

DEL 1

Innledning

Den første delen består av tre artikler, hvorav den første artikkelen av Kim-Daniel Vattøy og Kari Smith er en studie av NAFOLs innflytelse på lærerutdanningen på NAFOLs nettverksinstitusjoner og på lærerutdannere som har vært NAFOL-studenter. Artikkelen bygger på data samlet inn ved NAFOLs egen vurdering høsten 2015. De andre artiklene i del 1 er skrevet av konferansens hovedtalere, professor Frances Rust fra New York University i USA og professor Tina Seidel og hennes team fra Tyskland. Rusts artikkel, «Wrestling with Complexity: The Work of Teacher Educators in Uncertain Times», diskuterer, fra et internasjonalt perspektiv, kompleksiteten rollen som lærerutdanner innebærer i en tid da utdanningssystem blir mer og mer preget av å være politisk kontrollert. Rust snakker om å ta til seg kompleksiteten og se mulighetene i den, i stedet for å forenkle lærerutdannerens rolle og ansvar gjennom styring og krav om målbare resultater. Den tredje artikkelen har flere forfattere fra forskergruppen til Tina Seidel, og førsteforfatter er Maralena Pielmeier. Alle forfatterne kommer fra Technical University of Munich (TUM), School of Education. Artikkelen har tittelen «Fostering Dialogic Teaching – The ‘Dialogic Video Cycle’ as a video-based professional development programme to enhance classroom discourse». Forfatterne presenterer forskning på hvordan videoopptak fra undervisningen kan brukes som et profesjonelt utviklingsverktøy for lærere for å styrke klasseromsdialogen.

CHAPTER 1

Developing a Platform for a Research-Based Teacher Education

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INTRODUCTION

The international trends to make teacher education more academic and raise it to a Master's level affect teacher education programmes in many countries (European Commission, 2014; Tatto, 2015). By its nature, tertiary education is strongly research-focused, and teacher education is no exception (Biesta, 2012). There is a need for high-quality research in teacher education around the world (Tatto, Richmond & Andrews, 2016), yet the relationship between research in teacher education and improvement of other's learning has been problematized in the wake of highly questionable claims about the veracity and value of certain kinds of research (Vanderlinde & Braak, 2010). Related to this issue is the narrow assumption that research is only necessary when it produces certainty about what to do (Winch, Oancea & Orchard, 2015). The definition and activation of the term "research" in teacher education is consequently not unproblematic. Heikkinen, de Jong, and Vanderlinde (2016) define "practitioner research" in accordance with Dinkelman's (2003, p. 8) definition of "self-study", i.e., as the "intentional and systematic inquiry into one's own practice". "The main interest of practitioner research is not necessarily to produce knowledge (*theoria*), but first and foremost, to enable good (professional) work" (Heikkinen et al., 2016, p. 15). Heikkinen et al. (2016) adopt Aristotle's three forms of

knowledge, *episteme*, *techne*, and *phronesis*, and claim that “practitioner knowledge” has a focus on the practical forms of knowledge: *techne* and *phronesis*. Such fundamental assumptions about knowledge challenge traditional standards of measuring good research by the concepts of validity and reliability.

Teacher education has been construed as variously important in different periods of history: from being neglected to being a major field of study, and from having a unilateral focus on positivism to revealing a diversity of political, epistemological and methodological perspectives (Cochran-Smith, 2016). Research in teacher education consisted mainly of smaller-scale studies until the investment in large scale studies in the past few decades (Tatto & Furlong, 2015). There is evidence that teachers are motivated to engage in research to improve their own classroom practices (Leat, Reid & Lofthouse, 2015), and that such engagement is vital for their morale and professionalism (Mincu, 2015). However, the direction and distance that teachers are prepared to go in their engagement in research differ greatly (Leat et al., 2015). Another problematic area is teachers’ implementation and utilisation of research-based knowledge: “Teachers have been mandated to use research, and yet there is almost no teacher preparation literature that provides empirical guidance on how to prepare teachers to engage in this complex practice.” (van Ingen, Alvarez McHatton & Vomvoridi-Ivanovic, 2016, p. 187). A research-based teacher education is therefore a concern that engages policy makers. Tatto (2015) claims that “research-based teacher education programmes seem more effective than traditional programmes” (p. 175) and classifies Finland, with its inquiry-based approach to learning, as “excellent” (p. 176) in an analysis of four countries: Finland, Singapore, the USA, and Chile.

However, how to develop a research-based teacher education is more complex, since there seems to be no common understanding of what it entails. A major reason for this is that teacher education educates for a profession, and professional practice inevitably responds to context (Biesta, 2012). The context of teacher education differs greatly at the international, national and institutional level (Vanassche et al., 2015), and as such, research-based changes found to be successful in one context might not be equally successful in other contexts (European Commission, 2014). Research suggests, nonetheless, that educating critically reflective practitioners who are able to consume as well as produce research should be inherent aims in all teacher education programmes

(Darling-Hammond, 2006; European Commission, 2014). In addition, conducting and publishing research has become compulsory for academic promotion in a growing number of countries, including teacher educators (Korthagen, Loughran & Lunenberg, 2005). Cochran-Smith (2005) argues that engaging in research is complimentary to teaching and an integrated part of teacher educators' job responsibility. In one of the first large-scale quantitative studies on teacher educators' professional development, Tack & Vanderlinde (2016) found that research experience had a positive correlation with valuing research, being a smart consumer of research, being able to conduct research and conducting research. The understanding of research-based teacher education proposed in this paper is in strong agreement with the way Krokfors et al. (2011) describe Finnish teacher education:

- 1) the programme is structured according to systematic analysis of education,
- 2) all teaching is based on research; 3) activities are organized in such a way that candidates can practice argumentation, decision-making and justification when inquiring about and solving pedagogical problems; and 4) the candidates learn formal research skills during their studies (Krokfors et al., 2011, p. 3).

