



Led to learning

The National Leadership Education for School Principals in primary, lower and upper secondary schools in Norway; participants' assessments of own development

Report 3 from the Evaluation of the National Leadership Education for School Principals

Ingunn Hybertsen Lysø, Bjørn Stensaker, Roger Andre Federici, Anniken Solem and Per Olaf Aamodt

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Preface

This current report is the third of four reports from the follow-up evaluation of The National Leadership Education for School Principals - an initiative to strengthen leadership competence for principals and school leaders in primary, lower and upper secondary schools in Norway, started by the Directorate for Education and Training. The evaluation is a collaboration between NIFU and NTNU Social Research for the period 2010-2014. This report is written by Ingunn Hybertsem Lysø (NTNU Social Research), Bjørn Stensaker (NIFU, project leader), Roger Andre Federici (NTNU Social Research), Anniken Solem (NTNU Social Research) and Per Olaf Aamodt (NIFU). Lysø and Stensaker have coordinated the work with the report, and the researchers have cooperated on the analyses of the different data sources. Federici and Aamodt have had a specific responsibility for quantitative data and analyses, while Lysø and Solem have contributed with the collection of qualitative interviews. The authors thank Per Morten Schiefloe from NTNU/NTNU Social Research and Jannecke Wiers-Jenssen from NIFU, as well as the Norwegian Directorate for Education and Training for constructive comments to an earlier draft of the report.

Trondheim/Oslo, October 2013

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Contents

Summary	7
1 Introduction.....	9
1.1 The education of school leaders in Norway.....	9
1.2 Theme and thesis for the report.....	11
2 Theoretical Framework	13
2.1 Perspectives on knowledge and leadership development	13
2.1.1 Correlation between expectations and benefit	16
2.2 Capacity for learning and development as a leader	17
2.2.1 Individual change and leadership development	19
2.3 Summary	21
3 Methodical approach	22
3.1 Research strategy and level of evaluation	22
3.2 Quantitative participant survey	23
3.2.1 Population and data collection	24
3.2.2 Instruments	26
3.2.3 Factor analyses and reliability	29
3.2.4 Analyses.....	35
3.3 Qualitative participant interview	36
3.3.1 Selection and data collection.....	37
3.4 Summary	38
4 Empirical analyses	39
4.1 Participants	39
4.2 Assessment of the leadership education	43
4.3 Correlation between expectations and participants' benefits	45
4.3.1 Benefits - specific work assignments	45
4.3.2 Benefits - individual development	47
4.4 Change in capacity for learning and development as a leader	49
4.4.1 Change - self-efficacy.....	49
4.4.2 Change - engagement, autonomy and time use	52
4.4.3 Change - reflections on the leadership role.....	55
4.4.4 Change - confidence in the leadership role	56
4.5 Differences and similarities between program provisions	58
4.6 Summary	60
5 Discussion and conclusions	61
5.1 Fulfillment of participants' expectations for the education	62
5.2 Changes in participants' capacity for learning and development	63
5.3 Different program designs - similar learning communities	64
5.4 About the evaluation to come	66
References	67
Appendix	71
Appendix A: Questions from the participant survey	71
Appendix B: Average scores from other surveys	77
Appendix C: T-tests of changes in the participants.....	78
Appendix D: Analyses of significant changes per provider.	81
List of Figures	89
List of Tables	90

Summary

This is the third of four reports from the on-going evaluation of the National Leadership Education for School Principals that was initiated by the Directorate for Education and Training in 2009. This report seeks to highlight how the participants in the leadership education assess their own development as leaders after the program – measured through their reported self-efficacy and perceived capacity to undertake different leadership tasks.

Today, six institutions in Norway have academic programs within the national principal education: The Administrative Research Institute (AFF), the Norwegian Business School BI, Oslo University (UiO), the University College of Oslo and Akershus (HiOA), Bergen University (UiB) and the Norwegian University of Science and Technology (NTNU). So far, several cohorts of participants have gone through the program, which have enabled a broader basis for investigating change at the individual level from the program. This report seeks to answer three questions.

1. To what extent are experiences concerning program outcome in line with the initial expectations of the participants?
2. How has the capacity of participants to learn and develop as leaders changed during the duration of the program?
3. How are differences and similarities in program offerings among the six providers reflected in the perceived outcome by participants?

The report is built on different data sources. The participants' points of view of the program have been collected through different surveys during the program period, and through a smaller selection of interviews with participants. The methodological ambition of measuring learning from leadership programs is both theoretically and empirical challenging. However, three main conclusions can be drawn in this report from the empirical analysis:

- The initial expectations of the participants have in general been met by the program. In a previous report from the evaluation, a central finding was that participants initially had high expectations regarding the leadership education. To meet such high expectations is a considerable challenge, but the program has in general succeeded in doing this.

- The capacity of participants to change and develop as leaders have been strengthened - measured through various self-efficacy indicators throughout the program period. Participants of the program seem quite confident that they are able to undertake a range of school leadership tasks after following the program. The positive change in self-efficacy measures is small, but significant along a number of dimensions.
- It is difficult to identify any causality between the pedagogical profile of the six programs and the perceived development of the participants. Although much diversity exist between the programs with respect to curriculum design, they still seem to manage to create a relative similar learning community – characterized by tight coupling between theory and practice, and various forms of skill training. The age, gender or experience of participants is not important for the perceived development. The learning-oriented arena seems to contribute to the participants increased confidence in the role as school leaders.

The results of the evaluation reported here are based on specific ways of measuring individual change and development, and one should be careful in generalizing the results to other settings without taking this into consideration. Other factors than the program might be of importance to the participants development. We will refer to the final evaluation report that will be available in 2014.

1 Introduction

1.1 The education of school leaders in Norway

Development of the Norwegian school has been a high priority throughout the past decade. In recent years, attention has largely been focused on the importance of school leadership and the importance of primary, lower, and upper secondary schools having a competent and knowledgeable leadership. The argument lies not least in Parliament Report No. 31 (2007 - 2008) «Quality in in the School» which called for establishing a national leadership education for principals. Leadership education can be seen as part of a greater national commitment to quality in Norwegian schools and a focus on objectives and results, enhanced professional knowledge and evidence-based practice are key elements. Principals and school leaders are considered key players in this process, but have not even had an offer for competence development. The leadership program which was initiated and organized by the Directorate for Education and Training in 2009 is therefore the first of its kind, although studies in school leadership have been offered by universities and colleges for some time. The education can be seen as an attempt to take national responsibility for competence development in schools, where even those who already have leadership responsibilities are seen and given an offer of supplementary training and continuing education.

The scope of the offer that the Directorate for Education and Training established is relatively limited. Today, the national leadership education comprises 30 credits in the higher education system, and based on the tenders the education is offered at six schools: Administrative Research Fund (AFF) in collaboration with the Norwegian School of Economics, Norwegian School of Management (BI) , the University of Oslo and Akershus (HiOA), NTNU, the University of Bergen (UiB) and the University of Oslo (UiO). The education is part-time and involves a number of meetings combined with a relatively large portion of independent study. As described in Report 2 the six providers organise their programs partly in very different ways. The target group for the education are principals and school leaders in primary, lower, and upper secondary schools, as well as others who have ambitions to take on such tasks in the future. The number of places offered has increased since its inception in 2009 and in the fall of 2013 500 participants, distributed among six institutions, will start.

Because the leadership education represented a new and different endeavour, it was decided that the initiative should be closely monitored through a follow-up evaluation in the period 2010-2014.

Following a public tender NIFU and NTNU Social Research were given the responsibility, and a research-based evaluation design, with a focus on four different levels of analyses, was formed: 1) national level, 2) the program provider level, 3) the participant level and 4) the school level. Evaluation design has thus focused on both program quality and result quality, thereby exploring potential connections between the program that participants' have attended and the benefits of the education. This is the third report of the evaluation where the focus is on changes in participants' capacity for learning and development as a leader.

The evaluation design is based on the current collection of quantitative data from participants where they at start-up and upon completion of the education are asked about their experiences with the provision and experience of aspects of leadership and the leader job. The quantitative data is combined with qualitative interviews at different times with a selection of participating principals and groups of representatives of the six schools that offer the education as well as document studies. It also includes case studies where one follows the participating principals to their own school to investigate whether and how the education creates changes in practice. The case studies include both quantitative data on aspects of school leadership and organisational learning, and interview data from the principal and leadership team. The final evaluation report will be available in 2014 and will have a special focus on these case studies, and on the question of whether specific changes at the school level in the given time period can be traced back to the principal's participation in the education.

It is methodologically challenging to establish direct connections between the education provision and specific changes at the school level, when the school leadership training, exercise of leadership and evaluation constitutes a complex interaction. The evaluation highlights this complexity through the reports that focus on the key components and the various actors in the leadership education. In the first report, focusing on the national level, the Norwegian leadership education was placed into an international perspective, where both international practice and theory on school leadership and leadership education were used to illuminate aspects of the Norwegian initiative. In the second report, the six provisions were compared through different educational conditions based on how institutions (AFF, BI, HiOA, NTNU, University of Bergen and University of Oslo) have organized their courses. Meanwhile, the participants' expectations and experience of educational quality and practice relevance were included in order to say something about the programs. To investigate whether the education has led to learning at the individual level, the descriptions of the national level and provider level forms a starting point that we will draw on in this report.

In summary, the key findings from the first two reports were that the leadership education can be characterized as relatively pragmatic - both theoretically and in terms of practice - where many different elements and perspectives were attempted mixed. The initiative from the Directorate for Education and Training has incorporated various elements of modern leadership development in light of international developments, where both theoretical knowledge and practice proximity were attempted to be combined. This pragmatism could in principle open up many different forms of design and organization of the educational provisions, and a comparison of the six provisions also showed relatively large variations in how the programs were organised, both in terms of structural and educational conditions. While participants seem to be very satisfied with the program provisions, regardless of the institutions they were associated with. At least four different explanations can be identified from this. Firstly, the degree of satisfaction can be connected with the participants' relatively high expectations to the leadership education: participants got what they expected, and

therefore perceived the education to be relevant and of good quality. Secondly, it seems the differences between providers organising of the program suggests that institutions have taken several independent steps in the design of their program provisions based on already acquired expertise in leadership education / development. Thirdly, it is also possible that the existence of the national leadership training in itself is perceived as very important, and as a recognition of school leadership both as a practice and research field, and that principals and school leaders are considered key players in the development of quality in Norwegian schools. Finally, and based on empirical research on similar provisions both at home and abroad, one cannot ignore the importance that participants experience social support through the sharing of experiences with other school leaders, a network that many people find to be very valuable in several ways.

1.2 Theme and thesis for the report

In this report, we go a step further from the previous evaluation reports, and look closely at whether the participants in the national leadership education experience that they have changed and evolved as leaders during and upon completion of their studies. The fact that many of the participants felt that both the educational quality and practice relevance of the various provisions of the leadership education is high (see Lysø et al. 2012: 69), is no indication that participants actually manage or have the capacity to apply what they learn through the education in their own work and their own lives. Three research questions are formed to investigate whether the education has led to learning at the individual level:

1. How do participants' experience of benefits correspond with their expectations for the program?
2. How is the participants' capacity to learn and develop as a leader changed from beginning to upon completion of the education?
3. How are differences and similarities between the six program provisions reflected in the participants' experience of benefits and changes?

The first two research questions form the basis to investigate whether the leadership education functions in relation to these goals, but also to identify possible links between the program provisions the participants have attended and the individual changes. The first question of benefits is a follow-up of the previous report in which the participants' expectations were described. The second question looks at the capacity for learning and development and is more generally based on participants' own answers to a quantitative survey at different times in the course of their studies (see more about methodology and data in Chapter 3), as well as qualitative interviews with a small sample of participating principals who were interviewed at different times. The capacity for learning and development is operationalised in terms of the conceptual basis for the evaluation (see more about the theoretical framework in Chapter 2), and the objectives that the Directorate for Education and Training have set for what competence participants should have upon completion of the education.

The third research question can be seen as an extension of the topics that were discussed in the second evaluation report in which the six program provisions were described and compared. The aim here is to see whether it is possible to identify significant links between participants' change and the

program provision the participants have been associated with? As shown in the previous report the six program provisions have all taken independent educational measures, but participants consider the programs to have very high educational quality and practice relevance no matter which program they attended. This is explained by the fact that there is a correlation between expectations and experience, and that providers are relatively autonomous in their design of the program. It was also pointed out that the existence of program provisions in itself is a recognition of school leadership more generally and that the provision meets a need for support and networking for the participants. These two statements indicate a similarity between the program provisions. It is interesting to ask whether the differences and similarities between these provisions are reflected in the change in participants' capacity to learn and develop as a leader? Are there differences between program provisions in terms of consistency between participants' expectations and experience of the benefits of the education? In what way can any differences between participants be explained by educational aspects of the deals? What is the significance, for example, in the duration and scope of the provision or the type of assignments and exam? Is it so that any differences between participants can be attributed to other factors such as experience and job situation, and not a consequence of which program provision they have attended? Or it may be that participation in a learning community with others contributes to the change in capacity for learning and development as a leader regardless of how the provision is designed?

These questions are relevant to whether, and how, a leadership education should be continued and developed. The analyses of participants' changes in capacity for learning and development as a leader will also be able to contribute with information to the Directorate for Education and Training relating to the possible need to adjust the education scheme. As shown in Report 1, the leadership education is modern and contemporary, but also eclectic with a large and broad focus in terms of themes, elements and competence areas to be included in a relatively short time in the 30 credits. This may provide input in discussions about what kind of management and form of organising an education for school leaders should have in the future, but also the objective, academic content and learning methods such a continuation should build on. In the first report we pointed out a possible contradiction between being theoretical and conceptually 'modern' on the one hand and practically 'relevant' on the other. Participants also have different work situations, so how do you pick and disseminate knowledge that is important in relation to the day-to-day lives the participants in the programs actually have? Does one solve problems that participants are actually struggling with in day-to-day life, or are providers more concerned with the dissemination of general 'evidence-based' knowledge that is reflected in modern research in this field? Key issues in extension of this are which assessment methods are appropriate in relation to participants' prerequisites, for both developing individual and organisational capacities for learning. Meanwhile, a discussion of what is thought to be relevant is suitable - both relevance to the individual leader at the individual level, but also relevance at the system level.

In the next chapter the evaluation's theoretical framework is presented, where the focus is essentially on the operationalisation of changes in participants' capacity to learn and develop as a leader. Chapter 3 describes the methodology and data sources used in the empirical material in this report', while Chapter 4 presents the results of the analyses of participants' changes. Chapter 5 summarises the main findings and discusses possible explanations for these, and concludes with whether the current education has led to learning in the participants.

2 Theoretical Framework

In the first report, it was noted that the Directorate for Education and Training's overall goal for the program was «increased confidence in the leadership role» to better exercise leadership in practice. This was based on the weak tradition of leadership within the sector, and the assumption that school leaders have a need to develop the courage and strength to lead, personal and professional strength to stand up and embrace leadership by developing a stronger leadership identity. In addition, it was emphasised that leadership involves a greater degree of accountability, especially considering the formal result responsibility. This goal was based on requirements which the education should cover, where greater confidence is thought to be achieved through the acquisition of knowledge, skills and attitudes related to four areas of expertise; 1) student learning and the learning environment, 2) management and administration, 3) collaboration and organisational development, as well as supervision of staff, and 4) development and change. As shown in Report 2, the six program provisions all have taken different educational measures and are designed somewhat differently in terms of the number of meetings, the scope of the curriculum, the topic during the meetings, skills training and work requirements. At the same time the six provisions' basic perspectives on knowledge, learning and leadership were relatively equal, and no systematic differences between program providers in their view of knowledge could be identified.

The three perspectives on knowledge and leadership development that formed the conceptual framework for Report 1 (see page 43) and Report 2 (see page 20) is central to understanding how the differences and similarities between the program provisions are reflected in the participants' experience of change. The approach that forms the basis for describing the leaders' capacity for learning and development as a leader is based on social learning theory and leaders as reflected practitioners.

2.1 Perspectives on knowledge and leadership development

A series of studies on leadership development, which partly builds on the change of practice within leadership research and partly in criticism of MBA programs, argues for a program design that emphasizes experiential learning, reflective practice and critical reflection (Burgoyne & Reynolds 1997; Mintzberg, 2004a; Blackler & Kennedy, 2004, Gosling & Mintzberg, 2006). Practice-oriented

program design draws on studies of leadership in practice and how leaders learn leadership through reflection on practical experiences (Schön, 1983; Watson & Harris, 1999; Hill, 2003; Mintzberg, 2009). Mintzberg (2009: 228) argues for what he calls natural development and underlines the importance of personal reflection and with colleagues. At the same time it is stressed that bringing learning back to the organisation should be part of this development to affect the organisation. Within school leadership development one has also recognised that there are multiple sources of knowledge that may be relevant to how leadership in schools is conducted. Not least we see a shift in that the learning of leadership is seen as an ongoing process that must be fixed to the organisation in which the leader is a part of, where also local and collective knowledge development become central.

The need to balance different types of knowledge also appears in school leadership education. The theoretical framework used is based on Mintzberg's (2009) focus on leadership in practice, where the interaction between science, craft and art are central. This is shown in Figure 1.

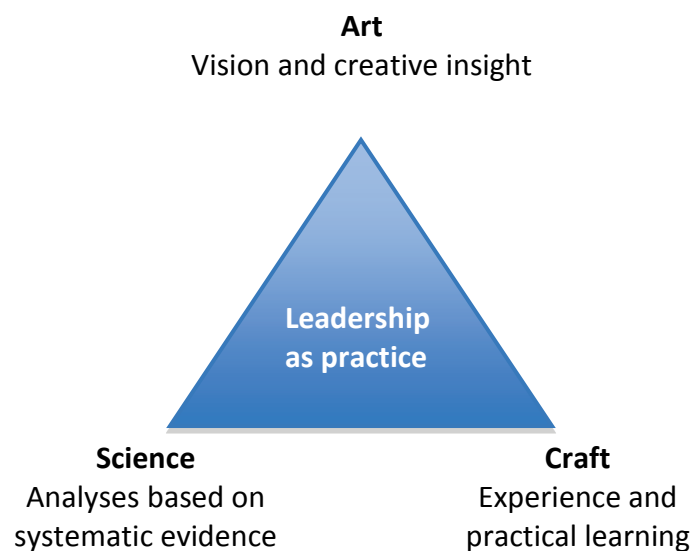


Figure 1 Leadership as practice (Mintzberg, 2009)

Mintzberg's model shows different types of knowledge that a modern education for school leaders should include, as this is believed to create learning and development as a leader. The theory is used as a tool for comparing the program provisions, but it is challenging to analyse whether an education manages to maintain the balance between the different knowledge types. An important focus of the leadership education has been to combine academic writing and skills training, something that providers have addressed in different ways.

In Report 2 we see a key finding that participants' very high assessment of the leadership education's educational quality and practice relevance can in part be explained by a high correlation between providers' intentions and participants' expectations, both in terms of goals, implementation and results. As for the objectives that providers and participants have, the issue is whether the learning intentions of the program are consistent with the expectations of the participants on how to become

a better leader. Implicit in this, normatively speaking is also what one thinks leadership should be, and what a leader is. The Directorate for Education and Training has emphasized «confidence in the leadership role» as the overarching goal of the national provision. When it comes to implementation, this is connected to whether the activities for the learning of leadership are consistent with how participants expect that leadership can best be learned. Activities such as joint reflection and sharing experiences in groups, writing assignments based on practical challenges and skills training are examples that both program providers and participants have pointed out to connect different types of knowledge. When it comes to results, the question is what one thinks about the relationship between knowledge and practice, and how this can best be balanced to create confidence in the leadership role.

If we link this to Mintzberg's (2009) model, the three perspectives on knowledge and leadership development are used to compare program provisions. This in terms of how the differences and similarities between these provisions are reflected in the participants' experience of benefits and changes. In Report 1 it was argued that modern leadership development has gone from a strong belief in the acquisition of knowledge through knowledge practice (Schön, 1983), to a stronger emphasis on collective knowledge where this takes place in the interaction between a leader and the organisation said leader leads. The distinction between knowledge acquisition and knowledge practice is inspired by Cook and Brown's (1999) discussion of «epistemology of possession» and «epistemology of practice», while knowledge development is based on the theories of organisational learning (Argyris & Schön, 1996) and meaning creation in organisations (Weick, 1995). This can also be referred to as «epistemology of social evolution». The three perspectives can be identified from what one thinks about the relationship between knowledge and practice (Cochran-Smith & Lytle, 1999), which is associated with the image one has of what a leader is. This has implications for how one thinks that the learning of leadership occurs, and learning through participation in leadership programs.

Based on the research questions, supplementary questions to compare the program provisions' objectives, implementation and results are developed. The relationship between research questions, supplementary questions and perspectives on knowledge and leadership development are shown in Table 1.

The purpose of the table is to show how research questions in this report are connected to the evaluation's overarching theoretical framework. The distinction between those perspectives could probably be relatively simple theoretically speaking, but they can be difficult to operationalise in an unambiguous way to examine educational practices. When we discussed how the program provisions balance the three views of knowledge in Report 2, several educational conditions that were pointed to suggest that all programs are located at the intersection of knowledge acquisition (science) and the exercise of knowledge (craft). The comparison of provisions in the second report forms the basis for identifying possible links between the six program provisions and participants' experience of benefits and changes. While the previous report focused on expectations for the education, this report examines how participants' experience of benefits corresponds to their expectations.

