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Research note: Growing through mentoring: an activity-based inquiry into mentor teacher growth in knowledge and practice

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The purpose of this research note is to describe an ongoing research project, the demographic characteristics of the mentor teachers who participated in the nationwide survey, and to introduce the articles in progress (i.e., document the processes undertaken in the project to date).

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Introduction

The purpose of this research project, a three-year study funded by the Swedish Research Council (2022-2024), is to investigate how the mentoring of student teachers can contribute to the professional development of the mentor teachers themselves. Professional development in this study refers to teachers´ perceived experiences of growth in professional knowledge, skills and dispositions in connection to the mentorship activities they carry out with student teachers.

We conducted a large-scale survey study, through a questionnaire design based on the previous literature on mentoring, explorative interviews with mentors, and the thematic areas proposed in Activity Theory (Engeström, 1999). The participants include a nationwide sample of teachers who mentor student teachers enrolled in teacher education programs at the primary school level (Grades 4-6) in Sweden. Through the analysis of the data, we aim to build a model that demonstrates how mentoring activities and mentor teachers´ characteristics can be potential predictors of their professional development.

Data collection

The preliminary phase of this study involved two parts: a) an extensive review of the mentoring literature with a focus on the mentoring of pre-service teachers, and b) exploratory interviews with 6 teachers who were either currently mentoring student teachers or have done so within the six months that preceded data collection. The interviews were carried out using a thematically semi-structured interview guide with questions related to following areas of their role as mentor: a) descriptions of their teaching and mentoring experiences; b) personal reflections on mentoring as professional development; and c) school factors that influence mentoring.

The interviews were conducted by three members of the research team who also transcribed the interviews. Together the team agreed on emergent themes and coded the transcripts accordingly. The findings from the interview phase, together with a review of the mentoring in education literature, and the thematic areas posited in Activity Theory (Engström, 1999) guided the construction of the (pilot and final) questionnaire. The questionnaire was designed to identify the relations between concepts related to the mentoring context, activities, processes, and the possible professional knowledge developed as an outcome. A valid and reliable measurement of the key concepts primarily depends on development of a conceptual framework that has both content and construct validity. In line with this principle, we used the conceptual elements of Engeström´s (1999) Activity theory, (i.e., tools, rules, contexts/conditions, community and division of labour), to represent the central components of mentoring.

The conceptual elements were reflected in items addressing the following: attitudes toward student mentoring; benefits to school from hosting student teachers; challenges related to mentoring; overall job satisfaction; perceived preparedness for the mentoring role; self-efficacy related to mentoring students; mentor training; and, perceived professional growth related to mentoring. These themes were represented with closed-ended items clustered in thematic areas. In addition, background questions such

as type and level of education, teaching experience, mentoring experience and school characteristics were included.

In order to evaluate the applicability, the relevance for the target population, and the appropriateness of response scales, we piloted the questionnaire with 18 mentor teachers in 3 partner schools connected to practicum courses at the University of Gothenburg. They were between 44 and 69 years old, 14 of them (78%) were woman and they had between 10 and 40 years of teaching experience. At the time of data collection, they mentored student teachers from 3 different Swedish universities. They had experience of supervising between 2 and 40 student teachers throughout their mentoring career. They reported heterogenous experiences of mentoring student teachers in various school subjects (Swedish, English, Mathematics, Natural and technology sciences, Social sciences, Modern languages, Swedish as a second language, Creative arts and crafts, and Music). The participants in the pilot study did not participate in the main data collection phase after the piloting.