However, not all teacher educators are able to respond to the above-mentioned requirements as many teacher educators have been recruited from school teaching because of their outstanding teaching skills, and research is not their primary expertise (Murray & Male, 2005; Smith, 2011). Despite an emphasis on teacher educator engagement in producing research, it is not always a common practice in many countries (Willemse, Boei & Pillen, 2016). Teacher educators have to become research literate themselves before they can develop a disposition of inquiry in their student teachers. The international literature does not provide much information about how to develop research competence in teacher educators; an exception is, perhaps, the increasing body of literature on self-studies (Roche, 2014; Russell & Berry, 2015). This genre of research centres around researching own practice in teacher education, yet does not specifically discuss issues related to developing teacher educators' research competence. Czerniawski, Guberman, and MacPhail (2017) point out research as one of the most urgent professional development needs for European teacher educators. Therefore,

a relevant question to ask is what initiatives are taken internationally and nationally to empower teacher educators to become research literate? An example of such an initiative is the European Doctorate in Teacher Education (EDiTE) project in which five European countries, Portugal, Austria, Poland, Hungary, and the Czech Republic, cooperate to strengthen teacher education internationally. In Norway, the Norwegian Research School in Teacher Education (NAFOL) was established in 2010 to support teacher educators' research competence. The aim of the current chapter is to present a study which examines the impact of NAFOL on research in Norwegian teacher education institutions after six years.

The Norwegian Context

Norwegian teacher education is in a state of transformation (Afdal & Nerland, 2014; Rasmussen, 2008). The government has decided that teacher education is to be at a graduate level from 2017 (cf. Norwegian Ministry of Education, 2014, p. 14). This change is rooted in the assumption that the current teacher education does not uphold a high enough level of quality, nor does it attract enough ambitious candidates. A 2014 Government document says:

As with any other higher education, teacher education shall be research based. The content of teacher education shall be based on updated knowledge. Research-based teaching also means that the education is characterised by scientific methods and oriented towards new ways of thinking and developing the practice field (Norwegian Ministry of Education and Knowledge, 2014, p. 44, authors' translation).

Historically, there have been two pathways to the teaching professions: through teacher education colleges, which mainly educate teachers for grades 1–10, and through universities, which educate teachers for grades 8–13 (Garm & Karlsen, 2004). The 200-year-old “seminar tradition” has been a central feature in the many colleges in Norway. A general characteristic of this tradition is a focus on teaching and learning, and less on research. The second pathway to teacher education, by contrast, has been more discipline-oriented with increased focus on specialization (Garm & Karlsen, 2004) and research within the disciplines. Rasmussen (2008) claims that the seminar tradition has been put under pressure

in the face of the new demand for research-based education. Afdal (2012) argues that the professional knowledge in these two models differs: “Knowledge in the seminar tradition holds logics closer to the logics of practice, whereas the logics of a research-based programme hold logics closer to the logics of science” (p. 248). She contends that the current transformation cannot be reduced merely to a question of academization, but must entail deeper and more fundamental processes (cf. Rasmussen, 2008). Norway has introduced a research-based teacher education in accordance with the Finnish model, where teacher education has been placed in universities since the late 1970s (Afdal, 2012; Rasmussen, 2008; Østern, 2016). The implications of a “research-based education”, however, remain unclear, and policy-makers, scholars and commentators convey conflicting attitudes of the terminology (Afdal, 2012; Smith, 2015).

Along with the introduction of the new national curriculum for compulsory education in 2006 (Norwegian Ministry of Education, 2006), the Government White Paper No. 16 (Norwegian Ministry of Education, 2006–2007) stated that a main objective in the long-term perspective is to make teacher education more research-based. The Government White Paper No. 11 (Norwegian Ministry of Education, 2008–2009) continued these ideas and emphasised the importance of “research-based teaching” in Norwegian teacher education. Paper No. 11 also provided examples of what a “research-based teaching” might imply: e.g., teacher education students’ involvement in research and pedagogical developmental work (p. 76). National research schools were introduced as measures to cope with this enhancement of teacher education: “The national research schools shall help raise the quality and increase the degree of completion in research training, and provide doctoral candidates with access to renowned research groups” (p. 79, authors’ translation).

In 2015 teacher education was offered at 19 universities and university colleges at a diversity of sites across the country (Norwegian Ministry of Education, 2014–2015, p. 37). From the autumn of 2017, teacher education at the Master’s level will be offered by 15 institutions. However, the current picture in Norway is blurred, since most institutions of higher education are subject to a governmental merging policy, and these merging processes are still taking place.

This is the backdrop on which NAFOL was established, originally for a project period from 2010 to 2016, and then with a prolonged period until the end of 2021.