**Table 1 Three perspectives on knowledge and leadership development
(based on Lysø et al.2011)**

Research question	Indicators	Knowledge acquisition (science)	Knowledge exercise (craft)	Knowledge development (Art)
What characterizes the six program providers' intentions with own leadership education?	What are the learning intentions of the program? (Goals)	Knowledge acquired through cognitive internalisation	Reflection on practice through participation in a community of practice	Development of practice through collective formation of meaning and action processes
Which ideas are presented in the tender, and which practices and perspective are implied in their descriptions of the programs?	How to design activities for the learning of leadership? (Implementation)	Normative "recipes" on how things should be done in practice based on predefined problems	Descriptions of practice through reflection based on existing problems that are discovered	Local transformative transition processes based on collectively constructed problem and solution
	What is thought about the relationship between knowledge and practice? (The result)	New acquisition of knowledge leads to better practice	New knowledge is based on reflective practice	New local knowledge is practice based and developed collectively
What are the participants' views on leadership education?	What is a leader? (Goals)	Practical scientist	Reflected practitioner	Social change actor
What are their expectations to the education and how do they assess the quality and practice relevance of the education?	How is leadership learned? (Implementation)	Acquire scientific knowledge about leadership to improve the individual capacity	Reflection on practice and learning through experience with practical problem solving	Collective construction and solution of practical problems to develop new local knowledge
	What is the desired benefit of the activities? (Result)	Added knowledge for later use to improve the organization	Raised awareness of practice knowledge and the ability to reflect	Organisational learning, local changes and innovation.

2.1.1 Correlation between expectations and benefit

Examination of participants' benefits from the leadership program is a follow-up of participants' expectations for the education (see Report 2), and two indicators are developed to investigate whether expectations are met. The indicator *specific tasks* focuses on different relational, administrative and educational tasks. These tasks were included in the evaluation through the *competency model for school leaderships* that describes a set of qualifications for principals (The Directorate for Education and Training, 2008, given in Report 1). Four main areas are to be covered with a focus on knowledge, skills and attitudes: (1) student learning-benefits and learning environment, (2) management and administration, (3) collaboration and organisation development, supervision of staff, and (4) development and change. Meanwhile operationalisation of the various

tasks are based on studies of school leadership (see Lysø et al. 2011). The indicator is a rough operationalisation of the model and attempts to capture participants' expectations as to whether the program will put them in a better position to perform concrete tasks, and subsequently whether the education has provided this benefit. In the previous report, we found that participants had the highest expectation that the leadership education will enable them to carry out educational tasks, followed by administrative and relational tasks. It also pointed out that one often has high expectations for desires one has (Seland et al., 2012).

The second indicator *individual development* is based on the study of leadership programs that indicate that they contribute to increased capacity for learning and development (Lysø, 2014). The different types of knowledge and relationships related to «confidence in the leadership role» such as identity and leadership languages, are included in the indicator. It examined the correlation between participants' expectations of what the individual development is all about and experienced benefits along the same factors. Examination of whether expectations are met is not sufficient to say anything about the participants' learning, so we have also developed an indicator that examines participants' individual change and leadership development.

To examine changes in participants' capacity for learning and development leading from beginning and upon completion of the education, evaluation of the overarching theoretical framework is developed by conceptualising learning in leadership education.

2.2 Capacity for learning and development as a leader

Mintzberg (2004, 2009) has emphasized that leaders learn through joint reflection on experiences where different knowledge types are connected together in a learning arena. A key common feature of all the provisions is knowledge-based reflection on practice in groups or through academic writing. To investigate leaders' capacity for learning and development we need to describe the learning process in more detail. Schön's (1983) theory of leaders as reflected practitioners and Wenger's (1998) social learning theory are used to understand learning and development as an ongoing process in which the formation of meaning and identity in the community are key aspects. Learning processes that connect different knowledge types are based on mutual reflection and sharing of experience, which helps the leader's ongoing learning and development. The capacity for learning and development is described as constructing leadership identity, generate leadership language and making sense of practice (Lysø, 2014). This is illustrated in Figure 2.

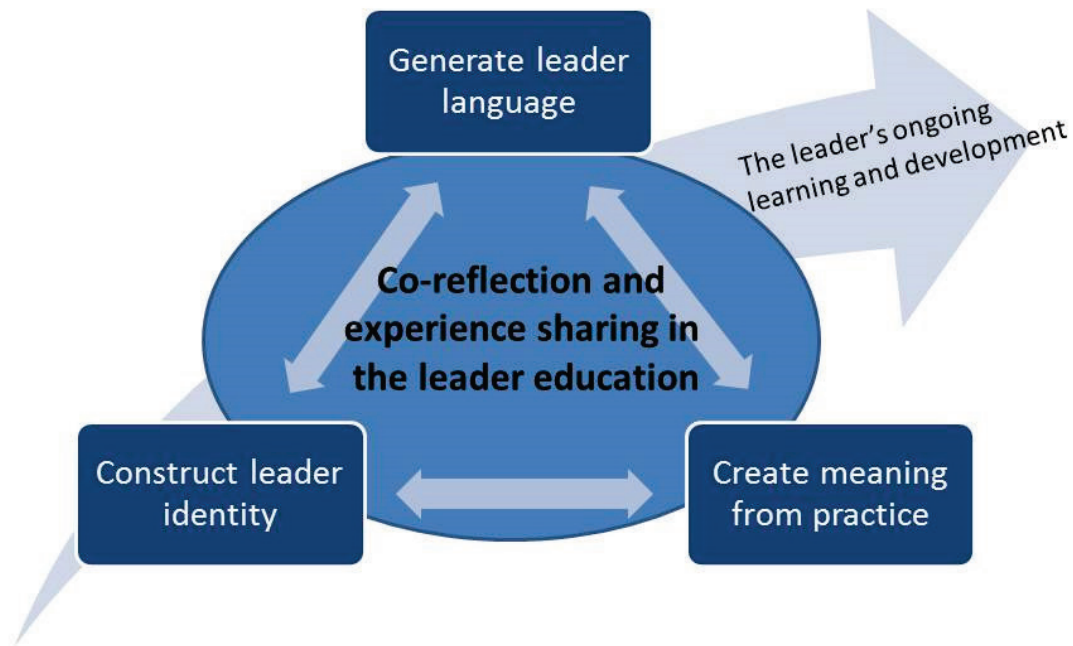


Figure 2 Learning processes in the leadership education (Lysø, 2014)

The figure illustrates that the key elements of learning is to construct a leadership, generate leadership language and thereby create new meaning for practice. These elements are analytical boundaries that can be difficult to distinguish empirically. Through joint reflection on experiential knowledge theoretical knowledge is applied, while the interaction becomes a source to generate a leadership language. The language we use to talk about leadership and with other leaders centrally and which is of significance in constructing leadership identity. If we follow Wenger's (1998) social learning theory then identity and meaning are constructed from experience through being a participant in the community of practice, where a common linguistic repertoire is central in order to experience a sense of belonging. This refers both to the identification with the other leaders in the leadership education, and to identify with being a leader in general. Any community of practice generates public resources of language and practices that express the identity of the members of a group (Wenger, 1998; Barton & Tusting, 2005). Shotter (1993) and Cunliffe (2001) argue that language provides formulations to construct understanding of oneself as a leader, others and the social context in a given organisation. The language helps to articulate the features of experiences and environments to create new meaning from practice, while organisational realities and identities are constructed. Recent empirical studies of programs for leadership development and education show that these are venues for the design of identity as a leader (Sturdy et al., 2006; Carroll & Levy, 2008; Gagnon, 2008; Nicholson & Carroll, 2011). Key factors studies emphasize that the mastery of

language is expected of leaders, increased self-awareness and confidence in their own role. This has implications for the capacity to learn and to develop as a leader.

According to Schön (1983) leadership is a continuous flow of events and experiential knowledge can be activated through reflection in and on practice. One is always in the midst of any situation, and new meaning is created when this flow of events is stopped. Effective meaning formation tends to occur when the current state is perceived as different from the expected state (Weick, 1995). Schön (1983) speaks of this as disturbance or surprise, creating a need for clarification through reflection where different types of knowledge are connected. Participation in a program can help stop the leader's ongoing construction of meaning from the flow of events through disturbances or surprises. Knowledge-reflection can help to create new meaning of one's own practice, the construction of what leadership is and what leadership should be. This is based on an understanding that leadership is a diverse, relational and complex phenomenon, dependent on situations and contexts (as we pointed out in the first report). Learning leadership is therefore viewed as an ongoing process that can help to develop the individual capacity, and participation in leadership programs is only one of several social arenas in which learning occurs. Sharing experience in itself is not sufficient for learning as it is the link to the theoretical knowledge that gives leaders a language to create new meaning.

The approach seeks to describe the change in participants' capacity for learning and development based on the experience of different aspects of the leadership job at the start of the education and upon completion. This may give some indication of learning and development, and whether this can be attributed to participation in the education or other conditions such as more experience in the leadership job, can not be detected directly. Therefore, this is also examined qualitatively through that principals describe the change and development they experience through participation in the program, and how this has helped them as leaders.

2.2.1 Individual change and leadership development

To investigate how participants' capacity to learn and develop as a leader has changed, we have chosen the indicators: mastery expectations, commitment, autonomy, time use and reflection on what one takes advantage of in the role of leader. Taken together, these indicators are designed to investigate whether the education has contributed to increased «confidence in the leadership role», the courage and strength to lead, personal and professional strength to stand up and embrace leadership by developing an identity as a leader. It should be noted that changes can not be directly attributed to the leadership education when a number of these conditions can be attributed more experience as a leader and the work situation as such.

With a starting point in the many and various areas of responsibility that are delegated to the principal, the ideal principal should have high expectations about mastering a wide range of tasks and aspects of school management. Self-efficacy is a key concept in Bandura's social cognitive theory and is defined as an individual's assessment of how well he or she expects to be able to plan and implement actions necessary to perform specific tasks (Olaussen, 2013). Self-efficacy is a belief about what one believes one is able to perform in a given situation and not a general assessment of own abilities (Bandura, 1997, 2008). Studies of leaders from different companies indicate that the degree of self-efficacy is often crucial for leaders' success, because the expectation of mastery affects effort, perseverance, aspiration and goal (Bandura, 1997; Gist & Mitchell, 1992) . Because we tend to avoid

situations and activities that set the qualifications that we think we can not meet, the expectation of mastery is important when tasks become difficult (Pajares, 1997, 2002) . Faced with such challenges, people with low self-efficacy more quickly reduce the effort or give up, while people with high self-efficacy will show greater commitment and perseverance.

There are several sources that affect self-efficacy; (1) mastery experiences, (2) vicarious experiences, (3) verbal persuasion, and (4) physiological and emotional reactions (see Bandura, 1997; Pajares, 2002 for elaboration). In relation to the leadership education it is particularly mastery experiences and vicarious experiences that may be key sources. Mastery experience is all about experience with the same or similar activities, where previously the outcome will be important for future self-efficacy. Vicarious experiences can be considered as model-learning where self-efficacy can be acquired by observing others, seeing others' examples and participate in teaching (Bandura, 1994, 2006). An education with a focus on increasing both practical skills and theoretical knowledge should increase participants' self-efficacy in relation to the practice field through explanation and instruction (vicarious experiences) and practical exercises (mastery experiences). Vicarious experiences also support the importance of the learning community, where self-efficacy is acquired through listening to and reflecting on other leaders' practical experiences.

Some research has been done on the importance self-efficacy has on the exercise of the leadership role. A study of Licklider and Niska (1993) indicates that there is a positive relationship between school leaderships' self-efficacy and quality of the educational supervision of the teachers. Other studies have shown that principals with low self-efficacy report lower job satisfaction and commitment, and higher rates of burnout (Federici, 2012; Federici & Skaalvik, 2012). Principals with high expectations of mastery tend to have greater endurance when it comes to achieving goals, they are more flexible in their everyday lives and are more adaptable to changes in terms of contextual factors and school strategies (Dimmock & Hattie, 1996). They also find that they have more control over their environment, and this is shown through the effective selection and prioritization of tasks and activities in school life. There are also a few empirical studies on the benefits of activities for leadership development where self-efficacy is used as a goal (see Ely, et al., 2010).

The evaluation also examines the degree of involvement and autonomy in the work of the participants. Commitment can be defined as an overall positive state of mind that is experienced in connection with the work that is performed (Schaufeli & Bakker, 2010). There is a sense of satisfaction that is persistent and pervasive, but that does not focus on a particular object, event, person or behavior. Engaged employees are characterised by energy and considers themselves well-equipped to handle the demands that the job requires (Schaufeli & Bakker, 2004; 2010). Studies of workers in different industries have shown that involvement is related to learning, motivation and mental health (Lu, While & Barriball, 2005). The experience of engagement can also serve as a buffer against stress and fatigue (Saane, Sluiter, Verbeek & Frings-Dresen, 2003).

One of the overarching goals of the leadership education is, according to the Directorate for Education Training, «confidence in the leadership role». In this report, we will assume that increased «confidence in the role» in the general sense can be related to increased engagement, but also to autonomy and range of action. Autonomy can be considered as a feeling of freedom to make choices about how to perform the work (Gagne & Deci, 2005). For example, it may imply freedom to prioritise and how tasks are delegated. Controlling environments inhibit autonomy and are often characterised by coercion, imposition of duties and direct instructions. Several studies show that

workers who experience autonomy score higher on enjoyment, effort, motivation and ability to see tasks through. Conversely, studies show that workers who experience little autonomy score higher on stress and burnout (Deci & Ryan, 2000; Gagne & Deci, 2005; Humphrey, Nahr Gang & Morgeson, 2007). The education will provide both theoretical knowledge and practical skills, and an interesting question is whether participation changes the experience of engagement and autonomy.

Participants were also asked questions about the experience of time spent on administrative, educational and relational tasks respectively, as well as time for self-development. Previous studies show that many principals experience work days so hectic that it is at the expense of educational development, and that meetings, administrative tasks and documentation eat up a lot of time (Federici, 2011; Opseth, 2011; Vibe, Carlsten, & Aamodt, 2009, Seland et al., 2012). There may be several reasons for this, but the lack of administrative support and commercial resources are factors that many principals points out. Two studies done by the Directorate for Education and Training and the Union of Education indicate that among the tasks that are required of a principal, the task they desire to use the most time on is educational work. Unfortunately, the reality of it is often another. The majority of Norwegian principals report that they spend most time on administrative tasks (Opseth, 2011; Vibe, et al., 2009), while they want to spend more time on educational tasks (Seland et al., 2012). Perceived changes in time use were included in that this is believed to be important for own range of action.

2.3 Summary

With the theoretical framework with three perspectives on knowledge and leadership development as a starting point, and the importance of the learning community, a number of indicators to examine changes in participants' capacity for learning and development from the beginning of the education to completion. The participants' experience of whether the benefits correspond to the participants' expectations are examined in order to follow-up the findings from the previous report. Together they form the starting point for identifying possible links between program provisions and participants' experience of benefits and change.

3 Methodical approach

In this chapter we will give an overview of the methods used for the collection of data that constitute the empirical material to examine how participants' perception of benefits corresponds to their expectations, how leaders' capacity to learn and develop as a leader has changed from beginning to completion of the education, and how the differences and similarities between the program provisions are reflected in the participants' experience of benefits and changes. The results of the empirical analyses presented in Chapter 4 and Chapter 5 summarise the main findings and conclude the report.

3.1 Research strategy and level of evaluation

In the tender for the evaluation the following overarching research questions, which have governed the choice of strategies for collecting various types of quantitative and qualitative data, were formulated:

- By comparing the various program providers, how does the leadership education function in relation to these goals? (Program quality)
 - In what way does participation in the leadership education contribute to improve the performance of the leader job in day-to-day life? (Result quality)
1. How can the evaluation contribute to the improvement and development of «best practice» in the leadership education? (Improvement and development)

A key objective of the evaluation is increased insight into the relationship between the way the program is designed and conducted, and results at the individual and organisational levels. This report focuses on the quality of results at the individual level based on participants' assessments of their own development, while program quality is focused on by discussing how these goals function.

Kirkpatrick's (1998) model with different evaluation levels is used to pin down the evaluation of different focus areas in terms of what one measures. Although evaluation levels can not be translated directly to the school context, the model is useful to emphasize that the measurement of satisfaction is not sufficient in measuring the results of learning initiatives. This is illustrated in Figure 3.

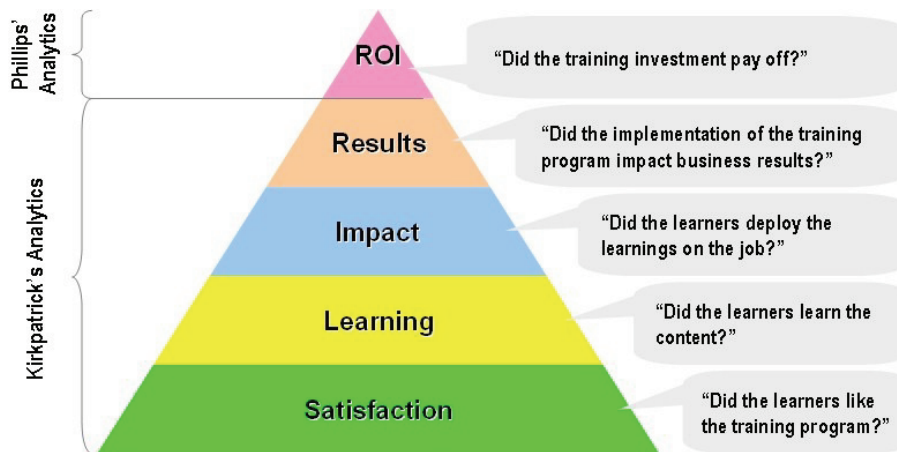


Figure 3 Level of Evaluation (given in Kirkpatrick, 1998)

In this report, we move from the participants' satisfaction (evaluation level 1) with the provision they have attended (focus in Report 2) to whether participation has contributed to learning (assessment level 2). We discuss how participants experience benefits and changes in capacity for learning and development, while application (evaluation level 3) of learning in practice may be indicated. This will be investigated further in the last report where the focus is on the application and implementation (evaluation level 4) in terms of change at the organizational level. The comparison of the six different program provisions provides a basis for assessing whether any changes at the individual level can be traced back to how the various program providers have adapted their provisions.

3.2 Quantitative participant survey

Based on information on the leadership education in combination with existing question batteries, a participant survey to measure perceived benefit and change from beginning to completion of the education is developed. The purpose of the quantitative approach is to examine the results of the education over time through a longitudinal design that is characterised by repeated measurements to describe stability and change (Ringdal, 2007). Participants in the leadership program were asked to fill out two questionnaires: one linked to starting the education and one for after having completed the education (referred to as pre- and post-test design, see Gall, Gall, & Borg, 2007). In addition to examining specific changes to a number of factors over time, the survey focused on assessing the quality and relevance and participants' expectations for and benefits from the education.

Application of the quantitative approach in relation to the focus areas program quality and performance quality for this report is illustrated in Figure 4.

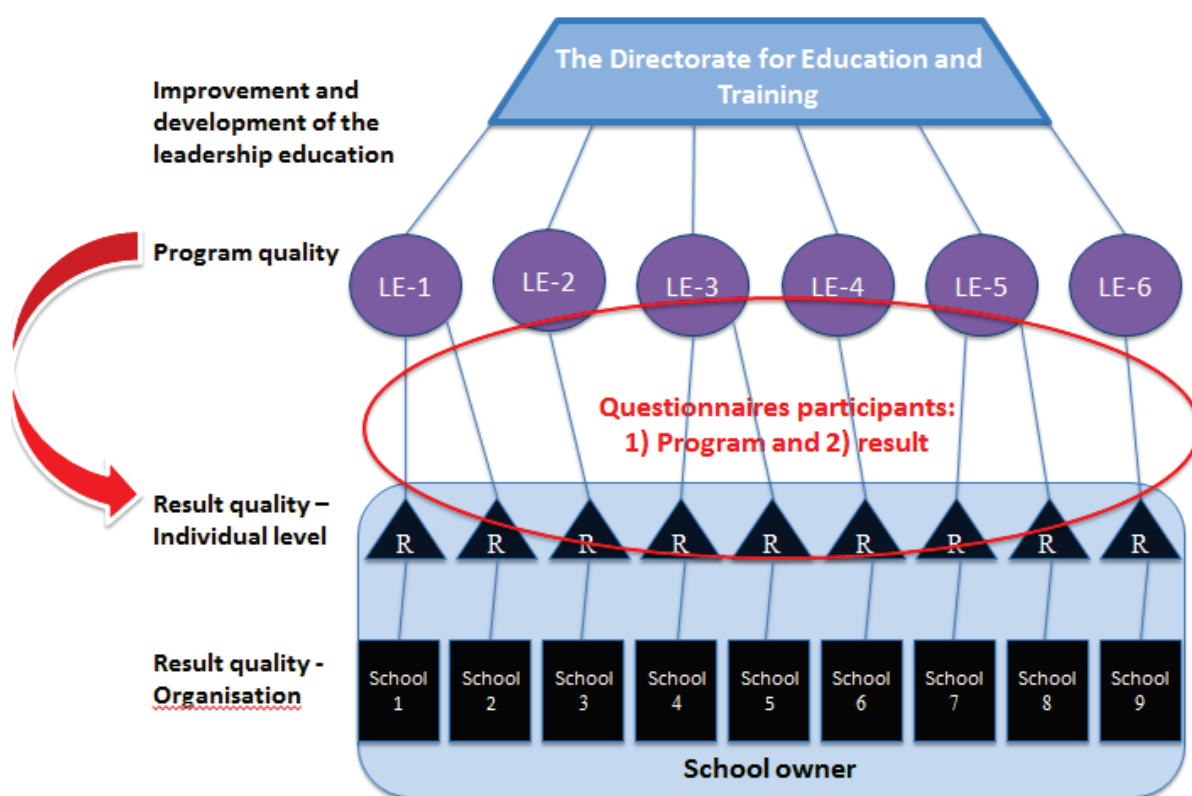


Figure 4 Quantitative approach: focus area result quality

The figure illustrates the six program providers' leadership educations (LE), and the arrow shows the focus area for the participant survey which is result quality at the individual level. Through this, the possible relationships between the six program provisions' participants' experience of benefits and changes are identified.

