek voor de leergang is dat de onderwerpen van de bijeenkomsten en de studiereis worden bepaald in aansluiting op de actuele interesses en leerwensen van de deelnemers. In de bijeenkomsten worden gastsprekers uitgenodigd en zijn er veel mogelijkheden om te reflecteren, bijvoorbeeld op het project. Er zijn weinig beschrijvingen van dergelijke leergangen gepubliceerd en systematische evaluaties van de effectiviteit van deze leergangen ontbreken. In dit proefschrift hebben we daarom onderzocht welke mogelijkheden er zijn voor onderwijsleiders in onderzoeksuniversiteiten om hun expertise in het leiden van onderwijsverandering

te ontwikkelen, met bijzondere aandacht voor een grondige evaluatie van de leergang onderwijskundig leiderschap van de UU.

We kozen het conceptueel kader van expertise en expertiseontwikkeling als basis voor het onderzoek. Hoewel onderwijsleiders in onderzoeksuniversiteiten meestal experts binnen hun eigen disciplines zijn, kan van hen niet worden verwacht dat ze ook experts zijn op het gebied van het verbeteren van onderwijs. In onderzoek naar expertise wordt een onderscheid gemaakt tussen routine expertise en adaptieve expertise. Routine experts kunnen, in vergelijking met anderen, taken in hun domein met een hoog niveau van efficiëntie en effectiviteit uitvoeren. Adaptieve experts begrijpen bovendien de principes waarom en wanneer een routine effectief en efficiënt zou zijn en kunnen deze routines zo nodig aanpassen. Zij beschikken over meer abstracte, analytische kennis waarmee zij in steeds veranderende omstandigheden snel goede oplossingen kunnen vinden voor problemen die niet dagelijks optreden. Veranderende omstandigheden zijn kenmerkend voor de situatie van onderwijsleiders. Immers in universitair onderwijs veranderen de context en ook de taken van onderwijsleiders voortdurend en op een vrij onvoorspelbare manier. Daarom is het belangrijk dat onderwijsleiders adaptieve expertise hebben, dat ze flexibel kunnen zijn met kennis en zich kunnen aanpassen aan nieuwe situaties en eisen. Expertiseonderzoek heeft aanwijzingen opgeleverd voor hoe deze adaptieve expertise te ontwikkelen. We komen daarop terug bij de samenvatting van ons laatste deelonderzoek.

In het eerste deelonderzoek, gerapporteerd in hoofdstuk twee, onderzochten we welke formats in gebruik zijn voor professionele ontwikkeling van onderwijsleiders. We hebben de UU-leergang vergeleken met vier andere trajecten bij universiteiten in Lund, Oslo, Kopenhagen en Edinburgh. We maakten portretten van de trajecten op basis van documentatie en bezoeken aan de universiteiten, waar we ontwerpers, deelnemers en programmaleiders hebben gesproken. We vonden drie typen trajecten. Twee ervan zijn programma's voor groepen onderwijsleiders. In Oslo en Kopenhagen werd de bestaande leergang academisch leiderschap aangepast door onderwerpen toe te voegen over onderwijskwaliteit. Deze programma's duren ongeveer 80 uur en de focus ligt op leiderschapsvaardigheden en op onderwerpen uit onderzoek in hoger onderwijs die nodig zijn om de universitaire onderwijsstrategie te implementeren. De leergangen in Utrecht en Lund waren specifiek ontworpen voor leiders van onderwijsveranderingen, om hen te ondersteunen in hun rol als veranderaar en leider van onderwijsinnovaties. Deze programma's duren ongeveer 200 uur. Het programma in Lund benadrukt het leren over leiderschap, terwijl het Utrechtse programma focust op inspiratie voor en kennis over onderwijsvernieuwing en het vormen van een netwerk met andere onderwijsleiders. Het derde type was een individueel programma in Edinburgh, waarbij de inhoud en

de activiteiten werden gekozen door individuele deelnemers en hun mentor en een landelijk erkend certificaat kan worden behaald. De duur van dit type verschilt per deelnemer. We analyseerden de portretten aan de hand van de vijf hoofdkenmerken van effectieve professionele ontwikkeling zoals aangegeven door Desimone (2009), inhoudsgericht, actief leren, samenhang, duur en deelname in een groep of team. Deze hoofdkenmerken hebben we teruggevonden in alle formats, wat zou betekenen dat alle formats effectieve professionele ontwikkeling zouden moeten opleveren. In de evaluaties gaven de deelnemers aan dat ze de trajecten effectief vinden.