Norwegian National Research School in Teacher Education (NAFOL)

The idea of a national research school in teacher education was initiated by the Norwegian Council of Teacher Education, in which all deans¹ of Norwegian teacher education programmes are members. The Council is in close dialogue with the Ministry of Education, and in 2009 the idea of a national research school was brought to the attention of the Ministry. It was positively accepted, and the Research Council of Norway was asked to put out a call for proposals of a research school. Instead of having several competing applications from the institutions, the majority of deans, through the National Council of Teacher Education, decided to join forces and submit one application. Funding was granted and NAFOL was established in 2010 with an aim of providing added value to PhD candidates from the then 23 different teacher education institutions in Norway (Østern & Smith, 2013; Østern, 2016, p. 75). The PhD candidates are enrolled in PhD programmes at their respective universities or university colleges. NAFOL represents a complementary offer with its strong focus on research in teacher education. An overall goal is “to develop, in a long-term perspective, a research-based teacher education to improve Norwegian education at all levels” (Smith, 2015, p. 45). A research-based teacher education must involve teacher educators as both consumers and producers of research-based knowledge (Smith, 2010, 2015; Tack & Vanderlinde, 2016). Within the development of a research-based teacher education, NAFOL is a research school aiming to strengthen the quality of Norwegian teacher education at all levels.

This study examines the impact of NAFOL as a national research school in teacher education on its network institutions, by seeking information from the deans, graduates, and staff. In the Norwegian context, there have been studies on teacher education reforms in Norway (Garm & Karlsen, 2004; Rasmussen, 2008) and their implications on curricula (Afdal, 2012). Other studies have focused on the consequences of a research-based teacher education and the role of the teacher as a researcher (Postholm, 2007; Smith, 2010, 2015). However, to our knowledge no studies have explored the impact of national research schools on teacher education institutions. In the light of this research gap, the current

1 In this chapter “deans” is also used for heads of teacher education programmes which are not faculties, but departments.

study explores the impact of NAFOL's activities as perceived by the network institutions and staff.

The main research question that guided this study is: How do network institutions, represented by deans, graduates, and of NAFOL's founders, perceive the impact of NAFOL's work in its first project period?

THE STUDY

The initiative to undertake the study was triggered by an assignment NAFOL was given by the Research Council of Norway to undertake and report on a wide self-evaluation process towards the end of the first project period from 2010–2016. The leadership of NAFOL decided to hire an external research assistant to collect data and do the first analysis to make the process more objective and trustworthy.

Sample

The network institutions, graduates, and one of NAFOL's founders were invited to participate in the study. The participants were purposively selected according to the objectives of the study (Boeije, 2002; Creswell, 2007), and participation was voluntary. All deans (23) of teacher education programmes in the NAFOL network institutions were approached and 20 responded. All graduates (69) from the three first cohorts were asked to respond to the questionnaire, out of which 44 responded. Another respondent was one of the founders of NAFOL, and finally, the institutional network council members gave permission to record a network council meeting discussing the impact of NAFOL.

Data Collection Instruments

In order to be able to reach a comprehensive understanding of the impact of NAFOL, a triangulated data collection approach was chosen. The data collection consists of two sets of digital questionnaires through the online service of SurveyMonkey, a recording from a NAFOL council meeting, and an interview with one of the founders of NAFOL.

The two sets of questionnaire were respectively piloted with two deans and three graduates and subsequently revised. The open questionnaire to the deans consisted of eight questions, and was not anonymous. The first three questions

aimed at mapping out the respondents' names, professional titles, and institutions by closed questions (see Appendix A). The other questions asked about the impact of NAFOL in their respective institutions, the communication flow with the network and NAFOL's leadership, suggestions for improvement, and the envisioned future after NAFOL's project period in 2021. The questions related to the impact of NAFOL and suggestions for improvement were specifically noted. The questionnaire to NAFOL graduates (first three cohorts) (see Appendix B) consisted of 10 questions, out of which the first four questions asked about their professional status, followed by six open questions which sought information about how they felt NAFOL had affected their identity as teacher educators, experiences as a NAFOL student, and learning outcomes. They were also asked about current research and publication activities, which have not been included in this study. This questionnaire was anonymous.

A NAFOL council meeting was recorded in the autumn of 2015. The topic of this meeting was feedback and perceptions of NAFOL's contribution in the research environments across the council members' respective universities/university colleges. All members of the council agreed to the recording for purposes of the evaluation which was explained prior to the recording. The participants were informed that participation was voluntary and their anonymity would be protected.

A semi-structured qualitative interview was used to learn about the perceptions of one of the founders of NAFOL. The interview was recorded and the recording was complemented by observation notes. The interview guide consisted of 10 questions (See Appendix C). Questions were asked about future challenges, cooperation between the institutions, administration and daily management, and about the quality of the NAFOL candidates and their dissertations. For the purposes of this study mainly information about the perceived impact of NAFOL and the dissertations has been used.

Process of Analysis

The data material was analysed by the two authors applying a *constant comparative method* (Boeije, 2002; Hewitt-Taylor, 2001). Initially, the researchers processed the data material through the method of open coding, which entails carefully scrutinising the data and coding of the material (Nilssen, 2012).

Through the open coding, the data were broken down into more manageable pieces allowing comparisons of similarities and differences (Strauss & Corbin, 2014). At all stages, the data from the different sources were compared with one another. The open coding was carried out by categorising and coding the questionnaire responses, interview transcripts, and recording transcripts vertically. Subsequently, the data were analysed horizontally through axial coding. This entailed singling out the main categories from the open coding, and examining the interrelationship between the main categories and the subcategories. The coded material from the horizontal analyses was analysed vertically in tables. At all times, the data from the different sources were compared and triangulated. Finally, the core categories were identified, which are what we identified as the main themes of the data material (cf. Strauss & Corbin, 2014).