The participants in the pilot study were asked to provide feedback on the initial questionnaire on both general and item specific levels. They reported that the initial survey was moderately long (N = 9; 50%) or too long (N = 9; 50%). They also provided qualitative written feedback, that we analysed and considered when rephrasing items, developing additional items or making instructions clearer in relation to some parts of the questionnaire. All items were analysed through correlational and factor analyses and the results served as a basis for making decisions about the items that were kept in the final version of the questionnaire. Three criteria were applied to selection of the final items: resulting scales were kept short; items with high correlations and/or high overlap in content were reduced; and final scale reliabilities were kept at the appropriate level. Piloting ensured that the final questionnaire instrument contained items that were easily comprehended, and any repetition removed. After the final version was created, we asked three of the pilot participants to read through the questionnaire again and give us feedback on the changes that were made. Their feedback was positive, after which we prepared the final version of the questionnaire for online distribution.

The questionnaire items were developed in Swedish and English, so that they could be used in all types of Swedish schools. Swedish is the language of instruction in most schools however, there is a growing number of schools where the program is given in English and some teachers might not be native speakers of Swedish. The congruence between the meaning of each item in Swedish and English was established as the consensus between five researchers in the project, two native speakers of Swedish, one native speaker of English and two speakers of both English and Swedish as a second language.

Population and sampling

All mentor teachers who are involved in school practice courses associated with the 20 institutions (12 universities and 8 colleges) that offer teacher education programs for grades 4 to 6 of primary school (Swe. mellanstadiet) throughout Sweden established the overall population for this study. In line with a census sampling approach (Cantwell, 2008), we contacted the school practice placement offices in each institution and were

either given lists containing mentor teachers electronic mail addresses directly, or the email address for the regional supervisor (usually an employee of the municipal department responsible for school education) who in turn contacted the mentors in their jurisdictions. We asked the regional supervisors to advise us how many mentors were on their distribution lists, but because of this intermediary step it is not possible to know exact numbers of mentors that received our invitation. We estimate that the survey link was sent to approximately 2900 email addresses. However, we also estimate that the total number of contacted individual mentors is lower than this total, due to several factors. Some mentors have more than one email address registered with the placement offices at universities and with the municipal offices. Also, many mentors work in schools that are placed geographically between two or more universities and so host student teachers enrolled in various universities. A number of those mentors received our link through more than one of the regional supervisors. In our final sample 80.1 % (N = 496) of all mentors had student teachers from one university only, while 16.6 % (N = 103) mentored student teachers from two, and the remaining 3.2% (N = 20) from 3 or more different universities. We included all in our sample to be able to secure representation based on geographical and institutional composition of the mentor teacher population considering the potential response rates for such surveys.

Based on our estimation of the total number of supervisors related to each university teacher education program we defined the minimum number of participants for each university. These thresholds were decided by considering the size of the teacher education program (i.e., number of students who receive mentoring) and the information received from regional supervisors about how many mentors had been contacted. If the total number of participants was low for any university, we resent the survey link in order to achieve a minimum of representation of each site. In addition, in collaboration with the local school practice offices we re-contacted the target teachers for the institutions that remained low. Eventually a total of 619 mentor teachers (approximately 20% return rate) participated in our study representing a geographical and institutional diversity in our population.

The data were collected in the period between November 16, 2022 and February 16, 2023. The questionnaire was distributed to those who were either currently or recently actively involved in student practice courses as in-school supervisors.

Participants' answers in the submitted questionnaires were assessed for usability, providing us with a total of 619 cases for analysis. As expected, the majority of participants were female mentor teachers (84 %). Participants were on average 48 years old (SD = 9.22). Around 80% of teachers were older than 40 years, and 84% had more than 10 years of teaching experience. The detailed sample characteristics, as well as characteristics of schools that employ them, are presented in Tables 1-8 in the Appendix.

Research in progress – where are we going?

In order to address the main research questions asked in the project we are in the process of analysing relevant data and structure our research reports around several research areas.

The following four (articles) studies are work-in-progress:

Exploratory interview study

This article shows how six experienced mentor teachers reflect on their experiences of mentoring and the opportunities for professional growth they feel mentoring has provided them. The interviews were conducted in the exploratory (initial) phase of the project and the data utilised to develop the quantitative survey instrument. The semi-structured interviews were chosen as the best way to deeply explore mentors' reflections on their mentoring and professional development experiences. The interviews were conducted by three members of the research team, transcribed verbatim and the transcripts thematically analysed together. The analysis draws upon several theoretical concepts: social practice theory and situated learning in communities of practice (Lave & Wenger, 1991); as well as professional identity development and relational agency.