Hoofdstuk 3 beschrijft onze eerste evaluatie van het ontwerp en de effecten van de leergang onderwijskundig leiderschap van de UU. We hebben een vragenlijst gemaakt, gebaseerd op interviews met vier deelnemers, om effecten van de leergang te achterhalen bij deelnemers uit de periode 2000-2008 en we hielden interviews met opdrachtgevers van de projecten en leidinggevenden van de deelnemers (d.w.z. vice-decanen, opleidingsdirecteuren of opleidingsmanagers en hoogleraren-leidinggevenden van de deelnemers) waarna we ook hen nog een vragenlijst stuurden. Deelnemers en opdrachtgevers en leidinggevenden waren het eens over de positieve effecten van de leergang op de deelnemers, die dankzij de leergang als deskundigen werden gezien. Ze zagen effecten op onderwijs en leren op de universiteit, vaak door de onderwijsinnovatieve projecten, en ze zagen effecten op het netwerk en de carrière van de deelnemers. De belangrijkste elementen van het programma die aan deze effecten bijdroegen, waren volgens hen de manier waarop het programma tegemoetkwam aan de behoeften van de deelnemers door de inbreng van de gastdocenten en de mogelijkheden voor discussies met andere deelnemers, de innovatieprojecten omdat daarmee een verbinding werd gemaakt tussen de leergang en de dagelijkse praktijk, en de studiereis naar buitenlandse universiteiten.

Met deze evaluatie hebben we effecten van de leergang gevonden op drie niveaus van het model van Kirkpatrick en Kirkpatrick (2006) over het evalueren van trainingen: de reactie van de deelnemers op het programma (niveau 1), veranderingen in hoe deelnemers zich gedragen en hun onderwijs innoveren (niveau 3) en de indruk en ervaring van deelnemers en opdrachtgevers en leidinggevenden dat ook op het niveau van de universiteit in het onderwijs veranderingen werden gerealiseerd (niveau 4). Niveau 2 betreft wat deelnemers leren van een training. In hoofdstuk 3 zijn die via percepties in kaart gebracht. In hoofdstuk 4 ontwikkelden we een instrument om een deel van de beoogde leerdoelen te kunnen meten: de adaptieve expertise van deelnemers op het gebied van curriculumontwerp en planning van onderwijsverandering. Het instrument, dat we de naam *Measuring Expertise in Designing Educational Change* (MEDEC) hebben gegeven,

bestaat uit een taak, een scoringsprocedure en een rubric. De taak omvat het ontwerpen van een curriculumplan en een projectplan voor de uitvoering ervan. De criteria voor de beoordeling van de kwaliteit van deze plannen, terug te vinden in de rubric, hebben we afgeleid uit literatuur over *constructive alignment* en over succesfactoren voor onderwijsvernieuwing. Om de validiteit van het MEDEC-instrument te onderzoeken hebben we deelnemers van vier cohorten van de leergang onderwijskundig leiderschap en twee groepen experts (respectievelijk met een onderwijskundige achtergrond en ervaren onderwijsleiders) gevraagd om de taak te maken. Zoals verwacht maakt het MEDEC-instrument onderscheid tussen de vaardigheidsniveaus van deelnemers en van de ene groep experts met een onderwijskundige achtergrond, maar in tegenstelling tot onze verwachting verschilde de andere groep experts, ervaren onderwijsleiders, niet significant van de deelnemers. We constateerden dat dit instrument met enige voorzichtigheid gebruikt kon worden, onder meer voor onderzoek naar de effectiviteit van leergangen.

In hoofdstuk 5 onderzochten we of deelnemers aan de UU-leergang adaptieve expertise ontwikkelen op het gebied van curriculumontwerp en planning van onderwijsverandering. We hebben deelnemers aan het begin en einde van het programma gevraagd om de taak van het MEDEC-instrument uit te voeren. We vroegen de deelnemers in een online vragenlijst hun eigen kennis en expertise te beoordelen aan het eind van de leergang, en terugblikkend, aan het begin van de leergang. Ze schatten in dat ze op alle thema's veel hebben geleerd. In interviews zeiden deelnemers dat ze in de taak concepten en voorbeelden gebruikten uit de leergang, en dat ze nu, na afloop van de leergang, een beter idee hadden van hoe een curriculum opgebouwd zou moeten worden en van het proces dat ingezet zou moeten worden om dit curriculum te realiseren. Factoren in de werkomgeving die bevorderlijk zijn voor de ontwikkeling van adaptieve expertise, zoals werkklimaat, ondersteuning van leidinggevenden, en variatie in taken, bleken op een acceptabel niveau te zijn. Volgens de scores op de taak in de pre- en post-test met het MEDEC-instrument is er echter geen significante verbetering van adaptieve expertise.