Data from the questionnaires were copied into a word processing document, and each of the respondents' statements were categorised through open coding. This vertical analysis provided the researchers with a large amount of codes. Initially, these codes were kept in their entirety and unaltered in order to strengthen validity, avoiding premature condensation. Subsequently, these codes were analysed axially or horizontally through the use of tables. Through this process, the excerpts from the respondents' answers were condensed into larger categories. These categories were later collected and condensed further. Finally, the researchers used selective coding in order to identify the core categories.

The semi-structured interview with a founder of NAFOL was recorded and transcribed. The transcription was also analysed through a constant comparative method, involving open, axial and selective coding, as described above. In order to ensure trustworthiness, the researchers re-listened to the voice recording after transcription. The observation notes were used supplementary to the transcription.

Similar to the interview, the voice recording of the council meeting was transcribed and analysed. The utterances of each council member were coded and thematised. Subsequently, all codes from the open coding were gathered and condensed before they were analysed axially. The themes that many council members (CM) highlighted were presented horizontally. The remarks that captured the essence of a theme were kept in their entirety in order to maintain transparency.

Ethical Considerations

Ethical issues and considerations permeated all processes of the study. The study is approved by The Norwegian Centre for Research Data (NSD), which is the Data Protection Official for Research in Norway. The researchers opted for transparency in revealing the objectives of the research project, and sought permission from the participants to record and collect data. Prior to data collection, the participants were informed about the purposes of the study, the right to voluntary participation, and the consequences for participation. It was specifically important to clarify these to the member of the founder group, since this identity was well known in Norway. Information collected by Questionnaire Set 1 was anonymised during the analysis and presentation of the data. In Questionnaire Set 2, all participants were anonymous from the start. Nevertheless, since the participants were asked to, e.g., state their professional title, the researchers felt an obligation to protect the confidentiality of these responses.

FINDINGS

The research question in the current study is: “How do network institutions, represented by deans, graduates, and a founder of NAFOL, perceive the impact of NAFOL’s work in its first project period?”. Firstly, the main findings are briefly summarised, and secondly, in support of the overall findings, more detailed data from the various groups are presented.

The triangulated findings from all data confirm that NAFOL has a positive impact in connecting Norwegian teacher education institutions. Both the graduates and network institutions expressed a sense of closer ties through networking and focusing on research in teacher education, and they experienced an increased sense of empowerment and strengthened identity as teacher educators and teacher education institutions. The findings, furthermore, indicate that the investment NAFOL places on networking, both at the national and international levels creates an important research platform for their respective institutions. The focus on empowering teacher educators as researchers is considered essential in relation to creating a research-based teacher education and especially in relation to the 2017 reform of upgrading primary and secondary teacher education to a graduate level. The main criticism of NAFOL concerns activities earmarked early childhood education; insufficient attention has been given to this specific group of teacher educators.

Deans

20 deans responded to the online questionnaire (13 men and 7 women). Upon examining their responses, some central themes such as: networking, identity building, linking research, theory and practice and the need to better address early childhood education were salient. Extracts from the responses are presented in support of these themes.

Deans about Networking

Several respondents drew attention to NAFOL playing an essential part in joining the network institutions together, basing their response on their personal understanding and feedback from the NAFOL candidates in their institutions.

“NAFOL offers a meeting point for dedicated educators and researchers. Whatever the size of their own institution, it is an important arena to hone ideas and point of views” (Resp. 6).

“From the beginning of the work process, each participant is part of a larger academic community. This is positive for both the candidate and the teacher training” (Resp. 15).

The feeling of being a member of a larger community was perceived as having an impact on the culture for doctoral education and research of the candidates' alma mater institutions:

“NAFOL has contributed in creating a culture for doctoral education within our institution. NAFOL offers a good professional support and a collegial environment for doctoral and associate professor candidates” (Resp. 13).

It seems that the purposeful investment in networking has a dual function as it connects both the candidate to a larger community, as well as it strengthens the research environment at the candidates' institutions. The networking activities are perceived to be national and international:

“Our candidates have a very good learning outcome through their participation, and they establish good national and international networks” (Resp. 12).

Deans about Identity

Overall, the deans reported positive feedback from their PhD candidates, and stressed the central function of the NAFOL programme in supporting increased

professionalism and specialisation in teacher education. This professionalism supports forming a sense of identity as researching teacher educators, something that had been missing in some of the smaller institutions:

“NAFOL contributes to identity related to teacher education and as a teacher educator” (Resp. 9); “NAFOL’s contribution creates an identity for quality research in teacher education” (Resp. 6.).

Several respondents reported that NAFOL has contributed to development within the respective network institutions:

“The PhD candidates’ contribution to the institutional teacher education environment is excellent. We experience empowerment through participation in research and methods courses” (Resp. 10).

“Since our candidates are largely permanent employees at our institution, their professional development directly benefits teacher education” (Resp. 14).

“Our PhD candidates receive good support and inspiration to develop their projects, which helps to develop our teacher training academically” (Resp. 16).