3.2.1 Population and data collection

The population is well-defined and consists of all participants in the leadership program. The program providers submitted their respective participant lists to the evaluation group, and e-mail addresses were then fed into the Select Survey¹, a web-based system for electronic data collection. The system detects which respondents answer and send automatic reminders.

Respondents in the present report consist of participants who started in autumn 2010 (Henceforth referred to as Class 1²), fall 2011 (Henceforth referred to as Class 2) and autumn 2012 (Henceforth referred to as Class 3). At the time of analysis Class 1, 2 and 3 had answered the pre-test, but only Class 1 and 2 had answered the post-test. An overview of the number of participants, date of issue,

¹ The service is bought by NTNU who administrates the system.

² The evaluation mentions the class with participants from the period 2010/2011 as Class 1, but for the four provisions that started up in 2009 this will in reality be their Class 2.

number of reminders, the number of responses and response rate distributed by class is shown in Table 2.

Table 2 Overview of selection distributed by pre- and post- test distributed by class

Class	Number of participation	Time	Reminders	Number of answers	Percent
Pre-test					
Class 1	334	21.02.11	3	320	95.8
Class 2	380	01.12.11	3	313	82.3
Class 3	413	01.10.12	3	287	69.5
Post-test					
Class 1	334	29.05.12	3	183	54.8
Class 2	380	18.04.13	3	160	42.1

Note. In the analyses, Class 1, 2 and 3 scores on the pre-test and Class 1 and 2's for the post-test are added together.

Providers in the leadership program and these offer different course capacities and the response rate is calculated from the recommended number of participants and is based on the lists received from the providers. Because of enrollment after the fact and dropout, the figures differ slightly from the actual number of participants. Note also that the response rate decreases in each class. A possible explanation for this is that providers have expanded the course capacity but that this is not necessarily filled or participant attrition happens at the start of the program. Table 3 shows the number of participants and responses distributed by program providers.

Table 3 Overview of population and answers distributed by program provider

Class	Pre-test						Post-test			
	Class 1		Class 2		Class 3		Class 1		Class 2	
	No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
AFF	12	11	24	21	24	12	12	7	24	13
BI	140	118	119	101	119	78	140	66	119	50
HiOA	49	42	62	56	62	49	49	25	62	22
NTNU	61	57	69	52	69	54	61	40	69	27
UiO	60	60	70	41	70	47	60	30	70	27
UiB	27	21	30	30	30	22	27	11	30	18

Note. The total number of participants deviates somewhat from Table 3. This is due, amongst other things, to that some respondents do not name their program provider.

The tables show that the response rate on pre-tests for all classes is satisfactory. One possible explanation for the difference from Class 1 to 2 is that the evaluation team attended seminar 2 for Class 1 at all providers and informally informed about the evaluation. Declining response rate of the pre-test from Class 2 to 3 has no natural explanation, but we cannot ignore that the way the evaluation has been informed is of significance. Number of respondents in the post-tests is

somewhat lower, but still over 50 percent in Class 1. The post-test for Class 2 is only answered by 42.1 percent. In general, the response rate is considered satisfactory (Babbie, 2004; Gall, et al., 2007) for pre-tests, but special care should be taken in relation to the interpretation and generalisation of the results of the post-test. There may be several reasons why participants refrain from responding. One known cause that has affected the response rate is that more participants for various reasons have completed the leadership education underway, or have changed jobs. We have no exact numbers on this. Respondents were also given the opportunity to receive the post-test (Class 1, 15 people, Class 2, 17 people). Other causes may be the size of the questionnaires that are relatively comprehensive in terms of the number of questions that participants should consider. This also causes some dropout in the two answers.

Analyses of changes at the individual level were made by matching respondents' answers from the pre- and post-tests. This means that the answers to the first survey are tied to the responses to the second survey. Table 4 shows the number of respondents that could be matched.

Table 4 Overview of selection who have answered both pre-and post-tests

Class	Number of participants	Number of answers	Percent	Number of matches	Percent
Pre- og post					
Class 1	334	183	54.8	171	51.2
Class 2	380	160	42.1	130	34.2

Note. In the analyses Class 1, 2 scores on the pre- and post-test are added together.

The table shows that 51.2 percent of participants in Class 1 and 34.2 percent of the participants in Class 2 responded to both pre-and post-tests. Note that there are participants who only answered the post-test, but not the pre-test (not matched). Dropout is a known challenge in longitudinal studies and can have several causes (see above). As mentioned earlier, both interpretation and generalisation of the analyses must be done with extreme caution. The findings will still be applicable to those who have answered the surveys.

3.2.2 Instruments

The questionnaires focus on the *expectations for and benefits from the education, self-efficacy, autonomy, engagement, time use and reflections on the leadership role*. Some background information is also included. In connection with the preparation of the two forms both established instruments (Uwe, NPSES, see Alivernini & Lucidia, 2011; Federici & Skaalvik, 2011, 2012; Schaufeli & Bakker, 2004) and new instruments that are adapted to the research field were used. Work to develop the surveys have also been based on the Directorate for Education and Training's model for competence requirements for school leaders, as well as the theoretical approach that we have described in the reports.

To achieve robust results, and increase reliability and validity, the new instruments were largely developed in mind to create composite measurements. Composite measurements consist of questions that measure factors that are difficult to capture through singular questions. A composite

measurement is often called a scale and consists of indicators in which respondents' answers to the questions are expected to be created or caused by an underlying variable (e.g. motivation) (Ringdal, 2007). All questions from the participant survey that are applied in the analyses can be found in Appendix A, and the various factors that are measured are described as follows.

Evaluation of the education

The claims concerning assessment of the education were developed specifically for the evaluation and were only asked in the post-test. The assessment of the education consisted of seven different claims including practical relevance, the educational quality and practical execution. Examples of two questions are, «the education was relevant to my work as school leader» and «the education inspired me for further work at my school». Respondents were asked to express level of agreement on a scale of 1-6, where the different numbers on the scale represented: completely disagree, somewhat disagree, disagree a little, agree a little, somewhat agree, completely agree. Even though this data is used in the previous report to say something about the provisions, the participants' assessments of the education is included here to see if a larger selection produces changes in the assessment generally, and whether the six program provisions are still evaluated positively by everyone.

Expectations to and benefit from the education

The questions concerning expectations for the education was developed specifically for the evaluation. Expectations for the program consisted of two overarching dimensions, each composed of thirteen questions. The first dimension focused on concrete tasks. Examples of questions are: «To what extent do you expect that the ongoing education will put you in a better position to perform work such as administrative tasks (such as reporting, scheduling)?» The second dimension was increasingly individual-oriented in terms of change and development. Examples of questions are: «To what extent do you expect the ongoing education will enable you to better utilize previous experience?» Similar questions were asked on the post-test, but with a focus on benefits so that the correspondance between expectations and benefits for the same dimensions are investigated. Respondents were asked to use a scale of 1-5, where the various numbers on the scale stood for: to a very small extent, to a small extent, to some extent, to a large extent, to a very large extent.

Self-efficacy

The questions that examine changes in participants' self-efficacy is obtained from an established and validated instrument, The Norwegian Principal Self-Efficacy Scale (NPSES) (Federici & Skaalvik, 2011; Federici & Skaalvik, 2012). The instrument consists of thirty-six questions that focus on different dimensions of the school leadership role: (1) educational leadership, (2) economy, (3) administrative leadership, (4) enjoyment, (5) support, (6) supervision of teachers, (7) teaching, (8) result follow-up, (9) relationship to parents, (10) relationship to school owner and (11) relationship to local community / businesses. Educational leadership is about educational leadership and development work. Economy is about having control of the resource situation at the school. Administrative leadership focuses on follow-up, management and control. Enjoyment focuses on the extent to which respondents feel that they are able to develop a good psychosocial work environment for teachers and students. Support is all about lightening the workday for teachers who face challenges or problems. Supervision of teachers focuses on follow-up and facilitating an increase in competence. Teaching encompasses self-efficacy in order to facilitate adapted teaching and that teaching is

carried out in the best possible way for all students. Result follow-up deals with the ability to follow-up student results in order to improve learning. The last three areas are about relationships with other actors, collaboration with parents, relationships with school owners and use of resources in the community - such as cooperation with local businesses and cultural institutions. An example of the questions asked to identify self-efficacy in economics is: «How sure are you on a scale of 1-7, that at any time you can keep track of the school's finances?» An example of questions about performance monitoring is «How confident are you on a scale of 1-7, that you can take concrete steps to improve student learning benefits?» Here, respondents were asked to express certainty on a scale of 1-7. The questions were formulated in the same pre- and post-tests to examine the change in leaders' expectations of mastery. The same was done on the issues of engagement, autonomy and time use.

Engagement, autonomy and time use

The claims related to engagement or job satisfaction that the participants were encouraged to consider, is taken from the Utrecht Work-Engagement Scale (UWES) (Schaufeli & Bakker, 2004). This instrument consists of nine questions focused on the respondents' overall experience of having a positive association to the work. Examples of questions are: «I am enthusiastic about my job.» And «I am proud of the work I do.» Respondents were asked to express how often they feel that way on a scale of 1-7, where the various numbers on the scale represented: never, sometimes in a year, monthly, sometimes monthly, weekly, sometimes weekly, daily. Identical questions were asked in the pre- and post-tests.

Three questions were asked to determine respondents' perceptions of autonomy or range of action in the job. The questions were: «In my work I am quite free to prioritise the tasks I myself think are important.», «In my position, I have the freedom to work on what interests me.» And «In my work, I have great freedom to prioritise what to spend time on.» Identical questions were asked in the pre- and post-tests. Respondents were asked to express degree of agreement on a scale of 1-6, where the various numbers on the scale accounted for: Incorrect, not very correct, correct to some extent, quite correct, very correct, completely correct.

Questions about time concern the respondents' perception of time spent on administrative tasks, educational assignments, self-development, and student and parent related issues. Examples of questions about time in relation to educational tasks are: «How much time do you spend on educational supervision and supervision of the teachers?». Examples of questions about time in relation to administrative tasks are: «How much time do you spend on administrative tasks (e.g. reporting, scheduling)?» Here were posed identical questions in the pre- and post-tests. Respondents were asked to express time use on a scale of 1-5, where the various numbers on the scale represented: very little time, little time, some time, lots of time, very much time.

Reflections on the leadership role

Questions about reflection on the leadership role focused on the extent to which respondents benefit from surveys, experiences, discussions with various actors, research and theory, as well as participation in courses, in their exercise of leadership in schools. Examples of questions are: «In an overarching way consider your own leadership role. To what extent do you benefit from data on student learning outcomes?» And «In an overarching way consider your own leadership role. To what extent do you benefit from research and theory?» Identical questions were asked in the pre- and post- tests. Respondents were asked to express a degree of agreement on a scale of 1-5, where

the various numbers on the scale stood for: to a very small extent, to a small extent, to some extent, to a large extent, to a very large extent.

3.2.3 Factor analyses and reliability

To investigate whether the questions and statements could represent composite measurements, we used a statistical analysis called exploratory factor analysis (Pallant, 2010; Ringdal, 2007; Tabachnick & Fidell, 2007). Such analysis is used when one wants to examine the relationships between the variables and reduce them to fewer factors or components. It is correlation between the observed variables that forms the basis of this factor analysis. It is a goal that factors should overlap as little as possible and that each variable charges high on a factor. Values less than .40 on other factors are considered acceptable (Tabachnick & Fidell, 2007). The Principal Components Analysis (PCA) with Oblimin rotation was used in all analyses. To investigate the composite measurements' internal consistency, a reliability analysis was conducted. The internal consistency is examined by calculating Cronbach's Alpha. This coefficient is calculated based on the average of all items' split-half correlations it is possible to do (Pallant, 2010; Tabachnick & Fidell, 2007). Alpha value expresses the average value of all intercorrelations. The scale should normally have a value of .70 (Tabachnick & Fidell, 2007). All factor and reliability analyses are based on variables from the pre-test. This is mainly done because the number of respondents is larger (3 classes), which helps provide a more reliable result.

Assessment of the education

The participants' assessment of the education was also made subject to an exploratory factor analysis. These questions were only posed on the post-test, that is after the education was completed. Initial analyses showed that the question «the mood among the participants was good» (See appendix A) stood out among the others. This claim was therefore removed. The results from the final analysis are shown in Table 5.

Table 5 Factor analysis of the assessment of the education

^a Variable	Factors	
	(1) Practice relevance	(2) Educational quality
The education gave me further inspiration	.930	
The education is relevant to practice	.870	
The education was relevant for my work	.842	
The lecturers were engaging		.987
The educational quality was good		.898
Satisfied with how it was executed practically		.748
Cronbach's Alpha	.845	.862

Note. Factor charger under .40 are not shown. ^aThe questions are abbreviated. (Appendix A: The questions in their entirety).

The table shows that the claims regarding the evaluation of the education constitute two factors, each of which can represent the underlying composite measurement. Reliability is satisfactory and the variables charge high on the factor where they are most contextually affiliated.

Expectations for education

Questions about expectations for leadership education were subject to exploratory factor analysis. Because these questions consisted of two main dimensions, two separate analyses were performed. The results from the first dimension based on questions regarding specific tasks are shown in Table 6.

Table 6 Factor analysis of the first dimension: Expectations for the education

Variable	Factors		
	(1) Administrative	(2) Educational	(3) Relational
Finance, accounting, and budget work	.895		
Administrative assignments	.824		
Responsibility and maintenance of physical frames	.552		
Personnel issues (non-educational)	.577		
Overview of laws and regulations	.422		
Follow-up of the school's results		.741	
Educational development work		.792	
Educational supervision of teachers		.678	
The teachers' competence development		.497	
Parent contact			.914
Student related cases			.810
Contact with the school owner			.515
External contact with the local community			.573
Cronbach's Alpha	.761	.712	.749

Note. Factor charges below 0.40 are not shown. The questions are abbreviated (Appendix A: The questions in their entirety).

The table shows that the overall dimension related to specific tasks constitutes three factors, each of which can represent the underlying composite measurement. Note that although the exploratory factor analysis shows that the variables constitute three independent factors, there must also be an assessment of the measurement based on theory and common sense. The factors presented in this analysis groups variables together that deal with the same thematic area and it therefore appears legitimate to treat them as composite goals. The headline given each factor summarises what they deal with. The results show that the three composite measurements have an alpha value greater than .70. This shows that they have a satisfactory reliability measurement such as Cronbach's Alpha. The overall individual-oriented dimension was also subjected to an exploratory factor analysis. The results of the analysis are shown in Table 7.

Table 7 Factor analysis of the second dimension: expectations for the education

Factors				
^a Variable	(1) Leadership	(2) Apply	(3) Formulate	(4) Boundaries
Become a more clear leader	.798			
Develop a stronger leader identity	.700			
To become more confident in the leader role	.698			
To change leadership style	.678			
To become a more reflected practitioner	.363			
To better use research and theory		.839		
To better use earlier experience		.687		
Better understanding of education politics		.571		
Develop formulation writing ability			.816	
To develop leadership language			.714	
To better utilise intuition and gut feelings			.548	
Setting boundaries for use of time				.928
Setting boundaries for use of content				.907
Cronbach's Alpha	.816	.646	.699	.812

Note. Factor charges below 0.40 are not shown. ^aThe questions are abbreviated. (Appendix A: Questions in their entirety).

The table shows that the individual-oriented dimension of expectations for the education amounts to four factors, each of which can represent the underlying composite measurement. Note that the variable «to become a more reflective practitioner» charges under .40 on Factor 1. Because the reliability is satisfactory and the variable charges highest on Factor 1, it is kept there. This can also be supported by a content-related analysis. Furthermore, the results show that three of the composite measurements have a satisfactory alpha value. The reliability of Factor 2 is somewhat low but acceptable.

Self-efficacy and engagement

Since the questions on self-efficacy (NPSES) and engagement (UWES) are obtained from established instruments and tested in previous studies (see Federici & Skaalvik, 2011; Schaufeli & Bakker, 2004; Schaufeli, Bakker & Salanova, 2006), they were not subjected to a factor analysis. A comparison of average scores with similar studies for autonomy and self-efficacy (Federici & Skaalvik, 2012) has been completed and is found in Appendix B. Reliability of all the dimensions of self-efficacy and engagement are shown in Table 8.

Table 8 Reliability: Self-efficacy and engagement

	Cronbach's Alpha
Variable	
Educational leadership	.769
Finance	.928
Administrative leadership	.753
Enjoyment	.826
Support	.669
Supervision teachers	.734
Teaching	.809
Result follow-up	.786
Relation to parents	.784
Relation to school owner	.730
Relation to local community	.828
Engagement	.918

The table shows that all the dimensions of self-efficacy have a satisfactory reliability. This includes engagement.

Autonomy and time use

Factor analysis of respondents' perception of autonomy is shown in Table 9.

Table 9 Factor analysis of autonomy

	Factors
^aVariable	Autonomy
Freedom to prioritise work tasks	.922
Great freedom to prioritise time	.898
Work with what interests me	.837
Cronbach's Alpha	.859

Note: Factor charges below 0.40 are not shown. The questions are abbreviated (Appendix A: The questions in their entirety).

As expected, the analysis shows that questions related to autonomy constitute a factor and this has a satisfactory internal consistency as measured as Cronbach's alpha.

Table 10 shows the factor analysis of respondents' perception of time spent on various tasks.

Table 10 Factor analysis of time use

^a Variable	Factors		
	(1) Educational	(2) Administrative	(3) Student-Parent
Educational development work	.754		
Educational supervision of teachers	.718		
The teachers' competence development	.667		
Follow-up of the school's results	.645		
Self-development through courses and networking	(.482)		
Finance, accounting and budget work		.773	
Responsibility and maintenance of physical frames		.640	
Overview of laws and regulations		.611	
Contact with the school owner		.554	
Administrative assignments		.478	
Student related cases			.853
Parent contact			.733
Cronbach's Alpha	.708	.637	.599

Note: Factor charges below 0.40 are not shown. The questions are abbreviated (Appendix A: The questions in their entirety).

The table shows that time use constitutes three factors, each of which can represent underlying composite measurement. The reliability is satisfactory for Factor 1, which is about the educational tasks and acceptable for Factor 2, which is a measure of a variety of administrative tasks. Factor 3 has low reliability and a content-based analysis indicates that the questions concern different conditions. It still remains a factor based on the correlation between the variables ($r = .432$ $p = .01$). Also the variable «self-development through courses and network» is removed from Factor 1, because it is interesting to examine it more closely in relation to the leadership education. The reliability of this factor is estimated without this variable.

Reflections on the leadership role

The questions focused on the extent to which respondents take advantage of the various elements in the exercise of leadership in schools. Table 11 shows the factor analysis of reflections on the leadership role.

Table 11 Factor analysis of reflections on the leadership role

^a Variable	Factors			
	(1) Reports	(2) Experiences	(3) Discussions	(4) Courses- theory
Student surveys	.895			
Data on student learning results	.838			
School assessments	.830			
How we usually handle things		.868		
Gut feelings or intuition		.846		
Discussions with PTA			.832	
Discussions with the club or trustees			.743	
Discussions with school owner			.728	
Knowledge I have learned at courses				.851
Research and theory				.668
Cronbach's Alpha	.837	.658	.666	.452

Note. Factor charges below 0.40 are not shown. ^a The questions area abbreviated (Appendix A: The questions in their entirety).

The table indicates that questions that focus on the extent to which respondents take advantage of various factors in the exercise of leadership in schools can make up four factors, each of which can represent the underlying composite measurements. The reliability is satisfactory for Factor 1 and acceptable for Factors 2 and 3. Factor 4 does not have an acceptable reliability. Because these questions are interesting to look at in relation to the leadership education, they are from this point treated separately. Factor analysis of reflections on the leadership role without these two questions is shown in Table 12.

Table 12 Factor analysis of reflection on the leadership role (without course theory)

^a Variable	Factors		
	(1) Reports	(2) Experiences	(3) Discussions
Student surveys	.891		
Data on students' learning results	.869		
School assessments	.845		
How we usually handle such things		.864	
Gut feeling or intuition		.863	
Discussions with PTA			.837
Discussions with the club or trustees			.743
Discussions with school owner			.739

Note. Factor charges below 0.40 are not shown. ^a The questions area abbreviated (Appendix A: The questions in their entirety).

The table shows that the factor structure does not change despite the variables on courses, research and theory being removed from the analysis. The factors reporting, experiences, discussions and courses - theory are retained in the analyses.

3.2.4 Analyses

A descriptive and parametric analysis of the data material was conducted. These are briefly described in the following. In addition, we explain briefly the significance and effect size. The analyses are in appendix.

Descriptive analyses

The data was initially examined using descriptive analyses. Such analyses are used to study the characteristics of a variable and how respondents are distributed therein. This can be a measure such as the mean and standard deviation. For example, we use the average values to present respondents' answers in the various thematic areas (expectation, coping, etc.) It is important to note that the average values must be related to the scales used. In this report higher averages indicate better individual capacity. For example, issues related to self-efficacy are interpreted as the higher the value, the higher the leaders' expectations about mastering.

Parametric analyses

Further, parametric analyses in the shape of t-tests and variance analyses (ANOVA / ANCOVA) are done. Such analyses compare averages between different times and / or different groups. In ANCOVA analyses, it is also possible to consider other variables that may affect respondents' scores, such as age and experience. In this report we use the t-tests to examine whether respondents' answers have changed significantly between pre- and post-tests. ANOVA and ANCOVA analyses are used to examine the differences between providers, considering age, education and years of leadership experience.