Mentor teachers´ self-efficacy beliefs related to mentoring student teachers

Teachers´ self-efficacy beliefs have been extensively proven to be a crucial factor for predicting outcomes on a personal and professional level. Teachers´ self-efficacy beliefs are related to the effort teachers invest in teaching, the goals they set, resilience in unfavourable circumstances, ability to handle demanding situations, job satisfaction, motivation to leave the profession, emotional exhaustion, health outcomes, and students´ motivation and achievement. Self-efficacy as a concept is derived from Social Cognitive Theory. It is defined as "beliefs in one´s capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p3). To our knowledge, there is no empirical evidence about the role teachers´ self-efficacy beliefs have in mentoring students during their student practice or factors predicting it. In this article we will focus on the factors determining student mentors´ self-efficacy beliefs. We will study the role of background factors (age, gender, experience with mentoring, and the role within the school), individual factors (attitudes toward mentoring and motivation to become a mentor) and contextual factors (perceived challenges related to students and perceived challenges related to the mentoring context). We will particularly focus on understanding the connection between mentors´ self-efficacy beliefs and their perceived professional development. The article will be based on survey data collected from 619 mentors described above.

Mentoring through the lens of Legitimation Code Theory

This study explores the survey data from the perspective of Legitimation Code Theory (LCT) (Maton, 2013) to learn how mentor teachers view the task of mentoring. In LCT the dimension of 'Specialization' is understood to mean that in any social practice there is legitimate knowledge – in our case there should be a legitimate understanding of what mentoring entails – and legitimate knowers – a dominant understanding of who is a (legitimate/good) mentor. In this study we intend to first identify which specialization focus (specialization code) is more frequently reported by mentor teachers and then if and how this code changes/varies between groups of teachers. By looking for Specialization in survey responses we hope to find the extent to which mentors "value" some sort of specialized knowledge related to the mentoring task (in LCT Specialization terminology, this is called epistemic relations, (ER)) and to which extent they value

personal dispositions and attributes (in LCT Specialization terminology this is called social relations, (SR).

Mentoring factors and processes as predictors of mentor teachers´ professional development: A large scale survey study in Sweden

The purpose of this study is to investigate mentor teachers´ characteristics and mentoring activities as potential predictors of their professional development. The predictors include job satisfaction, reasons for starting mentoring, mentoring training and competence, mentoring activities, attitudes, tools and interaction with university teachers. The outcome variables focus on mentor teachers´ professional development and consequences for their students and schools. Participants include mentor teachers who mentor teacher education students for grades 4-6 in Sweden. The data collected from this sample through a questionnaire are used at the scale level to test a model developed based on the activity theory involving the mentorship factors and processes and professional development consequences for teachers.

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Appendix

Table 1
Distribution of study sample by gender, age, supervised student teachers and teaching experience

	N	%
Gender		
Female	522	84.3
Male	84	13.6
n/a	13	2.1
Age		
23-40	127	20.5
41-54	312	50.4
55-68	162	26.2
n/a	18	2.9
Nr. of supervised students		
1-5	232	37.5
6-9	155	25.0
10-15	128	20.7
More than 15	93	15.0
n/a	11	1.8
Teaching experience in years		
9 or less	101	16.3
10-19	218	35.2
20-29	235	38.0
30 or more	63	10.2
n/a	2	0.3

N = 619

Table 2
Teacher education level *(multiple response)*

	N	%
F-3	99	16.0
4-6	170	27.0
7-9/subject teacher	55	9.0
1-7	256	41.0
4-9	42	7.0
Middle years level (Mellanstadielärare)	44	7.0
Lower years level (Lågstadielärare)	26	4.0
Förskollärare	23	4.0
Gymnasium	14	2.0