Deans about Research Linking Theory and Practice in Teacher Education

A number of deans stated that NAFOL needs to continue to act as a platform for Norwegian teacher education research by arranging meeting places, involving PhD candidates in practice-oriented research, carrying on the work of consolidating teacher education research, and participating in national and international networks. The deans see NAFOL’s work as vital in creating ties between education, research and practice:

“Through the broad, interdisciplinary, profession-oriented approach and participation in national and international networks, NAFOL represents a platform that Norwegian teacher education has never had before, both for the participants and the host institutions” (Resp. 10).

“NAFOL creates affiliation to the teacher education profession. By strengthening researcher competence, this will gradually improve education, research, and practice” (Resp. 14).

“NAFOL should primarily aim to accept candidates with projects closely connected to the practice field” (Resp. 6).

Deans about Suggestions for Improvements and Thoughts about the Future

With regard to improvements suggested by the respondents, it was pointed out that the strong focus on primary and secondary education might neglect the need to address early childhood education. The findings suggest that the need for more attention to early childhood education is the major criticism of NAFOL's activities.

The cooperation with NAFOL is mostly good. Early childhood education may be forgotten because it is common to think of primary and secondary teacher education when talking about teacher education. This is mostly a problem at council meetings. The leadership and steering committee have so far had great focus on early childhood education (Resp. 14).

Many of the respondents pointed out that NAFOL had become the platform for Norwegian teacher education and this had to be continued:

“We must ensure that the networks between teacher education institutions established through NAFOL are continued and maintained” (Resp. 3).

Furthermore, a number of respondents pointed out that NAFOL should seek more funding to further extend the project period, or make NAFOL a permanent offer for teacher educators pursuing a doctorate. The argumentation behind this wish was due to the implementation of teacher education at a graduate level and a need for educators with research competence.

With the introduction of graduate level teacher education, there will be a great need for NAFOL. This should imply working for making NAFOL permanent. There is a need for such an offer that brings candidates from many different institutions together. (Resp. 12).

NAFOL Graduates (Graduates)

Of the respondents in Questionnaire Set 2 (n = 44), 27.5% of the respondents listed that they work at universities, whereas 72.5% work at university colleges. In alignment with findings from the deans' responses, the NAFOL graduates emphasised the themes of networking, teacher educator identity, and the acquisition of new subject-related and theoretical perspectives as the main impact of

NAFOL. The findings from the graduates also criticize NAFOL for insufficiently addressing early childhood education, especially expressed by early childhood teacher educators when asked about their learning outcome after the four years as NAFOL candidates.

Graduates about Networking

With regard to networking and the building of research partnerships, one respondent emphasized the career-long perspective of NAFOL's contribution:

“My network within teacher education has become drastically expanded, and will be important for the rest of my professional career. I have gained increased insights in collaboration with different professional disciplines” (Resp. 29). Other respondents answered: “I have established a network with other teacher educators and preschool educators” (Resp. 2). “NAFOL has provided me with a larger network, and given me inspiration to work as a teacher educator” (Resp. 14). “I have a larger network than I previously had” (Resp. 15). “My network within teacher education has expanded enormously, and will be important for the rest of my professional career” (Resp. 29). “I have colleagues who I can contact around the country at several of teacher education institutions” (Resp. 41).

Graduates about Teacher Educator Identity

Several of the respondents highlighted an increased sense of teacher educator identity through their participation in NAFOL: “NAFOL has given me an identity both as a teacher and a teacher educator” (Resp. 26). “NAFOL has affected me to a great extent. I have gone from being a music teacher to also becoming a teacher educator. This has strengthened my identity as a teacher educator” (Resp. 20).

This identity is closely connected to a renewed and enhanced sense of professionalism: “NAFOL has given me a stronger professional affinity” (Resp. 5). “I have become more aware of my roles as teacher educator and researcher, and it has developed my professionalism” (Resp. 11). “NAFOL has provided me with new perspectives, professional consciousness and identity” (Resp. 21).

One respondent emphasised the focus on research in teacher education and, particularly, the connection between subject, subject-related didactics and pedagogy:

NAFOL has contributed to realising the significance of research *in* teacher education as well as *on* teacher education. Furthermore, I have had a great learning outcome in terms of following a cohort of scholars with background from different subjects, school and education research. This has affected my view of the relationship between subject, subject-related didactics and pedagogy (Resp. 28).

In this latter quote, we see the multi-faceted role of NAFOL in terms of providing a platform for researchers representing different subjects and research interests within the context of teacher education. This indicates that NAFOL contributes to boundary crossing in the graduates' perspectives on teacher education.

Graduates about Research Linking Between Theory and Practice

Through participation in NAFOL, many respondents stressed the acquisition of new subject-related and theoretical perspectives:

“NAFOL has led me to better understand how the different subjects in teacher training must work together and be seen in relation to each other. Besides, I have seen how many talented people there are in Norwegian teacher education” (Resp. 1)

These perspectives were seen by some graduates as crucial in their own work: “The research programme provided perspectives on educational research, which I can feed into our institutional teacher education programme” (Resp. 7). “I have gained greater understanding of the cooperation between different disciplines” (Resp. 29). “NAFOL has made me aware of my own academic environment, and I’ve become familiar with new areas that are of relevance to my own work” (Resp. 33).