Significance and effect size

In statistics one often uses the term statistically significant. When this term is used one means, simply put, the result is not due to chance. This means that there is no chance or measurement error that results in us finding changes or differences, but that there may be features in groups or what we measure that enables us to find this result. A statistically significant result is thus a measure of how confident we can be that the results found in a sample can be generalised and how certain we can claim that the results apply to the population. It is important to note that there are weaknesses in just seeing whether the results are significant or not. Significant results can be trivial and unimportant. The sample size also plays a role. Effect sizes are therefore calculated. These are analyses that measure the strength of the differences in the two averages, such as change in self-

efficacy before and after the education was completed. This provides a better measurement than one significance test.

In terms of t-tests the effect size Cohen’s *d* is often used. This is calculated as the difference in mean value between the two groups divided by the total standard deviation in the two groups (Cohen, 1988). Standard deviation is a measure of dispersion. That is the extent to which the distribution of responses bunch around the average or are more scattered throughout the scale. Cohen’s *d* is therefore a measurement that shows that the difference between the groups is significant, trivial or whether it has any practical significance. Cohen’s *d* says whether the effect is small (0 to 0.9), moderate (0.3 to 0.49) or large (> 0.5). In ANOVA analyses the effect size *ETA* is calculated. This coefficient indicates whether differences between groups are small (0.01), moderate (0.06) or large (.14).

3.3 Qualitative participant interview

Similar to the quantitative approach in evaluation, the qualitative approach was mainly implemented to examine the results of the leadership education over time. The longitudinal design is intended to describe stability and change, and in that regard has been focused on the participants’ descriptions of their own leadership practices. How the case studies and the qualitative participant interviews included in the empirical material, are placed in the evaluation, is illustrated in Figure 5.

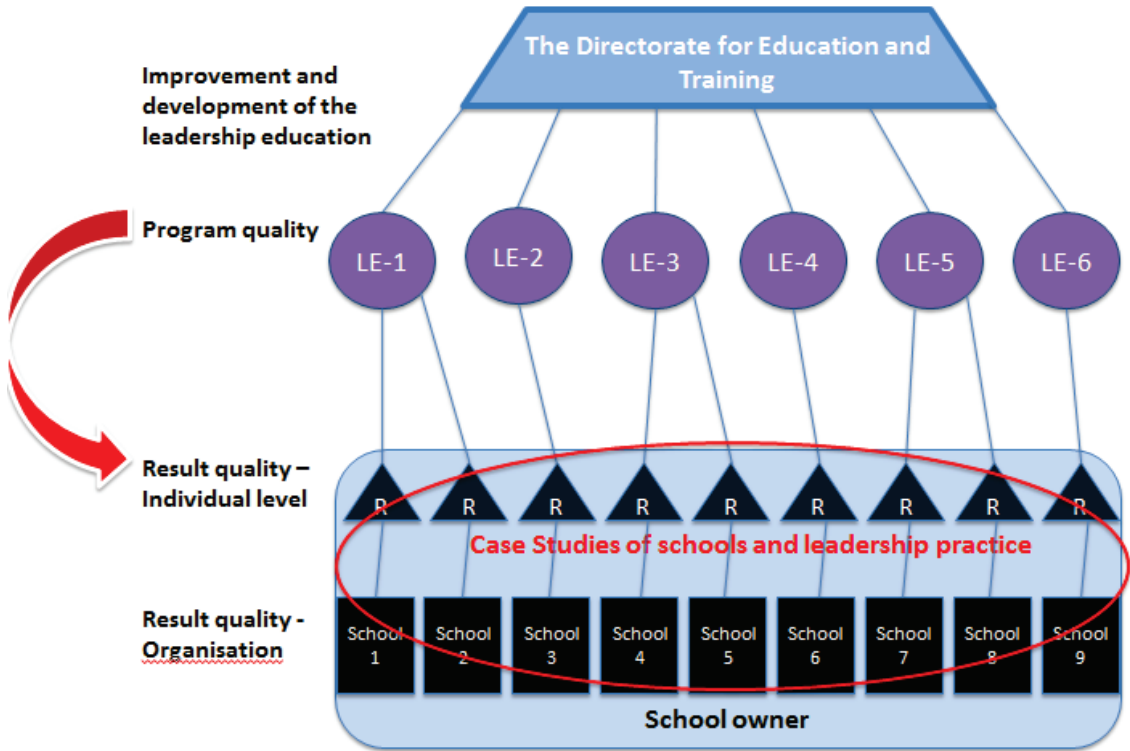


Figure 5 Qualitative approach: focus area result quality

The figure illustrates the six program providers' leadership programs (LP), and the arrow shows the focus of this report using qualitative interview data from the principals in the case studies. The participants' own descriptions of benefits and any changes in leadership practices will be applied in general.

3.3.1 Selection and data collection

The selection of schools for case studies is strategic based on differences in aspects such as the type and size of school, but also the fact that all the six program provisions are represented. Case studies are selected from the class that started in the leadership program in 2010. The main purpose of the case studies is to describe the leadership practices in schools from a theoretical framework for organizational learning and aspects of school leadership (self-efficacy) to analyse changes over time, and thus whether this may be traced back to the school leader's participation in the program.

The first round of data collection at the schools was conducted from March 2011 to September 2012 in the form of school visits and interviews with 12 principals and leadership teams at the schools that had this. Notes were taken from the interviews, and the vast majority of the interviews were recorded on audio file and transcribed. Interviews were conducted after participants had started with the program, so only follow-up interviews by telephone were conducted with some of the principals to get their views after completing the education. The interviews had an open and exploratory approach and focused on the expectations and perceptions of the quality of the program they had attended. Participants were also asked to reflect on their own learning process, what they had applied from the education in their schools right after having completed the program, as well as the challenges of applying what they learned from the program at their own schools. The exploratory approach formed an important basis for the second round of collecting qualitative data used in the empirical material for this report.

The second round of participant interviews with 12 principals was conducted in September 2013, thus three years after the start of the leadership education in autumn 2010. When the six program provisions are of unequal length, this means from 1 ½ to 2 years after completing the education. In this round 11 of the 12 principals had the opportunity to participate in the data collection, which was conducted by telephone with a duration of 30-45 minutes. All interviews were recorded on audio file and transcribed afterwards. A semi-structured interview guide was used with three main questions that focused on the principals first describing own change and development as leaders in recent years, and whether and how participation in the leadership program may have contributed to the changes, and finally any other conditions or factors that had contributed to the development of themselves as school leaders. For each question keywords were listed as follow-up based on the previous round of participant interviews, as well as based on the quantitative results presented in this report. These keywords formed categories for the analysis of interview material, which in this report are mainly used to complement the quantitative analyses of the participants' experience of learning and development of the program.

3.4 Summary

This chapter is an account of the quantitative and qualitative methods used for the collection of data that make up the empirical material. The purpose is to examine the correlation between participants' outcomes and expectations, and individual changes in capacity for learning and development from start-up and upon completion of the education. On the basis of this, possible links between participants' experience of benefits and changes based on what provisions they have been participating in are identified. The empirical analyses are presented and discussed in the next two chapters. Occasional causal inferences in relation to the findings of this report are made. The fact that the evaluation has a longitudinal design does not mean that this is legitimate. It is important to note that causality is not observable and that changes over time must be interpreted with caution. For example, if the analyses show an increase in self-efficacy over time, it is not certain that this can be attributed to leaders' participation in the leadership education, but other factors such as acquired experience. To a greater extent validate our conclusions the quantitative findings are combined with data from qualitative interviews.

4 Empirical analyses

The analyses are mainly based on quantitative data from participant surveys (pre-and post-test) and supplemented by qualitative data from interviews with a small selection of principals. Quantitative data is presented as descriptive analyses in the form of column diagrams where the columns illustrate the average response from the participants and the general allocation per program provider. The research questions formulated for this report form the structure of the empirical analyses:

1. How does the participants' experience of benefits compare to their expectations for the program?
2. How did the participants' capacity for learning and development as a leader change from upon start-up to after the program had concluded?
3. How are the differences and similarities between the six program provisions reflected in the participants' experience of benefits and changes?

Initially the background information on the participants is presented to see if there are changes from the previous report, including analyses for the selection of program provider (for an overview of the number of participants distributed among the six program provisions in terms of response rate, see Chapter 3).

4.1 Participants

We start by showing the background information among the participants in the leadership education through a distribution by gender, age and position at the school. Note that the numbers are based on participants who answered the pre-test in Class 1, 2 and 3 (see Chapter 3 for response percentage). Background variables are illustrated in Table 13.

Table 13 Background variables

Class 1, 2 and 3			
Variable	Primary and lower Secondary	Upper Secondary	Combined
Position			
Principle	49.3 %	31.2 %	45.2 %
Assistant Principle	7.7 %	18.1 %	10.0 %
Superintendant	30.1 %	8.7 %	25.4 %
Department head	13.0 %	42.0 %	19.4 %
Total	100 %	100 %	100 %
Gender			
Man	39.2 %	48.0 %	40.6 %
Woman	60.8 %	52.0 %	59.4 %
Total	100 %	100 %	100 %
Age (Years)			
Min	29.00	31.00	29.00
Max	63.00	62.00	63.00
Experience (Years)			
Min	0	0	0
Max	25	30	30

Note. N = 607 (N is somewhat smaller than the table with participants and percentage of answers presented in the methodology chapter because certain respondents have not noted their position and/or school type).

The table shows that mostly women (59.4%) participate in the leadership education and that the average age is 45. Numbers from the Education Mirror (2010) show that 55 percent of the leaders in primary and lower secondary school and 45 percent in upper secondary school are women. In lower secondary school, most leaders are between 33 and 40 years, but there is also a large portion that are between 52 and 61. In upper secondary school 79 percent of leaders are above 45 years, and 45 percent above 55 years. From this we can say that the participants in the leadership education to a large extent reflect the population. Furthermore one sees that 45.2 percent of participants have a position as principal (primary, lower, and upper secondary schools) and that the other positions together make up 54.8 percent. These will be referred to as "other" positions in the following column diagrams. This shows an increase in the number of principals participating from the previous report in which 33.7 percent held a position as principal.

In the following, Figure 6 illustrates the highest education among participants distributed in groups of principal and school leaders in other positions.

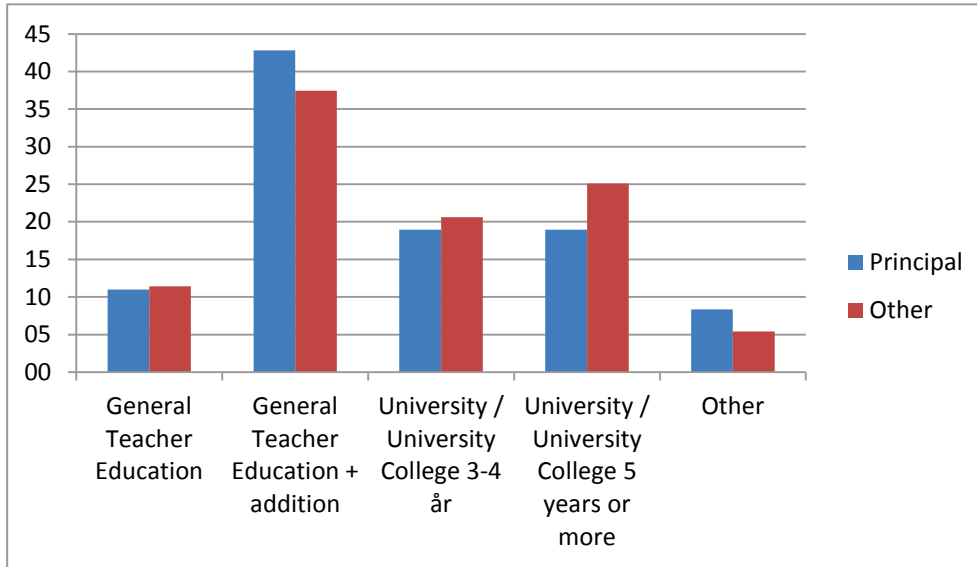


Figure 6 Participant prerequisites distributed by education and type of position

Among the participants the majority of both principals and other school leaders have a general teacher education with additional training, while a large minority of the participants have an under- or post-graduate degree from University/University College. The Education Mirror (2010) shows that whereas 88.1 percent of the nation's school leaders had an undergraduate university or university college degree in education, 5.7 percent had a graduate degree from University or University College. 6.2 percent of the leaders in lower secondary school had no educational competence. The table shows that participants in the National Leadership Education for School Principals to a large extent reflect the level of education of school leaders in general, but there are some additional participants who also have higher university and university college education. Since the previous report informs a few more that they only have general teacher education.

Why participants attended the education will be illustrated in Figure 7 distributed by position.

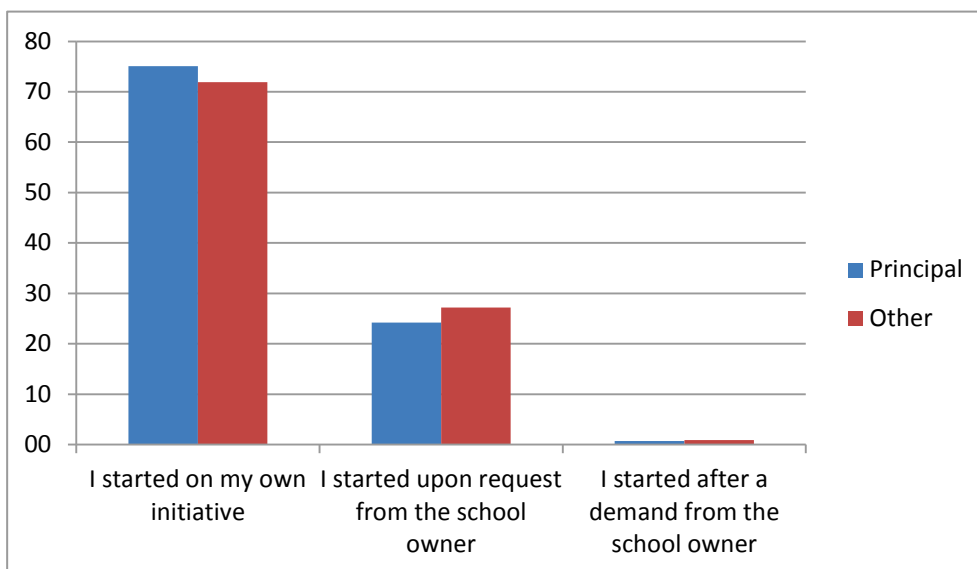


Figure 7 Why participants attended the education distributed by position

As the figure shows, the majority of the participants started on their own initiative, while many started on recommendation from the school owner. The figure also shows that demands by the school owner occur. The figure is virtually unchanged from the previous report. Figure 8 illustrates the significance of geographical proximity and program provider's profile on choice of school.

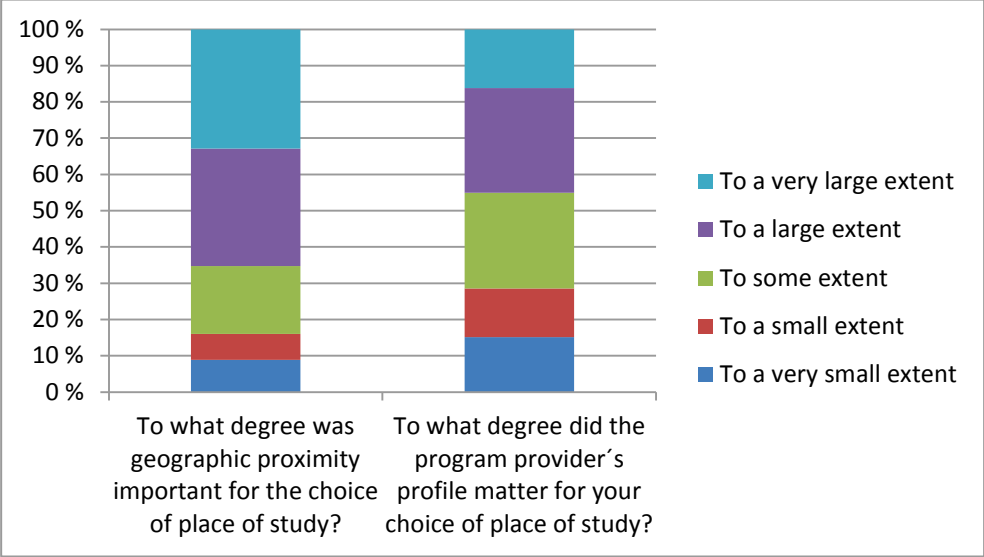


Figure 8 Choice of provider by geographic proximity and program profile

As we see in the figure, the geographic proximity can be given greater meaning than the providers' profile for the choice of school, even though the program profile too affects the participants' choices. Nearly half say that the program profile to a very large or large extent affects the choice of school. The figure is virtually unchanged from the previous report. In the previous report it was pointed out that the variation in the support participants got from school owners affected participants' prerequisites, and Figure 9 illustrates participants' possibility of reduced work time in connection to the program.

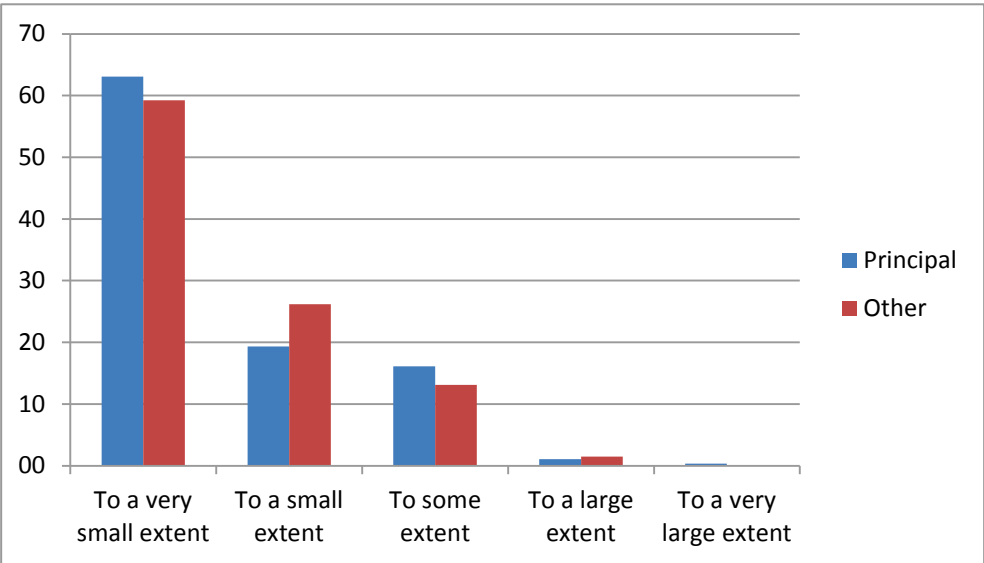


Figure 9 Participants' possibilities for reduction of work in connection to the program

The figure shows that over 80 percent answered to a very small extent or to a small extent having had the possibility of work reduction in connection to participation in the leadership program in order to focus on work requirements of the education. There are only small variations between principals and other school leaders. This can make participation in the leadership program demanding, and it can be especially difficult to fit in time for paper writing and other schoolwork aside from the seminars themselves. The figure is virtually unchanged since the last report, but it might be interesting to see if reduction in work time is changed in the future.

Participant prerequisites and facilitation by the school owner is a current topic. When it comes to possible dropouts in the leadership education in relation to a combination of studies and having a leader position being demanding, it may be interesting to compare with the practice of supplementary training in general, or practices for the education of school leaders particularly in other countries. For example, Sweden has made it a rule to reduce work time in connection with participation in leadership education.

4.2 Assessment of the leadership education

Participants' assessment of the leadership education is based on quantitative data where participants are asked to assess the relevance and quality of the program they have attended. Although participants' satisfaction is not an adequate measure to say something about benefits, it is included to see if participants' assessments have changed when one has a larger selection (post-test Class 1 and 2) than was available in the previous report (post-test Class 1). In the questionnaire, participants were asked about the program's educational quality (educational quality of the lectures, whether the lecturers were engaging, and whether they were satisfied with the practical implementation of the program) and practice relevance (whether the education was relevant to their work, practice-related, and whether it inspired for future work at the principal's school). Corresponding questions were asked in the interviews, and data from these supplements the column graph. The following figures show these assessments based on the dimensions that emerged in the factor analysis. Participants' assessments distributed among program providers are shown in Figure 10.

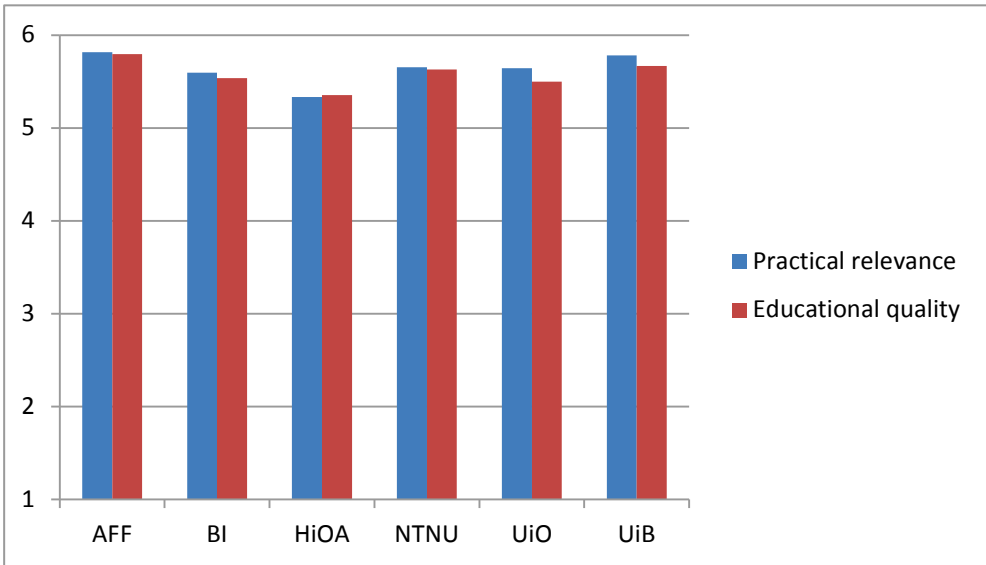


Figure 10 Participants' assessments of practical relevance and educational quality

In general, participants give both the educational quality and the practical relevance of the education a very high score. The educational quality of the lectures is perceived as very good and lecturers are viewed as engaging. Participants' experience of practical implementation is also rated very high. The figure gives the impression that there are small differences between providers, and although HIOA scores slightly lower than the others, the differences are not significant. The scores related to relevance to their own work are high amongst all providers (5.50, based on the response scale from 1 - 6). The education is also perceived as largely practice related and inspirational for future work. In light of that, there are, after all, quite large differences between the schemes in the various programs when it comes to a range of educational conditions, it is striking that the quality is judged so similarly based on the quantitative analyses.