Na het afwegen van mogelijke verklaringen komen we erop uit dat, als het de bedoeling is dat een leergang bijdraagt aan het ontwikkelen van adaptieve expertise, het goed zou zijn om het programma van de leergang daarop aan te passen. Op basis van literatuur over ontwikkeling van expertise ontwikkelden we verschillende suggesties, bijvoorbeeld om in het programma veel aan casusanalyse te doen, waarbij deelnemers mentale modellen maken voor het soort onverwachte situaties waar onderwijsleiders mee te maken krijgen. In het programma zouden veel mogelijkheden moeten zijn voor deelnemers om hun

kennisbasis verder uit te breiden, met een focus op het begrijpen van mechanismen rond het leiden van onderwijsveranderingen, en die kennisbasis te gebruiken in verschillende contexten en steeds complexere situaties. Begeleiders van de leergang zouden idealiter trainingstaken, en opdrachten voor reflectie en feedback daarop moeten differentiëren, dus afstemmen op het vaardigheidsniveau van individuele deelnemers en richten op verbetering van specifieke aspecten van hun huidige functioneren. We stellen een nieuwe term voor om deze aanpak te beschrijven: gedifferentieerde gestructureerde praktijk (*differentiated structured practice*), een uitbreiding van de term gestructureerde praktijk, waarmee Ericsson en Harwell (2019) een serie groepsbijeenkomsten onder begeleiding zónder individuele component aanduiden. De term *differentiated structured practice* is breder bruikbaar dan het veel genoemde *deliberate practice*, waarmee een aanpak wordt bedoeld waarmee individuen, zoals musici en sporters, hun expertise ontwikkelen door heel gericht (*deliberate*) oefeningen te doen die door een mentor of begeleider op hen worden toegesneden.

We bevelen aan om bij herontwerp van een leergang rekening te blijven houden met andere wenselijke doelen van het programma die momenteel al wel gerealiseerd worden, zoals bijvoorbeeld netwerkvorming. De voorgestelde aanpassingen van het programma betekenen dat er een nog groter beroep op de motivatie van deelnemers zal worden gedaan om tijd te besteden aan onderwijs en professionele ontwikkeling, terwijl in een onderzoeksuniversiteit de druk groot is om onderzoek prioriteit te geven. Met een netwerk van gelijkgestemde collega's dat ontstaan is in een leergang zou een cultuurverandering op gang kunnen komen, bijvoorbeeld een verandering in de balans tussen onderzoek en onderwijs; iets dat inmiddels gebeurt gezien recente publicaties vanuit Nederlandse en Europese wetenschappelijke organisaties.

Het was teleurstellend dat de UU-leergang, ondanks dat de hoofdkenmerken van effectieve professionele ontwikkeling herkenbaar waren in het programma, toch geen toename van adaptieve expertise realiseerde. Wij stellen voor om, geïnspireerd door de bovengenoemde suggesties, enkele van de kenmerken van effectieve professionele ontwikkeling van Desimone (2009) te herschrijven. Het kenmerk *inhoudsgericht* zou niet alleen moeten gaan over domeinkennis, maar specifiek over analytische kennis, mentale modellen en kenmerken van problemen en oplossingen. Het kenmerk *actief leren* zou ook moeten inhouden dat er over veel casussen wordt gediscussieerd, en dat activiteiten in complexiteit moeten toenemen. Het kenmerk *deelname in een groep of team* zou uitgebreid moeten worden met *en individuele training*. En er zou een extra kenmerk moeten zijn over *begeleiding, reflectie en feedback*, die specifiek aandacht besteedt aan de rol van de begeleiders in het ontwerpen van de leergang.

De centrale vraag voor dit proefschrift was hoe onderwijsleiders kunnen worden ondersteund bij het ontwikkelen van hun expertise in het leiden van onderwijsveranderingen aan onderzoeksuniversiteiten. We hebben geconstateerd dat het UU-programma een voorbeeld is van een succesvolle aanpak die volgens deelnemers en hun opdrachtgevers en leidinggevenden leidt tot meer kennis, veranderingen in de dagelijkse praktijk van deelnemers en veranderingen in het universitaire onderwijs. Waardevolle elementen van de UU-aanpak zijn de theoretische input tijdens de acht bijeenkomsten en de studiereis, het aanpassen van het programma op vragen van deelnemers, en de mogelijkheden voor interactie tussen de deelnemers en het vormen van een netwerk. Deelnemers zouden waarschijnlijk nog meer kunnen bereiken als het programma met een gedifferentieerde aanpak individuele deelnemers op maat gemaakte opdrachten aanbiedt waarmee ze in een groepssetting hun kennisbasis kunnen uitbreiden, zodat ze adaptieve expertise kunnen ontwikkelen in het leiden van onderwijsveranderingen.

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Curriculum vitae

Hetty Grunefeld studied Computer Science at the University of Twente in Enschede. She started her career as a consultant for teaching and learning in both the Computer Science department and the Educational Centre of the University of Twente. In 1996 she moved full time to the Educational Centre, to work with the Departments of Mechanical Engineering and of Physics. In 2001 she moved to Utrecht University, to IVLOS Institute of Education, which is now known as Educational Consultancy & Professional Development (Onderwijsadvies & Training). Between 2008 and 2013 she was member of the management team.

Since 2002 she is programme leader of the year-long Educational Leadership programme for senior academics, educational innovators, and directors of education. Her expertise includes educational leadership, curriculum development, quality assurance and professional development for teachers in Higher Education.