Graduates about Learning Outcomes

Most of the respondents were pleased with their own learning outcomes after the four years as NAFOL candidates:

“I have learned a lot from my participation in NAFOL. It has been absolutely fantastic to listen to and acquaint myself with world-renowned researchers” (Resp. 1). “NAFOL gatherings have provided outcome at two levels: 1) technically in terms of writing a doctoral dissertation, and 2) professional specialisation through attending international conferences” (Resp. 6).

However, there were also more critical voices, especially from early childhood teacher educators, such as:

“I had an OK learning outcome. There was much about school research and the teacher’s role, and less of kindergarten research. I had also wanted more training in quantitative research” (Resp. 2). “I had varied experiences, specifically because I work with childhood education research, and NAFOL is predominantly focused on compulsory education and school research” (Resp. 16). “I have missed a clearer focus on the early childhood teacher education in the seminars and conferences. It has been too ‘school dominated’” (Resp. 14).

Findings from Recording of Council Meeting

The findings from the recording of the council meeting identified eight themes: positive feedback from the PhD candidates, competing with some institutions’ PhD programmes, networking, teacher educator identity, internationalisation, teacher education at graduate level, and supervisor seminars. Due to space limitations only the most central themes are presented.

Council about Feedback from the PhD Students

The network representatives reported on positive feedback from their NAFOL students as illustrated in the following statements:

“It has been clear to us that NAFOL has been beneficial for the fellows and participants, so there has been a steady influx to NAFOL”.

NAFOL has almost become a rule of thumb in terms of choice of research schools, and now there are some candidates who have to wait to become accepted. It is quite a disaster if the candidate has to enroll in a different research school/programme.

Council about NAFOL’s Relation to Institutional Doctoral Programmes

As more and more institutions are developing their own doctoral programmes, the “competition” in terms of candidates’ time was brought up as a potential concern by some institutions. NAFOL was, however not seen as a threat to the institutional programmes, more as complementary to their own programmes.

“We have a PhD study of professional practice, which is rather broad and includes various professional studies. What is important to our graduates is that they receive more professional specialisation which we lack in our own programme.”

Council about Networking

Networking was also stressed by the council as one of the major benefits of NAFOL by smaller as well as by larger institutions, and at a national and at an international level.

“We have one candidate, and he spends a lot of his time alone. That’s what candidates do. So, for us this is a network. Meeting others and establishing contacts, so that it doesn’t get too lonely”.

“NAFOL supports creating a research environment for candidates who sit solitary around the various colleges that do not have their own doctoral programme. That’s pretty lonely”.

“NAFOL strengthens a closer supervision and a stronger group identity, which is very positive. We’ve have quite large groups of candidates and applicants.”

These candidates become members in a network at an early stage. Primarily this has been at a national level, but now it has also opened up to include the international research society to a greater extent. The candidates establish contacts with candidates from other institutions, which is very much appreciated.

NAFOL invites top international lecturers. Our candidates emphasise that they are with them all of the time, and they have easy access to them. This means that the lecturers do not merely deliver their lectures and leave. The academic and social aspects are closely tied in a good way.

Council about Teacher Educator Identity

The status of teacher education and the role of teacher educators are vulnerable in many institutions, and it seems that NAFOL contributes to strengthening the identity of teacher education at a personal and institutional level:

I have observed that NAFOL helps building teacher educator identity in candidates attending the programme. This pertains particularly to those coming from subjects that traditionally do not have a teacher education focus. These candidates are involved in a teacher education way of thinking in NAFOL. NAFOL’s combination of research and teacher education is very positive.

We are a small teacher education department within an institution which could be called multidisciplinary, so is this an extremely important arena to help candidates build a teacher education identity. Our candidates have also pointed out this aspect.

NAFOL's Significance in the Face of a Graduate Level Teacher Education

The network institutions foresee challenges implementing the coming reform of introducing teacher education at a graduate level, especially since all teacher education candidates will be required to submit a research thesis. This means that teacher educators need to be able to supervise research projects.

“There is a challenge of the new five-year Master’s teacher education. Therefore, we strongly encourage everyone who is admitted in a PhD programme to apply for NAFOL”.

“We are very happy for the extension that NAFOL received. The need is increasingly urgent, and I hope that NAFOL may live even longer than 2021. NAFOL is important for a five-year Master’s degree programme”.

Interview with a Member of NAFOL's Founding Group

The founding member was in charge of NAFOL during the period under evaluation, from 2010–2015. She was also involved in planning the research school from the very beginning. She referred to the fundamental principle for the founders of NAFOL, which was that NAFOL would collect its empirical data from the practice field and serve as a broker between theory and practice. The theoretical and practical dimensions would therefore be fundamentally rooted in the educational research undertaken by the NAFOL candidates. Moreover, the founder emphasised that NAFOL is a research school for teacher education, and a major objective was to stop the human capital flight from teacher education to the disciplines upon completing a PhD degree which had been common in Norway. The NAFOL graduates were envisioned as continuing to work (teach and research) in teacher education upon completion, and thus make a change in teacher education locally with a national impact since the candidates represent the majority of teacher education institutions in Norway. Furthermore, the founder highlighted the importance of the networking in NAFOL: “The great strength of NAFOL is the community and the networking. It is the community that strengthens the individuals.”

DISCUSSION

The objective of this study was to examine how the stakeholders of NAFOL perceive the impact of the national research school after the first six years. The findings suggest that NAFOL's main contribution centres around three areas: establishing networks and cooperation, developing a teacher educator identity, and research linking theory and practice in teacher education. Whereas, the main criticism relates to attention to early childhood education. In the discussion, each of these areas will be addressed.