The fact that the leadership education has a high practical relevance and educational quality is something that is also confirmed in both rounds of participant interviews. In the first round, several principals said that the lectures were for the most part good with relevant theory and research, while the scheme was relevant for practice through group discussions and experience-sharing. When it comes to writing, supervision is highlighted as important, and several participants stress how important good supervision in groups is for good processes. Most of them expressed that the execution of the seminars had good progression, and although not all topics were equally relevant or connected, on the whole it was positively assessed. A common feature was that the program had been inspiring for further work on school leadership, and several participants wanted to make changes in their own school eventually.

In follow-up interviews 1 ½ - 2 years after completing the program the positive impression was reconfirmed. The principals emphasize even more strongly the importance of the activities directly connecting theory and practice, through sharing-experience and reflection. The following quotation elaborates on this:

At the same time I have to say that the very best thing about the leadership education is to meet other like-minded people. (...) Yes, as you know it has been extremely important and if there is something that I miss now, it is that the network comes together in seminars and you learn a lot [sic], but it is all the talks we have occasionally during breaks and when we have group work and such, that is very, very important.

The majority of the principals also mention supervision on writing as important to achieve this connection, since purely theoretical assignments are not considered as relevant in terms of own practice. Some experienced that writing assignments took a lot of time and were laborious along the way, but found that they subsequently are happy because they learned a lot. It was emphasized that a link to practice in the writing assignments was key, which is illustrated by the following quotation:

We talked about writing, but it [the education] would not be anything special if there were only writing and those academic matters. The seminars alone, the groups, the methods, and to reflect on one's writing. The writing is related to something practical, what you are doing, it is a success factor.

In the following we will go from focusing on participants' satisfaction with the provision to examine the experienced benefits and whether that corresponds to the participants' expectations at the start of the education.

4.3 Correlation between expectations and participants' benefits

Participants' expectations were the subject of analysis in Report 2, and the first research question in this report examines how the experienced benefits after the education concluded corresponds to the participants' expectations at the start. Through a questionnaire the participants were asked what expectations they had for whether the leadership education would put them in a better position to perform various tasks (administrative, educational and relational) and whether participation in the program would contribute to individual development. Similar questions were also asked in the two rounds of qualitative interviews. In the first round, the principals were asked about the expectations they had before they started the education, and if those expectations had been met thus far in the program. In the second round the principals reflected on of their own change and development as leaders in general, and in relation to the expectations they had at the start.

In the following, a complex analysis of the correlation between expectations and benefits based on questions that were developed specifically for the evaluation is presented. *Expectations for the education* in the pre-test and *benefits from the education* in the post-test consisted of two overarching dimensions that each consisted of thirteen questions (see Appendix A). It is worth noting that the pre- and post-test contained the same questions, and participants were not asked directly about whether they felt that their expectations were met. When the participants answered the post-test they had fairly recently completed the program so that it may be too early to capture real benefits for the participants in terms of changes in leader practices. It is important to be aware of this limitation when the results are to be interpreted, but it will still be able to provide some relevant reference points.

4.3.1 Benefits - specific work assignments

The first dimension of expectations focused on whether the education had put them in a better position to perform relational, administrative and educational assignments. Similar questions about the expectations were asked in the pre-test on a scale of 1-5. The scores for respondents on the pre- and post-test for different assignments are illustrated in Figure 11.

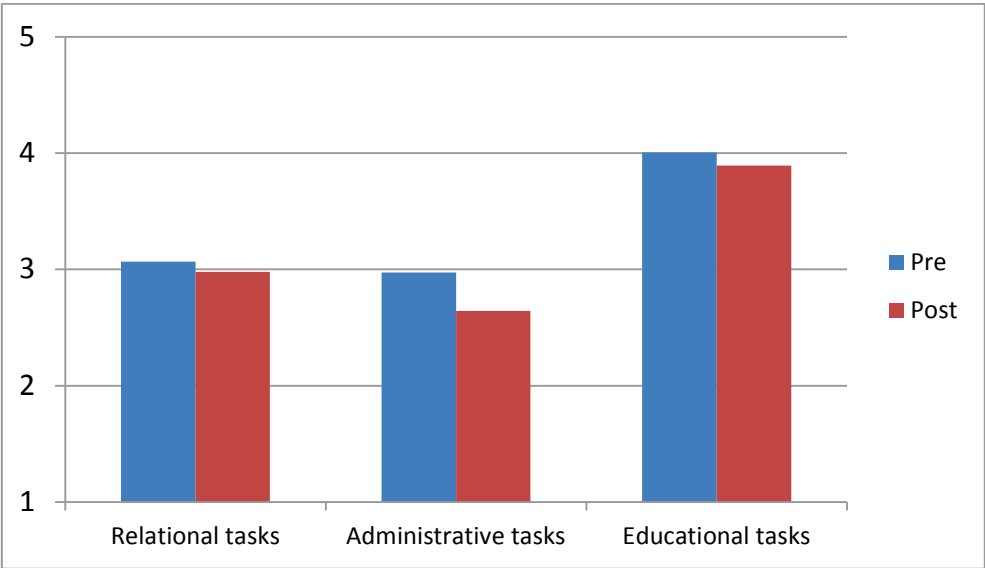


Figure 11 Correlation expectations and benefits (specific work assignments) - in general

A comparison of the three factors, work assignments, shows that participants' expectations were highest that the leadership education would enable them to carry out educational tasks, followed by relational and administrative tasks. Relational assignments have the greatest degree of correlation between expectations and experienced benefits, followed by educational assignments, and lastly administrative assignments with somewhat less correlation. This may also reflect what assignments school leaders want to prioritize based on what they master,, and time use, research shows that educational assignments often get the highest score (Seland et al. 2012).

To investigate whether differences shown in the figures were significant, t-tests were conducted and the results from these are presented in Appendix C. The changes from participants' expectations in the pre-test to benefits in the post-test are fairly moderate, but significant. To illustrate the correlation between pre-and post-test a numerical value for each respondent, which illustrates the degree of change, was calculated. These figures are illustrated by program provider and can be interpreted as the average change in participants' benefits in relation to expectations. Positive numbers illustrate a positive change (an increase compared with the pre-test), indicating a benefit that is higher than expected, and negative numbers illustrate a negative change (a decrease compared with the pre-test), indicating a lower benefit than expected. The results are shown in Figure 12.



Figure 12 Correlation expectations and benefits (specific work assignments) - per provider

The figure shows that only participants from AFF score higher on the post-test in terms of relational and educational assignments. For all the other providers the development is negative with regards to all three specific assignments. Note that the numbers are at a decimal level, and must therefore be interpreted with caution and not be overdramatized. The figure says nothing about the *size* of participants' benefits, but nevertheless it provides a good picture of the degree of correlation between expectations and benefits in relation to different assignments distributed by program provider. We will be very cautious about interpreting these as differences in benefits between program providers.

We have no satisfactory explanation as to why the benefits of the education, in terms of specific work assignments after the education concluded, would score lower than expectations participants had at the start, especially considering that the education has a clear practical goal. It is possible that the participants may have had some unrealistic expectations, and that this type of education hardly gives clear demonstrable benefits related to all these assignments. The first report pointed out that the program covers a great many topics, elements and areas of competence to be included in 30 credits and acquired in a relatively short period of time (Lysø et al. 2011). Although Report 2 pointed out that the provisions have different educational designs, the expectations the participants had at the start could be affected by the fact that the leadership education was a national commitment with a lot of resources and ambitions.

4.3.2 Benefits - individual development

The second dimension of expectations focused on whether participants expected that the education would contribute to individual development in terms of leadership, application of research and theory, formulation ability and setting of boundaries (see Appendix A). Similar questions about benefits were asked in the post-test. The scores for respondents on the pre-and post-test related to individual development are shown in Figure 13.

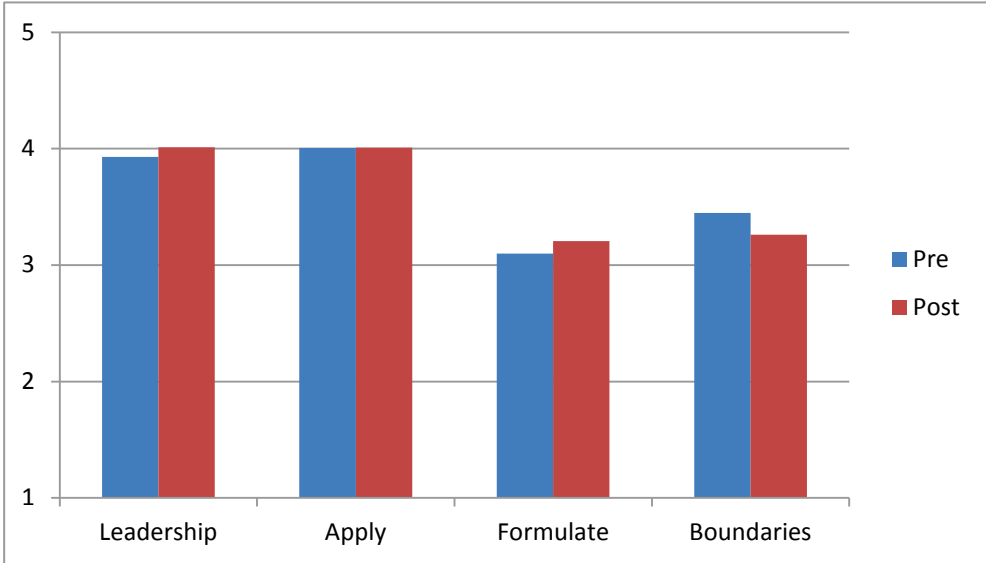


Figure 13 Correlation expectations and benefits (individual development) - in general

The figure shows the correlation between participants’ expectations at the start and the benefits after completing the education, and the only significant change we find is the negative development in terms of benefits for "boundaries". For the factor "application" there is no change, while "leadership" and "formulation" show a certain increase, but the change is not significant. The figure thus shows that there is to a large extent a correlation between participants’ benefits and what they expected the leadership education would do in terms of individual development. The factor "leadership" deals with questions around becoming a more clear leader and being more secure in the leadership role, developing a leader identity and changing leader style. In the interviews most

participants also point out that among other things they have become more clear as leaders, illustrated by the following quotation:

One of my closest colleagues is [...] a leader, and she says that I notice a big difference in you after you went to the leadership education. And that is kind of interesting. (...) What I know she has said, and what I might even feel myself, is that I have become more clear as a leader after that part. Also, as I think, I have got more focus on educational development, and in particular what leaders can do to be a good influence in terms of pupils' learning.

There are also high expectations for the factor "application", and this deals with the application of different types of knowledge and understanding of education policy. The quotation below is an example of this:

Among other things, I think about some of this literature and material that has been about research in practice, relating development to the practice field, it is a very good education in that it was largely related to the practice field in school, that is, what happens between student and teacher. Thankfully there was only a small degree of such lofty, to use that expression, literature and studies that were hard to bring down to everyday life at school. On the contrary, it was easy to take all the academic content back to the job of principal and I think this was the very, very best thing about it, because then you can continue the reflection and raise the level of reflection when you come back to work and between seminars and when writing the exam and such and then it gives more meaning.

The factor "formulation" is about writing ability and learning leadership language. The significance of writing is expressed as follows:

[Academic Writing] certainly was a positive contribution. Because to formalize, and in a way ... it lays a better foundation for the work you want to do and the work you think you might do in the future, and the reflections you have about your own work at your own school, work on educational development and so on. So the writing increases your knowledge and increases your understanding and that too gives even more confidence, I think.

To illustrate the degree of change from the pre-and post-test for the dimension of individual development, a numerical value for each respondent was calculated here as well. The figures are illustrated per provider and can be interpreted as the average change in participants' benefits in relation to expectations. As with Figure 12, positive numbers indicate a higher benefit than expected, and negative numbers indicate a lower benefit than expected. The results are shown in Figure 14.

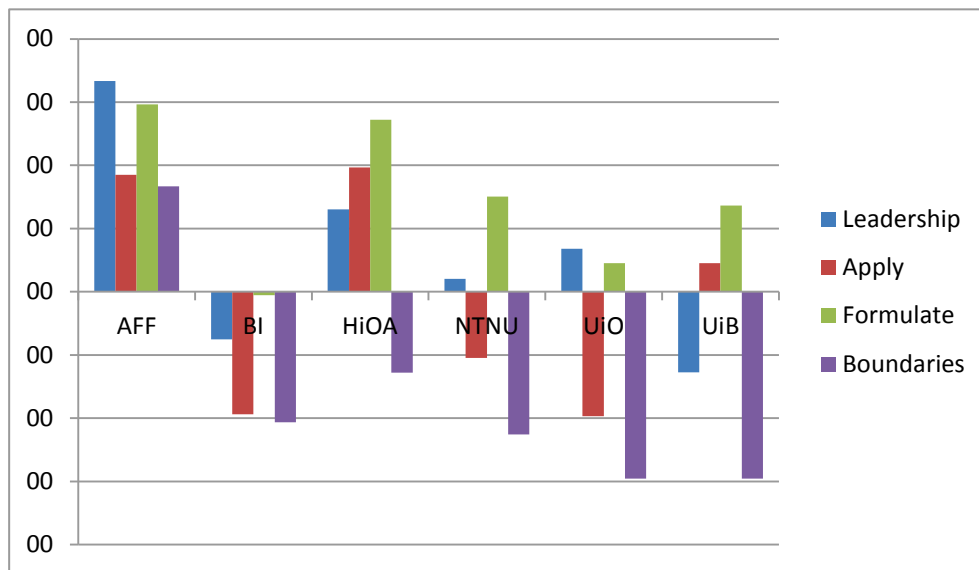


Figure 14 Correlation expectations and benefits (individual development) - per provider

The figure shows that in general, the participants at AFF and HiOA score higher on questions about benefits in the post-test than the other providers. However, the factor "formulation" is positive for all the providers, indicating that the education has contributed a higher benefit than expected at the start of the program. Because the base figures for some of the providers are low (few respondents), one must be careful not to emphasize the comparisons between providers.

4.4 Change in capacity for learning and development as a leader

To say something about the participants' individual change and leadership development, the answers to different questions before and after the education are compared. These questions were posed identically in the pre- and post-test to measure stability and change. This applies to questions about change in self-efficacy, engagement, autonomy and time use, as well as reflections on the leadership role. These factors cannot directly detect effects of the education in terms of changes in leadership practices, but the analyses are used to say something about the participants' capacity for learning and development as a leader. The quantitative results will be supplemented and elaborated with qualitative data from the second round of interviews with principals.

4.4.1 Change - self-efficacy

The questions that examine participants' *self-efficacy* are gathered from an established and validated instrument, The Norwegian Principal Self-Efficacy Scale (NPSES) (Federici & Skaalvik, 2011; Federici & Skaalvik, 2012). The instrument consists of thirty-six questions that focus on different aspects of the school leadership role (see Appendix A). Respondents were for each question asked to express a degree of certainty on a scale of 1-7. The questions were equally formulated in the pre- and post-test, and the participants' scores at the start and after the education was completed are presented in Figure 15.

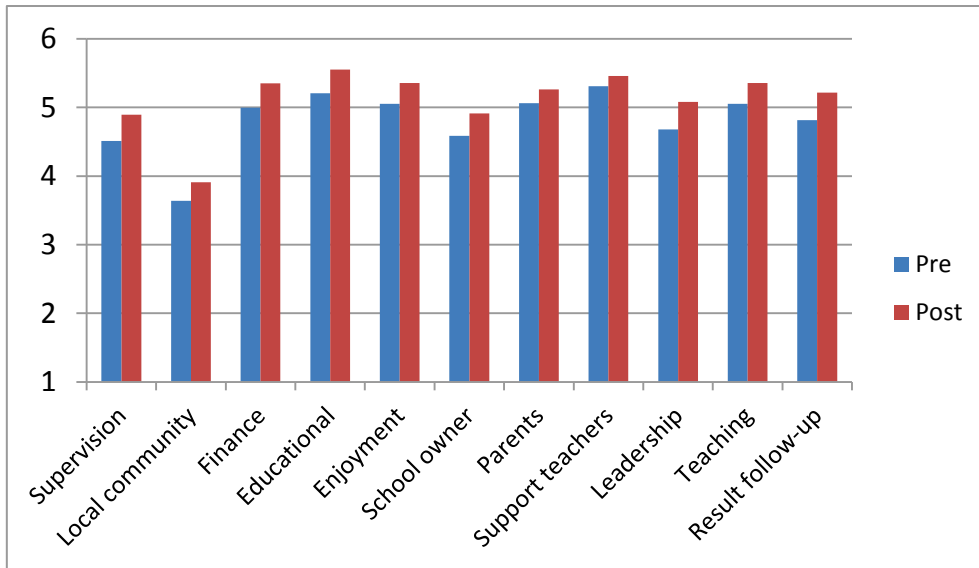


Figure 15 Participants' self-efficacy - changes in general

The figure shows that there has been an increase in self-efficacy in all the different areas where questions are asked. There has been a significant increase in self-efficacy in all dimensions except for «relation to parents». The effect size is small to moderate. The biggest change is found in leadership, enjoyment, teaching and follow-up of results. The following quote expresses own mastery and confidence as a leader.

We have taught all the subjects there are, with more and less mastery. So that when I was teaching tenth grade English, I had no English in my education, but I got them ready for the exam and I made it. But I did not have that great feeling of mastery because I was not a great English teacher. But it is sort of the same here, because you can always be a leader without having any expertise about it, but in the supplementary training where you have to produce work, both written and orally, you simply become more confident. There is a feeling of knowing a lot of this. And that is including how to handle time pressure and all of that.

Changes between the pre-and post-test for each program provider is illustrated in Figure 16 and 17

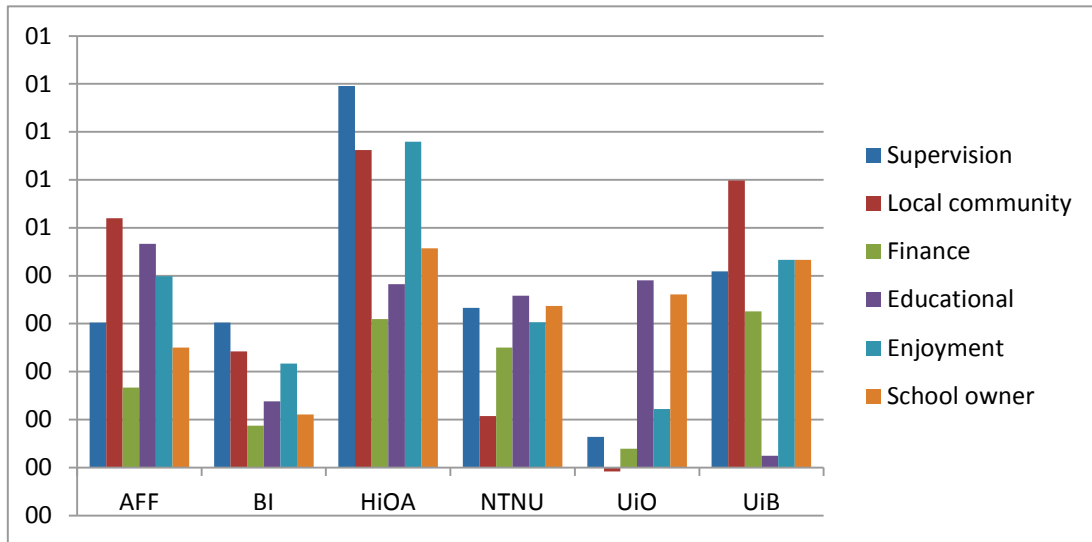


Figure 16 Participants' self-efficacy - change per provider

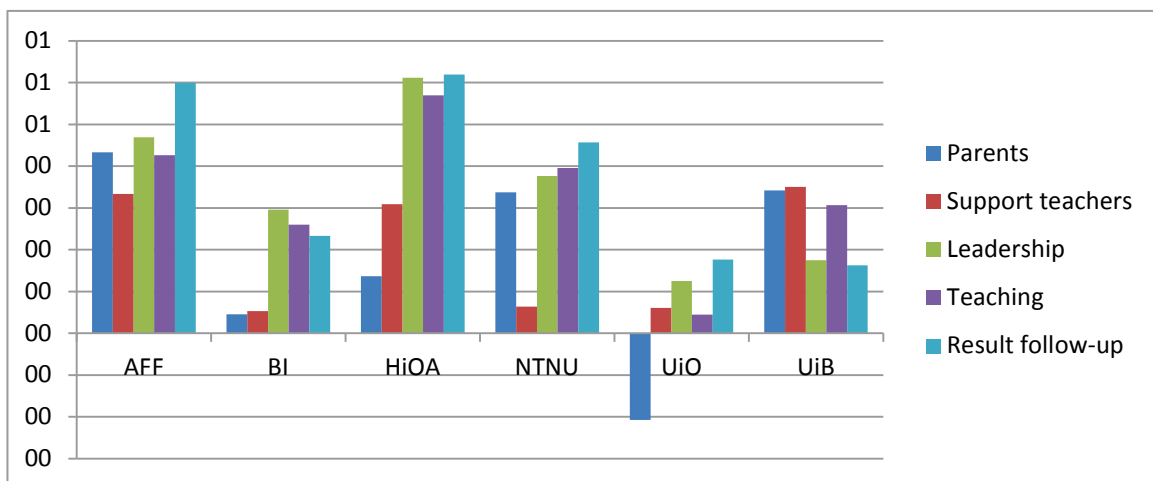


Figure 17 Participants' self-efficacy - change per provider

In the figures, we see that self-efficacy has had a positive change for all participants, regardless of the program provider, except for *relation to parents* among participants at UiO. It is interesting that we barely find clear positive changes in self-efficacy - which after all is all about rather specific work assignments, whereas when we look at the benefits in the previous we rather see a decline in the fulfillment of expectations with regard to specific assignments. Many of the statements around specific work assignments in the two types of questions are quite overlapping. This allows for a discussion about whether expectations are an adequate measurement for evaluating education through looking at correlations with experienced benefits.