F-6	10	2.0
Fritids	10	2.0
Other	33	5.0

N = 619

Table 3

Grade levels mentor teachers have taught *(multiple response)*

	N	%
F-3	369	60.0
4-6	532	86.0
7-9	165	27.0
F-5	18	3.0
6-9	25	4.0
Senior secondary (Gy)	35	6.0

N = 619

Table 4

Subjects mentor teachers supervise *(multiple response)*

	N	%
Swedish	438	71.0
Mathematics	387	63.0
Social Science - SO (Hi, Ge, Rel, So)	331	53.0
English	270	44.0
Science- NO (Bi, Phy, Ch)	265	43.0
Technical studies/technology	171	28.0
Art	103	17.0
Swedish as a second language	69	11.0
Physical education	38	6.0
Music	25	4.0
Modern languages (eg French, Spanish or German)	10	2.0
Craft	4	1.0
Home and consumer science	3	0.0
Mother tongue	1	0.0
Sign language	1	0.0
Other	33	5.0

N = 619

Table 5
Hours spent in mentoring tasks (in a week)

	N	%
Less than 1 hour a week	27	4.4
1 hour a week	37	6.0
2 hours a week	178	28.8
3 hours a week	158	25.5
4 hours a week	100	16.2
5 hours a week	61	9.9
6 hours a week	20	3.2
7 or more hours a week	33	5.3
n/a	5	.8

N = 619

Table 6
School characteristics

	N	%
Type of school		
Public (*Kommunal*)	598	96.6
Independent school (*Friskola*)	16	2.6
Private School	4	0.6
n/a	1	0.2
Nr of 4-6 classes in school		
0	26	4.2
1-3	126	20.4
4-7	238	38.4
8 or more	213	34.4
n/a	16	2.6
Is your school designated 'training school' (*Övningsskola*)?		
No	314	50.7
Yes	239	38.6
I don't know	61	9.9
n/a	5	.8
Would you say that your school is in a socio-economically disadvantaged area?		
No	390	63.0
Yes	194	31.3
I don't know	35	5.7

N = 619

Table 7
Mentor teachers' school location (*recoded into region*)

	N	%
Blekinge Län	4	0.6
Dalarnas Län	18	2.9
Gävleborgs Län	9	1.5
Gotlands Län	11	1.8
Hallands Län	22	3.6
Jämtlands Län	3	0.5
Jönköpings Län	72	11.6
Kalmar Län	18	2.9
Kronobergs Län	19	3.1
Norbottens Län	4	0.6
Örebro Län	4	0.6
Östergötlands Län	52	8.4
Skåne Län	74	12.0
Södermanlands Län	9	1.5
Stockholms Län	39	6.3
Uppsala Län	2	0.3
Värmlands Län	15	2.4
Västerbottens Län	14	2.3
Västernorrlands Län	34	5.5
Västmanlands Län	16	2.6
Västra Götalands Län	169	27.3
n/a	11	1.8

N = 619

Table 8
Universities mentored student teachers attend *(multiple response)*

	N	%
Göteborgs universitet	142	23.0
Högskolan i Borås	43	7.0
Högskolan Dalarna	34	5.0
Högskolan i Gävle	16	3.0
Högskolan i Halmstad	16	3.0
Högskolan i Jönköping	88	14.0
Högskolan i Kristianstad	35	6.0
Karlstads universitet	38	6.0
Linköpings universitet	61	10.0
Linnéuniversitetet	58	9.0
Luleå tekniska universitet	12	2.0
Malmö universitet	57	9.0
Mittuniversitetet	38	6.0
Mälardalens högskola	21	3.0
Stockholms universitet	36	6.0
Södertörns högskola	12	2.0
Umeå universitet	23	4.0
Uppsala universitet	24	4.0
Högskolan Väst	19	3.0
Örebro universitet	8	1.0