Establishing Networks

Engaging in a doctoral education is often described as a long and isolated process. Taylor and Beasley (2010) argue that many doctoral students take a long time to complete their studies, or never complete them at all. In an extensive review study of journal articles on doctoral studies over 40 years, one of the conclusions Jones (2013) reached is that doctoral students feel isolated, alienated and lonely. Many doctoral students experience the socialization process as difficult. The findings in our study suggest that NAFOL contributes to the students' experience of belonging to a supportive network from the very beginning, and that their deans notice this. The main reason is probably that NAFOL accepts groups of students once a year, and they meet for two-day seminars four times per year over a period of four years – altogether 16 seminars. During this period, they develop professional and social relations with peers from all over Norway. Moreover, twice during their NAFOL period, they spend three/four days with doctoral students at a foreign university, sharing texts for feedback, discussing shared lectures and having joint dinners and cultural experiences. Hence, the established networks reach beyond the national context. This is specifically important for candidates coming from smaller teacher education institutions without their own doctoral programmes, since they are, perhaps, the only PhD candidates at that time. Social and peer support for doctoral students have been found to play a major role in successful completion of the dissertation (Jaraim & Kahl, 2012), and NAFOL intentionally aims at including all NAFOL students in supportive networks.

NAFOL is a network of teacher education institutions in Norway, and as such it contributes by organising meeting places across institutional and disciplinary

networks to crossing disciplinary and institutional boundaries. Institutions for early childhood education meet with institutions educating teachers for upper secondary school, the academy of music meets with the sports academy, and at the institutional level, smaller colleges in distant places develop working relations with large universities in the big cities. Such interdisciplinary thinking resembles the success of Finland's integration of theory, research and practice in their research-based teacher education programme where: "[e]ach student thereby builds an understanding of the systemic, interdisciplinary nature of educational practice." (Sahlberg, 2010, p. 4). The deans express appreciation of these networks, especially deans from smaller and discipline-specialized institutions. Shared meeting points serve as a means of preventing institutional isolation and moving out of the previously discussed seminar tradition of teacher education in Norway (Garm & Karlsen, 2004; Rasmussen, 2008). In the future this might change, as higher education institutions become involved in merging processes, and the need for a national network, such as NAFOL might be less urgent. The findings do not, however, suggest that this is the case, since most deans see a need for NAFOL as a national doctoral network also in the future.

Teacher Education Identity

The role as teacher educator is complex (Loughran, 2014; Smith, 2011), and teacher educators have a blurred identity as teachers and as researchers (Murray & Male, 2005). Many teacher educators come into teacher education as successful teachers; however, working in higher education entails conducting and publishing research. In smaller teacher education institutions in Norway, teaching has been more focused on than research (Alfdal & Nerland, 2014). However, due to recent developments and the 2017 reform of introducing a graduate level for teacher education in Norway, all institutions will be required to be active in research. Changing the identity from being a teacher and a teaching institution to developing a two-dimensional identity, i.e., being a researcher and research institution, is challenging at the individual as well as at the institutional level. NAFOL, with its focus on research, provides a supportive environment in the process of taking on a new and demanding identity. NAFOL graduates, as the deans report, express an emerging awareness of the role of research as part of their responsibilities. It is a question of developing a language and a culture of research in the institution

that includes all staff and is forward-looking. The more staff with research competence, the stronger the identity of being a researching teacher education institution. The status of teacher education in academia has been presented as weak in many countries, including Norway (Brennan & Willis, 2008; Furlong et al., 2008; Menter & Hulme, 2008; Simons & Kelchtermans, 2008; Smith, 2009). The deans in this study report that teacher education in the institution strengthens as it becomes more research active, and more teacher educators actively initiate research activities and invite colleagues to join. It seems that NAFOL graduates strengthen the research competence of their teacher education department/faculty.

Research Linking Theory and Practice

The notorious gap between theory and practice in teacher education is widely documented (Ord & Nuttall, 2016; Seidel, Blomberg & Renkl, 2013), and to a certain extent one could say that this has been one of the reasons why practice-oriented research – as a bridge between theory and practice – is increasingly gaining acknowledgement (e.g., Willemse et al., 2016). Practice-oriented research is defined by Bleijenbergh, Korzilius & Verschuren (2011) as: “[...] practice oriented research is that it involves all research that is performed with the primary aim to support a practical problem to be solved or a decision to be taken” (p. 146).

NAFOL is a national research school in teacher education, and all research in NAFOL relates to the practice of teaching or teacher education (Østern, 2016). Detecting and seeking solutions to practical problems in education is as of today 140 NAFOL dissertations document (Østern, 2016). This kind of research by nature creates links between theory and practice in teacher education, both in the process of working on the dissertations and also in the new knowledge that is being produced. The research activities of NAFOL candidates as a link between theory and practice came up in the interview with one NAFOL’s founders as well as in the open responses from the deans and the graduates, and both groups reported on implementing their research into teaching and developing the programmes. It is an explicit aim of NAFOL (Smith & Østern, 2013), to promote practice-oriented research as a lever to improve teacher education in Norway, and thereby also indirectly impact the quality of teaching in schools and kindergartens.