4.4.2 Change - engagement, autonomy and time use

Engagement focuses on respondents' overall experience of enjoyment in the workplace. Autonomy is about the freedom to prioritise work assignments and time. Questions about time consist of four dimensions which deals with the participants' experienced time use on administrative and educational tasks, time for self-development, and student and parent related issues. This division has similarities with specific work assignments for school leaders. Participants' change of engagement, sense of autonomy and time use along the four dimensions are shown in Figure 18.

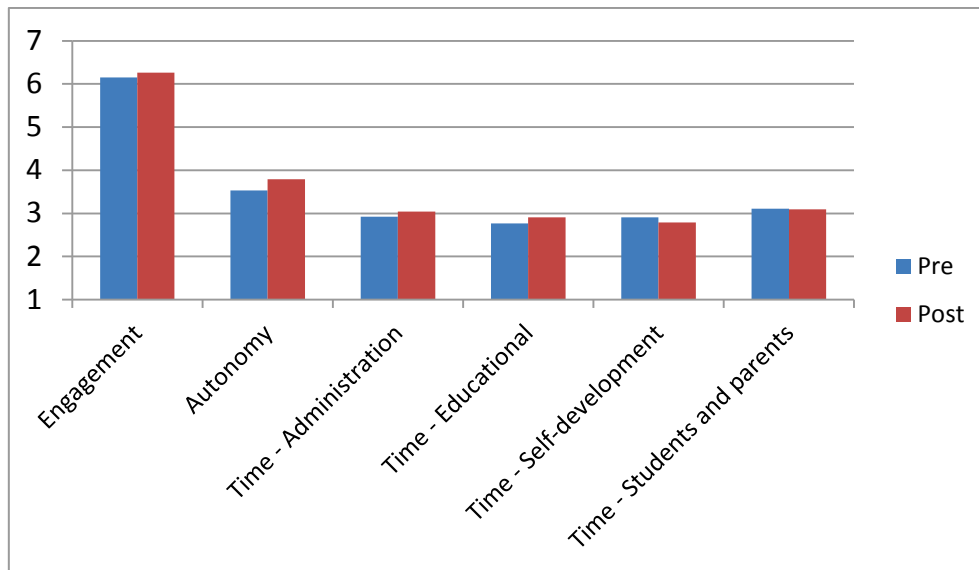


Figure 18 Participants' engagement, autonomy and time - changes in general

There has been a significant increase in the participants' scores for the experience of autonomy and range of action, as well as the time spent on educational assignments. Participants say that the time spent on self-development has decreased, while there is no change in engagement, time for administration, and time for students and parents. This could perhaps be interpreted in a way that participants have been made aware in terms of their own range of action, and prioritising educational tasks. This can be considered as positive, but it is worrying if this happens at the expense of experienced time for self-development. In that regard, the participants may have answered based on the education, interpreted as the time for self-development, had concluded at the time of the questionnaire. We add that the observed changes are small, although they are significant.

Raising awareness of one's own range of action as a school leader is something that most of the principals highlight in the interviews. Some of them express an increased understanding that the range of action was larger than they thought at first, and that they have used this to a greater extent by taking more space in terms of educational leadership or more deliberately balancing power and trust in the role of leader. An example of raising awareness about one's own range of action is presented in the quotation from one of the principals who is new as principal:

*I have learned a tremendous amount, that I can say, but I took the leadership education here, I started completely parallel, and starting working as principal the same day that I started the leadership education. So that way it worked out very well, but I have no previous experience as principal, I had never been principal before I started the leadership education, actually. But it is clear that I see that being principal is **extremely** educational, and I have had a rare learning curve, I must say. And that is largely related to what I experience in my everyday life, but it is clear that the national leadership education for me plays a role in creating a framework. Role understanding is one of the things that I will point out, the fact that I realise the responsibility I have, I find that to be quite substantial, and at times somewhat weighing on my mind, but at the same time what one's possibilities are. To say that they are limitless might be an exaggeration, but they are indeed quite big. And if I understand this, I have a big range of action.*

When it comes to time use, none of the principals say that they spend less time, but several of them say that they use their time more efficiently through better meetings and case procedures, as well as delegating more than previously. In addition, there are some that point out that they have changed what assignments they prioritise, exemplified below:

To prioritize is perhaps the most difficult thing, because those who, if you call their parents, or, people get in touch, then you are booked into meetings and all, and to actually manage to ... I have spent this year to find out how I should do it. (...) But the boundary between being accessible enough that people get used to it, I was going to say, towards making sure you say no a few times, that is where it lies, that is where leadership is, in a way. And that is really exciting to figure out, and you cannot read up on that, and the leadership education cannot figure that out.

I have gone into the organisation and taken the educational spot, this much I have done. And I do that at the expense of administrative assignments. So I put some things aside that I do not care so much about.

In the following, we examine the dimensions of engagement and autonomy, and the change in scores between the pre- and post-test for each program provider is illustrated in Figure 19.

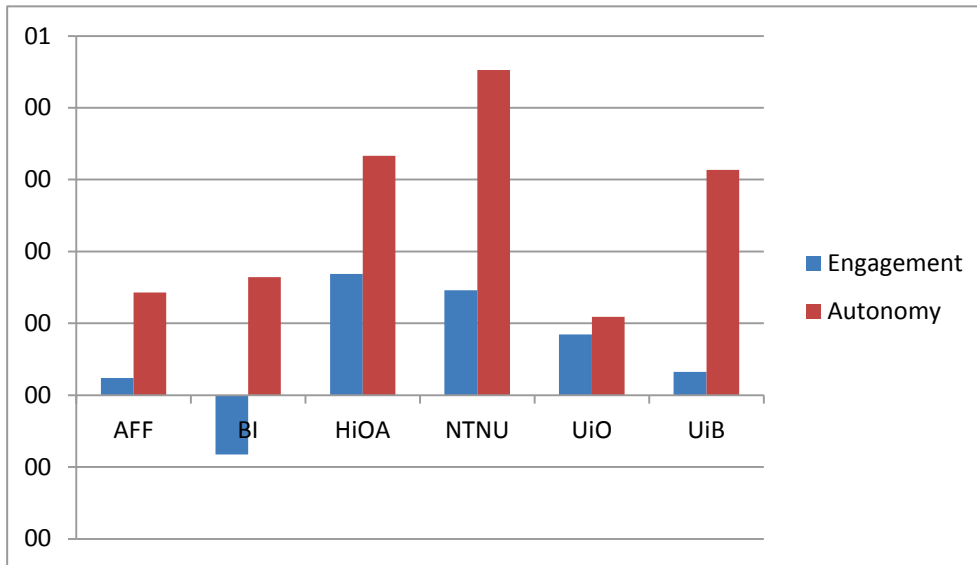


Figure 19 Participants' engagement and autonomy - change per provider

The figure shows that the largest increase in scores is within autonomy and range of action. This applies to all program providers, but is most visible for HiOA, NTNU and UiB. Engagement has not changed significantly, but the figure shows that participants scored higher after the education than at the start. This applies to all providers except for participants at BI, but it must be noted that the change is very small. In the following, the change in time use for the four dimensions is examined more closely for each of the program providers. This is illustrated in Figure 20.

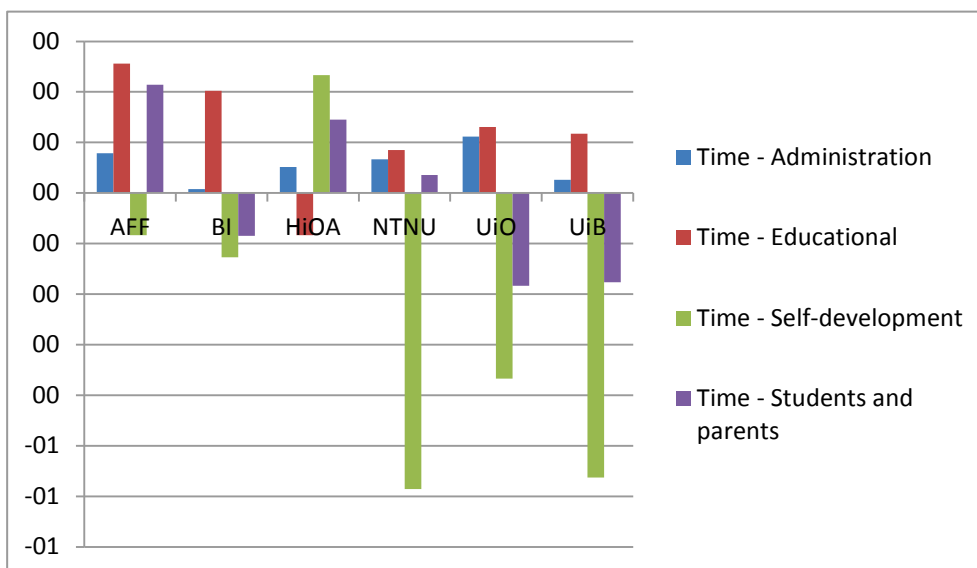


Figure 20 Participants' experience of time use - change per provider

The t-test (see Appendix C) and the figure show that the time for self-development is the one area where the greatest decrease is found, being most evident at NTNU, UiO and UiB. The explanation for this decrease in the post-test, however, may be that the participants at this time have completed the education. Also note that the program provisions have different start-up times, duration and scope

(as shown in Report 2). Experienced time use on educational assignments has increased most clearly among the participants at AFF and BI, while it has decreased among participants at HiOA.

4.4.3 Change - reflections on the leadership role

The questions concerning *reflections on the leadership role* focused on to what extent the participants take advantage of various elements such as reports, experiences, discussions, research and theory, as well as seminars in their leadership practice in schools (see Appendix A). The respondents were asked to express the degree of agreement on a scale of 1-5, and questions for the pre-and post-test were identically formulated. The participants' changes from start-up to after the program had concluded are illustrated in Figure 21.

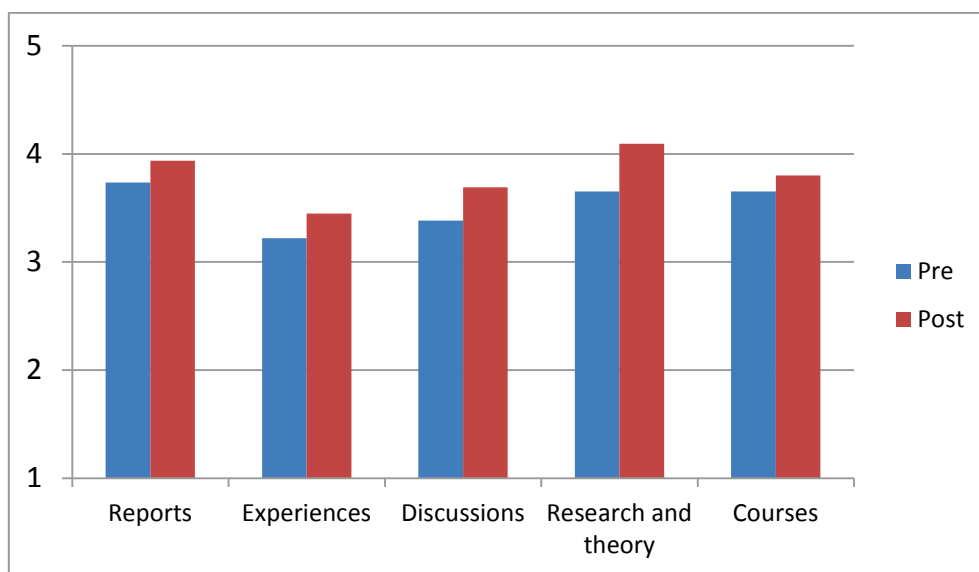


Figure 21 The participants' reflections on the leadership role - changes in general

The figure indicates that participants score more positively on the various dimensions compared with the pre-test. The changes are significant for the factors «experiences», «discussions» and «research and theory». The greatest increase appears to be within whether the participants are using research and practice in connection with leadership. This can be interpreted in a way that the participants during the education have become more aware of how they can benefit from different types of knowledge.

Better application of different types of knowledge is expressed by almost all of the principals in the interviews, and elaborated through the following quotation:

I am not so good at doing it, but in relation to actually searching for academic literature and in a way come prepared, I notice the benefits it could provide in terms of staying updated. You were very good at conveying that in the education, but I see that I am not good enough to follow up on it in everyday life, but it has been very useful to have it as a backdrop. (...) Also, there is at the same time the fact that the leadership education addresses a great deal, so you get sort of the comprehensiveness then. The scale of the job and not the least the

responsibility, and as I said earlier the range of action, because that is put into words through different types of lecturers and others you meet and assignments we do and listening to other people's assignments, so ... It helps in opening your eyes and to increase understanding. I am clearly a better principal with this education, than without it. I would like to think so.

Change in scores among participants between the pre- and post-test per program provider is shown in Figure 22.

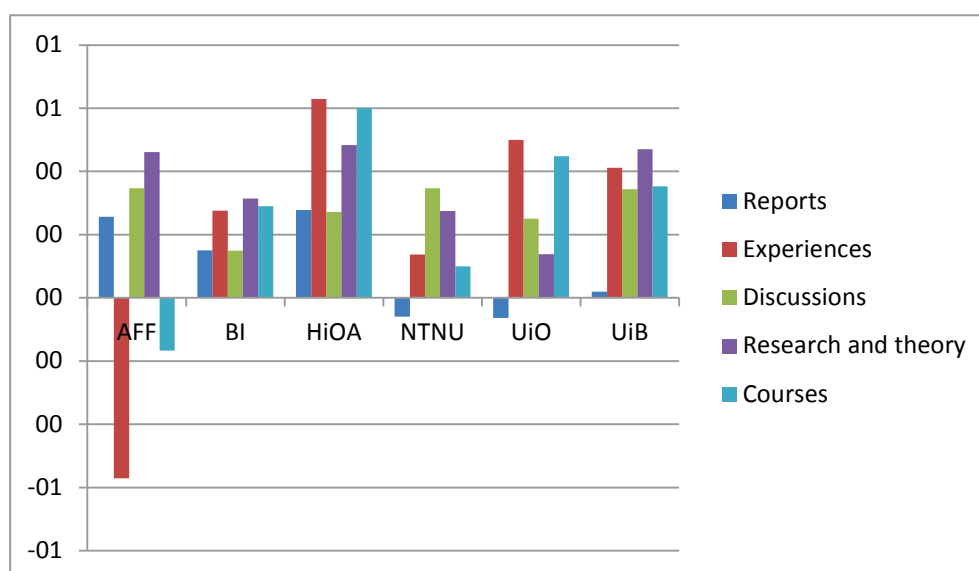


Figure 22 The participants' reflections on the leadership role - change per provider

The figure shows that in general there has been an increase in scores among participants for all program providers. AFF has an average negative reduction of 0.58 in the factor *experiences*. We see that although the six providers score somewhat differently on what change in the reflections on the leadership role, they all show a positive change.

4.4.4 Change - confidence in the leadership role

In the first round of interviews, the principals express that the education has provided confidence in the role of principal, awareness and reflection on their own practice and school. In the second round of interviews, everyone says that they have increased their confidence in the leadership role, and two of the eleven participants who were interviewed have changed jobs from principal to a position with the school owner. They both pointed out that the leadership education was an important factor in making them dare to seek new challenges. What is specifically mentioned when the principals talk about increased confidence is a replenishment of theory and research, which contributes to better arguments for the decisions you make as a leader, and an academic language that allows them to participate in an academic community. They experience that they have gained more confidence, become more clear and make better arguments based on knowledge. Some also say that they have received feedback from others that they have changed.

Some describe the changes as a different way of reflecting, and have gone from mere assumptions to theoretical awareness, and emphasize the teachers' and staff's learning through discussion on academic material. Others point out that they have become more goal-oriented and systematic, more proactive and strategic. Several principals say that they experienced a more comprehensive understanding of how they can make changes in the organisation, and that development processes are relational changes that take a long time. Some also point out having an increased understanding of politics and power, and experience increased confidence in relation to the school owner in terms of responsibility and authority. How an increased confidence in the leadership role, a stronger identity and better argumentation based on the education is expressed by the principals, are illustrated by the following quotations:

First and foremost, I think that it [the education] has helped, and is helping, with confidence and ballast in terms of personally making the decisions that you make and initiate the processes that you want to initiate. It gives good support to the leadership role, and that is very important.

At least what I can see, what I can feel in my gut, I think that one has slowly but surely built up a theoretical base of knowledge and more practice, that the confidence in a way is bigger and that you feel more secure in your job.

I mean, the leadership education has influenced both the reasons for how to work around things, as well as the very specific assignments we have to do. Everything from theory, on models and what good adult education is, for example. That is where it has had an influence, and it has also had an influence in terms of thinking about change, in a way, on a general basis, and in a way the dialogue with the staff is also a bit more professional, i.e. «what is the basis for what you are saying», «who are you when you say this».

Individual and organisational change as a result of increased confidence based on participation in the education is illustrated by the following quotations:

Yes, I think I must see this as a result of attending to the leadership education. I have got argumentation in place, disclosure and insight into having a range of action that was bigger than what I previously thought I had. The fact that the principal can actually take other measures than what one usually experiences, much has been organised around steps, but to use other resources in a group to get further... it made me dare to hang in there and dare to accept that things take time. I probably did that all along, but now I am even less afraid of things taking time and that there will be turmoil when making changes. I dare to hang in there also because it is right to work towards what the mission of the school is.

I think I have changed quite a bit... for example, this spring I changed the whole structure of the school organisation ... [describes the process]. I put together a group consisting of individuals with different functions at the school, and there are other topics that are treated in that forum than in the old one.

How increased confidence in the leadership role helps in improving the exercise of everyday practice is examined further in connection with the case studies presented in the final evaluation report.

4.5 Differences and similarities between program provisions

Most of the changes that have been detected in the analyses per provider in this chapter are only apparent and not significant. This is due partly to the fact that the number of respondents is low for the individual program providers, and therefore fairly large changes are required for it to be registered as significant. The methods of analysis that are used to reveal differences between providers are described in Appendix D. We are not out to elucidate differences in absolute scores here, but differences in participants' benefits and changes per provider. There were only two variables that showed significant differences between providers: *Application* and *experiences*. When we checked for differences between participants with respect to age, experience and level of education, however, the significant differences in the variable *application* disappeared (see Figure 14). The differences in the variable *experiences* (see Figure 22) on the other hand remained, and it was here that AFF had a significantly more negative development than the other providers - with the exception of NTNU. We have no immediate explanation for this pattern.

To investigate how the differences between program providers are reflected in the participants' experience of benefits and changes, we have investigated the significant changes for the individual program provider on the different variables (see Appendix D for analyses per provider). Only significant changes are marked in the table, which gives an overall picture of the significant changes per provider. Positive changes are marked by a <+>, negatives by a <->, and <blank> where we do not detect significant changes. Note that it is not possible to compare the number of negative or positive markers, since the program providers with most respondents in the survey will have the greatest chance for significant impact. This comparison may however give some indication about the direction of change per provider, and whether it is possible to identify some correlations, tendencies and patterns. The question is whether the educational differences between program providers are reflected in the variables that demonstrate significant changes per provider, or whether some similarities between the providers in terms of changes are revealed.

Significant changes distributed by provider for the factors that dealt with correlation between participants' expectations and experienced benefits are illustrated in Table 14.

Table 14 Significant changes per provider - correlation expectations and benefits

Expectations - Benefits		Program Provider				
Variable	AFF	BI	HIOA	NTNU	UIO	UIB
Respondents pre/post	44/19	300/111	148/44	163/66	148/55	73/29
Administrative		-	-	-	-	
Educational		-		+		-
Apply		-			-	
Boundaries		-				

As the results earlier in the chapter show (see Figure 12 and 14), the participants offer the impression that the education to a large extent meets expectations. The table illustrates that only subtle differences between program providers based on the correlation between benefits and expectations can be identified. For four of the providers, there is less experienced benefits for

administrative tasks than expected from participating. We also see that for educational assignments, the education at NTNU gives more benefits than expected, while for BI and UiO somewhat less. Note that even though the changes are significant, they are very small and cannot prove any systematic differences between the six providers in terms of correlation between benefits and expectations.

Significant changes distributed by program provider for the factors that are based on individual change and development are illustrated in Table 15

Table 15 Significant changes per provider - individual change and development

Individual changes Variable	Program Provider					
	AFF	BI	HIOA	NTNU	UIO	UIB
Respondents pre/post	44/19	300/111	148/44	163/66	148/55	73/29
Relation to local community			+			+
Supervision	+	+	+			
Enjoyment	+	+	+	+		+
Relation to school owner			+	+	+	
Educational leadership					+	
Administrative leadership	+	+	+	+		
Teaching		+	+	+		
Result follow-up	+	+	+	+		
Autonomy				+		
Educational time use		+				
Self-development time use				-		
Experiences		+	+		+	+
Discussion				+		
Research and theory		+	+	+		+

The results that were presented earlier in this chapter (see Figure 16, 17, 19, 20 and 21) show no significant changes in participants from start-up to after the leadership education had concluded. The table shows indicators of change for providers related to different degrees of self-efficacy, autonomy, and reflections on the job as a leader. The changes in most variables in the table are positive and move in the same direction.

To summarize the two tables, the general impression is that the changes in participants' benefits seen after the education had concluded compared to expectations are largely moving in the same direction for all the six providers. The tables give only one example where the development heads in different directions for the program providers. This applies to educational tasks, where NTNU's participants report that the benefits are greater than expected, while it is less than expected for BI and UiO. For the rest, the only differences are found between significant and non-significant impacts. The table shows that there is a variation between program providers in the number of factors that show significant changes, and the question is whether these are random or systematic differences in

terms of characteristics of the program provision. Differences between the six program provisions still do not appear to have major effects on the participants' experienced benefits and change. The tables show no systematic groupings of the providers.

4.6 Summary

The analyses in this report are intended to investigate whether the leadership education has contributed to increased «confidence in the leadership role», for courage and strength to lead, personal and professional strength to stand up and take leadership through the development of an identity as a leader. It is challenging to measure whether the leadership education has had direct implications for how leadership is exercised in practice, but the analyses indicate that the participants have changed their learning capacity and evolved as a leader from the start-up until after the education had concluded. The participants' benefits in terms of solving relational and educational leadership assignments were close to what they expected, while benefits related to administrative assignments are somewhat reduced. For benefits related to participants' individual development, it is about as expected, but with some change in the factors leadership and formulation (not significant). Participants' self-efficacy has increased in almost all the dimensions covered by this scale, which is worth noting although the effects are not great. We find a similar positive change in the participants' experience of their own range of action, as well as time spent on educational assignments. Another finding is that participants, after concluding the education, experience using different types of knowledge in the job as a leader.

Overall, the analyses show that participants feel that they have had a positive benefit from the leadership education, and that benefit to a large extent indicates that expectations are met. The results show that the participants' capacity for learning and development as a leader has changed, and that education has contributed to increased confidence in the leadership role. Based on participants' self-reported evaluations of benefits and changes, we cannot detect differences between the program providers. In the last chapter the possible explanations for these empirical results is discussed.

5 Discussion and conclusions

In this report we have taken a closer look at how the participants in the National Leadership Education experience that they have evolved as leaders from start-up to after the education had concluded. This is a continuation of previous analyses of the various program provisions in the National Leadership Education for School Principals (see Lysø et al. 2012). The report therefore has a focus on whether the leadership education has led to learning at the individual level, and the following research questions have formed the basis for the analyses:

1. How does the participants' experience of benefits correspond with their expectations for the program?
2. How has the participants' capacity for learning and development as a leader changed from start-up to after the education had concluded?
3. How are the differences and similarities between the six program provisions reflected in the participants' experience of benefits and changes?

The research questions are examined through participants' self-reporting in a quantitative survey at various times during the education, and with the help of a small number of qualitative interviews with principals who have participated in the leadership education. In the analyses the participants' experience of benefits and changes is operationalised and assessed both in relation to the conceptual basis for follow-up evaluation and the objectives that the Directorate for Education and Training had set for what sort of competence each participant is going to be left with after participating in the leadership education.

Nevertheless, ambitions to measure learning from leadership educations are methodologically challenging both theoretically and empirically. The conclusions drawn in this report should therefore be interpreted with caution based on the fact that change in participants may depend on the time of the measurement, the ways it is measured, and in which organisational and political contexts the changes in participants' individual capacity for learning and development are placed. A number of conditions other than the leadership education may affect the participants' experience of change. Here we will refer to the final report of the evaluation of the National Leadership Education for School Principals, which will be available in the autumn of 2014. In summary, the analyses thus far show that three more overarching conclusions can be drawn:

- that the expectations of benefits that the participants had in advance have been largely met;
- that the participants' capacity for learning and development - measured through different self-efficacies - has increased along several dimensions;
- that the program provisions - in spite of differences in educational design and organisation - creates a relatively equal change-oriented learning arena for participants who contribute to increased confidence in the role of leader.

These conclusions are discussed in more detail below, and the report is rounded off with saying something about the last phase of the evaluation.

5.1 Fulfillment of participants' expectations for the education

In the previous evaluation report from the National Leadership Education for School Principals, a key discovery was that participants were very satisfied with the program provisions that together represent the National Leadership Education for School Principals (see Lysø et al. 2012). The experience of the academic provisions was very positive, and participants' expectations for the educations may partly have been colored by the fact that the leadership education was a national initiative that was both heavily promoted and had many resources associated with it. To meet such high expectations over time can be a great challenge, but essentially the programs seem to have managed this, particularly in terms of relational and educational leadership assignments. At the same time, the participants' benefits in relation to administrative assignments were reduced somewhat compared to their expectations, although the reduced benefits along this dimension cannot be called dramatic.

The high benefits of the education that are reported may partly be due to the participants' own motivation to improve their skills in leadership. Although a great many of the participants for instance have not received reduced work hours or other relief in order to participate in the program, interviews with participants indicate that they put a lot of time and commitment into the leadership education. The fact that it is precisely in the relational and educational assignments where benefits subsequently are the greatest, may be because the programs as such have actually emphasised a lot of relational training, while the participants themselves had the greatest expectations of benefits in relation to the educational assignments. The fact that there are reports of somewhat less benefits in relation to administrative assignments may be because school leaders perhaps have the least control over this dimension in the first place. Some administrative assignments cannot always be pushed on or made more efficient because they often include conditions such as school/home cooperation, personnel issues, economy, etc.

Looking at the participants' assessments of benefits in relation to the competence requirements for school leaders that the Directorate for Education and Training has specified for the education, the benefits that the participants report seems to be in line with the Directorate's goal settings - again with the exception of the administrative dimension. A key question in this regard is, however, whether the current leadership education has a scope that allows for all the dimensions that are emphasized to actually be fulfilled given the limitations that the programs are confined to in terms of credits and time use. One possibility is therefore that the program providers in practice have prioritised relational and educational assignments rather than administrative assignments.

When it comes to the dimension individual development, participants report a high benefit related to factor leadership and application. Leadership deals with issues around becoming a more clear leader, being confident in the leadership role, developing a leader identity and leader style. Benefits for the factor leadership shows a slight increase, thus expectations are well met. The experience of being a more clear leader, increased confidence and a stronger identity is also elaborated on in the qualitative interviews. The factor application is about employing various types of knowledge and the understanding of education policy, and the high expectations are met. The participants had somewhat lower expectations for the development of formulation ability and learning the leadership language, but report slightly higher benefits than they expected. The qualitative interviews show that improved written and oral abilities are key benefits of the leadership education. This shows that the Directorate for Education and Training's goals to increase confidence in the leadership role is achieved. Whether this contributes to change in leadership practices will be highlighted in the final evaluation report.

5.2 Changes in participants' capacity for learning and development

Self-efficacy is a key indicator of the individual capacity to develop and change as a leader, and high self-efficacy influences effort, perseverance, aspiration level and goals (Gist & Michell, 1992). Generally speaking, the National Leadership Education for School Principals has contributed to the fact that participants' reporting of self-efficacy is greater after than before they started their education. It should be emphasised that the positive change in self-efficacy is relatively small, but it is also significant along a range of different dimensions. The greatest positive change seems to have occurred in the areas of «leadership», «enjoyment», «teaching» and «follow-up of results». The leaders also believe that they have strengthened their autonomy and range of action as a result of the education.

For the participants - especially those from more practice-oriented general teacher educations - the leadership education can also represent new perspectives, not least in relation to the use of research and theory in their own work. Both the quantitative data and interviews with participants indicate that research and theory has created a greater confidence in the exercise of the leadership role, especially when initiative and decisions are to be justified. The leadership education also seems - both through the literature that the participants have been exposed to, and the seminars in which literature and own experiences are discussed in a learning community - to have given participants a vocabulary to address the challenges they face in everyday life.

The fact that self-efficacy has increased while the benefits of the leadership education is relatively stable, can be explained in different ways. Firstly, this may be due to measurement methodology, and where different methods of measurement and question batteries can give slightly different answers. It should not least be highlighted that differences in self-efficacy and benefits are relatively small. Another possible explanation may be that self-efficacy is mainly about assessments regarding oneself, while the questions about benefits are mainly about the program as such. Increased self-efficacy and stable benefits may then be explained as participants over time having simply strengthened their own self-confidence, belief in their own competence and their own ability to act without necessarily attributing all this change to the program as such. The National Leadership Education for School Principals may have given participants a stronger leadership identity, an

implication perhaps being that the belief that one can master different types of assignments, is also to a greater extent attributed to their own capacity for learning and development, both from the program and from other activities that the leaders are engaged in.

5.3 Different program designs - similar learning communities

This question can be seen as an extension of the themes discussed in the second evaluation report where the six program provisions in the National Leadership Education for School Principals were compared. In this report the participants' self-efficacy has been related to the various providers that are behind the National Leadership Education for School Principals. Although the programs educationally appear as relatively different - measured by characteristics such as curriculum, number of seminars, work requirements, etc. - the participants still seem to be very pleased with the academic provisions, regardless of provider. In this report, data from several classes of participants, that confirms this picture, is gathered, giving the impression that the programs have managed to maintain good quality over time.

Lysø et al. (2012:66) conclude that all the program provisions that are part of the National Leadership Education for School Principals may be said to have a center of gravity at the intersection of acquiring knowledge (science) and knowledge practice. The knowledge development element was hard to identify in all educations, but was not particularly sought after by the participants either. Thus one can argue that these overarching guidelines - that have enabled educationally different programs - have also created a somewhat similar change-oriented learning arena for the participants. No matter what you call the educational measures that the program providers have taken, there is in the programs a strong emphasis on individual reflection, group discussions and training in concrete skills. This learning community seems to have contributed to positive benefits, and to lay a foundation for individual change and development in the participants.

The Directorate for Education and Training has pointed out that a leadership education of 30 credits must be included in a more comprehensive master's degree in education or school leadership, and we find differences between providers in terms of opportunities for the participants to continue their studies (from 1 to 7 opportunities). In the previous report where the six program providers were compared, they appeared to be in part very different when it comes to a range of educational matters like organisation and structure, goals, academic content and work methods. When it comes to organising and managing the program, the provisions at AFF, BI and UiO appear to be more strongly rooted in an educational institution than at HiOA, NTNU and UiB which offer a more distributed legitimacy between partners. The administrative leadership is maintained in different ways when it comes to central or more distributed solutions, and the program at UiB appears as the most distributed in terms of organisation.

Every year, resources have been allocated to approximately 400 students that are based on the needs and capacity of each educational institution; BI has three classes at various locations in the country, in addition to classes in Oslo when needed. NTNU has two classes, one of which is placed at the University of Tromsø. UiO has two classes of Oslo. AFF, HiOA and UiB have one class each, but the classes are different in size. In 2013, the number of students has been increased to about 500, indicating that both the need and the capacity are increasing. With regards to scope and duration, AFF and HiOA have the most seminars and the highest number of seminar days (26 and 25 days)

which is more than twice as many as UiB has (12 days) and quite a few more than BI (16 days). NTNU and UiO each have 21 days. The duration ranges from BI with two semesters to the others with three semesters, with six to nine seminars with different start-up times which makes the length of the programs different.

Academic content also varies between providers, which is reflected both in the scope of the curriculum and theme for the seminars (see Report 2 pages 40-41). For example, based on the scope of the curriculum AFF, BI and UiB perhaps appear to be the least traditional-while HiOA and UiO appear to be the most traditional based on the curriculum. This is a possible example of an orientation towards more knowledge-practice that requires more time, which is reflected in the program's scheme for skills training. If we look at the theme for the seminars, some providers start with the leader and then move towards the organisation, while others start with the school in the community or as an organisation, or with Knowledge Promotion. The Directorate for Education and Training has emphasised that there should be a variation in work methods, which providers have addressed through activities that connect theory and practice in and between seminars. All the providers use individual counseling, group counseling and other forms of group work where participants reflect together. Skills training was also going to be included in the program, consequently all providers have partnered with consultant-/competence communities to address this (except for AFF which attends to this themselves). Providers use different tools for skills training, and the integration of the scheme with other activities varies between programs. There are also relatively large differences between the provisions in terms of work requirements and exams, and we can also find elements of the knowledge development perspective.

What is the significance of the programs' educational structure then in terms of the participants' benefits? Based on the programs' structures and organisations being very different, this should in principle imply that the benefits would be different. As illustrated in Chapter 4, a variation in benefits can then be identified if we measure this along different dimensions. The main tendency is still that benefits are generally positive, regardless of the provider, and the participants experience change from start-up to after the education has concluded. Some specific patterns between benefits and specific educational measures are difficult to identify. In relation to the reported benefits for «research and development», many providers seem to achieve this even if for example the scope of the curriculum for the providers is very different. Nor is it possible to see that the number of seminars means something special in relation to the dimensions of benefits that the participants report. Differences in work requirements and method of evaluation at the providers also appear not to create specific patterns in reported benefits. Links between theory and practice in the writing assignments are emphasised in the qualitative interviews in general, which seems to be important for written and oral formulation.

The potential connection between educational design and reported benefits appears to be very complex, where possible causal relationships in any case cannot be identified from the data available. In addition, it is difficult to distinguish sharply between the overarching guidelines that the Directorate for Education and Training has established, the educational institutions' formal academic schemes, and how this has turned out in practice. It is natural that there is a certain difference in benefits between the various program providers in that each program takes place at different locations, they have different educational resources, different geographic range among the participants, etc. Any specific pattern still does not stand out if one is trying to view participants' benefits in relation to specific educational design elements in the programs. Here it should be

emphasised that we have checked for whether other factors, particularly whether individual background variables such as position, gender, age and experience, may affect the reported benefits, where neither of these factors seem to matter.

This suggests that the main factor for reported benefits and change can be said to be a sort of general «program effect» where the participants' own motivations and expectations along with the learning community they seem to experience in the programs in relative terms have a greater significance than both the programs' educational and institutional characteristics, as well as individual traits among the participants.

We have previously mentioned that the increase in self-efficacy among the participants seems to be an indication of a stronger leadership identity regardless of which program one is associated with, at least when it comes to educational and relational skills. The differences in the programs in terms of educational design of different elements can therefore be of minor importance compared to the more overarching characteristics of the programs to balance knowledge acquisition and knowledge exercise - which for the most part is shared by all the programs. Typical examples of such overarching characteristics are that the participants should go through both skills training and academic writing, that the lectures should be research-based and should have a close link between theory and practice (see also Lysø et al. 2011, 2012). This approach is in line with the recommendations Mintzberg (2009) emphasises in leadership education more generally, and where the learning community helps to create a capacity for learning and development as a leader.

5.4 About the evaluation to come

The evaluation of the National Leadership Education for School Principals ends in 2014, in which data from a few school cases will be reported. The ambitions here will be to assess whether the National Leadership Education for School Principals also helps to create change in the schools that the participants are leading. In the last report, this question will be considered in relation to the preceding analyses at different levels that have been made in the evaluation. Not least, the question of how future leadership development in Norwegian schools can best be organised will be given wider space. The findings made in this report are in many ways very positive if one considers them in relation to the overarching objectives of the National Leadership Education for School Principals. At the same time, the evaluation of the leadership education has not had a control group with which to assess any benefits, and it must also be emphasised that although several classes have participated in the education, the number of participants that answered the questionnaire is limited. Overall, this implies some caution in relation to the implications to be drawn from the findings made in the report.

However, the leadership education has created greater awareness around leadership in Norwegian schools, which has also contributed to the development of school leadership as a research field. It has given many school leaders knowledge and skills related to the exercise of leadership, a stronger leader identity and increased confidence in the role. It must also be said to have contributed to innovation and more development among providers - in the institutions that provide a formal education in this field. On this basis, the final report will specifically discuss two dimensions that will be important to clarify in terms of future efforts in this field: Which factors seem to contribute to creating school leaders who succeed with transition and development work in schools, and what consequences this may have for the design of leadership educations in the future.

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Appendix

Appendix A: Questions from the participant survey

Assessment of the education

Think about the education in its entirety and consider the following claims...

Practice relevance

1. The education inspired me for future work at my school
2. The education was practice related
3. The education was relevant for my work as school leader

Educational quality

4. The lecturers were engaging
5. The educational quality of the lectures were consistently good
6. I am satisfied with the educational execution of the education
7. The mood among the participants was good. (removed from the factor analysis)

Expectations and benefits

To what extent do you expect the education you have started will make you more able to.....(pre)

To what extent do you feel that the education has made you better able to.....(post)

Concrete dimension

1. Finance, accounting, and budget work
2. Administrative assignments (for example reporting, time scheduling)
3. Personnel issues (non-educational supervision)
4. Educational development work on school level (for example local teacher scheduling work)
5. Educational supervision and follow-up of teachers
6. Student related cases
7. Parent contact
8. Contact with the school owner
9. Follow-up of the school's results
10. Responsibility and maintenance of physical frames
11. The teachers' competence development
12. External contact and use of resources with the local community
13. Making sure the school relates to regulations and laws (For example the core curriculum plan or adapted teaching)

Individual oriented dimension

1. To what extent do you expect that the education you have started will make you more able to: - better use earlier experience.
2. To better use research and theory to understand own organisation
3. To better use gut feelings or intuition
4. To improve understanding of educational politics
5. To improve set limits for time use in the leader job
6. To better set limits for the content of the leader job
7. To become a more reflected practitioner
8. To become more confident in the leader role
9. To develop a stronger leader identity
10. To change leader style
11. To become a more clear leader
12. To develop my written ability
13. To learn leadership language

Self-efficacy

Regarding all the tasks you are responsible for, on a scale of 1-7 how sure are you that you can.....

Supervision teachers

1. Observe the teachers' teaching often.
2. Initiate improved competence among the teachers.
3. Follow-up the teachers' teaching and choice of methodology
4. Supervise teachers regarding educational questions

Relation to the local community

5. Have contact and cooperate with local businesses
6. Use resources in the local community (persons, areas, spaces)
7. Make sure the school has contact with different groups and institutions in the local community

Finance

8. Keep the school's finances in order
9. At all times have an overview of the school's financial situation
10. Make sure the school's finances are under control

Educational leadership

11. Initiate, plan and lead the educational development work
12. Develop this school's educational platform

Enjoyment

13. Develop a good psychosocial environment for the students
14. Develop a school that is open and considering with regard to the students.
15. Develop a school where all the teachers enjoy themselves.
16. Get the students to take responsible for making the school a better place to learn.

Relation to school owner

17. Engage employees when it comes to their own development
18. Promote the school's needs to the school owner
19. Cooperate with the school owner on the direction that school should develop towards.
20. Get the school owner to change its mind upon disagreement between the school administration and school owner.

Relation to parents

21. Develop a good cooperation between school and home.
22. Cooperate with the parents' representatives

Support the teachers

23. Support and help employees who face challenges or problems
24. Take care of and support teachers who have a hard time with time-related issues and fatigue.

Leadership

25. Evaluate activity at school continuously, and follow up on evaluations.
26. Implement and monitor all decisions taken.
27. Always use the right control with employees in a constructive way.
28. Facilitate working conditions for all staff in such a way that the work can be done constructively.

Teaching

29. Managing the teaching resources in an efficient manner.
30. Ensure that teaching can be adapted for students with special needs.
31. Organising teaching in such a way that everyone gets adapted training.
32. Organising teacher resources so that teaching becomes best possible for students.

Result follow-up

33. Follow-up on student results to improve student learning.
34. Implement specific measures to improve student learning results.
35. Acquiring external expertise to improve student learning results.
36. Reorganising teachers to improve student learning results.

Engagement

For each statement, decide how often you experience it this way ...

1. I am full of energy in my work.
2. I feel strong and energetic at work.
3. When I get up in the morning, I look forward to going to work.
4. I am enthusiastic about my job.
5. I am inspired by my work.
6. I am proud of the work I do.
7. I feel happy when I am immersed in my work.
8. I am completely caught up in my work.
9. I am engrossed in my work.

Autonomy

Think of your job as a whole and decide whether you think the following statements true for you.

1. In my work I stand quite free to prioritise the tasks I personally think are important.
2. In my position, I have a lot of freedom to work on what interests me.
3. In my work I have a lot freedom to prioritise what to spend the time.

Time-use

Which areas do you much time on, and what do you wish you had more time for?

Educational tasks

1. Educational development work at the school level (eg. Local curriculum work).
2. Educational supervision and follow-up of teachers.
3. The teachers' competence development.
4. Follow-up of the school's results.

Educational tasks

5. Personal development through courses and networking.

Administrative tasks

6. Finance, accounting and budgeting.
7. Responsibility and maintenance of physical frames.
8. Making sure the school relates to regulations and laws.
9. Contact with school owner.
10. Administrative tasks (eg. Reporting, scheduling).

Student and parents

11. Student related matters.
12. Parent contact.

Reflections on leadership role

Consider overall on your leadership role. The extent to which you benefit from ...

Report

1. Student surveys.
2. Data on students' learning results.
3. School assessments

Discussions

4. Discussions with PTA
5. Discussions with the club or trustees
6. Discussions with school owner

Experiences

7. How we tend to deal with such things at school.
8. Gut feeling or intuition.

Courses

9. The knowledge I have gained at courses

Research and Theory

10. Research and theory.

Appendix B: Average scores from other surveys

Table 16 Comparison of the leadership education and other surveys

Variable	The leadership program		Earlier surveys		
	M	S	M	S	Diff
Autonomy	3.53	0.98	3.37	0.96	0.16
Self-efficacy					
Relationship to local community	3.64	1.23	4.25	1.13	-0.61
Finance	5.00	1.39	5.49	1.16	-0.49
Educational leadership	5.21	1.02	5.11	1.00	0.10
Enjoyment	5.05	0.81	5.11	0.76	-0.06
Relationship to school owner	4.59	1.13	4.63	1.09	-0.04
Relationship to parents	5.06	1.17	5.54	0.88	-0.48
Support	5.31	0.93	5.29	0.94	0.02
Leadership	4.68	0.85	4.80	0.87	-0.12

Note. The leadership program: N=990, Earlier surveys N=1818. (Federici & Skaalvik, 2012)

Appendix C: T-tests of changes in the participants

T-tests of participants' expectations along the two dimensions is used to measure correlation between gains and expectations are shown in Tables 17 and 18.