Early Childhood Teacher Education

The main criticism of NAFOL's work was found to be a perceived weak focus on early childhood teacher education. Taking into consideration that about 25% of NAFOL candidates are engaged in early childhood education, this criticism is relevant. Mac Naughton, Rolfe & Siraj-Blatchford (2010) claimed that early childhood education is multi-disciplinary, and researchers cannot rely on a specific discipline in designing their research projects. Moreover, the same authors point out that most educational research is classroom based, whereas early childhood education takes place in multiple contexts from birth to school, which require a great variety of designs as well as instruments for data collection. Beginning early, childhood researchers need to be introduced to this specific research domain. Moreover, in Norway there is an increasing interest for research related to the youngest children. However, along with many other countries, Norway still needs to expand the research activities for this sector (Alvestad, Johansson, Moser & Søbstad, 2009).

This is specifically urgent since Norwegian early childhood education has been a politically central issue since from 2006 when, by law, all children have the right to attend preschool from year one. The responsibility of enforcing the law lies with the regional authorities (Norwegian Ministry of Education, 2005). The early childhood sector is therefore of significant social importance and teacher education for this sector is in high demand, at the same time as it is in a process of developing sectorial knowledge (Alvestad et al., 2009). Thus, NAFOL will have to revisit its activities in relation to early childhood education to cater to the increasing number of teacher educators seeking a doctorate in early childhood education and to become change agent for this sector.

CONCLUSIONS

The Norwegian Research School in Teacher Education (NAFOL) is a unique project internationally (European Commission, 2013). It represents a network of the large majority of teacher education institutions in Norway, which work together to create an infrastructure for a research-based teacher education at a graduate level and to develop teacher educators' research competence. Teacher educators with a doctorate become producers of knowledge about education, specifically teacher education, and they are empowered in educating teachers

with a disposition of inquiry to their own and others' knowledge and practice, which in this chapter is understood as a built-in component in research-based teacher education programmes (Krokfors et al., 2011). The question examined was the perceived impact of NAFOL on teacher education after six years. The findings suggest that NAFOL plays a central role in developing national and international networks in teacher education in that it reaches beyond disciplinary, institutional, and national boundaries. The findings also highlight NAFOL's contribution to strengthening a teacher education identity at an individual as well as at an institutional level. Teacher education is not only about consuming research, but also about producing research. Research in teacher education can serve as a bridge between theory and practice, contributing to a less fragmented teacher education. In spite of the positive impact NAFOL is perceived to have, the research school has to revisit its activities in relation to early childhood teacher education, which draws increased attention in discussions about education.

The significance of the study beyond Norway is that NAFOL can serve as an example for contexts that aim at integrating more research into teacher education. It has, however, to be taken into consideration that Norway is a small country of 5 million people with sufficient resources to establish a national research school in teacher education. A small country has several meeting points where leaders of teacher education interact and these then have opportunities to develop joint projects. The purpose of this chapter is not to claim that NAFOL is the only answer to developing an infrastructure for a research-based teacher education, but it can hopefully provide useful information for other contexts seeking to strengthen teacher education research.

Further longitudinal research is needed to examine the impact of NAFOL over time by following the professional careers of NAFOL graduates, by learning about changes in the institutional teacher education programmes, and not least, by looking at the impact, nationally and internationally of the dissertations submitted by NAFOL graduates.

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APPENDICES

Appendix A: Questionnaire 1 (for deans of NAFOL's network institutions)

1. What is your name?
2. What is your professional title?
3. What is the name of your institution?
4. In what way do you feel that your teacher education is strengthened by NAFOL?
5. In your opinion, how can NAFOL contribute to a stronger tie between education, research, and practice?
6. How do you experience the cooperation between your institution and NAFOL?
7. Do you have any thoughts or advice on how NAFOL can work throughout the end of 2021 (end of project period)?
8. How can NAFOL continue its work without project funding? In what way are the network institutions capable of continuing the work, both nationally and locally, in strengthening their research competence without the support of NAFOL?

Appendix B: Questionnaire 2 (graduates from group 1–3)

1. Do you work at a university or university college? Other: please specify.
2. Do you work in teacher education?
3. What is your professional title? What type of educational programme do you work in?
4. What are your responsibilities (e.g., leadership, research groups, supervising Master/PhD theses, other) that you have at your institution?
5. In what way has NAFOL affected you as a teacher educator?
6. How have you experienced the cooperation with NAFOL?
7. What type of learning outcome have you had through NAFOL?
8. Are you continuing your research activity? In what way? Have you had new publications after completion of your PhD?
9. What has NAFOL contributed to networking between your institution and other institutions?
10. Based on your experience, do you have any advice on how we can improve NAFOL?

Appendix C: Interview guide, one of NAFOL's founders

1. How has NAFOL followed up the recommendations from the midway evaluation?
2. In your opinion, how has NAFOL contributed to the development of closer ties between education, research, and practice?
3. How have the two thematic tracks of NAFOL worked? Is there a need to change these?
4. What challenges do you see facing NAFOL in relation to further activity?
5. How would you assess the quality of the applications?
6. Do you think that the applications have been in keeping with the profile of NAFOL?
7. How are the dissertations relevant to practice and the teacher education subjects?
8. How does the cooperation with the network institutions work? With the board, daily management and administration?
9. Beyond the network institutions, what other business relations does NAFOL have?
10. What significance will the changes that are happening in the sector (fusions, Master in Teacher Training) have for the development of NAFOL in the future?