Table 17 T-test of participants' expectations (Concrete tasks)

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
Relational	3.09	0.67	2.88	.004	0.21
Post-test	2.95	0.68			
Administrative	2.91	0.66	6.58	.000	0.44
Post-test	2.63	0.62			
Educational	4.07	0.60	4.14	.013	0.29
Post-test	3.89	0.63			

Note. Summary scores are used. See Appendix A for the questions in their entirety

The table shows that participants score significantly lower on the post-test. The effect size is small to moderate.

Table 18 T-test of the participants' expectations (individual development)

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
Leadership	3.97	0.60	-0.52	.601	0.03
Post-test	3.99	0.60			
Apply	4.07	0.55	1.75	.080	0.12
Post-test	4.00	0.63			
Formulate	3.10	0.81	-1.90	.058	0.13
Post-test	3.20	0.75			
Boundaries	3.46	0.83	3.22	.001	0.24
Post-test	3.26	0.86			

Note. Summary scores are used. See Appendix A for the questions in their entirety

The table shows that there are no significant differences in the participants scores between the pre- and post-tests, outside of the dimension boundaries. The effect is small ($d=.24$).

T-tests of the participants self-efficacy, engagement, autonomy, and time-use were also conducted. The T-tests are shown in tables 19-21.

Table 19 T-test of participants' self-efficacy within certain areas

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
Supervision	4.54	0.92	-5.42	.000	0.37
Post-test	4.90	0.98			
Relationship to local community	3.58	1.25	-3.60	.000	0.22
Post-test	3.87	1.29			
Finance	5.11	1.26	-3.60	.013	0.14
Post-test	5.29	1.23			
Educational	5.22	1.07	-3.93	.000	0.29
Post-test	5.52	0.97			
Enjoyment	5.03	0.84	-6.10	.000	0.39
Post-test	5.35	0.82			
School owner	4.59	1.16	-4.29	.000	0.26
Post-test	4.89	1.13			
Parents	5.09	1.14	-1.73	.083	0.12
Post-test	5.22	1.20			
Support teachers	5.30	0.93	-1.99	.047	0.14
Post-test	5.43	0.94			
Leadership	4.72	0.87	-6.30	.000	0.40
Post-test	5.06	0.80			
Teaching	5.02	0.91	-5.63	.000	0.37
Post-test	5.34	0.83			
Result follow-up	4.85	0.98	-5.93	.000	0.38
Post-test	5.20	0.86			

Note. Summary scores are used. See Appendix A for the questions in their entirety

Table 20 T-test of the participants' engagement, autonomy, and time-use

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
Engagement	6.22	0.78	-1.11	.266	0.06
Post-test	6.27	0.78			
Autonomy	3.59	1.05	-3.76	.000	0.26
Post-test	3.85	0.96			
Time Administration	2.98	0.59	-1.27	.205	0.07
Post-test	3.02	0.57			
Time Educational	2.75	0.57	-3.25	.001	0.22
Post-test	2.87	0.52			
Time Self-development	3.01	0.83	3.16	.002	0.28
Post-test	2.77	0.89			
Time Students and parents	3.10	0.77	0.58	.559	0.04
Post-test	3.07	0.71			

Note. Summary scores are used. See Appendix A for the questions in their entirety

Table 21 T-test of participants' reflections on the different dimensions of the leadership role

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
Reports	3.80	0.71	-1.58	.115	0.14
Post-test	3.90	0.76			
Experiences	3.17	0.89	-3.65	.000	0.27
Post-test	3.41	0.86			
Discussions external	3.38	1.10	-3.64	.000	0.29
Post-test	3.69	1.01			
Research and theory	3.78	0.80	-5.30	.000	0.44
Post-test	4.11	0.71			
Courses	3.78	0.80	-0.38	.701	0.04
Post-test	3.81	0.84			

Note. Summary scores are used. See Appendix A for the questions in their entirety

Appendix D: Analyses of significant changes per provider.

This appendix describes each program provision to examine any significant changes, this with a view to identifying differences between the six program provisions. For each provider t-tests of the different variables are shown, showing significant differences between pre-and post-test per provision. Note that only significant results are included. An overview of each program provider based on Report 2 is included as a background.

Administrative Research Institute (AFF) is the private operator in Norway that has the longest tradition of leadership development for leaders at various levels in the private sector, and eventually the public sector. They have extensive experience in offering open programs with participants from different organisations, but have also offered an increasing number of programs that are tailored for a business or sector. The program they offer in conjunction with the leadership education is an example of this and it is the first time AFF organises a sector specific program for school leaders. They cooperate closely with the Norwegian School of Economics (NHH), both in order to give student credit and to involve lecturers and mentors on assignments. When it comes to partners, AFF has an agreement with the company Læringslaben AS. In addition, they insert external lecturers from the higher education sector on certain topics. AFF is the only one of the six providers that maintains their own skills training.

Table 22 Test all questions distributed by provider: AFF

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
AFF					
Supervision	4.32	1.13	-2.55	.022	0.29
Post-test	4.63	1.04			
Enjoyment	4.70	0.88	-2.83	.012	0.49
Post-test	5.10	0.76			
Relationship parents	4.70	1.39	-2.30	.037	0.35
Post-test	5.13	1.06			
Administrative leadership	4.39	1.06	-3.25	.005	0.51
Post-test	4.85	0.76			
Result follow-up	4.60	1.06	-4.51	.000	0.60
Post-test	5.20	0.94			

Note. Summary scores are used. See Appendix A for the questions in their entirety

The Norwegian Business School (BI) has extensive experience in leader education at various levels, and has since 2002 been offering education management in their Master's program which the participants can apply to. The first provision within school leadership was developed in cooperation with Oslo municipality on the basis of the need for school leadership education that was adapted to the challenges of the Oslo schools. Eventually they also offered this education in other parts of the

country. Today BI offers a leadership education in Oslo, Kristiansand, Haugesund and Stavanger. In order to maintain skills training, BI cooperates with the businesses Ledelse og Organisasjon og Vekst AS. Like AFF they have an agreement with Læringslaben AS, and draw in external lecturers on individual topics. When it comes to partners in the higher education sector they name the Department of Social Economics at NTNU, the Department of Education at the University of Stockholm and the Faculty for Education. The Leadership education at Uppsala University was also a partner at the start of the program.

Table 23 T-test of all questions distributed by provider: BI

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
BI					
Administrative	2.84	0.66	3.26	.002	0.36
Post-test	2.60	0.67			
Educational	4.11	0.57	4.14	.000	0.51
Post-test	3.82	0.56			
Apply	4.07	0.59	2.63	.010	0.31
Post-test	3.88	0.65			
Boundaries	3.47	0.86	2.13	.036	0.23
Post-test	3.27	0.85			
Supervision	4.63	0.82	-3.07	.003	0.36
Post-test	4.93	0.85			
Enjoyment	5.06	0.76	-2.53	.013	0.28
Post-test	5.27	0.74			
Administrative leadership	4.78	0.83	-3.18	.002	0.36
Post-test	5.07	0.78			
Teaching	4.96	0.91	-2.52	.014	0.31
Post-test	5.22	0.79			
Result follow-up	4.97	0.93	-2.20	.031	0.26
Post-test	5.20	0.83			
Time-use educational	2.77	0.62	-2.72	.008	0.38
Post-test	2.98	0.49			
Experiences	3.00	0.85	-2.22	.030	0.30
Post-test	3.28	0.99			
Research and theory	3.90	0.76	-2.84	.030	0.42
Post-test	4.21	0.72			

Note. Summary scores are used. See Appendix A for the questions in their entirety

The University Colleges of Oslo and Akershus (HiOA) merged in 2011, and the education they offer is organized at Oslo University College, Department of Education. The college has extensive experience with both teacher education and teacher education with an emphasis on finance and administration. They also have a Master's program in education management. In connection with the

leadership education a consortium called the Leadership education East (RØST) was created, which is established in cooperation with educational communities at Oslo University, Hedmark University College and Karlstad University. They also bring in lecturers from different departments of the University. In order to address skills training, the foundation IMTEC has been included as a partner. To begin with the workshops were, in rotation, held at the various institutions, but they have gradually started to conduct the workshops in hotels outside Oslo. HiOA say that they have spent much time on the creation of the consortium, which builds the team that implements the education.

Table 24 T-test of all questions distributed by provider: HiOA

Variable	Average	Standard deviation	t	p	Cohens d
HiOA					
Administrative	3.31	0.60	3.08	.004	0.63
Post-test	2.92	0.63			
Supervision	4.54	0.99	-3.73	.001	0.77
Post-test	5.33	1.07			
Relation to local community	3.78	1.26	-2.49	.018	0.54
Post-test	4.44	1.20			
Enjoyment	5.03	1.00	-4.44	.000	0.83
Post-test	5.71	0.64			
Relation to school owner	4.56	1.27	-2.15	.039	0.38
Post-test	5.02	1.14			
Administrative leadership	4.75	0.86	-4.62	.000	0.77
Post-test	5.36	0.73			
Teaching	5.06	0.86	-4.36	.000	0.71
Post-test	5.63	0.75			
Result follow-up	4.82	1.11	-3.69	.001	0.61
Post-test	5.44	0.92			
Experiences	3.18	0.93	-4.01	.000	0.71
Post-test	3.81	0.85			
Research and theory	3.55	0.89	-3.03	.005	0.59
Post-test	4.03	0.75			

Note. Summary scores are used. See Appendix A for the questions in their entirety

The leadership education at **NTNU** is organized by the Program for Teacher Education (PLU) and has extensive experience in teacher education, but also has, since 2002, offered a Master's program in education management. In connection with the establishment of the leadership education, also called the principal school north of Dovre, they entered into a partnership with educational environments at the Tromsø University, Nordland University, and University Colleges of Nord-Trøndelag, Sør-Trøndelag and Volda. In order to address skill training, they have partnered with the

companies FAVEO project leadership (Trondheim) and Business Competence (Tromsø). The education is conducted in Trondheim and Tromsø. NTNU has also spent some time on team building and FAVEO has facilitated what they call a 'course in the course'.

Table 25 T-test of all questions distributed by provider: NTNU

Variable	Average	Standard deviation	t	p	Cohens d
NTNU					
Administrative	2.90	0.65	3.13	.003	0.40
Post-test	2.66	0.55			
Educational leadership	5.01	1.12	-2.08	.043	0.35
Post-test	5.37	0.95			
Enjoyment	4.90	0.86	-2.19	.033	0.36
Post-test	5.20	0.82			
Relation to school owner	4.35	1.09	-2.01	.050	0.29
Post-test	4.69	1.23			
Administrative leadership	4.50	0.94	-2.70	.010	0.43
Post-test	4.87	0.79			
Teacher	4.93	1.02	-3.01	.004	0.42
Post-test	5.33	0.89			
Result follow-up	4.70	0.99	-3.27	.002	0.49
Post-test	5.15	0.84			
Autonomy	3.40	0.89	-2.79	.008	0.52
Post-test	3.86	0.89			
Time-use self-development	3.02	0.79	3.42	.001	0.73
Post-test	2.44	0.81			
Discussion	2.92	0.68	-2.49	.017	0.49
Post-test	3.27	0.76			
Research and theory	3.75	0.67	-2.21	.032	0.41
Post-test	4.03	0.70			

Note. Summary scores are used. See Appendix A for the questions in their entirety

Leadership education at the **University of Bergen (UiB)** is organized by the Faculty of Psychology, but rooted in the higher education network west - collaboration between the university and colleges that existed independently of the leadership education, but that gives guidelines to the organization. Affiliates are the University College of Sogn and Fjordane, University College of Bergen, University College of Stord / Haugesund and Norwegian Teacher Academy, who all have extensive experience in providing education for teachers. The legitimacy of the provision is thus spread across several institutions and this network gives participants the opportunity to continue on a Master's program at

several of these institutions. Skills training is maintained by the company PricewaterhouseCoopers AS (PWC). UiB has offered leadership education that is conducted at a hotel in Bergen, but currently also offer an education program in Førde.

Table 26 T-test of all questions distributed by provider: UiB

Variable	Average	Standard deviation	t	p	Cohens d
UiB					
Educational	4.20	0.63	2.38	.026	0.53
Post-test	3.87	0.62			
Relation to local community	3.54	1.06	-2.34	.029	0.49
Post-test	4.14	1.38			
Enjoyment	5.01	0.69	-2.80	.011	0.52
Post-test	5.45	0.99			
Experiences	3.32	0.56	-2.46	.026	0.69
Post-test	3.74	0.66			
Research and theory	3.65	0.79	-2.42	.027	0.57
Post-test	4.12	0.86			

Note. Summary scores are used. See Appendix A for the questions in their entirety

The **University of Oslo (UiO)** has organized their leadership education at the Department of Teacher Education and School Research (ILS), which has extensive experience in leader training in schools and have offered school leader education at the Master's level since 2003. Partners in other communities at UiO like the Education Research Institute (PFI), the Department of Political Science and Research and Competence Network for IT in Education (ITU), and the provision thus appears to be firmly rooted in the institution. They also bring in external lecturers on individual topics, and have for example an agreement with the company Juridiske Kurs og Konferanser AS. The company *Resultatorientert Utvikling AS* is hired to take responsibility for skills training. The education is conducted in the University's own premises at Blindern.

Table 27 T-test of all questions distributed by provider: UiO

Variable	Average	Standard deviation	t	p	Cohens <i>d</i>
UiO					
Administrative	2.79	0.68	3.21	.002	0.63
Post-test	2.40	0.55			
Apply	4.23	0.55	2.49	.030	0.31
Post-test	4.04	0.66			
Educational leadership	5.22	1.13	-2.28	.028	0.35
Post-test	5.61	1.07			
Relation to school owner	4.65	1.30	-2.16	.040	0.31
Post-test	5.02	1.12			
Experiences	3.05	0.77	-3.69	.000	0.65
Post-test	3.55	0.76			

Note. Summary scores are used. See Appendix A for the questions in their entirety

ANOVA analysis - differences between providers

This analysis examines whether there are significant differences in the averages between the providers. Note that the analyses have been performed on variables showing change. Thus, differences in responses between the pre-and post-test. The analyses examine whether there are significant differences in change between the six providers, and not whether respondents score higher or lower generally within each provider. Such an analysis would not illustrated "effect" of the education, but whether the various participants, for example, have different expectations.

Preliminary analyses showed that only two variables were significantly different on average between providers. This was application (questions about expectations for the education) and experiences (questions about reflections on leadership). Table 28 shows the average and standard deviation of these, distributed by program provider.

Table 28 Average and standard deviation - apply and experiences

Provider	Apply		Experiences	
	M	S	M	S
AFF	0.19	0.68	-0.57	1.02
BI	-0.19	0.71	0.28	1.02
HiOA	0.20	0.73	0.63	0.88
NTNU	-0.10	0.54	0.14	0.61
UiO	-0.20	0.58	0.50	0.67
UiB	0.05	0.46	0.41	0.69

The numbers in Table 28 show that there are small differences in average between the providers on the variable apply. The differences are more apparent on the variable experiences where AFF has a negative average, while the other providers have a positive average. Table 29 shows the result of the analysis

Table 29 ANOVA: Apply and experiences

Variable	Df	F	P	ETA
Apply	5 (265)	3.106	.010	0.05
Experiences	5 (196)	4.512	.001	0.11

The results of the analysis show that there are significant differences between participants. Effecty size (ETA) shows that the differences are small to moderate. Because the analysis does not show where the differences are, a so-called post-hoc analysis is conducted. Table 30 shows the results from this.

Table 30 ANOVA: Post hoc analyses - apply and experiences

Variable	Provider	Provider	Mean diff	SE	P
Apply	BI	HiOA	-0.39	.12	.025
Experiences	AFF	BI	-0.85	.25	.013
		HiOA	-1.20	.27	.000
		UiO	-1.07	.28	.002
		UiB	-0.98	.30	.024

Note. Only significant results from the post-hoc test is shown. (Bonferroni).

The results of the post-hoc analysis shows that there are significant differences between BI and HiOA in the dimension apply. The ETA was small here so this may not be very important. Furthermore AFF stands out from the other providers on experiences. We received an indication of this in Figure 24. The ETA is medium, indicating a moderate effect.

ANCOVA analyses - differences between providers

Although the results of the ANOVA analysis showed that there were only significant differences between the two variables, we also wanted to do an ANCOVA analysis. This analysis examines differences between providers, while controlling for other variables. We included the variables of age, experience and education because these are characteristics of participants that may influence the experience of participation and benefits. The inclusion of these variables and the consequences this has for the result can be considered in two ways. 1) Age, experience and education may be the

reason why we find differences between providers - that is perceived change or effect due to causes other than the program itself. 2) Control of age, work experience and education could help us find several significant differences, because we remove the effects of these.

ANCOVA analyses for all variables were conducted. The significant difference between AFF and BI in the variable apply disappeared when age, experience and education level were included. This can be interpreted as age, work experience and education were the reasons for the difference between the providers and not the program itself. The variable experiences was still significant and Table 31 shows the results of this analysis.

Table 31 ANCOVA: Experiences - control for age, experience and education level

Variable	Df	F	P	ETA
Experiences	5 (168)	4.384	.001	0.12

The result of the analysis shows that there are significant difference between providers on the variable experiences when you control for age, experience, and education level. The effect size (ETA) shows that the difference is moderate. Because the analysis does now show where the differences are located, a post-hoc analysis is conducted. Table 32 shows the results of this.

Table 32 ANCOVA: post hoc analyses - experiences: control for age, experience and education

Variable	Provider	Provider	Mean diff	SE	P
Experiences	AFF	BI	-0.94	.27	.010
		HiOA	-1.36	.30	.000
		UiO	-1.05	.311	.014
		UiB	-1.07	.34	.030

Note. Only significant results from the post-hoc test is shown. (Bonferroni).

The results from the post-hov analysis are the same as the results from the ANOVA analysis and shows that there are significant differences between AFF and the other providers when it concerns the factor experiences

List of Figures

Figure 1 Leadership as practice (Mintzberg, 2009)	14
Figure 2 Learning processes in the leadership education (Lysø, 2014).....	18
Figure 3 Level of Evaluation (given in Kirkpatrick, 1998)	23
Figure 4 Quantitative approach: focus area result quality.....	24
Figure 5 Qualitative approach: focus area result quality	36
Figure 6 Participant prerequisites distributed by education and type of position	41
Figure 7 Why participants attended the education distributed by position.....	41
Figure 8 Choice of provider by geographic proximity and program profile.....	42
Figure 9 Participants' possibilities for reduction of work in connection to the program	42
Figure 10 Participants' assessments of practical relevance and educational quality	43
Figure 11 Correlation expectations and benefits (specific work assignments) - in general.....	45
Figure 12 Correlation expectations and benefits (specific work assignments) - per provider	46
Figure 13 Correlation expectations and benefits (individual development) - in general	47
Figure 14 Correlation expectations and benefits (individual development) - per provider	49
Figure 15 Participants' self-efficacy - changes in general	50
Figure 16 Participants' self-efficacy - change per provider	51
Figure 17 Participants' self-efficacy - change per provider	51
Figure 18 Participants' engagement, autonomy and time - changes in general	52
Figure 19 Participants' engagement and autonomy - change per provider	54
Figure 20 Participants' experience of time use - change per provider.....	54
Figure 21 The participants' reflections on the leadership role - changes in general.....	55
Figure 22 The participants' reflections on the leadership role - change per provider	56

List of Tables

Table 1 Three perspectives on knowledge and leadership development (based on Lysø et al.2011).....	16
Table 2 Overview of selection distributed by pre- and post- test distributed by class.....	25
Table 3 Overview of population and answers distributed by program provider.....	25
Table 4 Overview of selection who have answered both pre-and post-tests.....	26
Table 5 Factor analysis of the assessment of the education.....	29
Table 6 Factor analysis of the first dimension: Expectations for the education	30
Table 7 Factor analysis of the second dimension: expectations for the education	31
Table 8 Reliability: Self-efficacy and engagement.....	32
Table 9 Factor analysis of autonomy.....	32
Table 10 Factor analysis of time use	33
Table 11 Factor analysis of reflections on the leadership role.....	34
Table 12 Factor analysis of reflection on the leadership role (without course theory).....	34
Table 13 Background variables.....	40
Table 14 Significant changes per provider - correlation expectations and benefits.....	58
Table 15 Significant changes per provider - individual change and development	59
Table 16 Comparison of the leadership education and other surveys	77
Table 17 T-test of participants´ expectations (Concrete tasks).....	78
Table 18 T-test of the participants´ expectations (individual development).....	78
Table 19 T-test of participants´self-efficacy within certain areas	79
Table 20 T-test of the participants´ engagement, autonomy, and time-use	80
Table 21 T-test of participants´ reflections on the different dimensions of the leadership role.....	80
Table 22 Test all questions distributed by provider: AFF	81
Table 23 T-test of all questions distributed by provider: BI	82
Table 24 T-test of all questions distributed by provider: HiOA.....	83
Table 25 T-test of all questions distributed by provider: NTNU	84
Table 26 T-test of all questions distributed by provider: UiB	85
Table 27 T-test of all questions distributed by provider: UiO	86
Table 28 Average and standard deviation - apply and experiences.....	86
Table 29 ANOVA: Apply and experiences.....	87
Table 30 ANOVA: Post hoc analyses - apply and experiences.....	87
Table 31 ANCOVA: Experiences - control for age, experience and education level	88
Table 32 ANCOVA: post hoc analyses - experiences: control for age, experience and education	88

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